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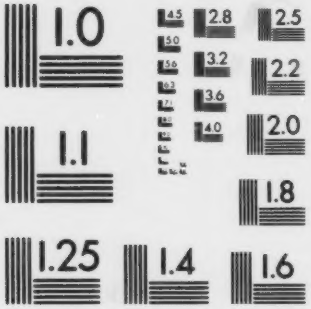
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Syntex

V^e Conférence
internationale sur le

SIDA

**Le défi
scientifique
et social**

**Montréal (Québec) Canada
du 4 au 9 juin 1989**

Parrainée par le

Centre de recherches pour le
développement international,
Santé et Bien-être social Canada, et
l'Organisation mondiale de la santé

En association avec:
La Société internationale sur le SIDA

V International
Conference on

AIDS

**The Scientific
and Social
Challenge**

**Montréal, Québec, Canada
June 4 – 9, 1989**

Sponsored by the

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Message du Président du comité du programme

Ve Conférence internationale sur le SIDA
SOUS LE SIGNE DE LA SOLIDARITÉ

En tant que président du Comité du programme de la Ve Conférence internationale sur le SIDA, je tiens d'abord à vous remercier chaleureusement d'avoir accepté notre invitation. Votre présence, ainsi que celle de vos nombreux collègues, est un témoignage éloquent de la solidarité qui unit tous les participants de cette rencontre exceptionnelle.

Il nous est permis, au-delà des mots, de croire que ce congrès sortira vraiment de l'ordinaire. D'abord, par son ampleur : plus de 10 000 délégués, 1 000 représentants des médias et 1 000 représentants de compagnies et d'organisations. Mais surtout, par la philosophie profondément humaniste qui l'animera.

L'observateur qui aura suivi attentivement, depuis Atlanta en 1985, la série de conférences internationales sur le SIDA, aura noté à quel point ces rencontres se sont progressivement décloisonnées. À l'origine, on s'en souviendra, la Conférence abordait quasi exclusivement des thèmes biomédicaux. Mais graduellement, les chercheurs scientifiques ont dû se rendre à l'évidence : le SIDA n'était pas seulement un problème médical, mais aussi un drame humain.

Bien sûr, nous savons tous que la solution ultime verra éventuellement le jour dans un laboratoire. Mais entre-temps, qu'est-ce que le virologue ou le microbiologiste peuvent proposer au sidéen et à ses proches pour alléger leur fardeau? Pour les aider à lutter contre l'ignorance et l'intolérance qui, chaque jour, se font plus présents? Nos laboratoires sont des lieux d'espoir; notre conscience nous interdit de les laisser se transformer en ghettos. Devant les extrémismes qui pointent à l'horizon, il est de notre devoir à tous de contribuer à l'élargissement et à l'approfondissement de l'étude du SIDA. Agir autrement serait inconscient, voire même cruel pour des millions de gens qui tournent vers nous des regards chargés d'espoir.

Le Congrès de Montréal innove donc en présentant officiellement une perspective multidisciplinaire, que résume bien son thème : "Le SIDA : défi scientifique et social." Le programme de la rencontre reflète précisément cette approche intégrée, puisque 30 % des séances toucheront les divers aspects sociaux du problème. Dilution du contenu biomédical? Aucune crainte n'est permise à ce sujet : dans les seuls domaines de l'épidémiologie, des aspects cliniques et de la recherche fondamentale, on compte plus d'une centaine de séances et près de 550 conférenciers—plus que toute autre rencontre auparavant. Miroir de cette nouvelle approche, le recueil des résumés vous propose une somme de 5 539 textes qui s'attaquent tant aux dimensions médicales que sociales du SIDA.

Plus humaine, donc, l'approche. Et à la fois plus internationaliste. Car avouons-le, il restait à la série de conférences internationales sur le SIDA à véritablement s'internationaliser. Avec le recul du temps, il nous apparaît évident que le Tiers Monde n'a peut-être pas occupé toute la place qui lui revenait lors des précédentes rencontres. Situation paradoxale quand on sait que la pandémie a des conséquences particulièrement graves dans le Tiers Monde : les plus récentes statistiques font état d'un taux d'infection atteignant jusqu'à 20 % chez la population hétérosexuelle de certaines grandes villes.

Les organisateurs de la conférence de Montréal n'ont pas hésité : ils ont tout mis en oeuvre pour accroître la participation du Tiers Monde. En consultant des chercheurs des pays en voie de développement sur les questions d'organisation. En commanditant des conférences préparatoires en Afrique, en Asie et en Amérique latine pour déterminer les attentes des chercheurs locaux face à l'événement. Le Canada, par l'entremise de l'Agence canadienne de développement international (ACDI) et de différents organismes dans d'autres pays occidentaux, a aussi apporté une assistance financière pour assurer cette participation.

Enfin, nous avons veillé à ce que la Conférence demeure un instrument privilégié pour sensibiliser les populations, les décideurs et les pouvoirs publics du monde entier. La Conférence de Montréal utilise abondamment la technologie audiovisuelle et des expositions artistiques à des fins didactiques. Elle innove aussi en facilitant une participation hors murs du grand public. Toujours dans cet esprit d'ouverture sur le monde, les organisateurs ont établi que les langues officielles de la Conférence seront l'anglais et le français. Des traductions simultanées dans ces deux langues sont offertes en tout temps, ainsi qu'en espagnol aux séances plénières.

Dans la foulée des premières rencontres, la Conférence de Montréal est elle aussi une tribune internationale favorisant l'échange d'information. Mais plus encore, nous avons voulu qu'elle se signale par une convergence sans précédent de toutes les énergies et compétences disponibles. À l'heure de l'interdépendance planétaire, au-delà des barrières professionnelles et des divergences de toute nature, la solidarité de la communauté internationale face au problème du SIDA s'impose plus que jamais. Ce n'est qu'à ce prix que des millions de gens démunis pourront légitimement entretenir l'un des biens les plus précieux qu'il leur reste : l'espoir.

Richard A. Morisset, M.D.
Président du Comité du programme de la V^{e} Conférence internationale sur le SIDA

Message From the Programme Committee Chairman

V International Conference on AIDS
UNDER THE BANNER OF SOLIDARITY

As Chairman of the Program Committee for the V International Conference on AIDS, first let me cordially thank you for accepting our invitation. Your presence here, alongside your numerous colleagues, attests eloquently to the solidarity binding everyone attending this exceptional meeting.

For we have solid reason to believe that this conference will really be an extraordinary one. First, because of its scope: over 10,000 delegates, 1,000 media representatives and 1,000 corporate and organizational delegates. But above all, by the profoundly humanistic philosophy guiding it.

Anyone who has kept a close watch on the series of International Conferences on AIDS that began in Atlanta in 1985 will have noticed how these encounters have gradually opened up. Originally, you will recall, the meetings dealt almost exclusively with biomedical topics. Yet scientists soon had to admit that AIDS is not simply a medical problem, but also a human drama.

Naturally, we all know that the ultimate solution will eventually come to light in a laboratory. But meanwhile, what can the virologist or microbiologist offer an AIDS victim and his or her loved ones to ease their burden? To help them combat the ignorance and intolerance they face, which are growing day by day? Our laboratories are realms of hope; our conscience forbids us from turning them into ghettos. Facing the extremists looming to the horizon, we all have a duty to help broaden and deepen research into AIDS. To act in any other way would be unconscionable, if not cruel to the millions of people looking to us with profound hope.

The Montreal Conference represents an innovation in that it officially presents a multidisciplinary view neatly summarized in its theme: "AIDS: A Scientific and Social Challenge." The program for this meeting accurately reflects this integrated approach, since 30% of the sessions will deal with various social aspects of the problem. Will this dilute its biomedical content? That need scarcely be feared: in the fields of epidemiology, clinical aspects and basic research alone, there will be over 100 sessions and almost 550 speakers—more than at any previous conference. Mirroring our new approach, the collected abstracts cover a total of 5,539 papers that tackle both the medical and social dimensions of AIDS.

Definitely a more human approach. And at the same time a more international one. For we must admit that our series of international conferences on AIDS have yet had to become genuinely international. With the passage of time, it became clear to us that the Third World may not have been playing its full role at past meetings. This is paradoxical, since we know that the pandemic is having especially serious consequences in the Third World: the most recent statistics indicate an infection rate covering almost 20% of the heterosexual population in some major cities.

The organizers of the Montreal Conference have made every effort to increase Third World participation. They have consulted scientists from developing countries on organizational matters. They have sponsored preparatory conferences in Africa, Asia and Latin America to determine what local scientists expect from the event. Canada, through the Canadian International Development Agency (CIDA) and various organizations in other western countries, has also provided financial assistance to ensure Third World participation.

Finally, we saw to it that this Conference will be a special means of raising the consciousness of the general public, decisionmakers and public authorities around the world. The Montreal Conference will use a wealth of audiovisual technology and art exhibits for educational purposes. It is also innovating by making it easier for the general public to participate extramurally. In this same spirit of openness to the world, the organizers have decided that the Conference's official languages will be English and French. Simultaneous translation into either language will be available at all times, along with Spanish at the plenary sessions.

Like its predecessors, the Montreal Conference is an international forum promoting the exchange of information. But even more, we wanted it to signal an unprecedented convergence of all the available energy and skills. In the era of the global village, leaving behind professional barriers and differences of every kind, the international community's solidarity in confronting the problem of AIDS is more vital than ever. It is at this price alone that millions of people can legitimately nourish one of their most valuable remaining possessions: hope.

Richard A. Morisset, M.D.
Program Committee Chairman of the V International Conference on AIDS

Comites et personnel

Committees and Personnel

La V^e^ Conférence internationale sur le SIDA remercie chaleureusement tous ceux qui ont contribué de leur temps et de leurs énergies à la réalisation de cet événement.

The V International Conference on AIDS wishes to express its gratitude to all those who have contributed to this event's success.

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Samedi 3 juin

13 h à 20 h

Inscription	Palais des Congrès 100A *

Dimanche 4 juin

10 h à 19 h

Inscription	Palais des Congrès 100A

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Cérémonie d'ouverture	Palais des Congrès

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Le Très Honorable
Brian Mulroney
Premier Ministre du Canada

Son Excellence
Kenneth Kaunda
Président de la République de la Zambie

20 h à 21 h 30

Réception d'ouverture	Complexe Desjardins

* Salle

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June 3

13:00 to 20:00

Registration Palais des Congrès 100A*

Sunday
June 4

10:00 to 19:00

Registration Palais des Congrès 100A

16:30 to 19:00

Opening Ceremonies Palais des Congrès

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World Health Organization

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Founder, Institut Armand Frappier
Montreal, Quebec

The Right Honourable
Brian Mulroney
Prime Minister of Canada

His Excellency
Kenneth Kaunda
President of the Republic of Zambia

20:00 to 21:30

Opening Reception Complexe Desjardins

* Room number

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- (Colloque) Diagnostic et histoire clinique de l'infection par le VIH, 407 B 189

C. **Recherche fondamentale (biomédicale)**
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- Psychologie et sexologie, 411 A 701

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F. **Droit et éthique**
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G. **Implications internationales**
- Risques et prévention, 406 A 978
- (Colloque) Compassion et soins communautaires dans les pays en voie de développement, 406 BC 979

H. **Répercussions économiques du SIDA**
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- (Colloque) Problèmes de laboratoire dans le diagnostic du SIDA, 407 B 202

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- Modèles animaux (partie 1), 407 C 522
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D. **Le SIDA et l'individu**
- Les adolescents (partie 2), 4[illegible] ABC 702
- Counseling, 411 A 703

E. **Le SIDA, la société et le comportement**
- Problèmes de la communauté gaie, 411 B 824

F. **Droit et éthique**
- (Colloque) infection par le VIH, reproduction et fonction parentale, 411 C 949

G. **Implications internationales**
- Prévalence (partie 2), 406 A 980
- (Atelier) Atelier régional : Asie, 406 BC 981

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Tuesday, June 6

8:30 - 10:30

"State-Of-The-Art" — Plenary session
Palais des Congrès 407 ABC*

11:00 - 17:30

Audiovisual Presentations — Guy-Favreau Conference Centre

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- AIDS surveillance, 408 A 55
- HIV infection in IVDUs, 408 BC 56

B. **Clinical Aspects of AIDS**
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- AIDS in the developing world, 406 A 197
- (Symposium) HIV therapy, 407 B 198

C. **Basic Research (Biomedical)**
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- (Symposium) Mechanisms of pathogenesis of human retroviruses, 407 C 516
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D. **AIDS and the Individual**
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E. **AIDS, Society and Behaviour**
- (Round table) Social Services: Experiences and evaluations, 411 B 822

F. **Ethics and Law**
- (Symposium) Confidentiality and its limits, 411 C 945

G. **International Issues**
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C. **Basic Research (Biomedical)**
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E. **AIDS, Society and Behaviour**
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F. **Ethics and Law**
- (Symposium) Clinical ethics, 411 C 947

G. **International Issues**
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H. **The Economic Impact of AIDS**
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C. **Basic Research (Biomedical)**
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- Animal models (Part 1), 407 C 522
- Molecular biology: Regulatory genes and their products, 410 ABC 523

D. **AIDS and the Individual**
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E. **AIDS, Society and Behaviour**
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F. **Ethics and Law**
- (Symposium) HIV infection, reproduction and parenthood, 411 C 949

G. **International Issues**
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H. **The Economic Impact of AIDS**
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Mercredi 7 juin

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« État de la question » — Plénière
Palais des Congrès 407 ABC *

11 h à 17 h 30

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B. **Aspects cliniques**
- Pharmacologie et toxicité de l'AZT, 401 ABC 203
- Traitement : thrombocytopénie, 403 ABC 204
- (Colloque) Qualité des soins offerts aux personnes atteintes du SIDA, 407 B 205

C. **Recherche fondamentale (biomédicale)**
- (Colloque) Gènes régulateurs et diversité génomique virale, 407 C 524
- Éléments de base en immunologie (partie 1), 408 A 525
- Biologie moléculaire (partie 2), 410 ABC 526

D. **Le SIDA et l'individu**
- Les femmes, 409 ABC 704

E. **Le SIDA, la société et le comportement**
- Rôle des ONG dans la lutte mondiale contre le SIDA, 411 A ... 825
- La lutte communautaire contre le SIDA dans les années 1990, 411 B 827

F. **Droit et éthique**
- (Colloque) Recherche de traitements et de vaccins, 411 C 950

G. **Implications internationales**
- Le VIH en pédiatrie, 406 A 982
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H. **Répercussions économiques**
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B. **Aspects cliniques**
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- Hémophilie : histoire clinique et études de cohortes, 403 ABC . 207
- (Colloque) Infection par le VIH : atteintes à certains organes, 407 B 208

C. **Recherche fondamentale (biomédicale)**
- (Colloque) Mise au point de vaccins contre le SIDA, 407 C 527
- Mise au point des médicaments : nouvelle approche pour l'étude des médicaments antiviraux, 408 A 528
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D. **Le SIDA et l'individu**
- (Colloque) Consommateurs de drogues par voie intraveineuse : réalités changeantes et mythes persistants, 409 ABC ... 705

E. **Le SIDA, la société et le comportement**
- Le SIDA en milieu de travail, 411 A 828
- Le SIDA dans les médias, 411 B 829

F. **Droit et éthique**
- (Colloque) Prévenir la transmission du VIH : les conflits religieux en matière de santé publique, 411 C 952

G. **Implications internationales**
- Perspectives mondiales, 406 A 984
- Transmission hétérosexuelle et rôle des MTS, 406 BC 985

H. **Répercussions économiques du SIDA**
- Financement et assurances, 404 AB 1036

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- Test de dépistage du VIH/Questions en matière de politiques et de programmes, 408 BC 68

B. **Aspects cliniques**
- Infections associées au SIDA, 401 ABC 209
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- (Colloque) Essais cliniques : points de vue des « acteurs », 407 B . 211

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D. **Le SIDA et l'individu**
- (Colloque) Les femmes dans les pays industrialisés : Questions et options, 409 ABC 706

E. **Le SIDA, la société et le comportement**
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F. **Droit et éthique**
- (Colloque) Cœrcition ou volontarisme ? Analyse critique internationale, 411 C 954

G. **Implications internationales**
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- (Atelier) Atelier régional : Afrique occidentale, 406 BC 987
- (Colloque) Déplacements internationaux et SIDA, 411 A 988

H. **Répercussions économiques du SIDA**
- Méthodologie des analyses de coûts, 404 AB 1037

Wednesday, June 7

8:30 - 10:30

"State-Of-The-Art" — Plenary session
Palais des Congrès 407 ABC*

11:00 - 17:30

Audiovisual Presentations — Guy-Favreau Conference Centre

11:00 - 12:30

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A. **Epidemiology and Public Health**
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- (Symposium) Quality of care for patients with AIDS, 407 B ... 205

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D. **AIDS and the Individual**
- Women, 409 ABC 704

E. **AIDS, Society and Behaviour**
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- The community-based response to AIDS into the 1990s, 411 B . 827

F. **Ethics and Law**
- (Symposium) Research for treatments and vaccines, 411 C 950

G. **International Issues**
- HIV in pediatrics, 406 A 982
- (Symposium) Tropical diseases: the impact of HIV, 406 BC ... 983

H. **The Economic Impact of AIDS**
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- (Symposium) International travel and AIDS, 411 A 988

H. **The Economic Impact of AIDS**
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Jeudi 8 juin

8 h 30 à 10 h 30

- Synthèse des plénières -
Palais des Congrès 407 ABC *

11 h à 17 h 30

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E. **Le SIDA, la société et le comportement**
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G. **Implications internationales**
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- Les lymphokines, 404 AB 216
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- Politiques sociales : expériences et critiques, 411 B 832

G. **Implications internationales**
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- (Table ronde) Infection par le VIH et travailleurs de la santé : questions actuelles, 408 BC 76
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Palais des Congrès 407 ABC*

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11:00 - 12:30

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C. **Basic Research (Biomedical)**
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D. **AIDS and the Individual**
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E. **AIDS, Society and Behaviour**
- (Workshop) Innovations in AIDS education and prevention, 411 B 831

G. **International Issues**
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H. **The Economic Impact of AIDS**
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- Public policy: Experiences and critiques, 411 B 832

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- (Symposium) Role of macrophages and lymphocytes as reservoirs of HIV-1, 407 C 540
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E. **AIDS, Society and Behaviour**
- Social dimensions of AIDS, 411 B 833

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- (Symposium) Discrimination and human rights, 411 C 955

G. **International Issues**
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Vendredi 9 juin

8 h 30 à 10 h 30

« Perspectives d'avenir » — Plénière
Palais des Congrès 407 ABC *

Cérémonie de clôture

Président
Ivan Head
Président de la Conférence
Président du Centre de recherches pour le développement international
Canada

Conférenciers
L'Honorable Perrin Beatty
Ministre de Santé et Bien-être social
Canada

Mohammed Abdelmoumène
Directeur général adjoint
Organisation mondiale de la santé
Suisse

John Ziegler
Président
VI^e Conférence internationale sur le SIDA
États-Unis

Lars Olof Kallings
Président
Société internationale sur le SIDA
Ministère de la Santé et des Affaires sociales
Suède

Message de
Danielle Mitterrand
Présidente, Fondation France Libertés

Randy Shilts
Correspondant national
San Francisco Chronicle
États-Unis

Friday June 9

8:30 - 10:30

"Future Prospects" — Plenary session
Palais des Congrès 407 ABC

Closing Ceremony

Chairman
Ivan Head
Conference Chairman
President, International Development Research Centre
Canada

Plenary Speakers
The Honourable Perrin Beatty
Minister of Health and Welfare
Canada

Mohammed Abdelmoumene
Deputy Director-General
World Health Organization
Switzerland

John Ziegler
Chairman
VI International Conference on AIDS
United States

Lars Olof Kallings
President
International AIDS Society
Ministry of Health and Social Affairs
Sweden

Message from
Danielle Mitterrand
President
Fondation France Libertés

Randy Shilts
National Correpondent
San Francisco Chronicle

*** Salle**
Room number

Programme
des Plenieres

Overall Plenary
Programme

Le lundi 5 juin

Monday June 5

Nouvelles Perspectives

Présidents :
Maureen Law
Sous-Ministre
Santé et Bien-être social Canada

Donald deGagné
Directeur, Vancouver Persons with AIDS Society
Canada

Conférenciers :
June Callwood
Journaliste
Globe & Mail
Canada

Albert Jacquard
Professeur à l'Université de Genève
Chef du service de génétique
Institut national d'études démographiques
France

Mechai Viravaidya
Fondateur
Population and Community Development Association
Thaïlande

Stephen Joseph
Commissaire de la santé
Ville de New York
États-Unis

David Suzuki
Scientifique/Journaliste
Département de zoologie
University of British Columbia
Canada

New Perspectives

Chairpersons:
Maureen Law
Deputy Minister
Health and Welfare Canada

Donald deGagné
Director
Vancouver Persons with AIDS Society
Canada

Plenary speakers:
June Callwood
Columnist
Globe & Mail
Canada

Albert Jacquard
Professor, University of Geneva
Chief, Genetic Services
Institut national d'études démographiques
France

Mechai Viravaidya
Founder
Population and Community Development Association
Thailand

Stephen Joseph
Commissioner of Health
New York City
U.S.A.

David Suzuki
Scientist/Broadcaster
Department of Zoology
University of British Columbia
Canada

Le mardi
6 juin

Tuesday
June 6

État de la Question

Président :
James O. Mason
Secrétaire adjoint de la santé des États-Unis

Conférenciers :
Progrès en gestion clinique du SIDA et de l'infection par le VIH dans le monde industrialisé
Ian Weller
Directeur d'études
Faculté de médecine génito-urinaire, University College & Middlesex School of Medicine
Angleterre

Difficultés et obstacles à la gestion optimale du SIDA et de l'infection par le VIH dans le monde en développement
N'Galy Bosenge
Directeur
Comité national du programme de lutte contre le SIDA au Zaïre

La perspective communautaire—questions confrontant les personnes ayant le SIDA et infectées par le VIH dans le monde en développement
Daniel Defert
Président
AIDES Féderation nationale
France

Humanité : les mesures pour une éthique sur le SIDA
David J. Roy
Directeur
Centre de bioéthique
Institut de recherche clinique de Montréal
Québec, Canada

La dynamique de la transmission du VIH : le rôle des modèles dans l'interprétation, la prédiction et l'évaluation des paramètres
Roy M. Anderson
Professeur
Imperial College of Science and Technology
Angleterre

State-of-the Art

Chairperson:
James O. Mason
Assistant Secretary for Health of the United States

Plenary speakers:
Advances in Clinical Management in AIDS and HIV Infection in the Developed World
Ian Weller
Reader in Genito-Urinary Medicine
Academic Department of Genito-Urinary Medicine
University College & Middlesex School of Medicine
England

Difficulties and obstacles for optimal management of AIDS and HIV infection in the developing world
N'Galy Bosenge
Director
National AIDS Control Programme in Zaire

The community perspective - issues confronting persons with AIDS and HIV infection and the community
Daniel Defert
President
AIDES Féderation nationale
France

Humanity: the measure of an ethics for AIDS
David J. Roy
Director
Centre for Bioethics
Clinical Research Institute of Montreal
Quebec, Canada

The transmission dynamics of HIV: the role of models in interpretation, prediction and parameter estimation
Roy M. Anderson
Professor
Imperial College of Science and Technology
England

Le mercredi 7 juin

Wednesday June 7

État de la Question

Présidente :
Monique Landry
Ministre des relations extérieures et du développement international du Canada

Conférenciers :

Le femmes, les enfants et le SIDA—questions touchant les femmes, les enfants et le SIDA dans le monde industrialisé
Catherine Hankins
Directeur
Programme régional de contrôle MTS-SIDA, Montréal
Québec, Canada

Le SIDA chez les enfants en Afrique : perspectives et défis
Angela A. Okolo
Maître de Conférence
Département de santé de l'enfant
Collège des sciences médicales
Université du Bénin
Nigéria

Epidémiologie et lutte contre le SIDA chez les consommateurs de drogues
Roel A. Coutinho
Service de santé municipale
Département de la santé publique et de l'environnement
Pays-Bas

Thérapie anti-rétrovirale : le passé, le présent et l'avenir
Samuel Broder
Directeur
National Cancer Institute
États-Unis

Pour une approche bio-culturelle du SIDA : impasses et nouvelles pistes
Gilles Bibeau
Professeur et Directeur
Département d'anthropologie
Université de Montréal
Québec, Canada

State of Art

Chairperson:
The Honourable Monique Landry
Minister for International Relations and International Development of Canada

Plenary speakers:

Women, children, and AIDS—issues involving women, children and AIDS in the developed world
Catherine Hankins
Director
Montreal Regional STD-AIDS Control
Quebec, Canada

Childhood AIDS in Africa: perspectives, challenges
Angela A. Okolo
Senior Lecturer
Department of Child Health
College of Medical Sciences
University of Benin
Nigeria

Epidemiology and control of AIDS among drug users
Roel A. Coutinho
Municipal Health Service
Department of Public Health and Environment
The Netherlands

Anti-retroviral therapy; past, present, and future
Samuel Broder
Director
National Cancer Institute
U.S.A.

**For a biocultural approach to AIDS: dead ends
and new leads**
Gilles Bibeau
Professor and Director
Department of Anthropology
University of Montreal
Quebec, Canada

Le jeudi 8 juin

Thursday June 8

Synthèse des plénières

Présidents :
L'Honorable Elinor Caplan
Ministre de la Santé de l'Ontario
Canada

Le Ministre Claude Evin
Ministre de la Solidarité, de la Santé et de la Protection sociale, France

Conférenciers :
Structure et pathogénèse du VIH
Marie-Paule Kieny
Directrice scientifique associée
Division de la virologie et de l'immunologie
TRANSGENE
France

L'épidémiologie de l'infection par le VIH : progrès récents et questions à résoudre
Peter Piot
Professeur et Chef du
Département de microbiologie
Institut de médécine tropicale
Belgique

Perspectives et embûches de la vaccination contre le VIH
Dani P. Bolognesi
Professeur James B. Duke
Département de Chirurgie
Duke University Medical Centre
États-Unis

Infection par le VIH dans le contexte d'une épidémiologie changeante des maladies transmissibles sexuellement
King K. Holmes
Professeur et vice-président
Département de Médecine
University of Washington
États-Unis

Prévention : peut-on mobiliser ce qui a été appris?
June E. Osborn
Doyen
École de santé publique
University of Michigan
États-Unis

"Synthesis" Plenary Speakers

Chairpersons:
The Honourable Elinor Caplan
Minister of Health of Ontario
Canada

Claude Evin
Minister of Solidarity, Health and Social Protection
France

Plenary Speakers:
Structure and pathogenesis of HIV
Marie-Paule Kieny
Associate Scientific Director
Virology and Immunology Division
TRANSGENE
France

The epidemiology of HIV infection: recent advances and remaining questions
Peter Piot
Professor and Head
Department of Microbiology
Institute of Tropical Medicine
Belgium

Prospects and pitfalls of vaccination against HIV
Dani P. Bolognesi
James B. Duke Professor
Department of Surgery
Duke University Medical Centre
U.S.A.

HIV infection in the context of changing epidemiologic patterns of sexually transmitted diseases
King K. Holmes
Professor and Vice-Chairman
Department of Medicine
University of Washington
U.S.A.

Prevention: can we mobilize what has been learned?
June E. Osborn
Dean
School of Public Health
University of Michigan
U.S.A.

Le vendredi 9 juin

Friday June 9

Perspectives d'Avenir

Présidente :
Thérèse Lavoie-Roux
Ministre de la Santé et des Services sociaux du Québec
Canada

Conférenciers :
Simone Veil
Présidente du Groupe libéral, démocratique et réformateur
Parlement Européen
France

Robert Gallo
Chef
Laboratory of Tumor Cell Biology
États-Unis

Luc Montagnier
Département de Virologie
Unité d'oncologie virale
Institut Pasteur
France

Alastair Clayton
Directeur général
Centre fédéral sur le SIDA
Canada

Richard A. Morisset
Président, Comité du programme de la Conférence
Professeur titulaire
Département de microbiologie et immunologie
Université de Montréal
Québec, Canada

Future Prospects

Chairperson:
Thérèse Lavoie-Roux
Minister of Health and Social Services of Quebec
Canada

Plenary Speakers:
Simone Veil
President
Groupe libéral, démocratique et réformateur
Parlement Européen
France

Robert Gallo
Chief
Laboratory of Tumor Cell Biology
U.S.A.

Luc Montagnier
Department of Virology
Viral Oncology Unit
Institut Pasteur
France

Alastair Clayton
Director General
Federal Centre for AIDS
Canada

Richard A. Morisset
Chairman, Conference Programme Committee
Professor
Microbiology and Immunology
University of Montreal
Quebec, Canada

Abreges

Abstracts

Système de numérotation

SECTION A
Épidémiologie et
santé publique

SECTION B
Aspects cliniques

SECTION C
Recherche fondamentale
(biomédicale)

SECTION D
Le SIDA et
l'individu

SECTION E
Le SIDA, la société et
le comportement

SECTION F
Droit et éthique

SECTION G
Implications
internationales

SECTION H
Répercussions
économiques du SIDA

SECTION I
Audiovisuel

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Overflow

Affiches
Posters

Les présentations de ce programme sont groupées par jour et par section. La numérotation des abrégés indique le jour et la nature des présentations.

Ces numéros renvoient aussi aux abrégés réunis dans le cahier des abrégés.

Exemple
M.A.O.37

M.	A.	O.	37
↓	↓	↓	↓
Jour de la présentation	Numéro de section	Nature de la présentation	Numéro de la présentation
M : Lundi T : Mardi W : Mercredi Th : Jeudi F : Vendredi	A, B, C D, E, F, G, H, I.	O : Exposé P : Affiche V : Vidéo	

Key to Numbering System

The presentations in this program are grouped by day, by section. The numbering system utilized for the abstracts serves to identify the day and type of presentation.

These numbers also refer to the abstracts in the Abstract Volume.

Example
M.A.O.37

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Day of the presentation	Section number	Type of presentation	Presentation number
M : Monday T : Tuesday W : Wednesday Th : Thursday F : Friday	A, B, C D, E, F, G, H, I.	O : Oral P : Poster V : Video	

SECTION A
Epidemiology and Public Health

SECTION B
Clinical Aspects

SECTION C
Basic Research (Biomedical)

SECTION D
AIDS and the Individual

SECTION E
AIDS, Society and Behaviour

SECTION F
Ethics and Law

SECTION G
International Issues

SECTION H
The Economic Impact of AIDS

SECTION I
Audiovisual

Médias
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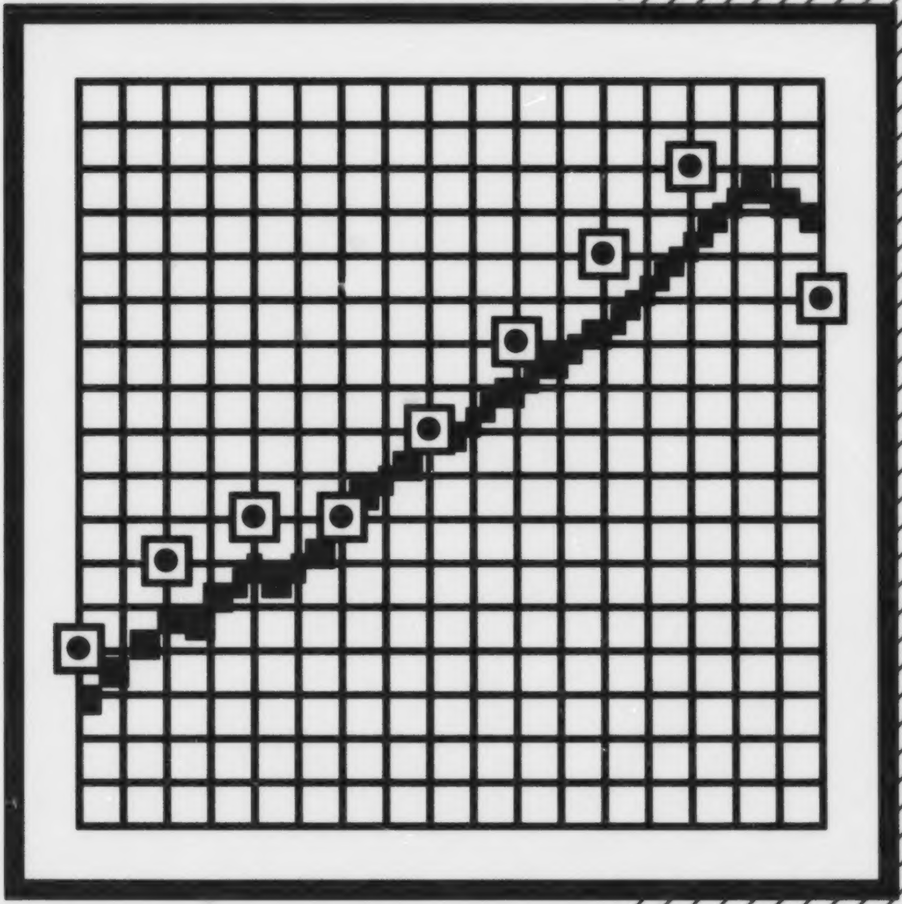
Posters

SIDART

SECTION A



Épidémiologie et santé publique

Epidemiology and Public Health

Études séro-épidémiologiques : États Unis
Seroepidemiologic Studies: United States

M.A.0.1

HIV SEROCONVERSION RATE IN A SERIALLY-TESTED POPULATION OF YOUNG ADULTS IN THE UNITED STATES (1987-1988).

McNeil, John*; Wann, F.**; Burke D.*; Brundage, J.*
*Walter Reed Army Institute of Research, Washington DC, USA; **SRA Technologies, Alexandria Virginia, USA.

Objective. To describe the rate of, and demographic characteristics associated with, HIV seroconversion within a large population of US citizens who are serially-tested for HIV antibody (HIV-Ab).

Methods. Civilian applicants for military service and all soldiers on active duty are routinely tested for HIV-Ab. Current policy stipulates repeat testing at least biennially. A total of 76,787 people tested negative for HIV-Ab on or after November 1, 1987 and were subsequently retested before November 1, 1988. The average time between tests was 7.2 months. An incident case is defined as someone who tested negative on the first test (EIA- or WB-) and positive on the subsequent test (WB + in duplicate).

Results. Twenty-nine seroconversions occurred over the observed period resulting in an annual incidence rate (IR) of 0.63/1000 (95% Poisson CI: 0.42-0.90). Direct rate adjustment by age to the standard US Army population resulted in an annual IR of 0.74/1000. Seroconversion risk was associated with minority ethnicity, age between 20-30 years, male gender, and being unmarried. Investigation of specific behavioral risk factors for seroconversion is in progress.

Conclusion. To the best of our knowledge, military testing programs represent the only opportunity to obtain a US population-based estimate of incident seroconversion. Using the method described above, the annual rate of new HIV infections within the Army has remained stable (0.74/1000) during interval years 1985-86, 1986-87, and 1987-88, and currently results in about 550 new HIV infections per year in this cohort of presumably low-risk young adults.

M.A.0.3

EPIDEMIOLOGY OF HIV INFECTION IN ACTIVE DUTY ARMY MEN AT NO IDENTIFIED RISK (NIR)

Renzullo, Philip*; McNeil, J.*; Bunin, J.**; and Brundage, J.* .
*Walter Reed Army Institute of Research, Washington, DC, USA; **AIDS Program, National Institute for Allergy and Infectious Diseases, Rockville, MD, USA.

Objective. To investigate risk factors for HIV infection among HIV-Ab positive male soldiers at no identified risk (NIR) for HIV infection and randomly selected HIV-Ab negative controls.

Methods. A large proportion of HIV-Ab positive male soldiers do not disclose histories of homosexuality/bisexuality, IV drug use, hemophilia, blood transfusions, or sexual activity with persons at risk for HIV infection. A case-control risk factor study was conducted with HIV-Ab positive soldiers and matched HIV-Ab negative controls. Subjects consented to a voluntary, anonymous and confidential survey of demographics, medical history, drug use, sexual history, and other behaviors associated with HIV infection. Civilian interviewers were blinded to the HIV-Ab status of each participant.

Results. Twenty (76.9%) of 26 cases and 9 (12.2%) of 74 controls reported engaging in behaviors associated with increased risk of HIV infection. Conditional logistic regression revealed significant risk of HIV infection was independently associated with engaging in sex with men (adjusted Odds Ratio (OR)=44.7, p=.03), engaging in sex with IV drug users, (OR=27.8, p=.02), being unmarried (OR=14.5, p=.02), and engaging in sex that caused one or both partners to bleed (OR=8.6, p=.04).

Conclusion. Results suggest that NIRs in the Army can be reclassified into traditional risk categories at about the same rate as in civilian studies. Study designs that are not only confidential, but also anonymous and interviewer-blinded, can improve the quality of risk factor assessments in both civilian and military individuals who perceive that divulging risk factor information can be potentially incriminating.

M.A.0.5

MEASURING LEVELS AND TRENDS OF HIV INFECTION IN THE GENERAL POPULATION BY MONITORING HIV SEROPREVALENCE IN PRIMARY CARE OUTPATIENTS

Petersen, Lyle*; Dondero T.*; Engel R.** and Herring N.**
*Centers for Disease Control, Atlanta, Georgia, USA, **Damon Clinical Laboratories, Needham Heights, Massachusettes, USA

Objective. To monitor nationwide levels and trends of HIV infection by surveillance of an accessible segment of the general population not selected on the basis of HIV risk factors and not self-selected.

Methods. On January 3, 1989, we began a blinded HIV seroprevalence survey using 100,000 outpatient blood specimens submitted annually by 15,000 primary care physicians to a national commercial laboratory for complete blood count (CBC) or hematocrit determination. CBC or hematocrit specimens are mostly drawn during routine physical examination or for anemia evaluation in women. At the laboratory, specimens are chosen systematically — stratified by gender, age, and geographic region — from a pool of >5,000,000/yr from a geographic area that includes 85% of the US population. Through a national computer network, a special program selects specimens, relabels them to eliminate identifying data, stores relevent demographic and clinical information, and finally links this information to the HIV test result.

Results. A total of 3 (0.64%) of the first 463 samples tested were seropositive. The first 30,000 samples will be analysed and compared with results from other national population-based or sentinel studies.

Conclusion. Primary care outpatients may be the most representative accessible population for HIV surveillance. Laboratory-based surveillance is a relatively inexpensive method to monitor HIV levels and trends in the general population. Of the first 463 specimens, 0.64% were seropositive.

M.A.0.2

SENTINEL HOSPITAL SURVEILLANCE FOR HIV INFECTION IN THE UNITED STATES: EARLY CROSS-SECTIONAL FINDINGS

St. Louis, Michael E.; Rauch, KJ; White, CR; Anderson, JE; Dondero, TJ; and the Sentinel Hospital Investigation Group. Centers for Disease Control, Atlanta, Georgia, USA.

Objective. To assess the pattern of HIV infection in the metropolitan U.S. in a systematic sample of persons not influenced by self-selection or self-deferral (as are military recruits and blood donors).

Methods. In a nationwide selection of urban hospitals, blood specimens left over after routine testing from patients with conditions thought unlikely to be associated with HIV infection were sampled and anonymously tested for antibody to HIV-1 by enzyme immunoassay and Western blot.

Results. In 1987 and 1988, blood specimens from 45,483 patients in 21 hospitals in 19 metropolitan statistical areas (MSAs) in the U.S. were tested for antibody to HIV. Adjusted to the age, sex, and race distribution of the U.S. population, HIV seroprevalence at these hospitals ranged from 0.2/1000 to 33.7/1000, with a median rate of 5.6/1000. The ratio of seroprevalence in Blacks to Whites at each hospital ranged from 0 to 7.5, with a median rate ratio of 1.7, and in males to females from 1.0 to 18, with a median rate ratio of 2.8. Infection rates in males aged 25-44 years reached 25-30% at two urban hospitals serving communities with high rates of intravenous drug abuse. Among hospitals in MSAs with cumulative incidence of AIDS less than 500/100,000, the cumulative incidence of AIDS in the MSA only explained approximately one fourth of the variation in seroprevalence (R^2=0.24,p<0.05).

Conclusion. The distribution of HIV infection in the metropolitan U.S. is highly heterogeneous and does not strictly follow the pattern of AIDS cases; some urban areas have very high concentrations of HIV-infected persons.

M.A.0.4

EVALUATION OF THE ESTIMATED NUMBER OF HIV INFECTIONS USING A SPREADSHEET MODEL AND EMPIRICAL DATA.

Timothy J Dondero, St Louis M, Andersen J, Petersen L, Pappaioanou M.
AIDS Program, Center for Disease Control, Atlanta, Georgia, USA.

Objective To evaluate existing estimates of total HIV infections in a given general population for consistency with empirical data from a variety of demographic and behaviorial subgroups.

Methods Using as examples three existing estimates of the total US HIV prevalence ranging from 500,000 to 3,000,000, which were derived from mathematical models or direct approaches, we converted these estimates to "expected" percentages (prevalences) of the total population infected. We then further broke these percentages down by age and sex subgroup proportional to the age and sex-specific seroprevalence data from our sentinel hospital populations, arriving at a series of demographic cells each with "expected" prevalence rates. We then compared these "expected" values with corresponding empirical HIV data from childbearing women, ambulatory care patients and other populations, taking into account the likely biases.

Results Overall, US estimates in the vicinity of 1,000,000 total infections or less appeared most compatible with the available empirical data.

Conclusion While no unbiased data exist that directly measure the HIV prevalence in the general population, nor are such data likely soon, several indirect mathematical models and direct approaches have been used to estimate the total number of infections. It is important to evaluate these estimates for consistency with empirical data which were not used in making the estimates. Our evaluation method suggests that US estimates in the vicinity of 1,000,000 are currently most plausible.

M.A.0.6

PREVALENCE AND ESTIMATED INCIDENCE RATES OF HIV INFECTION AMONG CIVILIAN APPLICANTS FOR US MILITARY SERVICE: CURRENT STATUS AND TRENDS

Brundage,John*;Gardner,L*;Burke,D*;McNeil,J*;Visintine,R**;Goldenbaum,M* *et al.*
*Walter Reed Army Institute of Research, Washington, DC, USA,**US Military Entrance Processing Command, North Chicago, Illinois, USA.

Objective. To estimate current status and recent trends of seroprevalence and infection incidence rates among young adults represented by applicants for US military service.

Methods. Since October 1985, approximately 2 million civilian applicants for US military service have been screened for antibody to HIV during routine pre-induction medical examinations. Observed seroprevalences document cumulative infection incidence, overall and in demographically and geographically defined subgroups. Trends in age- and birth-year-specific seroprevalences document infection incidence rates. Univariate and multivariate methods are used for summary parameter estimation.

Results. During the first three years of screening, the overall seroprevalence was 1.4/1000. Seropositivity was significantly associated with age, race/ethnicity, gender, and residence (location and population density). Prevalences among 17 and 18 year olds were comparable, then increased monotonically from age 18 to 31. Generally, prevalences were higher among males, among black nonhispanic (BNH) applicants, and among applicants from urban areas in California, Texas, and along the east coast. During the first three years, the largest absolute increases in birth cohort-specific prevalences were among BNH males; the largest relative increases in birth cohort-specific prevalences were among BNH females.

Conclusion. Military applicant screening data provide unique, up-to-date insights into the distribution, concentration, and rate of spread of the infection epidemic among US young adults. Infection burden and rates of new infection are greatest among BNH young adults. Effects of bias (e.g., self selection) will be discussed.

SIDA/VIH : le sang et les produits sanguins
AIDS/HIV: Blood and Blood Products

M.A.0.7

TRANSFUSION-ASSOCIATED AIDS CASES IN EUROPE

Downs, Angela M.*; Ancelle-Park R.A.*; Brunet J.B.* and national surveillance correspondents of 31 countries
*WHO Collaborating Centre on AIDS, Paris, France.

Objective: To investigate the specific characteristics of European transfusion-associated AIDS cases and to estimate the mean incubation period.
Methods: Details (sex, age at transfusion, dates of transfusion and diagnosis, and disease presentation) of transfusion associated (TA) AIDS cases were obtained through the European AIDS surveillance system. Cases with other recognized risk factors, non-Europeans, Europeans having resided in countries in which heterosexual transmission is predominant, cases multiply-transfused over a period > 1 month and cases incompletely investigated were excluded. Frequency distributions were computed and the mean incubation period is to be estimated by a maximum likelihood method.
Results: Preliminary results relate to 230 cases reported by the end of 1987 in 13 countries (58% of all European cases reported in the surveillance category "transfusion" by the same date). An excess of males (M:F ratio = 1.4:1) is almost entirely accounted for by those aged 50 years and over (56.1% of TA cases); children under 13 years represent 11.3% of cases. OI are present at diagnosis in 89% cases; PML and lymphoma in 4%; LIP and KS in 2%. The number of TA cases diagnosed per year is still increasing, but no cases transfused after 1985 have yet been reported. Mean observed incubation times were 38.1 (range: 7-77) months in adults; 33.5 (11-80) months in children.
Conclusion: Almost all European TA cases present with OI at diagnosis; KS is very uncommon. Maximum likelihood estimates of the true mean incubation period (allowing for truncation of the data) will be based on a larger data set (to end 1988).

M.A.0.8

THE EPIDEMIOLOGY OF TRANSFUSION-ASSOCIATED (TA) AIDS IN THE UNITED STATES

Ward, John*; Reisler, E**; Karon, J**;
*Centers for Disease Control (CDC), Atlanta, Georgia, **Columbia School of Public Health New York, New York, USA.

Objective. Describe temporal and disease characteristics for TA-AIDS cases.
Methods. AIDS case reports to CDC through December 29, 1988 were reviewed. The number of TA-AIDS cases was adjusted for reporting delays.
Results. Through 1988, 2,032 adults with TA-AIDS were reported to CDC (3% of 81,065 adult AIDS cases). Adjusted for reporting delay, the estimated number of TA-AIDS cases increased rapidly thru 1987, but has since remained steady at 270/cases/quarter yr. Of 35 TA-AIDS cases who received blood screened negative for HIV antibody, 33 had other risks for infection. Compared to other cases, TA-AIDS cases tended to be older (58 vs 35 yrs. p=.001), white (74% vs 58% p=.001) and female (37% vs 10% p=.001). The median incubation period was 48 months (range 1-126 mos.) and was shorter for cases age 60 or older than younger adults (43 vs 51 months p=.001). Of the 487 cases diagnosed in 1988, 107 (22%) had wasting syndrome and 46 (9%) had dementia. TA-AIDS cases with dementia were older than those with other diagnoses (64 vs 57 yrs p=.01). When matched by a diagnosis of *P. carinii* pneumonia and controlled for age, more TA-AIDS cases were dead at the time of diagnosis than cases infected by other routes (26% vs 14%, p=.001).
Conclusion. Although cases recently infected with HIV are few, TA-AIDS will continue to be diagnosed. HIV infection should be considered for transfusion recipients with unexplained weight loss or dementia. A low index of suspicion for AIDS in transfusion recipients may delay recognition of HIV related opportunistic illnesses.

M.A.0.9

BLOOD AND PLASMA DONATIONS AMONG A COHORT OF IV DRUG USERS

Nelson, Kenrad E., Vlahov D., Margolick J., Bernal, M.
The ALIVE Study, Johns Hopkins University, Baltimore, MD.

Objective. To describe the recent history of blood and plasma donation among a cohort of active IV drug users (IVDU's) enrolled in an HIV natural history study.
Methods. A cohort of active IVDU's was recruited for a prospective natural history study of HIV infection from street outreach, clinics and hospitals and drug treatment programs. Individuals with AIDS were excluded. Reported history of blood and plasma donation by year was correlated with history of IV drug use, HIV serological status, medical symptoms, stigmata of IV drug use and CD4 levels at baseline.
Results. Overall 398 (24.7%) of 1613 participants were HIV seropositive at baseline; 459 individuals had donated blood or plasma in the past 10 years. Of 245 IVDU's donating between 1985 and 1988, 215 (87.8%) donated at a commercial plasma center, 80.4% had stigmata of drug use, 23 (9.4%) were HIV seropositive at entry into study, and 8 (40%) of 20 seropositive blood donors had CD4 levels below 500. 5 (4.0%) of 126 IVDU's donating in 1987-88 were HIV seropositive.
Conclusion. Our data indicate that blood and plasma donations among active IVDU's is common. Although IVDU's who are HIV seropositive have lower rates of recent donations, increased efforts to exclude IVDU's from the donor pool by education and discontinuation of paying plasma donors seem warranted.

M.A.0.10

PROSPECTIVE EVALUATION OF CONTEMPORARY SCREENED BLOOD DONORS FOR OCCULT HIV INFECTION

Busch,Michael*,**;Eble,B.*;Ulrich,P.*;ElAmad,Z.**; Perkins,H.*,** and Vyas,G.*.
*University of California and **Irwin Memorial Blood Centers, San Francisco, California, USA.

Objective. To monitor the persistent risk of HIV infection from transfusions of screened donor blood.
Methods. Peripheral blood mononuclear cells (PMC) were routinely prepared from a random sample (ca. 50%) of fully screened blood donations. Individual donor's cells were combined into replicate pools containing 1 X 10^6 PMC from each of 50 donors. Pools were cultured for HIV under conditions shown to recover virus from 80% of known infected donors at similar cell inputs and dilutions.
Results. As of December, 1988, 47,963 screened donor specimens were processed, of which pooled PMC from 26,850 have completed co-culture analysis. A single pool, probably representing a single donor, was reproducibly culture positive; HIV detection was confirmed by polymerase chain reaction analysis of pre- and post-culture cells from this pool.
Conclusion. Occasional infected donors are missed by current historical and serologic screening. This ongoing study will eventually analyze 200,000 screened donations, allowing for an accurate estimate of the persistent risk of transfusion-transmitted HIV infections. (Supported by NHLBI Contract HB-6-7024).

M.A.0.11

ROUTINE 6-MONTH MONITORING FOR BLOOD TRANSMITTED HIV INFECTION

Giovanetti, Anna; Mozzi F.; Bellobuono, A.; Vianello, L.; Zanella, A.; Sirchia, G.; et al.
Centro Trasf. Immunol. Trapianti, Osp. Policlinico, via F. Sforza, 35, 20122 Milano (Italy)

Objective. To monitor HIV infection transmission in patients transfused with blood from regular donors selected at 3 levels: 1) information on risky behavior for voluntary self-exclusion, 2) physical examination and confidential face-to face interview, 3) HIV1-antibody screening (ELISA). Methods. Pretransfusion: informed consent obtained to follow-up (which includes also monitoring for posttransfusion hepatitis) and blood sample taken by a medical audit team visiting the wards daily; 3 and 6 mo after transfusion: HIV1-antibody screening. Repeated ELISA positive results are confirmed by Western blot (WB) technique. WB positive results in a previously normal patient and in absence of other causes are considered evidence of HV1 infection by blood. Results. In Jan 1986-Jun 1988 991recipients (18% of all transfused in our setting) transfused with 5309 blood units performed the HIV1-antibody test at least 6 mo after transfusion and 351 other patients transfused with 2520 blood units performed the test at 3 mo only.38 of the 6-mo monitored recipients received 41 HIV-negative blood units from 29 donors who 1-12 mo (median 6 mo) later showed isolated anti-p15 or -p24 reactivity (28 cases) and overt seroconversion (1 case). None of the monitored patients became HIV1 positive. Conclusion. In our setting blood-borne HIV infection monitoring could be easily combined with that for hepatitis. Although the number of monitored patients is too small to draw conclusions, the monitoring system seems suitable to identify infectious, antibody negative donors.

M.A.0.12

NO LATE SEROCONVERTERS AMONG HIV-NEGATIVE PATIENTS AT BONN HEMOPHILIAC CENTER.

Kamps, Bernd,S.*; Niese,D*; Brackmann,H.H.**; Euler,P.**; van Loo,B.**, Kamradt,T.***
*Universitätsklinik Bonn, FRG, **Institut für experimentelle Hämatologie, Bonn, FRG, ***Massachusetts Institutes of Technology

Objective. To investigate the possibility of late seroconversion in patients exposed to HIV.
Methods. In 1984, 322 out of 696 patients treated at Bonn Hemophiliac Center were negative for HIV. From that time, only wet heat-treated or chemically treated Factor VIII preparations have been used except by two patients who seroconverted in 1985. Since 1986, the remaining 320 patients have been tested for HIV by both Elisa and Western Blot at intervalls of 3 to 6 months.
Results. No seroconversion occurred.
Conclusion. A great number of HIV-negative hemophiliacs have been exposed to HIV-contaminated Factor VIII preparations until 1984. The lack of any seroconversion after a 5 years' observation period suggest that late seroconversion might not be of great epidemiologic significance.

Séance thématique
Specialty Session

Epidémiologie et santé publique
Epidemiology and Public Health

Autres rétrovirus : VIH-2 et HTLV-I/II
Other Retroviruses: HIV-2 and HTLV-I/II

M.A.0.13

OBSERVATIONS ON THE NATURAL HISTORY OF HIV-2

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Objective: To determine the natural history of HIV-2 infection in a cohort of West African prostitutes by comparing over time the incidence of clinical and laboratory abnormalities between seropositive and seronegative prostitutes.
Methods: Starting in 1985, we enrolled female prostitutes visiting a nationally supported STD clinic. HIV-2 + prostitutes were matched (1:2 matching ratio) with HIV-2 - prostitutes by age (± 2 years), nationality and initial year of entering the clinic. Out of 92 seropositives now matched with 180 seronegatives, we have collected detailed repeat clinical data on 151 prostitutes. Continued clinical follow-up is being gathered.

A subset of 60 seropositive and seronegative prostitutes have been available to date for CBCs and lymphocyte subset determinations.
Results:

	HIV-2 +	HIV-2 -
Mean period of observation	27 months	31 months
Chronic diarrhea (# cases)	0	0
Weight loss > 10%	1	1
Chronic fever	0	0
Gen. lymphadenopathy	0	0

There has been no cases of ARC or AIDS-like illness. Various minor health problems were not unique to either the seropositive or seronegative group. 2 seropositives and 1 seronegative prostitute have had bilateral 1.5cm axillary lymph nodes. Interestingly, one seropositive case, also seropositive for HTLV-1, has a clinical syndrome consistent with TSP.

Controlling for age, nationality, years in the clinic and number of sexual partners/day, we performed a multivariate analysis to evaluate the various hematologic parameters in relation to serostatus. The mean T4 values were lower in the seropositives, but this was not significant after adjusting for the above parameters. A significant elevation was noted in T8 values for the seropositives after the adjustment. No prostitute tested demonstrated absolute T4 values in the abnormal range.
Conclusions: Extensive historical and physical exam data has yet to document a significant difference in disease development between seropositives and seronegatives in this cohort. The continued prospective characterization of this cohort in Dakar represents a unique opportunity to evaluate the potential for disease in HIV-2 infected individuals.

M.A.0.14

HTLV-I, HIV-1 AND HIV-2 SEROPREVALENCES IN GUADELOUPE, FRENCH WEST INDIES

Agius, Gérard*; Vaillant, V.*; Dindinaud, G.*; Basilliou, M.*; Zagury, J.F.** and Castets M.*,
*CHU La Milétrie, Poitiers, France; **Université Curie, Paris, France.

Objective. To estimate the prevalence of retroviral infections in Pointe à Pitre, Guadeloupe, French West Indies.
Methods. This seroprevalence study was undertaken at the hospital centre in Pointe à Pitre during November, 1987. Two hundred forty seven sera from patients presenting for routine outpatient care were tested. None of these patients was diagnosed as having AIDS or adult T-cell leukemia/lymphoma. Sera were screened by ELISA for antibodies to HTLV-I (DuPont), HIV-1 (Abbott) and HIV-2 (Pasteur). All sera reactive in either test were confirmed by Western blot (WB) testing. Sera from patients with any WB reactivity were subjected to HIV-1 antigen detection by ELISA (Pasteur).
Results. We found 7 (2.8%) and 1 (0.4%) were positive to HTLV-I and HIV-1, respectively. One subject was doubly infected with HTLV-I and HIV-1. No HIV-2 seropositivity was found. However, 2 sera showed indeterminate HIV-2 WB patterns, one of which was also indeterminate for HIV-1 WB (p24 band alone). The other was seropositive for both HTLV-I and HIV-1. These HIV-2 WB patterns lacking envelope protein reactivities had core protein bands (p26, p56). Only one HTLV-I WB showed an indeterminate interpretation with a core protein band (p19) alone. All HIV-1 antigen detections were negative.
Conclusion. It would be important for public health authorities to evaluate regularly with large seroepidemiologic surveys the dissemination of retroviral infections in these French overseas territories.

M.A.0.15

EPIDEMIOLOGY OF HIV-2 IN FEMALE PROSTITUTES IN SENEGAL

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Objective. HIV-2 is the predominant human retrovirus in many parts of West Africa. Although HIV-2 shares many genetic and antigenic properties with HIV-1 it also appears to exhibit important biological differences. We have followed a large group of registered female prostitutes (n>1300) in Dakar, Senegal to better understand the epidemiology of HIV-2.
Methods. Since 1985, all women registered at the Institute Hygiene Sociale in Dakar, Senegal were enrolled in the study. Physical examinations, questionnaires regarding risk and sexual behavior were administered and serum samples obtained for STD and retrovirus examination semi-annually. Counseling and condom distribution began in late 1988 and data regarding efficacy of intervention was obtained subsequently.
Results. As of early 1989 ,the overall seroprevalence in 1301 female prostitutes was 9.9% HIV-2, 1.2% HIV-1 and 0.8% HIV-1/2. The majority of women were native Senegalese (73%), with 21% from Ghana and 6% other nationalities. The mean age was 34 yrs, range 21-68, and the mean years of prostitution 6.7 yrs, range 1-19. HIV-2 positive prostitutes were more likely to be older (OR=2.58) and to be non-Senegalese (OR=1.79). The number of years of prostitution was not significantly related to serostatus. Inclusion of all variables in a multivariate logistic model did not modify these results. The spread of HIV-2 in this population was slow as judged by less than 2% seroconversion with 974 person-years of observation. History of transfusion, hospitalization, circumcision,tattooing and scarification were not found to be significant risk factors for HIV-2 infection. 120 person-years of follow-up on HIV-2 positive women has failed find evidence of the development of AIDS or related signs.
Conclusion. The epidemiology of HIV-2 in a high risk population followed over time appears to differ significantly from that of HIV-1. These differences include the risk factors for infection, rates of transmission and clinical outcome.

M.A.0.16

SEROPREVALENCE DU VIRUS HTLV-1 DANS LA POPULATION GENERALE DE SIX PAYS D'AFRIQUE CENTRALE

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*** Hôpitaux Elf Pointe Noire, Congo, Elf Luanda, Angola, **** OCEAC Yaoundé, Cameroun.

Objectifs. Evaluer l'endémie HTLV-1 au Tchad, au Cameroun, en Guinée Equatoriale, au Gabon, au Congo et en Angola.
Methodes. 15 enquêtes ont été réalisées parmi la population générale adulte selon la méthodologie du sondage en grappes. La recherche d'anti-HTLV-1 a été réalisée dans le serum par ELISA (Dupont de Nemours), un serum positif était ensuite retesté par western blot (Dupont). (critères de positivité anticorps anti-noyaux et anti-enveloppe).
Resultats. Près de 6000 personnes vivant en zones rurales ou urbaines, ont pu être ainsi sélectionnées. Les taux bruts de séroprévalence varient de 0.5% au Tchad et au Nord du Cameroun à près de 12% parmi les populations vivant dans la forêt équatoriale (Sud Cameroun, Gabon et Guinée Equatoriale). Les taux de séroprévalence augmentent avec l'âge uniquement dans les zones de forêt. Aucune différence entre les taux masculins et féminins ajustés par l'âge n'a été observée.
Conclusion. Cette vaste enquête sero-épidémiologique sur 6 pays a permis de préciser la répartition du virus HTLV-1 en Afrique Centrale et de définir une zone de forte séroprévalence parmi les populations vivant en pleine forêt équatoriale. Les différents cofacteurs pouvant expliquer cette répartition ainsi que les répercussions pathologiques d'une telle endémie seront discutés.

M.A.0.17

HIV1 and HTLV1 ANTIBODY PREVALENCE IN A US POPULATION SURVEY NHANES-II

Saxinger, Carl*; McQuillan, G**, Haddon, W**, Murphy, R**, Bodner A*** and Gallo, R*

OBJECTIVE To provide a measure of the prevalence of human retroviruses HTLV1 and HIV1 in a representative sampling of the U.S. Population
METHODS Samples were collected 1976-1980 by the NCHS using population-based methodology for a National Health Survey, NHANES-II 9,499 samples were screened by ELISA using HIV-H9 or HTLV1-HUT102 Test results greater than the mean + 3sd were confirmed by western blot Samples were scored positive if reactive by immunoblot with p24 and envelope HTLV1 positive samples were also tested for HTLV2 titer Analyses of correlation between HTLV/HIV seropositivity and variables of age, race, sex, location, population size, income, and education were performed
RESULTS One HIV1 positive serum from an individual with HIV risk factors was identified No further analysis was performed Twenty individuals were seropositive for HTLV1 None appeared to be HTLV2 specific HTLV1 seropositivity was statistically higher in blacks [0.71% (0.23-1.20, 95% C.I.)] and other minorities [1.03% (0-2.45)] than in whites [0.12% (0.05-0.20)] HTLV1 seropositivity was statistically higher for people above the age of 45 yrs for white [0.27% (0.09-0.46, 95% C.I.)] and black [1.89% (0.49-3.4)] persons
CONCLUSIONS Significant numbers of HTLV1 sero-reactive persons exist in regions throughout the U.S. HTLV1 has existed in the U.S. longer than HIV1 The underlying determinants of positivity in the random population, age and race, were similar to IVDA in the U.S. and other HTLV1 endemic populations Mode of transmission of HTLV1, thought to be similar to HIV1 in AIDS risk groups, is unknown in the normal U.S. population

M.A.0.18

HUMAN IMMUNODEFICIENCY (HIV) AND HUMAN T-LYMPHOTROPIC (HTLV-I/II) VIRUSES IN CHILDBEARING WOMEN: TESTS OF 24,569 CONSECUTIVE NEWBORNS.

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Objective. To describe the prevalence of HIV and HTLV-I/II infection in childbearing women in New York State.
Methods. Duplicate serum samples were eluted from dried blood spots obtained from anonymous infants at birth. Samples were examined simultaneously by EIA for HIV and HTLV-I/II antibody. Reactive sera were tested by micro western blot with lysate antigens. A commercial (Cytotech) antigen from cell line CH10J2 was used for HTLV-I blots. Specimens with HIV blot bands at 24 and 41 and/or 120/160 Kd or HTLV-I/II bands at 24 and 46 and/or 61/68 Kd were recorded as positive. Test results and data on maternal age, race/ethnicity and birth location were analyzed on a main frame computer.
Results. HIV antibody was detected in 143 (0.58%) newborns; HTLV-I/II in 59 (0.24%). Both antibodies were found in only 5 (0.02%). Positivity was highest in NY City at 1.1 (HIV) and 0.46 (HTLV-I/II), in contrast to 0.07 and 0 in upstate rural communities. Prevalence of antibodies to each virus also differed according to maternal race/ethnicity.
Conclusions. About 6 of every 1000 women giving birth in NY State are infected with HIV, 3 are infected with HTLV-I/II and 0.2 with both. The geographic and racial/ethnic distribution of the viruses describe differences in prevalence and transmissibility.

L'évolution de la politique en matière de santé publique : Où nous sommes-nous mépris? Où allons-nous?
Analysis of Public Health Policy for the Prevention of AIDS: Where Have We Gone Wrong? Where Do We Go from Here?

M.A.O.19 ANALYSIS OF PUBLIC HEALTH POLICY FOR THE PREVENTION OF AIDS: WHERE HAVE WE GONE WRONG? WHERE DO WE GO FROM HERE?

Chairpersons: Donald P. Francis (Berkeley, USA), Bertino Somaini (Bern, Switzerland)

Panelists: Ronald Bayer (New York, USA), Randy Shilts (San Francisco, USA), John K. Watters (San Francisco, USA)

The AIDS pandemic has presented us with a major challenge. Often this challenge has been met with a less-than-adequate response. Yet, in the midst of many failures, there have been many remarkable successes where, in the face of emotion-filled opposition, strong leaders have emerged and acted with courage and clarity. In this session we will address both successes and failures. The speakers are people at various levels inside and outside of government who have personally viewed the alternatives, taken risks and instituted changes. They, through courage, have advanced the cause of HIV prevention and care. They will analyze specific issues that they have encountered, review the problems faced, from where they came and how they were overcome. The ultimate purpose will be to enable us all to better approach the problems of the future through review of past successes and failures.

Tests de dépistage du VIH dans les cliniques de MTS
HIV Testing in STD Clinics

M.A.0.20 SEROPREVALENCE OF HIV AMONG CLIENTS ATTENDING SEXUALLY TRANSMITTED DISEASES (STD) CLINICS IN THE U.S.

McCray,Eugene*; Onorato,I.M.*; Sweeney,P.A.*, and State and Local Health Departments, *Centers for Disease Control, Atlanta, GA, USA.

Objective. To determine HIV seroprevalence in clients attending STD clinics, a sexually active population at increased risk of infection.
Methods. In 1988 and 1989, blinded surveys were conducted in STD clinics in 30 standard metropolitan statistical areas (SMSAs). Blood collected from consecutive STD clients was tested for antibodies to HIV after performing routine serologic tests and removing personal identifiers. Information on sex, age group, race, ethnicity and risk exposure groups for HIV infection is being collected on approximately 100,000 clients.
Results. Preliminary results from 9,494 STD clients in 6 SMSAs from 4 regions showed SMSA specific HIV seroprevalence rates that ranged from 1% to 14% (median, 6%). Rates of 9% were seen in males compared to 3% in females and 13% in Hispanics compared to 6% in whites and 5% in blacks. Rates increased with age to 44 years. HIV seroprevalence among clients whose risk behaviors were unknown or not stated was 4.0% compared to 30.7% in clients with known risk factors.
Conclusions. These results show that STD clinics see large numbers of clients infected with HIV. Seropositivity in STD clients whose risk behaviors are unknown or which cannot be adequately assessed makes interpretation of results difficult and may represent a limitation of blinded surveys. However, blinded surveys are needed to target prevention activities and follow trends in HIV infection. Complimentary nonblinded surveys are needed to obtain detailed information on risk behaviors.

M.A.0.21 SURVEILLANCE OF HIV INFECTION USING A NETWORK OF SENTINEL PHYSICIANS: A PILOT PROJECT IN THE PROVINCE OF QUEBEC.

Alary, Michel*; Castel J.*. *Département de Santé Communautaire, Hôpital du St-Sacrement, Québec, Québec, Canada.

Objective. To evaluate the utility of a network of sentinel physicians for the surveillance of HIV infection in the Province of Quebec.
Methods. From May to December, 1988, physicians working in four different centres (3 in Montreal and 1 in Quebec city) provided anonymous data on each patient submitted to HIV serotesting (Total N=1386). The following variables were collected: test results, country of birth, residence, age, sex, indication for testing, sexual orientation, number of sexual partners, past history of STD and of HIV testing.
Results. The following table presents the distribution of identified risk factors in HIV+ (96/1386=6.9%) and HIV- (1290/1386=93.1%) patients:*

	Seropositive	Seronegative	POR**
Sex-Male	96.8%	69.1%	13.5
Homo or bisexual	93.6%	42.1%	20.1
Presence of symptoms	19.1%	1.7%	13.7
Previous STD	56.3%	39.1%	2.0
Previous HIV testing	37.9%	23.3%	2.0
>=10 sexual partners	27.2%	10.9%	3.1

*Median age=30 years in both groups; **Prevalence odds ratio (p<0.01).
Conclusion. This surveillance network appears to identify the main factors associated with HIV seropositivity. Its future development to cover all the Province of Quebec should allow to moniter adequately HIV infection and eventual changes in risk factors in order to adjust preventive programs.

M.A.0.22 HIV INFECTED STD CLIENTS WHO DECLINE HIV COUNSELING AND TESTING.

Fleming, David*; Bennett,D.*; Klockner,R.*, Gould, J.* Cassidy, D.**, Foster,L.*. *Oregon Health Division, Portland,Oregon, U.S.A.; **Multnomah County Health Division, Portland, Oregon, U.S.A.

Objective. To determine the characteristics of HIV infected (HIV+) sexually transmitted disease (STD) clients who decline HIV counseling and testing (HIV-CT).
Methods. From 6/88 through 9/88, all STD clients at Portland's major public STD clinic were offered HIV-CT. The HIV antibody status for clients declining this service was determined by testing blood routinely drawn for syphilis serology after personal identifiers had been removed. All test results were linked with risk, demographic, and previous HIV testing information provided by the client.
Results. Of the 1740 clients offered HIV-CT, 641 (37%) accepted. Overall, 3% (55/1740) of clients were HIV+. Of these, 73% (40/55) declined HIV-CT. Seropositivity among heterosexual clients was only 0.6% (10/1581). Gay men comprised 9% (159/1740) of all clients, but 82% (45/56) of HIV+ clients, 80% (33/41) of HIV+ clients declining HIV-CT and 90% (27/30) of HIV+ clients who had been tested previously. HIV+ gay men who had not been tested previously were as likely as uninfected gay men to agree to HIV-CT [47% (7/15) vs. 40% (29/72); p=.9]. However, HIV+ gay men who had been tested previously were 3.7 times less likely than comparable uninfected gay men to agree to HIV-CT [16% (4/25) vs. 59% (19/32); p=.001]. HIV+ gay men who had been tested previously and who assessed their risk of infection as high were 6 times less likely than comparable uninfected gay men to agree to HIV-CT [12% (2/17) vs. 73% (11/15); p=.0001].
Conclusion. HIV-infected STD clients who have been tested previously selectively decline HIV-CT. Current STD HIV prevention efforts that focus on testing may become increasingly ineffective as progressively more STD clients are aware they are HIV+. STD clinics must offer alternate interventions that are specifically designed to help individuals who know they are infected but continue to practice unsafe sex.

M.A.0.23 HIV-1 SEROPREVALENCE IN SEXUALLY TRANSMITTED DISEASE (STD) CLINIC PATIENTS IN CENTRAL NORTH CAROLINA.

Suzanne Landis*, V Schoenbach*, D Weber*, M Mittal*, G Koch*, P Levine**
*U of North Carolina, Chapel Hill, NC; **NCI, Bethesda, MD, U.S.A.

Objective. To assess HIV-1 seroprevalence and HIV-1 risk factors in patients attending three large public STD clinics in North Carolina (NC).
Methods. During 5/25/88 to 10/5/88, 3124 consecutive patients had a syphilis serology blood sample anonymously screened for HIV-1; over 90% completed an anonymous, linked, self-administered questionnaire. HIV-1 seropositivity was defined as repeatedly-positive EIA (Electronucleonics) and RIA positive for p24 and gp120.
Results. Study population characteristics were: 55% men; 79% Black, 18% White; median age 24 years; 5% IV drug users; 6% history of treated syphilis; 3% (men) homosexual, 3% (men) bisexual. Of the first 1440 blood sera (data for all 3124 will be reported), 22 (1.4%, 95% CI: 0.8%-2.0%, overall; men 2.2%, women 0.5%; Blacks 1.7%, Whites 1.3%) were positive for HIV-1. Four cases had lived in NC less than one year. Seropositivity rates were 25% (12 cases, including the 2 seropositive IV drug users) among gay/bisexual men, 9% (3 cases) among apparently heterosexual men reporting previous syphilis treatment, and 0.4% (3 cases) among other men. Sexual transmission risk behaviors among men and women, respectively, were: multiple opposite-sex partners (77%,61%), no condom use (52%,65%), anonymous partners (38%,12%), sex for money (9%,3%), and anal intercourse (12%,7%).
Conclusions. HIV-1 is detectable among STD patients in Central NC. Though underreporting of risk factors cannot be excluded, as many as 40% of these patients' HIV-1 infections may have been heterosexually acquired.

M.A.0.24 CENTRES DE DEPISTAGE ANONYME ET GRATUIT FRANCAIS - BILAN DE DEUX CENTRES PARISIENS - VILLE DE PARIS

Cavelier Annick*, Ancelle-Park R.**, Helal H.*, Loygue J.*, Poinsard H.*, Pretet S.* et coll.
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Objectifs. 1° Qui a consulté ces centres de dépistage volontaire? 2° Pourquoi?
Matériel et méthode. Les 4660 autoquestionnaires anonymes exploitables remplis facultativement par les 5101 premiers consultants (91%) entre avril et octobre 1988.
Résultats et analyse. L'anonymat semble avoir plus intéressé que la gratuité 90% ont une protection sociale, 85% un domicile fixe. Clientèle locale, 92% résident en Ile de France, 53% vivent seuls (comme 50% des parisiens). Clientèle ciblée jeune, âgée pour 47% entre 20 et 29 ans, masculine 68%, et particulièrement exposée au risque : toxicomanes 8% dont 1% homosexuel et toxicomane, 14% homosexuels, 16% bisexuels, 62% hétérosexuels(les) dont 2% bisexuelles. 82% des consultants n'utilisent jamais ou mal le préservatif. Les femmes l'utilisent moins que les hommes (P<0.02) homosexuels, bisexuels ou hétérosexuels, même quand elles vivent seules et ont des partenaires multiples et 64% de toxicomanes ne l'utilisent jamais. Les homosexuels et bisexuels l'utilisent régulièrement pour 1/3 d'entre eux. Ils consultent par souci personnel 80%. 70% venaient pour un primo-dépistage. 253 séropositifs VIH1 au Western Blot ont été dépistés (5,4%) et ont été orientés vers un suivi médical et psycho-social.
Conclusion. Cette politique repose sur la responsabilisation individuelle. Quels que soient les résultats du test, les individus, exposés au risque, sont encouragés à modifier leur conduite et non à répéter le dépistage.

M.A.0.25 HIV SEROPREVALENCE IN SEXUALLY TRANSMITTED DISEASE (STD) CLINIC PATIENTS

Moye, John; Bracci,P.; Kappes,R.; Kunches,L.; Day,J.; Timperi, R. et al. MA Department of Public Health. Boston, MA., U.S.A.

Objective: To define the risk-group characteristics of STD clients volunteering for HIV testing during a period when unlinked testing was underway.
Methods: Unlinked HIV testing began 9/1/88 on syphilis serology sera taken at 3 Boston-area STD clinics. All patients received AIDS information and were offered free and confidential HIV counseling and testing.
Results: During the initial 3 months, 180 volunteered for testing (V); their sera probably were subsumed in the 1166 unlinked tests (U) performed in parallel. As shown, V included a larger proportion of gay/bisexual men and IVDU than present in the unlinked series; seropositivity may be lower in V gay men (6%) vs. U (32%) because V anticipated or already knew their status. Although the U series shows 20/880 "unrecognized" risk seropositives, none of these positives appeared in V.

	Unlinked (U)			Volunteers (V)		
	#Tested	(%)	HIV+	#Tested	(%)	HIV+
"Recognized" risk						
Gay/bisexual	47	4	15 (32%)	17	9	1 (6%)
Heterosexual IVDU	45	4	7 (16%)	21	12	3 (14%)
Other high risk	194	16	6 (3%)	33	18	0
"Unrecognized" risk	880	76	20 (2%)	109	61	0
TOTAL	1166	100	48 (4%)	180	100	4 (2%)

Conclusion: The true HIV seroprevalence in STD patients should be monitored via unlinked surveys, in order to interpret the impact of voluntary testing.

Séance thématique
Specialty Session

Epidémiologie et santé publique
Epidemiology and Public Health

Incidence et prévalence du VIH
HIV Incidence and Prevalence

M.A.O.26 INCIDENCE OF SEROCONVERSION AND RISK FACTORS IN A COHORT OF HOMOSEXUAL MEN: RESULTS AT 6 YEARS

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Objective. To determine the rate of seroconversion in a cohort of homosexual men.
Methods. We identified all subjects in our prospective study who were seronegative in 11/82 and who completed at least 2 visits during the period 11/82 to 10/88. Seroconversion was defined as the occurrence of a positive HIV antibody test in an individual who was previously negative. The time of seroconversion was estimated as the midpoint between the last negative and first positive test result. Survival analysis methods were used to calculate seroconversion rates . Risk factors for seroconversion were obtained from the enrolment questionnaire.
Results. A total of 477 subjects were included in the analysis The median length of observation was 51 months (range=4-72). A total of 118 seroconversions occurred during the observation period. The product limit estimate of the cumulative seroconversion rate was 28.5% (±2.3) at 72 months. The annual infection rates for the 6 years were 4.2%, 10.7%, 8.2%, 4.2%, 3.0% and 3.8% respectively. Cox regression revealed the following to independently increase seroconversion risk: history of gonorrhea, use of amphetamines, receptive anal intercourse, receptive fisting, elevated number of male sexual partners in the year prior to enrolment, and age < 30 years in 11/82.
Conclusion. This analysis confirms classical HIV risk factors. It is disconcerting to note that annual seroconversion rates have stabilized at 3-4% over the last 3 years. Although we have previously documented marked overall behaviour change, new infections continue to occur. The rise in annual infection rate in 1988, although not statistically significant, occurred within a closed cohort and at least raises the possibility that some complacency may be setting in. This should be followed carefully in this and other cohorts as there are implications for those trying to promote risk reduction which is not only effective but sustained.

M.A.O.27 INCIDENCE AND PREVALENCE OF HIV INFECTION AMONG HOMOSEXUAL AND BISEXUAL MEN, 1978-1988

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Kohn,R.*;Barnhart,L.*;Harrison,J.**;Bolan,G.*;Doll,L.**;Rutherford,G.*.
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Objective. To describe the incidence and prevalence of HIV infection in a cohort of homosexual and bisexual men who had multiple serum samples and interview data available, and to examine the generalizability of these data.
Methods. We studied 313 men who participated in hepatitis B vaccine trials in San Francisco (SF) since 1978 to determine the cumulative prevalence and annual incidence among susceptibles of HIV infection using lifetable techniques. We also analyzed retrospective data on number of sexual partners and specific high risk behaviors. We used citywide incidence data on rectal gonorrhea to examine the generalizability of the cohort data to all gay SF men.
Results. Cumulative Prevalence and Annual Incidence of HIV Infection

Year:	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Cum. Prev.:	0.7%	3.8%	13.7%	28.2%	42.3%	46.7%	48.5%	48.9%	49.7%	49.7%	50.6%
Incidence:	0.6%	3.2%	10.3%	16.8%	19.6%	7.5%	3.4%	0.8%	1.6%	0%	1.8%

Estimated No. of Partners with whom Engaged in Receptive Anal Intercourse

Year:	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Mean No.:	14	18	20	16	10	5	1	1	0.4	0.1	<0.1

San Francisco Gonococcal Proctitis Cases by Year

Year:	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Number:	4975	4874	5098	4833	4008	2109	1299	708	379	197	169

Conclusion. The decrease in HIV seroconversion in this cohort is paralleled by a decrease in high risk sexual behaviors and a city-wide decrease in gonococcal proctitis.

M.A.O.28 HIV SEROPOSITIVITY IN A CLINIC FOR THE HOMELESS

Greer, Jr., Pedro*; Dickinson, G.**; Parra, F.***; Egea, F.***; Jordahl, L.***; Holmes, R.**.
*University of Miami, Miami, Fl, USA, **Miami VA Medical Center, Miami, Fl, USA, ***State of Fla. Dept. of Health & Rehab. Svc., Miami, FL, USA.

Objective. To correlate prevalence of HIV seropositivity with high risk behavior among homeless persons in Miami.
Methods: The Camillus House Concern, a clinic for the homeless in Miami, offers anonymous testing for HIV antibody. Between 7/1/88-1/20/88, 144 persons requested testing. Tests were performed by EIA with confirmation of positives by Western Blot or immunofluorescence. All persons were interviewed by one of three trained counselors.
Results: Strict criteria for homelessness ("the street" or "a shelter" given for an address) were met by 126 persons. There were 122 men and 4 women, age 19-69, mean 33.8 years old. The rates of seropositivity were as follows: 3/24 (12.5%) homosexuals, 3/21 (14.3%) IVDA, 1/10 with both risk behaviors and 7/71 (9.8%) denying any risk behavior. The overall rate of seropositivity was 14/126 (11.1%). Seventy persons admitted contact with prostitutes, and 4/32 (12.7%) admitting such contact without other risk behavior were seropositive. There was no significant difference for rates of positivity among these groups (P>0.05 by Chi-Square).
Conclusion: These data suggest that the rate of HIV infection among homeless persons voluntarily seeking testing is relatively high, regardless of the type of risk behavior admitted. Random screening programs are needed to accurately define the prevalence of HIV infection in this population, and to provide a basis for preventative and health care programs.

M.A.O.29 PREVALENCE DE L'INFECTION HIV ET DE LA TUBERCULOSE PULMONAIRE DANS UNE POPULATION ASYMPTOMATIQUE EN HAITI.

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Objectif.Déterminer la prévalence de l'infection HIV et de la Tuberculose pulmonaire (TB) dans une population tout-venant d'Haitiens désirant émigrer
Methodes.De Janv.88 à Dec.88,3688 Haitiens (2189 hommes-60%,1499 femmes -40%),d'âge moyen 30±14 ans,de statut économique plutôt moyen,ont été étudiés. 74% provenaient des diverses régions d'Haiti (Groupe A),24% avaient deja vecu à l'étranger dans les 5 années auparavant (Groupe B).Un examen clinique complet,des tests de laboratoire incluant une sérologie anti-HIV par double Elisa et Western Blot,une radiographie pulmonaire,ont été pratiqués sur chacun des sujets.
Résultats.Une sérologie anti-HIV positive a été retrouvée dans 180 cas (4.88%).L'âge moyen des séropositifs (séro+) 32±17 ans avec un sex-ratio de 114 hommes pour 66 femmes.La prévalence de l'infection HIV n'est pas statistiquement différente dans le Groupe A (4.72%) et le Groupe B(5.35%). La prévalence de la TB qui est globalement de 2.14%,est comparable chez les séro- (2.19%) et les séro+ (1.11%).Aucune TB active n'est diagnostiquée chez les seropositifs.
Conclusion.La séroprévalence anti-HIV est globalement de 4.88%,elle n'est pas différente chez les résidents comparée aux émigrés.La prévalence de la TB qui est de 2.14%,n'est pas statistiquement différente chez les séro- et chez les séro+ asymptomatiques,alors que la TB est classiquement associée à plus de 50% des cas de SIDA avérés.

M.A.O.30 EPIDEMIOLOGY OF KAPOSI'S SARCOMA IN AIDS PATIENTS: UNITED STATES.

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Objective: To characterise patients with AIDS-associated Kaposi's sarcoma (KS) and evaluate whether KS may be due to an infectious agent.
Methods: We reviewed cases of AIDS reported to CDC by 3 December 1988.
Results: The percentage of patients with AIDS who had KS varied by AIDS risk group: homosexual men 22%; heterosexual male IV drug users 2.8%; female IV drug users 2.3%; and men with hemophilia 1%. Among homosexual men the percentage of AIDS patients with KS was twice as high for whites and Hispanics as for blacks and higher for 25 to 44-year-old men than for younger or older men. However, there were no sizable race or age differences in the percentage with KS among non-homosexuals. Over time, the percentage of patients reported with AIDS-associated KS declined at a similar rate in all risk groups; the percentage with KS in 1988 is approximately one fourth of that in 1982. After adjusting for risk group, age, race, and year of diagnosis, KS was more frequently reported for patients from California or New York than from other states.
Conclusion: If KS is caused by an infectious agent it is more likely to be transmitted by homosexual contact than by blood. The reasons for the age/race/geographic differences in percentage of patients with KS should be explored in other studies. The decline in KS over time may be due to increasing recognition of other diseases associated with AIDS, decreasing exposure to the putative KS agent in patients now developing AIDS, and/or different incubation periods for KS and other manifestations of AIDS.

M.A.O.31 EPIDEMIOLOGY OF HIV ENCEPHALOPATHY IN THE UNITED STATES

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Objective:To determine the frequency of HIV encephalopathy (HIVE) in patients reported with AIDS and to evaluate possible associations with demographic factors. Methods:A case of HIVE was defined as a person who was HIV seropositive with disabling cognitive and/or motor dysfunction in the absence of a condition other than HIV infection that could explain the findings. Cases were reported to CDC from September 1, 1987, when encephalopathy was added to the AIDS case definition, through December 31, 1988. Results: Over the 16-month period, 1153 (3.0%) of 38666 adults and 22 (3.3%) of 666 children (< 13 years old) with AIDS were reported to have HIVE as their only early manifestation of AIDS. Overall, 6.5% of adults and 11.5% of children had HIVE. Reported AIDS cases with HIVE only, occurred in a bimodal distribution with peaks in children < 5 and adults > 70. In general, in adults, rates of HIVE increased with age (p < .0001 for trend), even among persons < 50 years old (p=.02).

Age	#HIVE/Total(%)	Age	#HIVE/Total(%)	Age	#HIVE/Total(%)
0-4	20/528 (3.8)	20-29	181/8107 (2.2)	50-59	125/2744 (4.6)
5-12	2/138 (1.4)	30-39	517/18147 (2.8)	60-69	56/930 (6.0)
13-19	5/151 (3.3)	40-49	244/8270 (3.0)	70+	25/317 (7.9)

Although there were no associations of HIVE among reported adult cases with respect to sex, racial/ethnic group, geographic location, or HIV risk group, the frequency of HIVE in children < 5 years old was significantly higher in those with a history of blood transfusion (6/40,15%) than in children without such a history (14/488,2.9%, p=.002). Conclusions: HIVE is uncommon as the only reported early manifestation of AIDS but appears to be most common at the extremes of age.

La transmission sexuelle du VIH (partie 1)
Sexual Transmission of HIV (Part 1)

M.A.0.32 SERUM ANTIBODY TO HAEMOPHILUS DUCREYI AS A RISK FACTOR FOR HIV INFECTION IN AFRICA, BUT NOT IN EUROPE

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Objective: To determine whether serum IgG (Ab) antibody to Haemophilus ducreyi, the causative agent of chancroid, is associated with HIV infection in populations where genital ulceration (GUD) is endemic.
Methods: H. ducreyi IgG Ab was determined in an ELISA using a sonicated H. ducreyi antigen on sera preabsorbed with a pooled sonicate of 3 other Haemophilus sp. Sera were from heterosexual and homosexual men in Belgium, 1988 (n = 254), female prostitutes in Kinshasa, Zaire, 1988 (n = 697), adult men and women from the rural Equateur province, Zaire, 1986 (n = 100), and men with an STD in Rwanda, 1986-1987 (n = 303). Mean ages: 28-31 yr.
Results: H. ducreyi seroprevalence rates were 37 % - 44 % in the African populations. In the 2 African populations with high HIV prevalence, H. ducreyi Ab was strongly associated with HIV antibody (odd ratios: 3.0-3.3). This was not observed in Belgians at risk for HIV. In the rural Equateur population

Origin	Population	Prevalence of HIV in sample	H. ducreyi antibody (%) HIV NEG	HIV POS	p
Belgium	gay men	21 %	3/184 (2)	2/ 50 (4)	NS
Rwanda	men with STD	57 %	61/130 (47)	126/173 (73)	<.001
Kinshasa, Zaire	female prostitutes	40 %	252/444 (57)	205/253 (81)	<.0001
Equateur, Zaire	mixed adults	10 %	32/ 90 (35)	5/ 10 (50)	.17

44 % of prostitutes had H. ducreyi Ab vs 28 % of other adults (p < .01). H. ducreyi Ab was also associated with the presence of GUD, a history of GUD in the African study groups, but not with a positive serology for syphilis.
Conclusions: Serological evidence of past infection with H. ducreyi was a risk factor of HIV infection in African populations, further supporting the amplifying role of GUD in the sexual transmission of HIV. H. ducreyi serology may be a useful tool to rapidly assess the potential for HIV spread in pattern II populations.

M.A.0.33 ASSESSMENT BY PCR OF TRANSMISSION OF HIV FROM INFECTED HEMOPHILIACS TO THEIR SEX PARTNERS AND CHILDREN

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Objective. To evaluate transmission of HIV infection from men with hemophilia to their female sex partners and children.
Methods. HIV antibody and antigen were tested with assays available in Europe . Polymerase chain reaction (PCR) using primer pairs and probes specific for gag and env regions of HIV-1 were used to detect HIV DNA in serum samples and corresponding peripheral mononuclear cells in some cases. PCR + was defined as a reaction with both gag and env amplified sequences and specificity assessed with extensive positive and negative clinical controls.
Results. Sex partners of 26 sero positive (sero+) hemophiliacs were either sero+/PCR+ (5), or sero-/PCR+ (9), or sero-/PCR- (12). In addition the partner of one sero-/PCR+ hemophiliac was also sero-/PCR+ while the partner of a sero-/PCR- hemophiliac was negative for both markers. PCR positivity in sero- females was unrelated to date of seroconversion, duration of sex partnership, HIV antigenemia or clinical condition of the hemophiliac. 8 children from 5 couples were studied. 2 were born prior to their father's seroconversion and were sero-/PCR-; 2 born from sero+ mothers were sero-/PCR+; 2 born from sero-/PCR+ mothers were sero-/PCR-; 2 born from sero-/PCR- mothers were negative for both markers.
Conclusion. 54% of sex partners of sero+ hemophiliacs have evidence of exposure to HIV, either as persistent (19%) or silent infection (35%). More sex partners and infants from sero-/PCR+ persons need to be studied to evaluate the transmissibility of HIV genome.

M.A.0.34 A PROSPECTIVE COHORT STUDY OF HIV-1 SEROCONVERSION IN PATIENTS WITH GENITAL ULCER DISEASE IN NEW YORK CITY

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Objective. To compare HIV-1 seroconversion rates in patients who present to a sexually transmitted disease (STD) clinic with genital ulcers (GU), a putative cofactor in HIV-1 transmission, to those who present for diagnosis and/or treatment of a non-ulcerative STD.
Methods. In a New York City STD clinic, where high rates of HIV-1 and genital ulcer disease coexist, HIV-1 seronegative patients with and without GU were followed for 3 months. Questionnaires were administered at the time of entry, at 3 weeks, and at 3 months to obtain data on demographics, sexual behavior and IV drug use. Repeat serum for HIV-1 antibody was obtained at 3 months.
Results. To date, 210 patients have completed the study; 50 with GU and 160 without GU. Of the 50 patients with GU, 39% had chancroid, 22% syphilis, 19.5% herpes, and 19.5% had multiple GUs. HIV-1 seroconversion occurred in 2/50 (4%) of the GU patients and 0/160 of the non-GU patients (p=0.06). Both seroconverters were males who denied a history of IV drug use and sexual contact with men. They both had unprotected vaginal intercourse while their ulcers were present.
Conclusions. Persons with a GU may be at increased risk of contracting HIV-1 through sexual contact. In areas with concurrent epidemics of GU disease and HIV-1, increased efficiency of HIV-1 transmission may result in increased rates of heterosexual transmission.

M.A.0.35 EXTRAMARITAL/PROSTITUTE SEX AND GENITAL ULCER DISEASE(GUD) ARE IMPORTANT HIV RISK FACTORS IN 7068 MALE KINSHASA FACTORY WORKERS AND THEIR 4548 WIVES

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Objectives. To determine the prevalence of GUD and quantify its role in HIV transmission in a Kinshasa population at low risk of STD.
Methods. A cohort of 7068 male employees and 416 female employees of either a textile factory or a bank and 4548 wives of employees have been examined.
Results. HIV seroprevalence was 3.6% for employees and 5.8% for wives. Men with no recent history of extramarital sex had an HIV prevalence of 2.8% vs 4.4% for men with 1-5 partners and 8.7% for men with more than 5 (P<0.001). Twenty-eight per cent of HIV(+) male workers reported vaginal-sex with a prostitute in the past 2 years vs 22% of HIV(-) men (P<0.001). Eighteen per cent of HIV(+) men reported GUD in the previous 5 years vs 7.2% of HIV(-) men (P<0.001). During the same time period, 27% of 220 HIV(+) women reported GUD vs. 13% of 4744 HIV(-) women (p=<.001). Stepwise logistic regression demonstrated that the most statistically significant HIV risk factors were: history of GUD since 1982 (p<.0001), history of urethritis in the previous 2 years (men only) (p<.001), young age (women only) (p<.001), and a history of a blood transfusion since 1982 (p<.01). In 4487 married couples studied, a highly significant association between couple concordance for GUD and HIV was demonstrated.
Conclusion. While previous studies in populations at high risk of STD have demonstrated a strong association between GUD and HIV infection, the present study demonstrates the same strong association in male workers, their wives and female workers drawn from a low risk Kinshasa population. The high prevalence of extramarital/prostitute sex and STD in male employees emphasizes the importance of incorporating STD control activities in HIV prevention programs in both high and low risk populations. STD/HIV prevention programs in the private sector will likely decrease employee and dependant HIV-associated morbidity and mortality.

M.A.0.36 EFFICACY OF NONOXYNOL-9 IN PREVENTING HIV TRANSMISSION

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Objective. To assess the efficacy of N-9 in preventing HIV transmission.
Methods. A prospective randomized placebo controlled study was conducted among HIV seronegative prostitutes in Nairobi, Kenya.
Results. Ninety-eight women were enrolled, assigned to the use of N-9 contraceptive sponges (51) or placebo vaginal suppositories (47), and followed for a mean of 10 months (range 1-22). N-9 use was associated with a higher incidence of genital ulcers (17 vs 7% of exams, p<.001) and fungal vulvitis (19 vs 10%, p<.001) and a lower incidence of gonorrhea (21 vs 36%, p<.001). HIV infection occurred in 20 women in the N-9 group and 15 in the placebo group. Excluding women who were lost to follow-up or who seroconverted within 2 months of enrollment, 16 (46%) of 35 N-9 users and 10 (28%) of 36 placebo users developed HIV Abs by ELISA and WB (p=NS). By survival analysis, the cumulative proportion of women who seroconverted was 55% among N-9 users and 45% among placebo users (p=NS). Eleven (69%) of 16 seroconverting women in the N-9 group had antecedent genital ulcers within 2 months of seroconversion compared to only 2 (20%) of 10 in the placebo group (p=.04).
Conclusion. In this study of Nairobi prostitutes, we have failed to demonstrate efficacy of N-9 use in preventing heterosexual transmission of HIV. N-9 use was associated with an increased frequency of genital ulcers and of genital ulcer-associated seroconversion. Spermicide studies in other high risk populations are needed before recommendations regarding spermicide use can be knowledgeably made.

M.A.0.37 ANTI-HIV EFFICACY OF BARRIER CONTRACEPTIVES IN HIV-DISCORDANT COUPLES

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Objective To Measure the efficacy of condoms and spermicides in preventing HIV infection among seronegative regular sexual partners of seropositve persons.
Methods In September 1988 we initiated a study of condom and spermicide use among the HIV-discordant couples who regularly visit the U.T.H. STD clinic. After informed consent, the couples are counseled on the use of condoms and spermicidal suppositories, gel and film. Blood is drawn for HIV antibody tests, an admission questionnaire is completed, and the couple is given a pictorial coital log to maintain between visits. At quarterly follow-up visits contraceptive supply, counseling and blood tests are repeated, information on sexual activity is summarized from the logs, and the physical status of both partners is assessed. If a new seroconversion occurs (case), three controls will be selected. A case-control interview questionnaire will collect information on exposures and behaviors relevant to HIV infection.
Results Seventy-one couples have been enrolled, with 47 male-positive and 24 female-positive couples. Each couple has accepted at least one spermicidal product as well as condoms. Three-month follow-up visits have been completed by 13 couples and no sero-conversions have been detected. For 9 of 13 couples each reported coital episode has been protected by a barrier method.
Conclusion Initial barrier acceptability is promising. We will describe findings from the first half-year of the study.

Infection par le VIH chez les détenus
HIV Infection in Prisoners

M.A.0.38 HIV INFECTION SPREAD IN NORTHERN ITALIAN PRISONS.

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Objective. To assess patterns of HIV spread from intravenous drug users (IVDUs) to other inmates in three prisons in the northeastern part of Italy.
Methods. Information were collected among 544 IVDUs as regards past history of drug abuse, imprisonment and behaviours patterns known to be an important way of HIV spread.
Results. 231, 201 men and 30 women, out of the 544 IVDUs (43%) reported to have been imprisoned at least once. Among these 231 IVDUs, 44% of the men and 27% of the women were HIV seropositive. 111 IVDUs (38% of whom seropositive) reported to have been imprisoned in cells with inmates not otherwise at risk for HIV infection and 93 (47% of whom seropositive) shared cells with other IVDUs. Razor and toothbrush sharing was reported by 10% of HIV seropositive and seronegative IVDUs. Needle sharing and homosexual intercourses in prison were admitted only by a small minority of IVDUs, 9% and 2% respectively.
Conclusion. A large proportion of HIV seropositive IVDU prisoners shares cells with other IVDUs as well as with individuals not otherwise at risk. The segregation of prisoners who are seropositive does not seem to be justified. On the contrary, the practicability of issuing sterile injecting equipment to IVDUs prisoners requires much attention, in order

M.A.0.39 RETROVIRUS SEROPREVALENCE IN THE SHORT-TERM INCARCERATED: THE PHILADELPHIA PRISON SEROPREVALENCE STUDY

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Objective: To estimate seroprevalence of HIV-1 and HTLV-1 infection in consecutive new admissions to a city prison, where 25% of new admissions are discharged within 2 days and 40% within 7 days (with over 15,000 prison admissions annually).
Methods: Sera for a serologic test for syphilis is routinely taken from new prison admissions. In 95% of new prisoners this is obtained by venipuncture; approximately 5% undergo fingerstick if veins are inaccessible. In this study, discard blood from venipuncture from 1000 admitted prisoners was tested for HIV-1 antibody and core antigen and for HTLV-1 antibody over a two-month period. Antibody tests were confirmed by immunoprecipitation; positive HIV-1 antigen tests were repeated and then confirmed by blocking with antibody. The prisoner's sex, race, and age were recorded for each result.
Results: HIV-1 infection rate was 4.6% among consecutive prison admissions from whom venipuncture blood could be obtained. The rate of indeterminate tests was 0.3%. Of those testing positive for HIV-1, 6.1% had positive core antigen tests without detectable HIV-1 antibody. Overall, 3% of antigen-positive prisoners (n=6) were antibody-negative. Seroprevalence rates in white, black, and Hispanic men prisoners were equal. The rate of HTLV-1 antibody seroprevalence was 0.8%; the rate of indeterminate immunoprecipitation tests for HTLV-1 was also 0.8%. No subject showed evidence of co-infection with HIV-1 and HTLV-1. All but one of the positive HIV-1 tests and HTLV-1 tests were found in men.
Conclusion: HIV-1 seroprevalence among new Philadelphia prison admissions is equal among races and almost limited to men, in subjects from whom venous blood could be obtained. HTLV-1 infection is also nearly limited to men, at a lower rate. Education and training to modify risk behavior in this population ought to be a high priority, as both the high number of prison admissions and the circumstance of early prison discharge may raise the risk of HIV-1 transmission in the surrounding community.

M.A.0.40 ETUDE DES RISQUES DE CONTAMINATION PAR LES VIRUS DE L'HEPATITE B, DU VIH1 EN MILIEU CARCERAL.

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INTRODUCTION : Effectif de la Maison d'Arrêt 3 800 détenus, flux annuel 12 000. Taux de séropositivité VIH1 12,5%, prévalence des marqueures VHB 55%.
OBJECTIFS : Etudier les risques de contamination par les virus VHB et VIH1 chez des détenus incarcérés plus de 1 an.
METHODES : ①. Enquête sérologique : étude des marqueurs VIH1 (ELAVIA PASTEUR - Confirmation Western Blot) VHB (Radio-immunologie Abbott) à l'arrivée et après un séjour supérieur à 12 mois. ②. Le médecin recherche des pratiques à risque apprécie le respect des règles d'hygiène générale. ③. Questionnaire rempli par le détenu qui le dépose dans une urne fermée à clés. ④. Conditions d'étude : consentement du patient, anonymat des questionnaires, confidentialité.
RESULTATS : ①. 276 hommes, âge moyen 32 ans, homosexualité 2,4%, toxicomanie IV 13%, sniff 13%. Aucune permission de sortie. Echange de vaisselles (90%), de rasoirs 2,6%, tatouage 4%, plaie 19%. ② A l'entrée : séropositifs 6%, VHB 45%, aucun nouveau cas de séropositivité VIH1, VHB sur les prélèvements après une durée moyenne d'incarcération de 16 mois (extrêmes 11-57). ③. 3 affirmaient avoir eu des relations homosexuelles en prison dont 1 homosexuel séropositif (7 partenaires) aucun ne déclare l'usage de drogue IV. ④. 10 ont été témoins de relations homosexuelles, viol 1, usage de drogue IV par d'autres 3 cas (Enquête anonyme).
CONCLUSION : Pas de contamination prouvée sérologiquement malgré l'existence prouvée de pratiques à risquès. Nécessité de développement des mesures de prévention.

M.A.0.41 Tittle: Prevalence and risk factors for HIV infection among adolescent inmates in Madrid.

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Objective: Identify sociodemographic characteristics and risk practices for HIV infection among adolescents from poor areas of the Madrid. Material and methods: Serostatus for HIV and epidemiologic data through personal interviews were collected from 236 volunteers, aged 16 through 20, at the Juvenile Prison of Madrid between December 1987 and September 1988. Results: Overall prevalence of HIV infection was 59%. Eighty seven per cent of the inmates had a history of IVDU. and the prevalence of HIV infection for these IVDUs was 67%. Only two of the seropositive men had not used drugs intravenously: One of them was a male prostitute, the second one had tattoos and had contacts with prostitutes. Having one or more siblings who were IVDUs, the number of years of adiction, and a history of overdose episodes were significant risk factors for infection ($p<0.05$). Twenty three per cent of the inmates reported having anal intercourse with their heterosexual risk partners and 59% of them had stable heterosexual partners. Very few, 7%, of them had always used condoms and 64% are still sharing syringes. Conclusion: These young men are at high risk of HIV infection and in addition, they are at high risk of infecting other IVDUs and those women who have sexual contact with them, mostly their stable sexual partners, in spite the health education activities that have been carried out. Therefore, it is urgent to reach them through more creative efforts.

M.A.0.42 SEXUAL PRACTICES AND HIV INFECTION IN SOME ZAMBIAN PRISONS

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Objectives. To establish the seroprevalence of HIV infection amongst inmates in 5 urban prisons in Zambia as well as to study their sexual habits.
Methods. A questionnaire on clinical, social and sexual history was administered to all inmates who had been in prison for 3 months or more after which blood specimens were taken. The serum samples were screened for HIV antibodies using ELISA (Abbott) and those that tested positive were confirmed using Recombigen (Cambridge BioScience Corp) and Immunofluorescent Assay (IFA). In Lusaka, anal smears were taken from prisoners and controls (STD clinic attendees) and cultured on Thayer-Martin medium for gonococci.
Results. 256 (16.1%) of the 1593 inmates tested positive for HIV and homosexual activity was in 203 (12.2%) of the 1668 respondents. 15 (9.6%) gonococcal cultures were positive in 157 anal smears from prisoners and none was positive from 100 controls. The results are summarised in table below:

Prison	HIV prevalence %	Homosexuality %
Mukobeko Maximum (Kabwe)	9.2	13.8
Mukobeko Medium (Kabwe)	15.2	13.3
Kamfinsa (Kitwe)	14.8	18.2
Lusaka Central	29.0	4.7
Lusaka Remand	19.8	0.0

Conclusion. HIV infection is prevalent among inmates in some Zambian prisons and that homosexuality exists under deprived sexual conditions.

M.A.0.43 CORRECTIONS AIDS PREVENTION PROGRAM (C.A.P.P.) IN NEW YORK CITY

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Objective: To provide AIDS prevention services to a high-risk population including current and former IV drug users, male inmates who have sex with men, inmates who have been diagnosed with AIDS or ARC.
Methods: The program consists of the following: 1)Training of corrections staff (officers and civilians); 2)Education of all inmates during initial orientation sessions; 3)Group and individual education sessions; 4)Condom distribution on a pilot basis to inmates; 5)Discharge planning for inmates before release; 6) Development and distribution of materials geared to the needs and concerns of inmates at risk. Counseling and testing services are also available through onsite medical clinics and complement educational efforts.
Results: 1)Over 50,000 inmates have received AIDS education/prevention information with 10 staff. 2)Over 40% of the Department of Corrections staff received AIDS education since the program was initiated in 1987. 3)DOH AIDS educators are in great demand throughout the prison system, as is demonstrated by frequent requests for their services. 4)Corrections counseling staff have received AIDS education and provide back-up for DOH educators in case of illness.
Conclusion: In order for a corrections AIDS prevention program to succeed, the cooperation of the agencies (e.g. Department of Corrections) must begin from the inception of the program. The vital elements of this program must include: 1) education and information for Corrections staff, 2)education and information for inmates, 3)education of family, friends and significant others of inmates, 4) materials relevant for incarcerated populations, 5) appropriate resources and referrals for inmates upon release. In an incarcerated population, the primary focus must be on the reduction of fear, anxiety and the adoption of risk-reducing behaviors once released back into society.

Histoire clinique de l'infection au VIH : Cofacteurs et progression
Natural History of HIV Infection: Co-Factors for Progression

M.A.0.44 INCIDENCE OF AIDS IN HOMOSEXUAL MEN DEVELOPING HIV-1 SPECIFIC ANTIBODY

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Objective: To characterize individuals developing AIDS within 4.5 years of developing HIV infection in a study of homosexual men.
Methods: 300 men in the MACS developed Western blot confirmed HIV specific antibody between 2 semiannual visits. The time of seroconversion (SC) was defined as the midpoint between 2 followup visits.
Results: 18 of the 300 progressed to AIDS with 54 months of SC. The incidence rate by 6 month period per 10,000 person months of observation rose from 0 at 6 and 12 months to 74 during the 36-42 month interval. Using the product limit estimator of the distribution of AIDS-free time 89.9% were free of AIDS at 42 months. Men developing AIDS averaged 578.4 ± 388.5 lifetime sexual partners compared to 322.2 ± 328.8 for the AIDS free men. The T-cell phenotype did not differ between participants developing AIDS and those who remained AIDS-free, at the visit before SC. Changes in CD4, CD8 and hemoglobin levels post SC, however, differentiated men who developed AIDS from those who remained AIDS-free.
Conclusion: AIDS did not develop during the 1st 12 months of HIV-1 seropositivity. The subset of HIV-1 infected men (6.0%) who developed AIDS within the first 54 months of infection had a greater number of lifetime sexual partners and more marked changes in T-cell phenotype immediately following and subsequent to SC. At the visit prior to SC, the T. cell phenotype distribution did not differentiate the 2 groups.

M.A.0.46 HUMAN HERPES VIRUS 6 (HHV6) IN A COHORT OF HOMOSEXUAL MEN

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Objective. To examine the relationship of HHV6 infection to HIV infection or to the clinical progression to AIDS and other HIV-associated conditions.
Methods. Anti-complement immunofluorescence test for HHV6 in sequential serum specimens from pairs of homosexual men who did/did not develop HIV infection (64 pairs), AIDS (6), ARC (4), lymphadenopathy (6), or lymphopenia (18).
Results. There was no difference in HHV6 seroreactivity in serum from 55 men who acquired HIV infection and 58 men who remained HIV-seronegative. Also, there was no overall difference in HHV6 seroreactivity in serum from 34 HIV-seropositive (HIV+) men who developed HIV-associated diseases and 34 HIV+ men who did not. Independent of HIV-serostatus, of 93 HHV6+ men with two or more samples drawn and tested, the level of HHV6 seroreactivity declined markedly in 47 (51%), and 26 (28%) seroreverted to HHV6-. Compared to HHV6- men, HHV6+ men had similar numbers of sex partners and sexual practices. Despite similar duration of HIV infection, HIV+/HHV6+ men were significantly less likely than HHV+/HHV6- men to develop AIDS (13/26 vs. 77/105; stepwise logistic analysis, p= 0.013)
Conclusion. HHV6 did not induce long-term antibody response by the assay we used, was not apparently sexually transmitted, and was not a risk factor for HIV infection. Men who were HHV6+ were actually less likely to develop AIDS than were HHV6- men: we are examining this issue by polymerase chain reaction (pcr) for HHV6 in DNA of HIV+ men who have/have not developed AIDS.

M.A.0.48 PSYCHOSOCIAL CO-FACTORS IN ILLNESS ONSET AMONG HIV POSITIVE MEN

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Objective. To evaluate the effects of stressful life experience and mood on illness onset in a sample of initially asymptomatic HIV positive men.
Methods. A psychosocial questionnaire has been administered to participants in the Chicago site of the Multisite AIDS Cohort Study (MACS) biannually since 1985. Concurrent biomedical evaluation has made it possible to study the relationship between psychosocial variables and illness onset in a prospective design. The subsample of initially asymptomatic seropositive men was studied. Discrete-time survival analysis with time-varying exogenous variables was used to estimate the impact of distressed mood and major stressor events on illness onset measured by physical exam. Control variables were introduced for baseline immunologic functioning.
Results. Distressed mood and the occurrence of stressful life events are both associated with elevated risk of illness onset. Risk of illness onset over a six month prospective time period is more than three times greater with exposure to major stressor events.
Conclusion. This investigation documents that stressor events and distressed mood are implicated in illness onset among previously asymptomatic seropositive men. It is not clear from this analysis whether the pathways involve behavioral changes which might potentiate the virus or whether more direct psychoimmune associations are involved. However, the results imply clear intervention implications that seropositive men may prolong the time they are asymptomatic by minimizing exposure to stress-provoking life events.

M.A.0.45 IMMUNOLOGIC MARKERS MODEL THE RISK OF AIDS

Alexander Krämer*, PS Rosenberg*, D Fuchs**, RJ Biggar*, WA Blattner*, JJ Goedert* *National Cancer Institute, MD 20892, USA, **University Innsbruck, Austria

Objective. To define predictors of AIDS in HIV-seropositives.
Methods. Serum neopterin, beta2-microglobulin (B2), T4 count and T4/T8 ratio were evaluated in a cohort of HIV-infected homosexual men followed from estimated dates of seroconversion. Time-dependent covariate analysis was used to determine at what year before AIDS onset each marker was predictive.
Results. During 1982-88, 48 of 132 subjects (36%) developed AIDS. T4/T8 ratio was predictive ≥4 years before AIDS (p=.03; Table: O=observed, E=expected AIDS cases by T4/T8 at intervals before diagnosis).

Marker	2-12			12-24			24-36			36-48			48-60months		
T4/T8	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E	O	E	O/E
2.6-0.7	1	8	0.1	8	13	0.6	9	14	0.6	5	8	0.6	3	6	0.5
0.6-0.5	3	8	0.4	8	13	0.6	8	11	0.7	5	7	0.7	4	4	1.0
0.4-0.0	20	8	2.5	20	10	2.0	17	9	1.9	10	5	2.0	5	2	2.5
p(trend)	.00001			.001			.005			.01			.03		

Low T4 count (p=.0006) or high neopterin (p=.02) predicted AIDS ≥3 years, high B2 level ≥2 years (p=.04) before diagnosis. Cox regression revealed independence of T4/T8 and neopterin (p=.01).
Conclusion. The earliest predictor of AIDS in HIV-seropositive homosexual men was a low T4/T8 ratio, followed by T4 count and neopterin 1 year later. These findings may help to better assess prognosis and monitor treatment strategies in HIV infection.

M.A.0.47 HIV-1 p24 ANTIGENAEMIA AND LOSS OF ANTI-CORE ANTIBODIES ARE CORRELATES OF RAPID DISEASE PROGRESSION AND NOT OF DISEASE PROGRESSION PER SE.

De Wolf, Frank*, Lange J*, Houweling J**, Coutinho R*, van der Noordaa J*, Goudsmit J* et al. * Academic Medical Centre, University of Amsterdam and ** Municipal Health Service, Amsterdam, the Netherlands.

Objective. To study the natural history of HIV-1 infection in relation to serological and immunological profiles.
Methods. 199 asymptomatic HIV-1 antibody (HIV-Ab) seropositive and 76 HIV-Ab seroconverted homosexual men were prospectively followed for 39 months. Epidemiological and clinial data were collected and blood was sampled every 3 months.
Results. AIDS was diagnosed in 38 men (AIDS attack rate 20.8%). The AIDS attack rate in HIV core Ab positives was 12.1% vs. 31.0% in core Ab negatives; it was 13.3% in HIV-1 p24 antigen (HIV-Ag) negatives vs. 53.9% in HIV-Ag positives, and it was 10.9% in those with CD4+ cell counts > 0.5 x 10^9/L vs. 49.9% in those with CD4+ counts < 0.5 x 10^9/L. AIDS attack rates after 30 months follow-up have been previously reported (De Wolf et al. J Infect Dis 1988;158:615-22), and were as follows: 6.0% in core Ab+, 35.7% in core Ab-, 6.9% in HIV-Ag-, 43.9% in Ag+,6.1% in those with CD4+ cell counts > 0.5 and 51.9% in those with counts < 0.5.
Conclusions. With longer follow-up the relative importance of absence of core Ab, presence of HIV-Ag, and (less so) of CD4+ cell counts < 0.5 x 10^9/L as predictors of AIDS has declined. Absence of core Ab and presence of HIV-Ag are predictors of rapid disease progression rather than of disease progression per se.

M.A.0.49 PSYCHOSOCIAL PREDICTORS AS CO-FACTORS FOR DISEASE PROGRESSION IN MEN INFECTED WITH HIV: THE SAN FRANCISCO MEN'S HEALTH STUDY.

Coates, Thomas J.*, Stall, RD*, Ekstrand, M*, Solomon, GF**
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**University of California, Los Angeles

Objective: To assess the contribution of psychosocial variables to disease progression in men infected with HIV.
Methods. Subjects were 198 men in the SFMHS infected with HIV (determined by ELISA and RIA), who in 1985 and 1987 completed psychosocial and behavioral interviews, physical exams, and analysis of lymphocyte subset analysis. Psychosocial variables included assessment of depression, losses of friends and lovers to the AIDS epidemic, social support, loneliness, primary relationship status, stress, work overload, and family and social support for a gay lifestyle. Behavioral variables included high risk sexual behaviors, sexually transmitted diseases, and drug and alcohol use. Physical exam assessed for signs and symptoms of HIV infection; AIDS was determined using CDC criteria. 1985 variables were used to predict disease progression in 1987 using multiple discriminant function analysis.
Results. Subjects were classified as symptomatic (diagnisis of AIDS or 2 or more AIDS prodromal symptoms + T-Helper cells <500)or asymptomatic (1 or fewer AIDS prodromal symptoms, T-Helper Cells >500, or both). All were asymptomatic in 1985; 28% (N=56) were symptomatic in 1987. Predictors of disease progression were lifetime sexual partners, lifetime sexually transmitted diseases, age of the subject, sexually transmitted diseases between 1985 and 1987. Conclusions. Secondary prevention might be enhanced through both behavioral (to reduce sexually transmitted diseases) and psychosocial interv.

L'annonce aux partenaires et la prévention de l'infection par le VIH
Partner Notification in HIV Prevention

T.A.0.1 PARTNER NOTIFICATION IN HIV PREVENTION

Chairpersons: Nathan Clumeck (Brussels, Belgium), Robert S. Remis (Montréal, Canada)

Panelists: John Gallwey (Oxford, United Kingdom), Jan Amil Kristoffersen (Skarer, Norway), Kathleen Toomey (Atlanta, USA), Fred Wolf (Denver, USA)

Although education is an important tool for preventing HIV transmission, its impact is slow and less than 100% effective. In addition, many persons exposed to HIV through sexual contact or needle-sharing may not perceive themselves to be at risk. The notification of sexual and needle-sharing partners of HIV-seropositive persons provides an opportunity to personalize the risk for exposed partners through information, counseling and testing and, in turn, to interrupt the chain of transmission. Preliminary evidence suggests that this approach may be feasible, acceptable and effective, at least in certain settings. Nevertheless, many questions remain concerning the place of partner notification in HIV prevention. Important issues include: the mechanism to access index cases, legal and ethical constraints, criteria for selective notification, criteria for partner selection (duration and timing of contact, adequate locating information), operational issues (staffing, training and quality assurance) and the determination of efficacy. Six panelists will provide a world perspective on current policies and programs, addressing the rationale, obstacles and opportunities for effective partner notification.

Surveillance du SIDA
AIDS Surveillance

T.A.0.2

THE IMPACT OF THE REVISED DEFINITION ON AIDS CASES DIAGNOSED IN MASSACHUSETTS: A PRELIMINARY ANALYSIS

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OBJECTIVE. To assess the disease and diagnosis trends associated with the latest revision (September 1987) of the CDC AIDS case definition.
METHODS. Cases diagnosed in 1988 and reported through December 1988 to BMASP were analysed. AIDS-related diseases were coded into mutually exclusive categories to assess cases meeting only the new disease and diagnostic criteria.
RESULTS. Of 564 cases, 430 (76%) met the pre-1987 definition. Eleven percent (60/564) met only the new disease categories: 3% dementia alone; 4% wasting alone; 2% M. tuberculosis (TB) alone; 2% had either other mycobacteria, salmonella, candida of the lung, or both wasting and dementia. Thirteen percent (74/564) were presumptively diagnosed, with pneumocystis pneumonia being most commonly reported (26/74, 35%). Of 319 homosexual men (HM), 51 (16%) met the new criteria vs. 45/125 (36%) IV drug users (IVDU), (p<.001) and 38/120 (32%) all other risk groups (ORG) (p<.001). Significantly more (p<.001) IVDU (17%) and ORG (13%) were diagnosed with only wasting, dementia, or TB when compared to HM (4%). Of 24 female IVDU, 15 (62%) met the new criteria vs. 30/101 (30%) male IVDU (p<.01). No differences were found by race.
CONCLUSION. In 1988, 134 cases met only the revised definition, a 31% increase in cases associated with the revision; it is unknown how many of these may eventually be definitively diagnosed. Sixty cases met only the new diseases categories, a 14% increase. IVDU, particularly female IVDU, and ORG cases were more likely than HM to be diagnosed using the new criteria.

T.A.0.3

L'IMPACT DE LA NOUVELLE DEFINITION DE SIDA A BARCELONE: LE ROLE DE LA TUBERCULOSE.

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Institut Municipal de la Salut. Barcelona. Spain.

Objectif. Evaluer l'impact de la nouvelle définition du SIDA des CDC, et étudier les changements que cette définition comporte dans une ville avec une prévalence de tuberculose relativement élevée.

Méthodes. Le Service d'Epidémiologie et de Statistiques Vitales de l'Institut Municipal de la Santé de Barcelone enregistre les cas de SIDA et de tuberculose (maladies a déclaration obligatoire) notifiés par les médecins, et de plus réalise une recherche active sur les cas de ces deux maladies qui n'aient pas été notifiés.

Résultats: En 1987, chez les résidents à la ville, il y a eu 834 cas de tuberculose (taux d'incidence annuelle (TIA) de 49.0/100.000) et 113 de SIDA (taux de 6.6/100.000) selon l'ancienne définition des CDC, tandis que en 1988 on a identifié 943 cas de tuberculose (taux de 55.0/100.000) et 177 de SIDA (taux de 10.4/100.000) selon la nouvelle définition des CDC.
Jusqu'au 31.12.1986, parmi les cas de SIDA, 46.3% étaient homosexuels et 38.9% étaient toxicomanes par voie intraveineuse, mais avec la nouvelle définition des CDC, cela a changé: ainsi, en 1988, 58.1% des malades de SIDA sont toxicomanes par voie intraveineuse et 30.6% homosexuels masculins. L'incorporation de la nouvelle définition a supposé également une augmentation importante des cas de SIDA (36.3% en 1987-1988).
Dans ces résultats la tuberculose joue un rôle très important car la plupart de ces nouveaux cas apportés par la nouvelle définition (86.4%) correspondent à tuberculose extrapoulmonaire, cette maladie étant beaucoup plus fréquente chez les toxicomanes que chez les homosexuels (odds ratio = 4.58, IC = 2.25-9.33). Parmi les cas de SIDA, les toxicomanes se caractérisent, aussi, par une âge plus jeune que les homosexuels (moyenne de 27.06 ans versus 39.0, p< 0.001) et par avoir été plus fréquemment en prison (odds ratio = 29.7, IC = 7.23-129.8).

Conclusion. Ces résultats soulignent l'importance croissante des toxicomanes par voie intraveinouse parmi les cas de SIDA à Barcelone, tout spécialement dû à la maladie tuberculose. Les difficultés notoires pour obtenir des toxicomanes qu'ils suivent correctement la chimiothérapie ou la chimioprophylaxie contre la tuberculose, obligent à redoubler les efforts afin de développer des nouvelles stratégies face à ce nouveau problème.

T.A.0.4

IMPACT OF THE 1987 REVISION OF THE AIDS CASE DEFINITION IN THE UNITED STATES

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Centers for Disease Control, Atlanta, Georgia, USA.

Objective. To measure the impact of the 1987 expansion of the AIDS case definition on the numbers and characteristics of reported cases in the United States.
Methods. For cases diagnosed since the revision and reported through 1988, we analyzed the proportion meeting only new criteria by quarter-year and demographic and other characteristics. We also compared the distribution of characteristics in cases meeting only new criteria and those meeting old criteria.
Results. In the 28,920 cases diagnosed and reported since the revision, the proportion meeting only new criteria was 28% overall, increased quarterly from 26% to 31%, ranged from 0% to over 70% in different states and territories, and was higher in women (38%) than in men (28%), higher in children (36%) than in adults (28%), higher in Hispanics (36%) and blacks (non-Hispanic) (33%) than in whites (non-Hispanic) (23%), and higher in heterosexual intravenous drug abusers (IVDAs) (43%) and lower in homosexual male non-IVDAs (21%) than in other exposure categories. The distribution of characteristics in cases meeting only new criteria differed from that in cases meeting old criteria:

Criteria	Women	Whites	Blacks	Hispanics	Heterosexual IVDAs	Homosexual non-IVDAs
Old (N=20,876)	9%	59%	26%	14%	18%	63%
New Only (N=8,044)	14%	45%	34%	21%	35%	43%
Total (N=28,920)	10%	55%	28%	16%	23%	57%

Conclusion. The revision has increased the numbers of reported cases nonuniformly over time and in different demographic and exposure categories, complicating analysis of trends in both the numbers and characteristics of cases.

T.A.0.5

MARKED UNDER REPORTING OF CDC DEFINED AIDS DUE TO POOR UTILIZATION OF THE HIV ANTIBODY TEST.

Andrew Masterson, A. Oppermann, S.Landesman., Kings County Hospital Center and SUNY Health Science Center at Brooklyn, Brooklyn, New York, USA.

OBJECTIVE: To determine the number of patients who would have received a CDC AIDS diagnosis if HIV antibody testing had been performed.
METHODS: All patients included in this study were in-patients, for at least 24 hours, at a major inner city public hospital between 1/1/88 and 12/31/88. HIV antibody testing was accessible to all patients, but not offered.
RESULTS: During 1988 there were 192 AIDS cases reported to the CDC from the aforesaid hospital. During the same period 91 patients were diagnosed with diseases that, along with a positive HIV antibody test, would have qualified for reportable CDC AIDS. None of the 91 patients had an HIV antibody test performed. All 91 patients had CDC defined risk factors: 33 had presumptive PCP, 31 had presumptive Toxoplasmosis, 7 had presumptive Esophageal Candidiasis, 6 had Wasting Syndrome, 4 had Extra Pulmonary TB, 2 had recurrent Non-typhi Salmonella Septicemia, and 1 had persistent Isosporiasis. An additional 7 had at least two of the above stated presumptive diseases.
CONCLUSIONS: The number of reportable CDC AIDS cases would have been increased by more than 40% had HIV antibody testing been performed. Thus 1) Lack of inclusion of these cases leads to significant under reporting of the disease. 2) Lack of inclusion of these cases results in a decrease in reimbursement to the hospital. 3) Lack of a CDC AIDS diagnosis prevents patients from qualifing for greatly needed social services.

T.A.0.6

EVALUATION OF AIDS SURVEILLANCE IN SWITZERLAND: ESTIMATION OF UNDERREPORTING AND IMPACT OF ACTIVE SURVEILLANCE

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Somaini,B.* et al.
Federal Offices *of Public Health, **of Statistics, Bern, Switzerland

Objective.To determine completeness of reporting AIDS cases and the impact of the active surveillance system introduced in December 1987.
Methods.All death certificates (DC) inidcative of AIDS or HIV between 01-1985 and 06-1988 were reviewed and matched to reported AIDS cases.DC were analysed and underreporting (UR) was assessed by the Chandrasekaran and Deming Method. For DC between 12-1987 and 06-1988 that could not be matched,investigations on medical history were performed.The impact of active surveillance was investigated by analysing reporting sources,controlled for type of CDC definition.
Results.Of 235 deaths,210 (89.4%) could be matched to DC.The calculated UR based on deaths between 01-1985 and 06-1988 was 24.8%.For deaths between 12-1987 and 06-1988 the predicted UR was confirmed by reviewing medical records. The raise in reports since December 1987 (begin of active surveillance) was greatest for cases meeting only the criteria of the revised CDC AIDS definition.
Conclusion: Evaluation of a surveillance system is crucial for the interpretation of its data.The high percentage of deaths that could be matched to DC is thought to be due to the anonymous nature of both,reports of AIDS cases and DC.UR was substantial in Switzerland for cases diagnosed before mid 1987. The active surveillance pursued since 12-1987 generates more thorough report.

T.A.0.7

UNDERREPORTING OF MINORITY AIDS DEATHS IN THE SAN FRANCISCO BAY AREA, 1985-1986

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**California Department of Health Services, Office of AIDS, Sacramento, USA.

Objective. To determine the completeness of reporting of AIDS deaths among Blacks and Hispanics in the five San Francisco Bay Area counties in 1985 and 1986.
Methods. Death certificates listing AIDS as a cause of death were identified using vital statistics data. Hispanic status was determined using surname and birthplace of both decedent and parents. Deaths were cross-checked with reported cases in the California State AIDS registry (part of the Centers for Disease Control AIDS Reporting System) current to May 6, 1988.
Results. Overall, 225 deaths were identified from death certificates. Of these, 168 (74.7%) matched with entries in the AIDS registry. Nonmatches were 15 deaths (6.7%) not listed in the registry at all (Category A in the table), 20 (8.9%) listed in the registry as still living (Category B), and 25 (11.1%) incorrectly listed as being white (Category C). Three deaths were in both of the latter two categories.

	Deaths Identified	Nonmatches	Category A	Category B	Category C
1985 Blacks	38	7 (18%)	2	2	3
1986 Blacks	70	13 (19%)	5	7	1
1985 Hispanics	47	10 (21%)	1	4	7
1986 Hispanics	70	27 (39%)	7	7	14

Conclusion. Minority AIDS deaths may be substantially underreported, even from an area considered to have a good AIDS reporting system. Racial misclassification, especially for Hispanics, appears to be a major problem. The situation did not improve from 1985 to 1986. Further data for minorities (including Asians) and data for whites will also be presented.

Infections par le VIH chez les consommateurs de drogues par voie intraveineuse
HIV Infection in IVDUs

T.A.0.8

TRENDS IN HIV SEROPREVALENCE AND RISK BEHAVIOR AMONG DRUG TREATMENT PROGRAM ENTRANTS

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Objective. To study trends in HIV seroprevalence, risk behavior and concern about AIDS among intravenous drug users (IVDU) entering methadone maintenance (MM) programs.
Methods. Seroprevalence/risk behavior studies of Connecticut MM program entrants have been carried out over two time periods: from April 1986 to March 1987 and from July 1987 to the present. We compared data from 222 IVDU entering four MM programs in the first study period to those of 355 IVDU entering the same programs from July 1987 to June 1988.
Results. Overall HIV seropositivity among IVDU who consented to testing was 17% (30/181) in the first study period and 15% (42/285) in the second period. Reported needle sharing in the month before entry decreased from 62% (137/221) in the first period to 44% (156/351) in the second period (p<.0001). This decrease persisted when the data were stratified by age, race, sex, clinic site, history of previous drug treatment or number of drug injections per day. Reported use of bleach to clean needles increased from 12% to 38% (p<.0001). IVDU in the second study period showed more concern about HIV transmission through needle use than through sexual practices: 85% (303/355) reported sharing needles less frequently because of AIDS, however 39% (137/355) reported having fewer sexual partners, and only 9% (33/355) used condoms "often" or "always".
Conclusions. IVDU entering MM programs in Connecticut show evidence of decreasing their HIV risk behavior. Seroprevalence remains stable.

T.A.0.9

NEEDLE EXCHANGE IN CENTRAL LONDON: ONE YEAR FOLLOW UP

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Objective. To evaluate the busiest needle-exchange for injecting drug users(IDUs) in the UK, in terms of its efficacy in reducing shared use of injecting equipment and preventing transmission of HIV infection.
Methods. Attendance rates (Oct '87-Nov '88) were monitored, as were syringes dispensed and returned. A sample of clients were interviewed, first at 1 month then again 3-4 months after entry to the scheme, regarding injecting and sexual behaviour. Saliva samples were tested for anti-HIV.
Results. On av 257 IDU's attended monthly, and made 762 visits per month. An av 8950 syringes were dispensed per month, 6918 returned; return rate 77%.

Recent Equipment Sharing (Last 1 month) and Sexual Behaviour (Last 3 months)

	1st Interview	2nd Interview
Borrowed equipment	15% (18/121)	9% (6/70)
Lent equipment	13% (16/121)	7% (5/70)
Sexually active	76% (92/121)	73% (51/70)
Used condoms	48% (44/92)	35% (18/51)

Saliva samples were donated by 109 clients, of which 7(6%) were ab+. A 2nd sample was provided by 60/109 3-4 months later; a further 2 were ab+ (a rise to 8%). Ab+ clients shared equipment with twice as many IDUs as ab- clients.
Conclusions. This scheme attracted and retained clients, its syringe return rate improved (Nov-Apr 66%; May-Oct 84%) and fewer clients had shared equipment on second interview. However condom use fell, and anti-HIV prevalence rose from 6%-8%. Continuing health education is indicated.

T.A.0.10

SEROPREVALENCE OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION AMONG INTRAVENOUS DRUG USERS (IVDUs) IN THE U.S.

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Objective: To determine HIV seroprevalence among IVDUs entering drug treatment in the United States.
Methods: In 1988 and 1989, CDC in association with state and local health departments are conducting blinded surveys among IVDUs entering drug treatment. After testing blood for routine purposes, individual identifiers were removed and consecutive sera were tested for antibodies to HIV. Demographic information, (sex, age group, race and ethnicity), type of treatment program, and the primary drug used will be collected on over 22,000 IVDUs representing 44 clinics in 29 metropolitan areas.
Results: Preliminary results from 7 metropolitan areas show that HIV seroprevalence among IVDUs entering drug treatment ranged from 0% to 42.7%. Infection rates were higher in more densely populated metropolitan areas than in less densely populated areas. IVDUs who primarily used cocaine had a higher HIV seroprevalence (14.2%) compared to all other drugs (9.1%). HIV seroprevalence was higher among African-Americans than among whites (12.7% vs. 5.2%), but varied in different metropolitan areas.
Conclusion: These data suggest that continued efforts are needed to reduce the spread of HIV infection associated with IV drug use among African-Americans and in selected metropolitan areas. In areas with lower HIV seroprevalence there is a need to develop innovative programs to prevent the introduction and further spread of HIV among IVDUs.

T.A.0.11

SEROCONVERSION FOR HIV IN INTRAVENOUS DRUG USERS IN SAN FRANCISCO

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Objective. We examined changing HIV seroconversion rates over time in intravenous drug users in treatment in San Francisco who have been studied more than once since 1985.
Methods. IVDUs in methadone and detoxification treatment programs in San Francisco have been offered anonymous HIV testing with notification of results since mid-1985. Unique identifiers are obtained and repeaters are identified. 380 IVDUs were identified as having been studied at least twice during 1985-1988. We examined seroconversion in this group.
Results. 11/380 IVDUs studied twice seroconverted over 421 person-years, or 2.6% per person-year (ppyr). Rates by ethnic group were white 1.8% ppyr, black 5.7% ppyr, hispanic 3.6% ppyr. The overall seroconversion rate fell over time from 7% ppyr in 1985 to 2.4% ppyr in mid-1987 and has remained roughly constant since. 7 seroconverters were female and 4 were male; all had used intravenous cocaine at least weekly in the previous year. The average rate of 2.6% ppyr corresponds to 300 new infections/year in this population in San Francisco, compared with 0.5% or about 100 infections/year in homosexual men.
Conclusion. Following the introduction of voluntary testing, methadone slots for seropositives and outreach and bleach distribution programs, seroconversion of IVDUs in treatment fell to 2.4% per year. The rate has remained stable at this level since mid-1987, so that additional interventions are now required.

T.A.0.12

RISK FACTORS FOR HIV-1 INFECTION AMONG STREET-RECRUITED INTRAVENOUS DRUG USERS IN NEW YORK CITY

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*Narcotic and Drug Research Inc, NY, NY, USA; **NY State Div. of Substance Abuse Services, NY, NY, U.S.A.

Objective. To determine whether risk factors for HIV-1 seropositivity among street-recruited IV drug users (IVDUs) are similar to those reported in analyses based on drug abuse treatment samples. Since almost all reported studies are based on treatment samples, it is important to determine whether IVDUs recruited in other ways have similar risk factors.
Methods. Sera and interviews were collected in 1987 from 256 IVDUs recruited in areas of active drug use in Queens and the Bronx. Antibody testing used repeat ELISA with 100% Western blot confirmation.
Results. 53% were seropositive. Drug injection frequency is a significant predictor of seropositivity. This is primarily a function of cocaine injection. 5/16 (31%) of subjects who had injected only heroin during 1983-86 and 23/37 (62%) who had injected only cocaine were seropositive (p < .05). 4/18 (22%) who had begun injecting within the previous 5 years and 132/238 (55%) longer-term injectors were infected (p < .01). By crosstabulation, use of cookers after others, injecting in shooting galleries, frequency of injecting speedball (mixed heroin and cocaine), self-reported STD history prior to 1975, age (< 30 years), and non-Latino ethnicity, are each significantly related to seropositivity. In stepwise multiple logistic regression, cocaine and speedball injection frequencies, injection for 5+ years, non-Latino ethnicity, and recruitment in the Bronx are significant predictors of seropositivity.
Conclusion. Seroprevalence in the street sample was approximately the same as has been reported in treatment samples in NYC. Injection frequency, cocaine injection, ethnicity, and geographical location have all previously been shown to be risk factors for HIV-1 infection in NYC drug treatment samples. This suggests that, in a city in which HIV-1 has been present among IVDUs a long time, street and treatment samples show similar patterns of infection. Separate studies are needed in cities where the epidemic is more recent. The finding that IVDUs are less likely to be infected for 5 years after beginning to inject makes public health interventions targeting new injectors both feasible and urgent.

T.A.0.13

HETEROSEXUAL BEHAVIOR OF INTRAVENOUS DRUG USERS.

Hoek, Anneke van den; Haastrecht BJA van, Coutinho RA.
Municipal Health Service, Amsterdam, The Netherlands.

Objective. To determine the potential role of intravenous drug users (IVDU) in the heterosexual transmission of HIV by studying sexual techniques and condom use practiced with steady, casual and commercial partners.
Methods. Between Sept. '88 and Jan. '89, 209 IVDU (112 ♂ and 97 ♀) participating in a HIV-study have been interviewed by standard questionnaire about their sexual behavior in the prior 3-6 months.
Results. The mean age was 30.6 years (SD 5.4). Infected with HIV was 38%. 97/209 IVDU (59 ♀ and 38 ♂) reported a steady partner of whom 38% was non-IVDU, The mean number of sexual contacts was 2.8/week. 41 participants (27 ♂ and 14 ♀) had 92 casual relations of whom 67% was non-IVDU. 53 women worked as prostitutes with a mean number of 36 customers per month.
Table presents % using condom > 2/3 of the sexual contacts (s.c.) during specific sexual technique by type of relationship.

	steady partner		casual partners		customers
	% ♀	% ♂	% ♀	% ♂	% ♀
- vaginal s.c. with condom	23	28	25	29	90
- orogenital s.c. with condom	17	-	8	-	81

Vaginal intercourse was the most popular sexual technique in all relationships and anal s.c. was rarely practiced by only a few participants.
Conclusion. In most private sexual relations condoms are not or infrequently used with no difference between steady or casual partners. As 38% of the participants is infected with HIV, their potential role in heterosexual transmission - to IVDU and non IVDU! - may be considerable. Private partners appear more at risk than commercial partners.

Transmission sexuelle du VIH (partie 2)
Sexual Transmission of HIV (Part 2)

T.A.0.14 TRANSMISSION OF HIV IN EDINBURGH AMONGST HETEROSEXUAL INJECTION DRUG USERS (IDU).

*Susan J Davidson, JR Robertson, *RP Brettle. *Infectious Diseases Unit; Muirhouse Surgery, EDINBURGH, Scotland, U.K.

OBJECTIVE: Assessment of immunological and behavioural variables involved in transmission of HIV amongst heterosexual IDU in Edinburgh.
METHOD: Heterosexual couples with one HIV +ve index were recruited into a prospective study of heterosexual transmission. 6 monthly interviews recorded behaviour, plus clinical and immunological status.
RESULTS: To date 73 couples have been interviewed, with 19 female (F) and 54 male (M) index cases who all acquired HIV by IDU. 16 F and 4 M sexual contacts are also drug users. In these F contacts, despite a mean length of relationship (R) of 35(5-96) months, a mean of 19(0-60) months of unprotected intercourse (UI), a mean of 65(10-223) episodes of intercourse per year plus a mean of 43(12-70) months of IDU only 3(19%) have seroconverted. In the M contacts despite R of 42(2-139) months, UI of 24(2-60) months, a mean 112(70-167) episodes of vaginal intercourse per year and 47(14-62) months of IDU no transmission occurred. Transmission did not correlate with anal intercourse, past history of STD or barrier contraceptive use nor with absolute T4 count or clinical state of index. In couples whose only risk of transmission was heterosexual sex, transmission occurred in 16% from M to F and 5% F to M.
CONCLUSION: In double drug using couples exposed to 2 risk factors transmission is not greater than those only exposed to heterosexual sex. This is surprising, suggesting that other factors such as variability in infectivity of the index or susceptibility of the contact to infection may be important.

T.A.0.15 Co-Factors in the Heterosexual Transmission of HIV in West Germany

S. Staszewski, S. Rehmet, E.B. Helm, W. Stille, Zentrum der Inneren Medizin, Universitätsklinik Frankfurt, Fed. Republic of Germany.

Objective: To investigate heterosexual HIV transmission frequency as well as co-factors in favour of transmission.
Method: We examined 133 heterosexually active couples, of whom at least 1 partner was positive for HIV (index person), and who had had sexual contacts without barrier contraceptives until first examination.
Results: Of 129 index persons (81 males, 48 females), 27 (21%) had infected their partners (n=28). A comparison between those (= IPP), and those not having infected their partners (IPN) showed a significant difference as to frequency of positive TPHA and extent of cellular immunodeficiency. 27% IPP, but only 14% IPN showed a positive lues serology. 46% IPP, but only 18% IPN had a CD4 cell count <200. On the other hand, 31% IPN, but only 4% IPP, had CD4 >800. Moreover, until now, 33% IPP, but only 8% IPN, have developed full-blown AIDS. The investigation of the above mentioned index persons' sexual partners showed a significant difference in infection rates of men and women. Of the 84 female sexual partners, 26 (31%) were infected, but only 2 (4.1%) of the 49 male partners.
Conclusion: Transmission rates from female to male are higher than vice versa. Persons with fast progressing disease seem to be more infectious than persons with stable conditions.

T.A.0.16 HETEROGENEOUS MALE-TO-FEMALE TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS.

Padian, Nancy*, Shiboski, S.*. *University of California, San Francisco, California, USA.

Objective: To examine recent observations that number of sexual contacts is unrelated to transmission and to assess evidence for heterogeneous rates of heterosexual transmission.
Methods: Using data from a study of opposite sex partners of individuals infected with HIV, we examined the association between number of contacts and other risk factors for transmission. To account for unkown infection dates in the index case, reported number of contacts was adjusted by estimating dates of seroconversion and counting only those contacts after this date. 153 women who were sexual partners of infected men were examined: 24% were infected.
Results: The logarithm of the adjusted number of contacts is associated with transmission (p=.001) and remained significant after adjusting for four previously significant risk factors (race, anal intercourse, bleeding from trauma during sex, and not using condoms). An interaction between number of contacts and condom use provided evidence of different transmission rates between couples who did and did not use condoms.
Conclusions: Number of contacts is associated with infection, but in a nonlinear fashion. Variation in the number of contacts necessary for transmission can be attributed to the hypothesis that contacts are mediated by condom use and heterogeneity in susceptibility and infectiousness. Studies that did not find an association between number of contacts and transmission may have only considered a linear relationship, may have misclassified exposures, or may not have examined the sources and effects of heterogeneous transmission rates.

T.A.0.17 RISK FACTORS FOR HIV TRANSMISSION IN STEADY HETEROSEXUAL COUPLES.

Seidlin, Mindell; Dugan, T; Vogler, M; Bebenroth, D; Krasinski, K; Holzman, R. New York University, New York, U.S.A.

Objective. To assess the determinants of HIV transmission in heterosexual couples.
Methods. Eligible partners(P) had never used IV drugs and had ≥ 10 episodes of vaginal intercourse (VI) with an infected index case (I). All Ps and available Is were interviewed about sex, reproductive and drug behavior, & tested for antibody to various DNA & RNA viruses, P24 antigen; CD4 cells; and VDRL reactivity. Risk ratios were calculated by logistic regression.
Results. 61 Ps (56 female) and 29 Is (4 female) were enrolled. 31 Ps were HIV+ and 28 were HIV–; 2 Ps had inconclusive tests. HIV+ and – Ps did not differ significantly in median age, race, marital status, length of relationship with I and episodes of VI, number of lifetime sex partners, age of first intercourse, sex during menses, history of alcohol use, and presence of antibodies to EBV, CMV, and HSV1. P's serostatus was not related to their I's risk group or circumcision status.

	RR For HIV seropositivity	
Variable	Univariate(95%CI)	Adjusted for other variables
Crack	13.16 (1.35,111.89)	5.42 (0.50, 58.96)
Other NonIV Drugs	0.88 (0.29, 2.70)	0.70 (0.13, 3.86)
Any Anal intercourse	3.11 (1.04, 9.32)	8.28 (1.31, 52.22)
HSV2 antibody	3.30 (0.64, 17.96)	3.34 (0.44, 25.04)
Hstry genit. ulcer	3.35 (0.90, 12.47)	1.41 (0.40, 4.96)
Fellatio	0.36 (0.08, 1.52)	0.06 (0.007, 0.47)

Conclusions. In these 61 couples, prevalence of HIV seropositivity in the partner of an index case was related most strongly to crack use and to anal intercourse.

T.A.0.18 SMOKING AS A RISK FACTOR FOR HETEROSEXUAL TRANSMISSION OF HIV-1 IN HAITIAN WOMEN

Halsey, Neal*; Boulos, R**; Holt, E*; Quinn, TC*; Brutus, JR**; and Ruff, A*; et al.
*Johns Hopkins University, Baltimore, MD, USA, **Centers for Health and Development, Port-au-Prince, Haiti

Objective. To identify risk factors for HIV-1 infection in pregnant Haitian women.
Methods. Women residing in an impoverished urban community were interviewed and tested for HIV-1 and syphilis.
Results. Of 1,953 women tested, 179 (9.2%) were seropositive for HIV-1. Higher HIV-1 seropositivity rates were associated (p<0.001) with being unmarried, positive serology for syphilis, lower economic status, and smoking. Smoking women had an 18.4% seropositivity rate vs. 8.6% for non-smokers (p=0.0004).

Women who smoked 6 or more cigarettes per day had a higher rate than women who smoked 1-to-5 times per day (31.0% vs 14.1%, p=0.04). Logistic regression analysis revealed that smoking was a significant predictor (OR=3.2, 95% CI 1.7-6.2) of HIV-1 seropositivity independent of all other factors.
Conclusions. Smoking has been associated with increased risks of herpes simplex virus type 2 and papillomavirus infections, and cervical lesions in other studies. We postulate that smoking may increase susceptibility to HIV-1 infection either directly through effects on the cervix or indirectly by increasing the risk of other infections that disrupt cervical epithelium.

T.A.0.19 RISK FACTORS IN HETEROSEXUAL TRANSMISSION OF HIV

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*Istituto Malattie Infettive -**Istituto di Microbiologia; Universita' di Bologna, Bologna, ITALY

Objective: To assess the risk factors in HIV heterosexual transmission evaluated by a cohort study on stable partners of HIV infected subjects.
Methods: From 1985 to 1988 we have examined 197 heterosexuals which have had stable relationship (at least for 9 months) with HIV Ab +ve subjects. All the partners (64 males and 133 females) had not other current or previous risk factors of acquiring HIV infection (i.v. drug addiction, homosexual practices and transfusions). All subjects underwent HIV serology (ELISA & WB) and 93 of them answered a questionnaire about sexual habits, e.g. "safe-sex" and sexual intercourse behavior. A cohort of HIV Ab negative partners took a part in a follow-up program; they complied to repeat HIV Ab tests and epidemiological interview every 6 months. This longitudinal study involved 86 partners, who were HIV Ab negative at first analysis, during an average period of 28 months.
Results and Conclusion. Ten/64 (15.6%) male and 29/133 (21.5%) female partners were found to be HIV Ab positive at the beginning of this study, and the difference between male-to-female and female-to-male rate is not statistically significant. Length of relationship, frequency in sexual contacts, vaginal intercourse, and anal sex for females, they all seem to be the most important factors in HIV contagion. The epidemiological analysis of seroconverted partners outlines the same results. Still we see all seroconversions happened in 9/54 partners (16.6%) and they occurred among couples which didn't use condoms regularly (< 50% of sexual contacts).

Efficacité et évaluation des programmes
Programme Effectiveness and Evaluation

T.A.0.20

SAFER INJECTION AMONG PARTICIPANTS IN THE FIRST NORTH AMERICAN SYRINGE EXCHANGE PROGRAM

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OBJECTIVE: Syringe exchanges (SE's) to prevent HIV infection among IV drug users are widely used in Europe, but only recently have been established in North America. We examined changes in the use of drug injection equipment among participants in the first North American SE, in Tacoma, WA.
METHODS: 46 participants were randomly selected and interviewed about their drug injection practices for the one month prior to beginning the SE and for the month prior to the interview (while participating in the exchange). The subjects had been participating in the SE for an average 3 months. 70% were male, 61% White, 17% Black, 9% native American, 8% Latino/Hispanic, 2% Asian and 2% not specified. Mean age was 33 years. The various risk behaviors were measured in frequency per month, and t-tests were used for statistical testing. (The study is ongoing, and data from additional subjects will be available by the time of the conference.)
RESULTS: Although there was considerable variation across individuals, all measures showed change towards "safer" injection. Lending injection equipment to a sexual partner or close friend declined from a mean of 64/mo. to a mean of 44/mo. (p<.05), lending equipment to a casual friend from 48/mo. to 32/mo. (p<.05), renting used equipment from 29/mo. to 18/mo. (ns), borrowing equipment from 31/mo. to 24/mo. (ns), and using only water to clean equipment from 102/mo. to 70/mo. (ns). Use of bleach to clean equipment increased from 71/mo. to 130/mo. (ns).
CONCLUSION: Participation in the SE was associated with substantial reduction in AIDS risk behavior, similar to European findings. Also similar to European findings, there was an important residual of risk behavior that may require interventions beyond the syringe exchange.

T.A.0.21

EVALUATION OF THE NEEDLE EXCHANGE PROGRAM IN AMSTERDAM

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Objective. To study the impact of participation in the needle exchange
program on drug use behavior.
Methods. In 1987 145 IVDU's were interviewed of whom 60 (39%) were seen for
follow-up in 1988. Differences between "exchangers" (participants of the
exchange program) and "non-exchangers" were studied regarding demographic
and drug use behavior.
Results. Those who had foreign nationality were more often lost to follow-
up. The follow-up group as a whole moved in the direction of more safe in-
jecting behavior, which was primarily accounted for by risk reduction in the
group of non-exchangers. However, as in 1987, exchangers in 1988 still were
at a significantly lower risk level than non-exchangers (p<0.001). There was
no increase in i.v. drug use among the exchangers. 32% of the exchangers in
1988 said to inject irregularly the last 1/2 year vs. 70% of the non-exchan-
gers (p<0.05). A logistic regression on the 1987-data showed that 5 out of 13
variables were independently and significantly associated (in the mentioned
direction) with needle-sharing (borrowing) during the last 2 years: not daily
injecting, not exchanging needles, having volunteered for an AIDS-test, male
sex and young age.
Conclusions. Exchangers maintain their relatively low risk-level of i.v.
use over a long period of time. Using a needle exchange program seems to be
especially attractive to regular injectors and does not lead to an increase
in i.v. drug use. Those who inject infrequently are more likely to share
needles. Alternative preventive efforts - like education on how to clean
needles safely and effectively - may have to be directed at this group.

T.A.0.22

BRIEF COUNSELING TO REDUCE AIDS RISK IN IV DRUG USERS: UPDATE

Gibson, David R., Lovelle-Drache, J., Derby, S., Garcia-Soto, M., Sorensen, J. L., and Melese-d'Hospital, I.,
University of California, San Francisco, USA

Objective. We are evaluating the effectiveness of brief counseling designed
to reduce AIDS risk in intravenous drug users. Drawing on insights from
health psychology, the 55-minute counseling is a practical, nonstaff-inten-
sive intervention, which, if effective, could be widely disseminated. The
counseling features problem-solving of situations in which drug users are
tempted to share needles or engage in unprotected sex.
Methods. Eighty-eight IV drug users in heroin detoxification treatment were
randomly assigned to counseling or an information-only brochures condition.
Outcome measures include knowledge, perceived threat, anxiety, response effi-
cacy (acceptance of guidelines to reduce risk), self-efficacy and communica-
tion skill in arranging low-risk behavior, and self-reported needle-sharing
and unprotected sex.
Results. Sixty-eight (77%) and 63 (73%) were reached for post- and follow-up
interview 10 and 90 days after receiving counseling/brochures. Very few drug
users in either condition reported any needle-sharing at either measurement
point. At the postinterview, experimental (counseling) subjects scored 4/10
and 1/4 points higher on five-point drug-related measures of self-efficacy
(p=.05) and communication skill (p=.05), and reported using condoms 40% more
often (p=.004) and bleaching needles more often than subjects receiving bro-
chures. The self-efficacy finding was sustained at the follow-up interview;
counseling subjects also reported more sexual response efficacy (p=.01).
Conclusion. The counseling appears to have short-term positive consequences.

T.A.0.23

PLAN FOR THE PREVENTION AND CONTROL OF AIDS IN BASQUE COUNTRY.

Zulaica, D.; Elizalde, B.; Garcia Gurutzarri, A.; Zubia, I.; Urcelay, A., Servicio Vasco de Salud.Osakidetza.San Sebastian.Spain.

Objetive: Report on the Plan for Prevention and Control of AIDS in Basque Country 18 months after its inauguration.

Methods: The infrastructure of the plan consists of five persons: responsible phisician, an epidemiologist, a health educator, a nurse and an administrative. The program development was divided into three areas: a) information and education campaigns, b) organization of health care, c) activities to prevent discrimination of seropositive subjects, particularly in schools.

Results: Two large campaigns were carried out and evaluated.
a) Information and education campaigns: one oriented toward the general population to promote the use of condoms and other
protective measures, and the other designed to combat discrimination.
b) Organization of health care: The care of seropositives was structured at the primary
and hospital levels, which were coordinated through at-home care teams.
c) Anti-discriminatory activities: In schools, particulary, we have had serious problems
of integration of seropositive children. The policy of fully informing
school directives instead of withholding this information has been more positive. There
are now 11 seropositive children in the schools of the Basque Country.

Conclusion: In our opinion, the existence of regional programs, with unified criteria, messages and activities, expedites coordination and increases the effectiveness of efforts against AIDS.

T.A.0.24

INCREASING CONDOM SALES FOLLOWING AIDS EDUCATION, USA

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*Centers for Disease Control, Atlanta, Georgia, USA,
**Nielsen Marketing Research, Northbrook, Illinois, USA.

In the fall of 1986, the US Surgeon General warned of the risk of Human
Immunodeficiency Virus (HIV) infection and recommended the use of condoms,
as well as other measures, to prevent sexual transmission.
Objective. To ascertain whether condom use increased in the US after the
Surgeon General recommended their use.
Methods. Sales data from a national probability sample of drug stores
(and, since 1986, food stores and mass merchandisers) were analyzed.
Results. Annual sales of condoms in drug stores rose 0.6% from 1983 to
1984, 1.2% from 1985 to 1986 and 20.3% from 1986 to 1987. The largest
sales increase occurred in early 1987:

BIMONTHLY CONDOM SALES BY DRUG STORES, FOOD STORES AND MASS MERCHANDISERS

	Plain Latex	Latex with Spermicide	Natural Membrane
Mar-Apr '87	32,134,000	5,949,000	3,288,000
Jul-Aug '87	36,361,000	8,847,000	3,382,000
Nov-Dec '87	32,896,000	8,766,000	3,333,000
Mar-Apr '88	35,452,000	9,801,000	3,036,000
Jul-Aug '88	38,722,000	12,249,000	2,976,000

Sales increased as much in areas of low AIDS incidence as in areas of
higher AIDS incidence where sales had already increased in 1986.
Conclusion. Latex condoms sales increased in the US after they were
recommended for the prevention of HIV transmission. The largest increase
was in latex condoms with spermicide. Concurrent with an increase in
latex condoms, sales of natural membrane condoms decreased.

T.A.0.25

EFFECTIVENESS OF CONDOM PROMOTION IN A NAIROBI COMMUNITY OF PROSTITUTES.

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Waiyaki, P.**, Ndinya-Achola, J.O.*, and Ronald, A.R.***, et al.
*University of Nairobi, Nairobi, Kenya, **Kenya Medical Research
Institute, Nairobi, Kenya, ***University of Manitoba, Winnipeg, Manitoba,
Canada.

Objective. To evaluate the frequency of condom use among a group of pros-
titutes and the impact of condom use on sexually transmitted disease (STD)
incidence.
Methods. Condom promotion and distribution was initiated in a community
of prostitutes in one Nairobi region in 1986. Condom use was evaluated by
interview of study group women (SGW) every 6 months. Newly enrolled women
served as controls (CW). The effect on STD transmission was determined
from monthly male STD incidence data by city region, using a region
similar to the index region (IR) as a control (CR).
Results. By March 1988, 100% of SGW (n=135) reported some condom use vs
78% of CW (n=36) ($p<10^{-6}$). The mean frequency of use was 77 ± 25% in SGW
vs 29 ± 29% in CW (p<.001). The most frequent reason for not using con-
doms was client reluctance. The mean monthly incidence of all STD among
IR men was 336 in 1981 and 134 in 1987, while the incidence in CR men was
573 in 1981 and 378 in 1987.
Conclusion. This program has achieved a durable increase in condom use
and may have resulted in reduced STD transmission.

Déclaration du VIH
HIV Reporting

T.A.0.26 SURVEILLANCE FOR HIV INFECTION IN MINNESOTA: RESULTS FROM THE FIRST THREE YEARS OF OPERATION.

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Objective. To ascertain the burden of medically detected disease caused by HIV infection (regardless of symptoms) in Minnesota.
Method. HIV infection became reportable to the MDH in October 1985. The reporting system was passive until January 1987, when active surveillance was implemented at all hospitals in the metropolitan Twin Cities area and at 6 sentinel hospitals in the remainder of MN. All clinical laboratories in the state also participate in laboratory-based surveillance.
Results. As of January 1989, 1487 cases of HIV infection have been reported by name. Current stages for cases are: Group I (acute infection) = 1; Group II (asymptomatic infection) = 531; Group III (peripheral generalized lymphadenopathy) = 119; Group IV (constitutional symptoms) without AIDS diagnosis = 103; Group IV with AIDS diagnosis = 467; and Unknown = 266. HIV cases without AIDS were more likely than AIDS cases to be nonwhite ($p < 0.001$), female ($p < 0.01$), and IV drug users ($p < 0.001$). Only 3 AIDS cases (0.6%) have been reported in persons less than age 20; whereas, 34 (3.7%) of 911 HIV-infected persons of known age were less than age 20 ($p < 0.001$). AIDS cases have been reported from 37 of 87 MN counties (42%); whereas HIV-infected persons (including AIDS) have been reported from 58 counties (66%) ($p < 0.001$).
Conclusions. While these data may be biased by diagnostic practices, they provide information on infection trends not available from AIDS surveillance alone. Such trend analysis is useful in monitoring the HIV epidemic.

T.A.0.27 HIV INFECTION REPORTING IN THE UNITED STATES

Stehr-Green, Jeanette; Berkelman, R.; VanPatten, B.; Curran J.
Centers for Disease Control, Atlanta, Georgia, USA

Objective. To summarize the status of HIV infection reporting in the U.S.
Methods. AIDS surveillance staff from each state were contacted in October 1988 regarding mandatory reporting of HIV seropositive persons and were asked to provide copies of reporting regulations and report forms.
Results. As of October 1988, 24 states had mandatory reporting of HIV infection. States with reporting had a lower cumulative incidence of AIDS than states without reporting (median of 299 cases vs. 765 cases) and reported 19% of all U.S. AIDS cases. Sixteen states (67%) require reporting by name and 17 (71%) require a positive result on a confirmatory test before reporting. Most states collect basic demographic data (age, sex, race, and place of residence) and almost half collect risk factor information. Four states (17%) collect sufficient information on the clinical status of the patient to use the CDC HIV infection classification system. Sixteen states (67%) use the data to monitor epidemiologic trends and 15 (63%) states use the data to initiate partner notification services.
Conclusions. Because reporting systems were developed independently, there is no standardized approach and results cannot easily be compared. Due to selection biases associated with testing, the inability to exclude duplicate reports in states that do not collect patient identifiers, and the lack of studies to determine the completeness of reporting, HIV infection reports alone cannot be used to monitor trends in HIV infection. HIV infection reporting must be rigorously evaluated to determine whether it meets surveillance and prevention objectives.

T.A.0.28 THE ROLE OF HIV INFECTION REPORTING IN PUBLIC HEALTH

Chairpersons: Ruth L. Berkelman (Atlanta, USA), Joel DeKoven (Toronto, Canada)
Panelists: Molly Coye (Trenton, USA), O. Noel Gill (London, United Kingdom), Fred Wolf (Denver, USA)

Some or all jurisdictions within at least 25 countries currently require reporting of HIV-infected individuals to public health officials. Following two accepted oral presentations on HIV reporting, panelists will reflect upon the objectives of the HIV reporting system in their local jurisdictions or countries, and how their system is designed to meet these objectives. Systems with and without confidential identifying information will be described; and the laboratory's role versus that of the health care provider will be discussed. Issues related to the role of notifiable disease reporting in supporting partner notification and other individual case management activities as well as the epidemiologic usefulness of data collected by different reporting systems will be addressed. In addition, the impact of HIV reporting, both positive and negative, on other prevention/control activities, including counseling and testing sites, will be explored. Rather than attempting to build a consensus, this workshop is specifically designed to provide a forum for the exchange of information on a controversial subject. It will attempt to explore how and why different jurisdictions may be best served by different approaches to HIV reporting and to define factors which should be considered when areas seek to adopt or modify HIV reporting regulations.

Séance thématique
Specialty Session

Épidémiologie et santé publique
Epidemiology and Public Health

Histoire clinique de l'infection à VIH : manifestations précoces et progression
Natural History of HIV Infection: Early Manifestation and Progression

T.A.0.29 PROGNOSTIC INDICATORS FOR DEVELOPING AIDS WITHIN 24 MONTHS.

Alfred J. Saah, Munoz A, Fox R, Kaslow RA, Rinaldo C, Detels R, Phair JP.
The Johns Hopkins School of Hygiene and Public Health and the Multicenter AIDS Cohort Study (MACS), Baltimore, MD, USA.

Objective. To identify laboratory and clinical variables with predictive power for onset of AIDS above that provided by T helper (CD4+) number.
Methods. 1307 white MACS participants who were HIV-1 seropositive at baseline were seen every 6 months for at least 3.5 years. After stratifying by initial CD4+ number and percent decline in CD4+ number in the first 6 months, a Cox regression analysis was done to identify variables and changes in those variables that had independent predictive power for developing AIDS within 24 months.
Results. 170 men developed AIDS in the first 24 months of followup. Those who developed AIDS had, at baseline, significantly higher CD8+ lymphocyte counts (772 vs 682), lower hemoglobin(14.9 vs 15.2), higher IgA(333 vs 227), lower ratio to positive in the DuPont HIV ELISA(2.66 vs 2.83) and fewer platelets(225k vs 241k, p=0.09) than those who remained AIDS-free. Changes in the 6 mos. after baseline that were associated with developing AIDS included onset of an ARC-like symptom, a mean decline of 6k platelets, or 0.2g hemoglobin. DuPont ELISA ratio increased by 0.3 in those who did not develop AIDS, but remained unchanged in those developing AIDS.
Conclusion. In addition to number and rapidity of decline of CD4+ lymphocytes, a clinical profile of those who will develop AIDS within 2 years is now possible. Such data are helpful in patient management and in designing therapeutic trials.

T.A.0.30 CLINICAL COURSE OF PRIMARY HIV INFECTION : CONSEQUENCES FOR THE SUBSEQUENT COURSE OF THE INFECTION.

Pedersen, Court, Lindhardt BØ, Jensen BL, Lauritzen E, Gerstoft J, Dickmeiss E et al.
University of Copenhagen, Copenhagen, Denmark.

Objective. To investigate the impact of the clinical course of the primary HIV infection on the subsequent course of the infection.
Methods. A group of 86 individuals for whom the time of seroconversion for HIV could be ascertained within a time frame of 12 months were followed for a median of 670 (range 45-1506) days. Progression criteria were : 1) development of AIDS, 2) progression to CDC group IV. Life tables were used to compare disease progression.
Results. An acute glandular-fever-like illness occurred in 52% of the patients. The median duration of the illness was 16 days.
Progression rate to CDC group IV was 78% at three years for those who had a longlasting (>14 days) primary illness (n=27) compared to 10% for those who had minor symptoms or were symptom-free (n=59) (p<0.0001). The corresponding progression rates to AIDS were 23% and 0%, respectively (p=0.027).
Conclusion. The primary response to HIV infection may determine the subsequent course of the infection. Future studies should focus on the pathogenesis of acute HIV infection as it appears that a deliniation of the early events may provide the basis for a better understanding of the subsequent progressive immunodeficiency during HIV infection.

T.A.0.31 PROGRESSION TO AIDS IN THE SAN FRANCISCO GENERAL HOSPITAL COHORT STUDY

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Objective. We examined progression to AIDS over four years in HIV positive homosexual men.
Methods. 288 HIV AB+ men recruited 1983-84 were followed in the AIDS clinic at San Francisco General Hospital. We report progression to AIDS and ARC at four year of study, an estimated average seven years from infection.
Results. At 48 months the actuarial progression rate of HIV Ab+ subjects to clinical AIDS was 27% and to AIDS or ARC was 46%. For subjects with ARC the observed two-year progression rate to AIDS was 42%.
Progression rates to AIDS by no. of CD4 lymphocytes were: CD4<200 88%; 200<CD4<400 51%; CD4>400 21%. By Beta-2 microglobulin (Beta-2) they were: Beta-2>5.0 77%; 3.0<Beta-2<5.0 41%; Beta-2<3.0 15%. By p24 antigen they were: p24 present 68%; p24 absent 19%. In a model using these markers plus proportion of CD4 lymphocytes and hematocrit, rates by number of abnormalities were: 0 abnormalities 8%; one 24%; two 52%; three or more 86%. 75% of subjects without AIDS were abnormal on one or more markers at four years.
For subjects with ARC and one abnormal marker, two-year progression rates to AIDS were: ARC and CD4<400 89%; ARC and Beta-2>3. 91%; ARC and p24 present 85%.
Conclusion. Most seropositives in the SFGH cohort appear to be progressing to AIDS. Progression to AIDS over four years in asymptomatic HIV Ab+ homosexual men was well predicted by a multivariate model using five laboratory markers. Two-year progression in symptomatic men was well predicted by ARC plus one abnormal marker.

T.A.0.32 THE NATURAL HISTORY OF HIV INFECTION IN A COHORT OF HOMOSEXUAL AND BISEXUAL MEN: CLINICAL MANIFESTATIONS, 1978-1989

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Objective. To determine the relationship between clinical manifestations of HIV infection and duration of seropositivity in a cohort of homosexual and bisexual men.
Methods. We evaluated clinical manifestations of HIV infection in a cohort of 6,702 homosexual and bisexual men originally recruited from 1978 to 1980 for studies of hepatitis B. Men included in this analysis were all selected for enrollment into AIDS follow-up studies and had a well approximated date of HIV seroconversion (SC) ranging from 1977 to 1988. Using Kaplan-Meier methods, we analyzed cumulative risk of AIDS by duration of HIV infection.
Results. Of the 268 men whose SC date could be well approximated, 121 (45%) had estimated dates of seroconversion before January 1981 and had been clinically evaluated in the last 2 years (median time from SC = 100 months). Among these 121 men 63 (52%) developed AIDS, 27 (22%) AIDS-related conditions, 13 (11%) asymptomatic generalized lymphadenopathy, and 18 (15%) had no signs or symptoms on last examination. Using all 268 men, we estimated 4% of the HIV-infected men in the cohort will develop AIDS within 3 years of infection, 10% within 4 years, 15% within 5 years, 25% within 6 years, 34% within 7 years, 39% within 8 years, 43% within 9 years, and 54% within 10 years (95% confidence interval, 42-66%).
Conclusion. The risk of AIDS and other clinical manifestations of HIV infection continues to increase as duration of infection increases.

T.A.0.33 THE PROBABILITY OF PROGRESSION TO AIDS IN A COHORT OF MALE SEXUAL CONTACTS OF MEN WITH HIV DISEASE

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Objective: To investigate the proportion of individiudals in a cohort of male sexual contacts of men with HIV disease who will progress to AIDS.
Methods: At recruitment 143 cohort members were seropositive and 16 seroconverted during follow-up. Information was obtained on the times of first and last sexual contact with the index case. A mixture model was fit to estimate the probability of developing AIDS in this cohort and the parameters of the incubation time distribution based on a Weibull model. Infection was assumed to occur during the period of sexual contact with the index case for individuals not seroconverting during follow-up.
Results: 35 cohort members developed AIDS while under study. The probability of developing AIDS was estimated to be at least 50% and as high as 100% with values of 73% to 100% being equally plausible estimates. In the cohort the mean incubation time was estimated to be 7.4 years and the Weibull shape parameter was estimated to be 1.96.
Conclusion: At least 50% of men with HIV disease are likely to progress to AIDS. There was no evidence of a subpopulation not susceptible to AIDS. The estimated incubation time distribution in this cohort is consistent with other estimates.

T.A.0.34 RISK OF AIDS PROGRESSION APPEARS EARLY IN HIV INFECTION

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Objective. To determine whether differences exist between seroconverters who subsequently did and did not develop AIDS in the Vancouver Lymphadenopathy-AIDS study with respect to laboratory variables obtained close to the time of seroconversion.
Methods. Of 118 seroconverters in our prospective study as of 11/88, we identified all 10 who later developed AIDS (denoted 'cases'). For each case, 3 AIDS-free seroconverter controls were selected at random, matched to the cases on the basis of month and year of seroconversion. Dates of seroconversion were estimated as the midpoint between the last negative (LN) and first positive (FP) antibody test result. Laboratory data were obtained from the FP visit. Comparisons were made utilizing non-parametric methods.
Results. A total of 10 cases and 30 controls were included in the analysis. The median interval duration between LN and FP was 12 months (range=4-21) for cases and 11 months (range=3-26) for controls. At FP, laboratory data were obtained a median of 27.5 months (range=16-36) prior to diagnosis for the cases. Controls were AIDS-free a median of 50 months (range=35-62) from FP to 11/88. At FP, C1q binding (median 28.0 vs 12.0; p=0.008) and IgA levels (median 345 vs 300; p=.037) were significantly elevated, and CD4 counts (median 679 vs 804; p=0.043) were significantly lower among those seroconverters who later progressed to AIDS. No differences were observed at FP with respect to hemoglobin, white blood cells, lymphocytes, IgM levels, or CD8 counts.
Conclusion. Despite limited power, we found differences early in HIV infection between those who did and did not progress to AIDS. We speculate i) either those who progressed had much longer seroconversion windows or ii) these parameters are not simply surrogates of disease progression or duration, but represent markers of susceptibility to more rapid progression to AIDS.

Modèles mathématiques
Mathematical Models

T.A.0.35 SIMPLIFIED BACKCALCULATIONS FOR THE AIDS EPIDEMIC.

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OBJECTIVE: To develop simple backcalculation methods for projecting AIDS incidence and for estimating the previous incidence of HIV infection.
METHODS: We extended available methods to permit flexible models of the previous HIV infection rate. We fit these models using efficient regression techniques that were easily implemented on a personal computer.
RESULTS: Our methods provided estimates (with confidence intervals) of important features of the pattern and extent of previous HIV infections. These include: 1) the cumulative number of persons infected with HIV through 1985 and through the present; 2) The difference between average infection rates in various time periods; and 3) projections of future AIDS incidence. Because these calculations were easily performed, we could also evaluate the sensitivity of estimates to different assumptions about the natural history of AIDS and to other aspects of the analysis. These methods were applied to test cases such as persons with hemophilia and homosexual men and yielded results that were compatible with independent epidemiologic data. Using a Weibull time-to-AIDS distribution F(t)=1-exp(-.002t^2.516) derived from persons with hemophilia, we estimate that 8,100 hemophiliacs were infected prior to March 1, 1985 (standard deviation (SD) = 975). The infection rate peaked prior to 1985. Among those currently infected, we project a cumulative AIDS incidence through January 1, 1993 of 3,475 (SD=700).
CONCLUSIONS: The computational efficiency and generality of the flexible models improves the assessment of random and systematic errors. Application to other groups may provide important public health insights.

T.A.0.37 EXTRAPOLATING RECENT TRENDS TO MAKE AIDS CASE PROJECTIONS

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Objective. To evaluate extrapolation from recent trends as a procedure for making short-term projections of AIDS cases.
Methods. Trends in quarterly U.S. AIDS incidence (all cases, adjusted for estimated reporting delays) y were modeled using the Box-Cox procedure
$(y^{\lambda}-1)/\lambda$ = polynomial in time + error
The parameters were estimated by maximum likelihood.
Results. Projections of U.S. cases 5 years in the future can be very sensitive to the form of the polynomial chosen (linear or quadratic), and somewhat sensitive to the period during which the trend is modeled.

Period modeled	Reporting through	p(t)	Predicted incidence 1988	1990	1992
1/84-6/88	12/88	linear	36,500	67,000	109,000
1/84-6/88	12/88	quadratic	34,200	35,000	30,000
1/84-6/88	12/88	quadratic(log)	35,000	45,000	37,000
7/83-9/87	6/88	linear	40,000	76,000	126,000
7/83-9/87	3/88	linear	38,000	69,000	112,000

Recent estimated (adjusted) incidence continues to increase steadily.
Conclusion. Careful analysis is essential in using extrapolation methods. An arbitrary transform, such as the logarithm, should not be used. Reporting delays must be estimated carefully because extrapolations are sensitive to changes in recent data. Predictions should emphasize uncertainty, as indicated by prediction intervals, rather than a single estimate. Projections more than 2 to 3 years in the future should be used with caution.

T.A.0.39 A RISK BEHAVIOR BASED MODEL OF THE CUBIC GROWTH OF AIDS IN THE UNITED STATES

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Objective. To understand the spread of HIV in the United States.
Method. The cumulative number of AIDS cases in the United States has grown as the cube of time rather than exponentially. We explain this by interactions involving partner choice and sexual frequency in a risk behavior model with biased mixing. This leads to a saturation wave of infection moving from high to low risk groups. The model assumes that the distribution of people according to risk (behavior that puts one at risk of infection) decays slowly, with a significant fraction of the population engaging in high-risk activities. It assumes that people with similar risk behavior tend to interact primarily among themselves (biased mixing) rather than equally with others (homogeneous mixing). The model incorporates epidemiological data on the total AIDS cases and on the progression from initial HIV infection to AIDS.
Results. The decreasing growth rate of AIDS cases through 1988 was not due to changes in behavior, but rather it was due to the intrinsic epidemiology of the disease. The total number of persons infected with HIV in the U.S. in 1988 was approximately one million. The average duration of infection for new AIDS cases is increasing. The mean risk behavior for people being infected with HIV is decreasing. The model is consistent with a mean probability of transmission per sexual contact between 0.001 and 0.004. An increase in infectivity during the latter stages of HIV infection could increase the future growth rate of AIDS; behavior modification could reduce it,

T.A.0.36 STATISTICAL ANALYSIS OF THE STAGES OF HIV INFECTION USING A MARKOV MODEL

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Objective. Persons infected with HIV pass through a progression of stages from initially infected to death. We have estimated the waiting time distribution for each stage of infection. From these estimates, we specify the probability distributions of the AIDS incubation period, pre-HIV-antibody period, and stage-specific survival times.
Methods. The natural history of HIV was modeled by a Markov process with the following five stages: 1) infected but antibody negative; 2) antibody positive but asymptomatic; 3) pre-AIDS symptoms and/or an abnormal hematologic indicator; 4) clinical AIDS; 5) death. This five-stage model was fitted to censored data from a cohort of 558 HIV-infected individuals.
Results. From the fitted model, the estimated mean waiting times in each stage are the following: Stage 1, 2.6 months; stage 2, 52.6 months; stage 3, 62.9 months; and stage 4, 23.6 months. The 95% confidence interval (CI) on the mean pre-HIV-antibody period (waiting time in stage 1) is [2.2,3.0] months. The mean AIDS incubation period (from infection to the development of AIDS) is estimated to be 9.8 years with a 95% CI of [8.4,11.2] years. The median survival times from stages 1, 2, 3 and 4 are estimated to be 10.3, 10.1, 5.8 and 1.4 years, respectively.
Conclusion. A staged Markov model can be used to efficiently estimate important statistical descriptors of the natural history of HIV.

T.A.0.38 MODEL-BASED OPTIMIZATION OF INFECTIVITY PARAMETERS

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Objectives To: 1) develop a non-linear optimization program which computes values of key epidemiologic parameters; 2) determine whether seroconversion and case rates among male homosexuals/bisexuals in San Francisco during 1978-1986 imply varying infectivity (VI) among three stages of infection (early antigen; antibody-positive; AIDS); 3) compare VI-based projections to projections that assume equal infectivity (EI) of the three stages; 4) determine if VI holds when simulated numbers of partners and contacts are changed significantly (±50%); 5) determine if VI holds for two contact models (sequential mates model and total contacts model).
Methods The optimization program minimizes the difference between simulated case rate and seroconversion fraction curves and data reported by the San Francisco Hepatitis B cohort study. Six parameters are optimized: 1) per contact transmission probabilities for each stage; 2) duration of and initial fraction in the early antigen stage; 3) delay time from seroconversion to AIDS. The cumulative fraction to AIDS vs. time since seroconversion is approximated closely by a 5th-order exponential delay.
Results Over a wide range of simulated numbers of partners and contacts, case rate and seroconversion fraction data are matched using VI. Base run optimal parameter values are: 1) contact probabilities--early antigen 0.056, antibody-positive 0.00049, AIDS 0.04; 2) initial fraction in early antigen stage 0.00248; 3) delay from seroconversion to AIDS 9.07 years; 4) duration of early antigen stage 19 weeks. With EI the (single) optimized contact probability (0.00614) is too low for the early antigen and AIDS stages, but too high for the antibody-positive stage. The case rate curve can be matched using EI, but the associated seroconversion fraction curve rises too slowly during 1978-82 and falls too slowly after 1982. VI runs predict a less severe future epidemic than EI runs. VI holds for both contact models.
Conclusion High infectivity of the first stage suggests antigen screening in high risk groups.

T.A.0.40 DRUGS, SEX & HIV: A MATHEMATICAL MODEL FOR NEW YORK CITY

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Objective To develop a mathematical model of sexual and drug behaviours in order to investigate the magnitude and time scale of the HIV epidemic in women and children in New York City.
Methods Different methods for capturing HIV transmission by intravenous drug use and heterosexual sex were explored.
Results A mathematical model was developed. The final model includes three groups of women; women who are at risk through IV drug use, women who are at risk through sexual intercourse with an IV drug user and women who are at risk due to both factors. IV drug users are assumed to either share needles with strangers in shooting galleries or to only share needles with 'shooting buddies'. Sexual and drug behaviour dynamically interact and affect both the magnitude and the time scale of the epidemic. Several scenarios will be presented in which empirical data are used to explore the model and to assess the impact of possible behaviour changes.
Conclusion The model appears to adequately capture sexual and drug behaviours and thus appears useful for exploring the HIV epidemic in women and children in New York City.

Évaluation de l'efficacité des programmes de prévention
Evaluation of Preventive Programme Effectiveness

T.A.0.41 EVALUATION OF PREVENTIVE PROGRAMME EFFECTIVENESS

Chairpersons: David Heymann (Geneva, Switzerland), Jack Wirima (Lilongwe, Malawi)
Panelists: Richard Biritwum (Geneva, Switzerland), Jean-Baptiste Brunet (Paris, France), Therese Mulandi (Nairobi, Kenya), Ron Waldman (Atlanta, USA)

Objective: To discuss various aspects of evaluation of AIDS control programmes including an overview of the place of evaluation in AIDS control programmes, approaches and problems associated with AIDS surveillance for HIV infection, feasible indicators for monitoring programme implementation and evaluating programme impact, approaches for collecting indicator information, and the place of evaluation in developing individual programme interventions.
Methods: Global experts in evaluation and implementation of disease control programmes met in Geneva to identify and select quantitative indicators which could serve as surrogates for measuring changes in HIV seroprevalence. Potential indicators of effectiveness were developed for the three main strategies of the WHO Global Programme on AIDS: decrease in sexual transmission, decrease in transmission from infected blood/blood products or skin piercing instruments, and reduction of impact on individuals, groups and societies. Methodologies were then proposed for the collection of indicator information, either through existing health information systems or from information systems developed specifically for the evaluation process.
Results: The role of evaluation in AIDS control programmes, a proposed matrix of indicators for use in evaluation, proposed approaches for collection of the indicator information and plans for validation of the indicator information and approaches were developed by the global experts and will be presented during the discussions.

Transmission du VIH dans le milieu des soins de la santé
HIV Transmission in the Health Care Setting

W.A.0.1

HEALTH-CARE WORKERS EXPOSED TO PATIENTS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV), UNITED STATES.

Marcus, Ruthanne* and the Cooperative Needlestick Surveillance Group. *Centers for Disease Control, Atlanta, USA.

Objective. To estimate the risk of HIV infection in health-care workers (HCWs) exposed to blood of persons infected with HIV.
Methods. HCWs from over 300 health-care institutions throughout the United States who have parenteral, mucous-membrane, or non-intact skin exposures to the blood of persons infected with HIV are tested for HIV antibody at baseline, 6 weeks, 3, 6, and 12 months after exposure. On entry epidemiologic data and confidential risk factor information are collected from each HCW.
Results. As of December 31, 1988, 1107 HCWs were tested at least 6 months after exposure. Of 982 HCWs with needlesticks (n=888) or cuts with sharp objects (n=94), 4 were positive for HIV antibody (4/982 = 0.41%; upper bound of 95% confidence interval (CI)= 0.93%). One HCW had no baseline specimen available for testing, and thus occupational acquisition could not be documented. The remaining three workers received a needlestick injury, experienced an acute retroviral syndrome, and seroconverted to HIV within 6 months postexposure. Two of the three HCWs who seroconverted were injured by a co-worker during a resuscitation procedure. Of the remaining 125 HCWs with blood contamination of mucous-membranes (n=53) or broken skin (n=72), none seroconverted (0/125=0%; upper bound of 95% CI=2.35%).
Conclusions. In this ongoing surveillance of HCWs exposed to HIV-infected blood, the risk of seroconversion following parenteral exposure has consistently remained less than 1%. Efforts must be made to prevent exposure to blood to further minimize the risk of HIV transmission to HCWs.

W.A.0.2

SURVEILLANCE UPDATE: HEALTH-CARE WORKERS WITH AIDS

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Objective. To characterize health-care workers (HCWs) with AIDS in the United States and evaluate the role of occupational transmission of HIV.
Methods. HCWs with AIDS reported to CDC who have no identified risk (NIR) are investigated by health departments using a standard protocol.
Results. As of January 16, 1989, 3,550 HCWs with AIDS had been reported. HCWs were less likely than other AIDS patients to report IV-drug use (7% vs 21%, p<0.001) and more likely to report male homosexual contact (73% vs 62%, p<0.001) or have NIR (6% vs 3%, p<0.001). One HCW with AIDS has had a documented seroconversion to HIV after a needlestick exposure to blood from an AIDS patient. Of the 203 HCWs with NIR, 125 (61%) are under investigation; 30 (15%) died, refused interview or were lost to followup; and 48 (24%) had no risk factor identified after investigation. Compared with the 6.8 million HCWs in the U.S., the 48 investigated HCWs with NIR were more likely to be black (44% vs 13%) and less likely to be women (29% vs 77%). They comprised 8 physicians, 1 dentist, 5 nurses, 1 paramedic, 11 aides/orderlies, 2 respiratory therapists, 5 clinical lab technicians, 9 maintenance workers, 2 morticians, and 4 others with no patient contact. Twenty (42%) of the 48 HCWs reported needlestick and/or mucous membrane or non-intact skin exposures to blood or other body fluids; in none was the HIV status of the patient known.
Conclusion. Most HCWs have an identified risk for HIV infection; the others probably represent a mix of persons with unreported behavioral risk factors or unrecognized occupational exposures.

W.A.0.3

PREVALENCE OF HIV INFECTION AMONG PERSONS EMPLOYED IN MEDICINE AND HEALTH OCCUPATIONS

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Objective To examine the association between employment in Medicine and Health (MH) occupations and infection with HIV.
Methods Test results for HIV-Ab have been received on 545,114 US Army Reserve Component personnel. These individuals spend about 10% of their days in a military environment, and are employed in civilian occupations.
Results When examined by Dept of Labor occupational categories, those employed in the medicine and health (MH) field had a prevalence of 2.46 (per 1000), versus 1.51 for those not so employed. The 2397 white, black, and Hispanic male and female physicians and dentists were all HIV-Ab negative. The prevalence among white females (n=4291) in MH jobs was 0.23, compared to 0.23 for those in other occupations. The prevalence for black females in MH occupations (n=1714) was 1.23, and 1.84 in other occupations. Among white and black single males, the prevalence was significantly higher for registered nurses (RN), medical technicians (MT), and not otherwise specified medical occupations (NOS). The prevalence among single white males was 7.50, and the prevalence ratio (PR and 95% confidence interval), versus those not employed in MH occupations, was 7.26 (3.71, 14.21). In single black males the prevalence was 31.60, with a PR of 4.76 (2.90, 7.82). Prevalence was not significantly higher for 4569 ever-married black, white, and Hispanic males employed in RN, MT, or NOS jobs; nor among 2738 ever- and never-married black, white, and Hispanic males in all other MH fields.
Conclusions The higher prevalence associated with employment in MH fields is largely restricted to single white and black males employed in the RN, MT, or NOS areas. The absolute prevalence is much higher among single black males, but the PR is higher for single white males. These patterns of HIV infection do not support the hypothesis of an occupational risk of infection that is detectable by prevalence surveys.

W.A.0.4

ADHERENCE TO UNIVERSAL PRECAUTIONS BY HCWs IN AN INNER-CITY EMERGENCY DEPARTMENT WITH HIGH HIV-1 PREVALENCE AMONG PATIENTS

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Objective: To assess adherence to "Universal Precautions" (UP) among health care workers (HCWs) in an emergency department (ED) with high prevalence (6.0%) of HIV-1 among its patient population.
Methods: We prospectively observed 129 HCWs performing 1274 interventions on 151 consecutive patients requiring rapid interventions. Institution-wide and departmental instructional sessions on UP were held for HCWs throughout the year prior to the initiation of the study. Interventions were classified as major (42.5%) or minor (57.4%) depending on the potential for exposure.
Results: Overall adherence was adequate during 16.5% of major interventions and 64.8% of minor interventions (p<.05). During minor interventions, adherence was the same for trauma presentations (62.9%) and non-trauma presentations (67.0%) (p>.05). However, in the presence of profuse bleeding, adherence during minor interventions declined to 19.7% in traumatic presentations (p<.05) and 0.0% in non-trauma presentations (p <.05). During major procedures, adherence was 34.0% with traumatic presentations and 0.8% with non-trauma presentations (p <.05). The overall adherence rate for HCWs was: Residents 58%; Attendings 38%; Consultants 43%; Nursing staff 44%; Paramedics 8%; X-ray technicians 14%; and Housekeeping 91%. When precautions were inadequate, surgical masks were used least (22.4%), followed by eye protection (45.0%), gowns (49.6%) and gloves (73.7%). A questionnaire administered following the study period revealed that the most common reasons given for not adhering to UP was lack of time to put on protective materials (47%), and interference in performance of procedures (33%).
Conclusion: HCWs in this setting are not taking adequate precautions. Other strategies for implementing Universal Precautions need to be developed.

W.A.0.5

NOSOCOMIAL OUTBREAK OF HIV INFECTION IN ELISTA, USSR

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A total of 41 out of 2504 children and 8 of 115 mothers of children who had been admitted to hospital in Elista Town (Kalmykia Republic, USSR) during the period from May until December 1988 were found HIV antibody positive by ELISA and Western Blot testing. No other HIV infection was identified among 20,000 inhabitants of Elista including 948 hospital workers and 1032 members of families of infected persons. Only 1 of 9 sexual partners of the 8 infected women was HIV positive. This man lived and was possibly infected in Africa in 1981. A child of his HIV seropositive wife died in hospital in May 1988 and is thought to have been the first infant in a chain of HIV infection. Other seropositive children are assumed to have been infected during overlapping admissions to the hospital. The virus appears to have been transmitted in hospital by use of one syringe into which blood was aspirated between intravenous injections. Four mothers for whom no risk factors were identified appear to have become HIV infected through blood of their children. It is hypothesized that the virus was transmitted from bleeding oral lesions in in children treated with heavy doses of antibiotic to bleeding fissures on mothers breasts during breast feeding. Results of the final analysis of the investigation will be reported.

Transmission hétérosexuelle
Heterosexual Transmission

W.A.O.6 HETEROSEXUAL TRANSMISSION

Chairpersons: Frank Plummer (Nairobi, Kenya), Martin Schechter (Vancouver, Canada)
Panelists: Marie Laga (Antwerp, Belgium), Nzilambi Nzila (Zaire, Africa)
Nancy Padian (San Francisco, USA)

Although a clear picture is emerging of the epidemiology of HIV transmission in gay men, our understanding of heterosexual transmission is not so consistent or well developed. The prevention of heterosexual HIV spread is clearly one of the critical global challenges in this epidemic. This symposium will attempt to review what is known and what is not known about heterosexual transmission and to generate consensus on some outstanding issues. Topics to be covered include the efficiency of male-to-female and female-to-male contact and current estimates of the transmission probabilities of various forms of contact. Several 'cofactors' operating at the level of the genital tract or at the systemic level have been implicated as influencing HIV transmission. These can act by increasing the infectivity of the index partner and/or the susceptibility of the secondary partner. In this regard, the role of other sexually transmitted diseases including genital ulcer disease and chlamydial cervicitis, the role of oral contraceptives, the role of circumcision, and the role of stage of HIV infection and viremia in the transmitter will be discussed among others. The scientific study of HIV transmission has been hindered by several methodologic problems which will be reviewed. These include difficulties in ascertaining the direction of transmission in couples where both are seropositive at entry into a study, obtaining reliable and valid measurements of sexual exposures (types of sexual practices, frequency of exposure, use of condoms, etc), and controlling for the confounding effects of other exposures. Solutions to these problems will enhance our ability to characterize the role of already identified and yet to be identified factors which increase the risk of HIV transmission. Knowledge of these factors will be critical for predicting the likelihood of future heterosexual epidemics and more importantly, for identifying potential intervention strategies aimed at the control of HIV transmission.

Études séro-épidémiologiques des femmes enceintes
Seroepidemiologic Studies in Childbearing Woman

W.A.0.7

STATEWIDE HIV-1 SEROLOGIC SURVEY OF NEWBORNS WITH RESULTANT CHANGES IN SCREENING AND DELIVERY SYSTEM POLICY

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Objective. To determine the prevalence of HIV-1 in New Jersey mothers and infants by blind testing for anti HIV-1 antibodies in newborns.
Methods. Filter paper blots of blood from all newborn infants in New Jersey are tested for metabolic diseases. These specimens were also tested for anti HIV-1 by EIA tests, with repeatedly EIA positive specimens tested by immunoblot tests during July-September 1988.
Results. 144, or 0.49% of 29,309 newborns tested positive for anti HIV-1. Extrapolating to annual births, 516 and 660 HIV-1 infected women are giving birth to infants annually in New Jersey a state of 7.4 million population. Rates were particularly high, 1.58% and 1.27% in the two counties with the highest AIDS case rates, and most AIDS cases related to intravenous drug abuse.
Conclusion. Estimating that about 1/3-1/2 of infants born of HIV-1 infected mothers will be infected themselves, about 200-300 HIV-1 infected infants are being born annually in New Jersey. In view of the criticality of early medical intervention, a policy of nonblinded neonatal HIV-1 testing of all infants appears indicated by these findings, as is a specialized system of counseling and health care for HIV-1 positive infants and mothers. Extrapolating this same rate of infection to all women of childbearing age in New Jersey would suggest that there are 8000-9000 infected women in New Jersey, the state with the second highest AIDS incidence in the United States. This is lower than previous estimates.

W.A.0.8

HIV INFECTION IN ADOLESCENT CHILDBEARING WOMEN

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Objective. To determine age-specific rates and trends of HIV infection in adolescent childbearing women in New York State.
Methods. An ongoing blind newborn HIV seroprevalence study tested 276,606 newborns during a 12-month period.
Results. The childbearing women infection rate was 0.66 percent (New York City = 1.3%; other New York State = .16%). Rates were lower among women less than 20 years (.43%) compared to 20-29 years (.67%) and 30-39 years (.69%). Rates for adolescent childbearing women are: 15 years (0.8%); 16 years (.30%); 17 years (.32%); 18 years (.39%); 19 years (.62%). Rates for adolescents were 0.89% for Hispanics, 0.59% for Blacks and 0.1% for Whites. Rates of adolescents in New York City were 3 1/2 times higher than for the rest of New York State. Prevalence increased with each year of age.
Conclusion. The survey documents a large number of HIV infected adolescents (117) and provides information on the extent of the problem not available from AIDS case surveillance.

W.A.0.9

MEASUREMENT OF HIV SEROPREVALENCE IN CHILDBEARING WOMEN IN LONDON.

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Objective To asses the efficacy of a method of large scale anonymous screening for evidence of HIV 1 infection in childbearing women using a cost-effective modification of a sensitive assay.
Methods Neonatal whole blood dried on filter- paper discs, taken for phenylketonuria assay (PKU), were used as described by Dr R.Hoff et al.. The blood was eluted from the discs providing a 100µl sample of an approximate 1 : 60 dilution of serum. This was tested for anti-HIV 1 using a modification of the Fujirebio gelatin particle agglutination assay (Serodia HIV). Reactive samples were titrated in the modified Serodia-HIV assay and tested in a Western Blot assay capable of using small volumes. The data generated were compared with the prevalence data collated by the Communicable Diseases Surveillance Centre PHLS..
Results Testing the eluted samples with modified Serodia HIV and Western Blot gave a sensitivity equivalent to that obtained when testing neat sera in current ELISAs (non-recombinant). In the first six months, up to Jan.1989, 46,600 PKU samples have been assayed. Of 10 repeatably reactive eluates 9 were unequivocally confirmed as anti-HIV 1 positive by Western Blot. This is a prevalence rate of 0.02%.
Conclusions The method we describe is accurate and inexpensive (total cost £0.125 per sample). It is an extremely simple way of ensuring total anonymity in testing and is suitable for widespread use.

W.A.0.10

HIV INFECTION IN PREGNANT WOMEN AND PERINATAL TRANSMISSION IN SWEDEN

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Screening for HIV in pregnant women is an important instrument to follow heterosexual transmission, and it gives valuable epidemiological information. In Sept 1 1987 a national HIV screening program was started in pregnant women in Sweden, and the acceptance rate is high.
Method: Pregnant women are offered an HIV test at their first visit to the antenatal care unit. A central reporting system has been set up, and the number of tests and HIV positive women are reported.The children are followed up.
Results: As of Nov 30 1988, 17 out of 130 508 tests were HIV positive(0.013%). 12/17 women were heterosexually infected. Eight women elected abortion, nine continued pregnancy. Apart from the screening there are another 22 children in Sweden born to HIV positive mothers. 2/27mothers have died of AIDS, 7 have HIV-related symptoms, 0-68 months after delivery. The median age of the children is 33 (0-78) months. Eight children (7 >15 months) are known to be HIV infected, 3 of whom have got AIDS (1 died). Another 14 children are more than 15 months old, clinically well and HIV negative (not infected). Eight children are less than 15 months old and clinically well (indeterminate).
Conclusion: HIV screening in pregnancy gives the families the possibility to elect abortion and to avoid future pregnancies. It is also an important part of the national HIV surveillance. The rate of infection in pregnant women in Sweden was found to be 0.013% and the perinatal transmission rate was 33%.

W.A.0.11

HIV SCREENING PROGRAM AT A LOS ANGELES PRENATAL/FAMILY PLANNING CENTER

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Objective: To evaluate HIV seroprevalence and the efficacy of a selective voluntary HIV testing program at a public prenatal (PN) and family planning (FP) clinic.
Methods: Between March and September 1988, blood specimens remaining from routine testing of 3,000 women, who were mostly Hispanic (87%) and of recent arrival to the U.S. (median 5 yrs), were tested for HIV antibody after all identifiers were removed.
Results: Four women (0.13%) tested positive (3/1801 Pn and 1/1167 FP). Three reported no risk factors; one reported a history of syphilis in the past year. Voluntary HIV testing was offered to women who reported having risk factors for HIV infection on interview. Only 14% (96/685) of clients selectively offered testing, 28% (14/50) of clients determined by investigators to be at highest risk of infection, 27% (16/59) of women who judged that they had had a chance of being exposed to HIV, and none of 4 women positive by blinded testing chose voluntary testing. Black women were 4.2 times more likely than Hispanic or White women to choose voluntary testing (p 0.001); the effect of race on acceptance of testing was greatest for lower risk women.
Conclusion: While few women in this clinic population are infected with HIV, higher risk women were not effectively persuaded to be tested through this program of voluntary HIV testing for selected persons. The design of voluntary testing programs should consider strategies to increase acceptance of testing, especially by persons at high risk, as well as local seroprevalence.

W.A.0.12

NATIONAL SURVEYS OF HIV SEROPREVALENCE IN WOMEN DELIVERING LIVE CHILDREN IN THE UNITED STATES.

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Objective. To obtain unbiased estimates of HIV prevalence in childbearing women by geographic area and demographic subgroup, and to monitor trends of infection over time.
Methods. In statewide surveys, neonatal blood specimens collected on filter paper for neonatal screening programs are tested for maternal antibody to HIV by EIA; repeatedly reactive specimens are confirmed by Western blot. Laboratories participate in CDC's Program of Quality Assurance for HIV Seropositivity of Dried Blood Spots. Information on month and year of infant birth, and in most states county of mother's residence and hospital location, and mother's age- and/or racial/ethnic-group is linked to test results. Information identifying individuals or hospitals is not retained.
Results. Thus far, 18 of 44 participating States and territories in 4 regions have reported provisional statewide seroprevalence rates from complete or partially complete surveys: Northeast 0.03% - 0.66%; South 0.09% - 0.46%; North Central 0.06% - 0.09%, and Mountain 0.03% - 0.04%.
Conclusion. The prevalence of HIV in women delivering live children varies by state and region. The unbiased estimates of prevalence obtained in this defined population at risk are important for developing and directing education/prevention programs, monitoring heterosexual transmission, validating completeness of AIDS case reporting, and for projecting the number of women and children with AIDS needing health care.

Incidence et mortalité du SIDA
AIDS Incidence and Mortality

W.A.0.13

ARE AIDS CASES AMONG HOMOSEXUAL MALES LEVELING?

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Objective. To analyse trends in reported cases of AIDS among homosexual and bisexual males in major metropolitan areas of the U.S.
Methods. We analyzed AIDS cases in NYC, SF, and LA and the rest of the U.S. among homosexuals and bisexuals (HB) without intravenous drug use (IVDU) from 1982 through 1988 by 6-month intervals, by race, by date of diagnosis, adjusting for reporting delay; and by date of report.
Results. The rate of increase for reported AIDS cases among HB has slowed in the U.S., earlier in NY, SF, and NYC (by 1987) than the rest of the U.S; the slowing has occurred for both whites and other races in most areas.

Percent change from previous 6 mo.-period in AIDS among HB (no IVDU) by date of diagnosis, adjusted for reporting delay

	1985(1)	(2)	1986(1)	(2)	1987(1)	(2)	1988 (1)
New York City	+32	+4	+26	+17	+2	-4	+11
Los Angeles	+66	+28	+32	+14	+14	0	-6
San Francisco	+30	+16	+28	+24	+10	-2	+8
U.S. (other)	+55	+40	+28	+29	+34	+11	+10

When analyzed by date of report, leveling is less apparent.
Conclusion. Reported AIDS cases among HB males are leveling across the U.S., noted earlier in selected metropolitan areas. Underreporting, differences in medical practices, early saturation of infection, and behavioral changes should each be evaluated as contributing factors.

W.A.0.14

HETEROSEXUAL AIDS IN THE PROVINCE OF QUEBEC

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Objective: To characterize the epidemiology of AIDS among heterosexual persons resident in the province of Québec, Canada.
Methods: Surveillance for AIDS was carried out since 1983; reports were evaluated using the WHO epidemiologic case criteria. Further data was collected for AIDS cases with heterosexual contact indicated as the source.
Results: From 1979 to January 15, 1989, 743 cases of AIDS were reported in Québec; 78 (10.5%) were among women and 30 (4.0%) among children, compared to 2.8% and 0.6% respectively for the rest of Canada. One-hundred-and-forty-six (19.6%) cases were due to heterosexual contact, for a rate of 21.9 cases per million population versus 1.7 for the rest of Canada. Seventy-nine percent of the excess in Québec can be explained by the markedly increased risk of AIDS among heterosexual immigrants from Pattern II countries, mostly Haiti: the incidence rate of AIDS in 1988 among non-homosexual Haitians in Québec was 710 as compared to 4.2 per million population for other non-homosexual Québecers, for a relative rate of 170. The rate of AIDS among heterosexual partners of high-risk persons was also higher in Québec: of the 37 cases reported in this group, 25 (68%) were related to sexual contact with persons from Pattern II countries, 13 having had exposure in Québec and 12 in the endemic regions themselves.
Conclusion: The rate of AIDS among heterosexuals in Québec is the highest in Canada. Most of the excess can be explained by the high rate of AIDS among heterosexual persons from Pattern II countries and among other heterosexuals with sexual partners from Pattern II countries.

W.A.0.15

SURVEILLANCE OF HETEROSEXUALLY ACQUIRED AIDS, U.S.A.

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Objective. To monitor temporal and demographic trends in the United States for adults with heterosexually acquired (HA)-AIDS.
Methods. HA-AIDS cases reported to CDC include heterosexual persons (exclusive of IV-drug users or hemophilics) who (1) report sexual contact (SC) with a person with or at increased risk for HIV infection or (2) were born in areas with high rates of HA-HIV infection, such as Haiti or Africa.
Results. As of January 16, 1989, 3654 HA-AIDS cases were reported: 2390 (65%) in persons with SC and 1264 (35%) in persons from endemic countries (98% of whom were Haitian). Although the proportion of HA-AIDS cases has remained relatively stable (ranging from 5.2% of all adults reported in 1983 to 4.8% in 1988), the composition of the group has changed: Haitians/Africans accounted for 79% of the 107 HA cases reported in 1983, but only 25% of the 1543 cases in 1988. Excluding homosexual men, SC cases have increased from 0.5% of men with AIDS reported in 1983 to 3.9% in 1988 ($p<0.001$) and from 14.8% of women to 25.6% ($p<0.001$). Most SC cases continue to be women (75%) and blacks or Hispanics (70%). Among SC cases, women are significantly younger than men (34 years vs 40 years, mean age). Both men and women reported SC with IV-drug users with equal frequency (71%). Men who reported SC were less likely than women (18% vs 49%) to reside in New York or New Jersy, which account for 63% of AIDS cases in heterosexual IV-drug users.
Conclusion. HA-AIDS remains largely focused in demographically distinct population groups. The proportion attributable to SC is increasing.

W.A.0.16

IMPACT OF THE HIV EPIDEMIC ON MORTALITY TRENDS IN MEN 25-44 YEARS OF AGE, UNITED STATES

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Objective. To identify causes of death that are increasing among young adult men in association with the HIV epidemic in the United States.
Methods. We analyzed national death records for 1980-1986 (underlying and multiple causes), compared cause-specific mortality trends in states with high versus low AIDS incidence, and calculated excess deaths in 1986 based on 1983 rates (the nadir of total mortality for men 25-44 years of age).
Results. Following decades of decline, national mortality rates for men 25-44 years of age increased from 212.1 in 1983 to 233.9 deaths/100,000 in 1986. By 1986, conditions in the AIDS surveillance definition represented 9% of deaths, with mortality rates ranging from 45.8 in five states with the highest AIDS incidence to 6.2 deaths/100,000 in 21 states with the lowest AIDS incidence. Similarly, rates for deaths due to infections not in the AIDS definition (including pneumonia, septicemia, and pulmonary tuberculosis), blood disorders, drug abuse, and unspecified causes increased more rapidly in states with high versus low incidence AIDS. This pattern was not observed for other cause groups, including cancers with a previously suggested link to HIV (oropharyngeal, anal/rectal, Hodgkins lymphoma). Of the 8,654 excess deaths in 1986 among causes that increased from 1983, 72% were attributed to conditions in the AIDS definition, 8% to other infections, 7% to drug abuse, and 6% to unspecified causes.
Conclusion. The HIV epidemic has led to an increase in diverse causes of death and to a reversal in mortality trends for young men.

W.A.0.17

NATIONAL SURVEILLANCE OF PERINATALLY-ACQUIRED AIDS, USA.

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Objectives. To examine temporal trends in perinatal AIDS (PA) cases.
Methods. Analysis of the 1046 PA cases reported to CDC from 1982-88.

Results:PA cases reported 1985-88	1985	1986	1987	1988
Number of cases newly reported in yr	105	160	256	449
% of cases meeting only 9/1987 defn	0%	0%	16%	44%
Number (%) of cases with age dx ≥5yrs	9(8%)	15(9%)	18(7%)	54(12%)
Median age at AIDS dx: overall	10 mo	12 mo	9 mo	14 mo
for cases meeting pre-1987 defn	10 mo	12 mo	8 mo	9 mo
for cases meeting 1987 defn only	—	—	18 mo	20 mo
Disease: % with P.carinii pneumonia	52%	46%	45%	31%
Median age at dx for PCP cases	6 mo	6 mo	5 mo	6 mo
Median age at dx for other cases	20 mo	18 mo	15 mo	19 mo
Residence: % from NY, NJ, or Florida	74%	64%	57%	60%
Maternal risk: % with hx IV drug use	58%	56%	53%	52%
Race/ethnicity: % Black or Hispanic	89%	87%	84%	81%

50% of cases were in boys, 50% in girls; there was no sex difference in age at diagnosis, disease presentation, or survival time after diagnosis.
Conclusion. PA yearly incidence is increasing; offspring of drug users remain the group most severely affected. More school-age children are being newly dx'd with PA, but since many newly infected children are born each year, the median age at dx has been fairly constant. Broadening of the case definition may have most affect on reportability of older children, who are less likely to present with opportunistic infections such as PCP.

W.A.0.18

THE RELATIVE IMPORTANCE OF AIDS AS A CAUSE OF DEATH IN PEDIATRIC AND YOUNG ADULT POPULATIONS IN THE U.S.1980-1987.

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Objective. To assess the impact of AIDS relative to other leading causes of death in persons less than 25 years of age in the U.S.
Methods. Yearly AIDS mortality rates computed from CDC national surveillance data were compared with rates for the leading causes of death obtained from national vital statistics data for the age groups <1 year, 1-4 years, 5-14 years, and 15-24 years for 1980-1986 and estimated for 1987.
Results. For <1 year olds, the mortality rate (per 100,000 live births) for AIDS rose from 0.028 in 1980 to 1.3 in 1986 and 2.02 in 1987. By 1987, AIDS is estimated to have been the 30th leading cause of death for this age group. Among 1-4 year olds, the rate (per 100,000) of AIDS mortality was 0.015 in 1981 and rose to 0.445 in 1986, when AIDS became the 10th leading cause of death in this age group, and 0.767 in 1987 when it is estimated to have been the 9th leading cause of death. In the 5-14 year age group the rate rose progressively to 0.155 in 1987 when AIDS is estimated to have been the 15th leading cause of death. Yearly rates for the 15-24 year age group were 1.02 in 1986 and 1.33 in 1987, substantially higher than for younger age groups, except for the <1 year olds. Among 15-24 year olds, AIDS was the 10th leading cause of death as early as 1984 and is estimated to have been the 6th leading cause in 1987.
Conclusion. Rates of AIDS mortality are increasing in the pediatric and young adult populations in the U.S. AIDS is now one of the ten leading causes of death among 1-4 year olds and 15-24 year olds in the U.S.

L'annonce aux partenaires
Partner Notification

W.A.0.19

EXPERIENCE OF PARTNER NOTIFICATION AMONG HIV INFECTED HETEROSEXUALS IN BRUSSELS

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During a 2 year period, 105 out of 289 heterosexual HIV seropositive patients were enrolled in a partner notification study, consisting in notification, counseling and testing (by Elisa and Western blot) of sexual partners. Fourty-five out of 105 (43%) were eligible. Reasons for withdrawing from the study were : refusal of cooperating (47%), partners out of Belgium (37%), miscellaneous (16%). The 45 index cases allowed notification of 92 heterosexual partners. The index persons were : 25 males, 20 females; mean age was 34,8y (range: 19-66); 35 Caucasians, 10 black Africans. Sexual partners were stratified according to their matrimonial status or relationship to index case as married (31%), regular sexual partner (18%), occasional partner (51%). Only 9 partners were using condoms (10%) during their sexual intercourse with index cases. Overall HIV seroprevalence was 36/92 (39%). Among the various groups of partners, seroprevalence was respectively : spouses (57%), regular partners (35%), occasional partners (30%). All partners received information about risk reduction procedures and health services in case of seropositivity.

This study suggests that partner notification is efficient as a technique aimed to inform, counsel and test heterosexual partners who ignore their exposure to HIV. Further studies are needed to assess the impact of partner notification on avoidance of risk behaviour and on reduction of further transmission of HIV, which is the first goal of the technique.

W.A.0.21

RESULTS AND BENEFIT-COST ANALYSIS OF PROVIDER-ASSISTED HIV PARTNER NOTIFICATION AND REFERRAL Spencer, N; Raevsky, C. Wolf, F; STD/AIDS Section, Colorado Department of Health, Denver, Colorado USA.

Objective: Evaluate results, benefits and costs of provider-assisted partner notification and referral to prevent HIV infection.

Methods: HIV Ab positives were interviewed by Disease Intervention Specialists (DIS) to notify sex/needle share partners of exposure. Partners were offered risk reduction counseling and HIV Ab testing. Program costs for personnel, travel and supplies were calculated as were local medical costs for the estimated number of AIDS cases prevented through this intervention.

Assumptions: HIV infection would have remained unrecongnized in newly identified cases and each would have transmitted to one susceptible in the course of a lifetime; 50% of HIV infected individuals develop AIDS.

Results: 172 HIV Ab positives were interviewed. They identified 289 local unsafe sex/needle share partners and suspects, of which they chose to self-refer 25%. 209 (72%) were located. 25 (18%) located partners were previously tested positive, 15 (10%) were previously tested negative. 111 (73%) had not yet been tested and 105 (95%) of these accepted new counseling and 72 (65%) also accepted new testing. 11 new positives were identified. Program costs during 1988 totalled $27,050 and program benefits totalled $194,700. Benefit-cost ratio was 7.2.

Conculsion: Provider assisted HIV partner notification and referral has high partner acceptance of new testing (65%), identifies previously undetected infections in potential transmitters, (15%) and has a high benefit-cost ratio (7.2).

W.A.0.23

ASSESSMENT OF THE DEVELOPMENT AND IMPLEMENTATION OF STATE AIDS/HIV PARTER NOTIFICATION PROGRAMS: FIVE CASE STUDIES

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Objective. To gather information on the characteristics, preliminary results, and apparent benefits of existing partner notification programs.

Methods. A case study methodology was used to collect detailed information on the design and operation of five state/local programs for notifying, educating, and counseling the sex and needle-sharing partners of individuals testing antibody-positive for HIV. The sites selected--Colorado, Florida, Virginia, San Francisco, and Seattle-King County, Washington--represent a range of approaches that, in combination, have much to teach others embarking on establishment ofpartner notification programs.

Results. The study confirmed that current State and local realities determine both the mix of methodologies being used in HIV prevention/education programs and also the particular approach being taken to notify partners. Cost-effectiveness balanced by a concern for public health were also major factors.

Conclusion. A generic planning model for initiating partner notification activities was developed from the comparative analysis of the five sites. The model highlights various steps in three phases of planning--epidemiology assessment, policy development, and program implementation. This model will be exhibited.

W.A.0.20

PARTNER ACCEPTABILITY OF HEALTH DEPARTMENT NOTIFICATION OF HIV EXPOSURE, SOUTH CAROLINA

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Objective. To determine partners' acceptability of notification by the health department of their exposure to human immunodeficiency virus (HIV).

Methods. An anonymous questionnaire administered to sex or IV drug contacts 2 to 24 months after the health department notified them of exposure to HIV.

Results. Available partners (79 persons) of HIV positive persons in one health district (6 counties) completed the questionnaire. Of the 79, 61(77%) were male and 18(23%) were female; 57(72%) black, 22(28%) white; 60(76%) homo/bisexual, 15(19%) heterosexual, and 4(5%) IV drug user. Ages ranged from 16 to 71 years (median 28 yrs). Only 9(11%), thought they had been exposed to HIV before health department notification. After notification and testing, 20(25%) were found to be HIV antibody positive. Of the 20, 14(70%) were male and 6(30%) were female. When asked if they felt the health department did the right thing in telling them about exposure, 68(86%) responded yes, 0(0%) no, and 11(14%) not sure. When asked if the health department should keep telling people when they have been exposed to HIV, 70(89%) responded yes, 4(5%) no, and 5(6%) not sure. When asked if being told they were exposed to HIV was helpful, 64(81%) responded yes, 3(4%) no, and 11(14%) not sure. Responses were similar for homo/bisexual men and heterosexuals, males and females, whites and blacks, and HIV positives and negatives.

Conclusion. Health department notification is highly acceptable to health department clients exposed to HIV in this rural South Carolina district.

W.A.0.22

PARTNER NOTIFICATION FOR HIV PREVENTION: CURRENT STATE POLICY IN THE UNITED STATES

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Objective. Partner notification (PN), used for many years in STD control programs, has been broadened to include the notification of sex and needle-sharing partners of individuals infected with HIV. PN encompasses two distinct strategies, patient referral and provider referral; all PN programs are based upon some combination of these two strategies.

Methods. In the AIDS prevention projects supported by CDC, states have been required to implement procedures for confidential PN. State programs were canvased to determine the extent of their current PN activities.

Results. All 50 states, Puerto Rico, the Virgin Islands, and the District of Columbia currently counsel HIV infected clients about the need to inform sex and needle sharing partners of their risk for infection (patient referral) and offer provider referral upon request by clients. Fifteen states have PN programs that encourage provider referral for all clients. Data available from 13 states demonstrate seroprevalence among partners of individuals with HIV infection ranges from <1% to 16.4%. Infection among female sex partners of bisexual men ranges from 0-7%; infection among sex partners of IV drug users ranges from <1% to 15%.

Conclusions. Partner notification is being applied increasingly in HIV prevention programs in the US to identify individuals at risk for infection. Evaluations to measure the efficacy of these programs among different ethic/racial groups and for individuals with different risk behaviors are currently being developed by CDC.

W.A.0.24

COMBATTING AIDS WITH CONTACT TRACING

The Swedish Study Group on Contact Tracing for HIV Infection*

In the Swedish effort to combat HIV infection and AIDS, contact tracing is considered as a fundamental tool. It is seen as an integrated part of the total medical and psychological care for the patient. It is assumed to be an important element in the reduction of the spread of the disease, due to the behavioural change effect of counselling and to the finding of hitherto unknown infectives. It has also been suggested to be much more economical than screening programmes for finding infected individuals.

A collaborative study, including most of the centres involved in the care of HIV infected patients, has been initiated, with the scope of describing the effects of contact tracing, as well on the individual as on the spread of the disease. The study consists of a retrospective analysis of contact tracing results and a prospective study of behavioural changes in and positive/negative effects for the individual patients. Possible epidemiological inferences from contact tracing statistics are also studied.

Thus far, the following preliminary estimates of the results of contact tracing for HIV infection in Sweden have been made: on the average, each index patient gives rise to 1.5 identifiable contacts; most of these are tested and 80% have known test results. One third of these tests are positive. About 40% of positive individuals identified in this way are previously unknown to the health care system.

* presented by Dr. J. Giesecke, Dept. of Environmental Health & Disease Control, Karolinska Hospital, Stockholm, Sweden (coordinator of the project). The project has been financed by a grant from the Swedish insurance company AFA.

Test de dépistage du VIH/Questions en matière de politiques et de programmes
HIV Testing/Policy and Programme Issues

W.A.0.25 MANDATORY PREMARITAL HIV ANTIBODY TESTING: A TWELVE MONTH EXPERIENCE

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Objective. To evaluate the effectiveness of mandatory premarital HIV antibody testing as an AIDS intervention method. Methods. Effective January 1, 1988, all marriage licenses applicants in Illinois are required by state law to prove that they have been tested for the presence of HIV antibodies and that test results have been communicated to both parties to the proposed marriage. The age, race, sex and history of risk behavior of all persons with Western blot confirmed positive results are reported to the Illinois Department of Public Health although individual identifiers are not. The number of marriage licenses issued is reported to the IDPH Registry of Vital Statistics. Results. Twenty-six of 155,458 marriage license applicants were found to be positive (seroprevalence = .02%). Of these, 62% reported a history of risk behavior. This is the same rate as has been observed for voluntary blood donors in Illinois. At an estimated per-capita cost of $35, the cost of premarital testing is estimated at $5.4 million annually, or $217,641 per seropositive individual identified, compared with $770 per seropositive individual identified through the state's Counseling and Testing program. The number of marriage licenses issued in Illinois decreased by 22% when compared with the previous twelve month period. Conclusions. Mandatory premarital HIV antibody testing in Illinois has identified few seropositive individuals at an enormous cost. Counseling and testing and partner notification programs targeting persons at risk of infection are more cost-effective than widespread mandatory screening of low prevalence populations.

W.A.0.26 HIV ANTIBODY TESTING AMONG ADULTS IN THE UNITED STATES

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Objective. To determine awareness, levels, and circumstances of HIV antibody (ab) testing in the United States (U.S.) adult population.
Methods. Data collected during May-October, 1988 from 21,168 adults with the AIDS supplement to the National Health Interview Survey (NHIS) were examined. Results were weighted to provide national estimates.
Results. Three-quarters of U.S. adults had heard of the HIV ab test. Groups less aware of testing included blacks (66%), Hispanics (66%), those with little or no self-assessed knowledge about AIDS (56%), and those not completing high school (55%). Overall, 17% of adults reported ever taking the HIV ab test, with percent tested varying among population groups:

Group:	Males	Females	Whites	Blacks	Hispanics	Single	Increased risk
% Tested:	20%	13%	17%	14%	14%	23%	28%

Of those tested, 71% had been tested due to blood donation, 12% as part of another activity requiring testing (e.g., military physical), and 18% were tested voluntarily. In all groups, blood donation was the most common reason for testing. Those tested voluntarily were more likely to be single, to report knowing alot about AIDS, and report being at increased risk for HIV/AIDS than those tested for other reasons.
Conclusions. While awareness of HIV ab testing is generally high, it is relatively low in some important groups (e.g., minorities). One in 6 U.S. adults has been tested, primarily through blood donation. While many tested voluntarily appear to be in groups targeted for testing, a large proportion of these groups have not yet been tested.

W.A.0.27 HIV ANTIBODY STATUS AND BEHAVIOR CHANGE IN TWO COHORTS OF GAY MEN IN SAN FRANCISCO: THE SAN FRANCISCO MEN'S HEALTH STUDY (SFMHS) AND THE AIDS BEHAVIORAL RESEARCH PROJECT (ABRP)

Coates, Thomas J.; Ekstrand, M; Kegeles, SM; Stall, RD.
Center for AIDS Prevention Studies, UC San Francisco, CA, USA

Objective. To analyze the impact of knowledge of HIV antobody status on behavior change and distress in two cohorts of gay men in San Francisco.
Methods. The ABRP (N=415), a convenience sample surveyed annually since 1984, allowed us to examine the relationship between knowledge of serostatus and behavior change among individuals who chose to be tested and to receive their results using community resources. The SFMHS (N=519), recruited in 1984 using probability sampling, were tested but had the choice of learning their serostatus. This study allowed us to determine the relationship of serostatus knowledge, independent of serostatus, and behavior change.
Results. The majority of men in both studies had learned their serostatus by 1987 (ABRP= 56.7%; SFMHS=64.5%). After adjusting for other predictors (AIDS loss, AIDS prodromal symptoms, depression, age, anxiety), knowledge of positive serostatus was associated with significantly lower rates of unprotected anal intercourse insertive (ABRP adjusted odds ratio= .51, $p < .05$; SFMHS adjusted odds ratio= .50, $p < .05$), but not with lower rates of unprotected anal intercourse receptive or multiple partner sex. Men who were less depressed, reported fewer prodromal symptoms. Younger men were also likely to continue to practice unprotected anal intercourse receptive.
Conclusions. Knowledge of positive serostatus can lead to behavior change. These results may be enhanced when testing is confidential or anonymous and assurances of non-discrimination are legislated.

W.A.0.28 TARGETING AIDS PREVENTION TOWARDS HIV-INFECTED PERSONS. Do Prevention/Treatment Programs reduce transmission and improve the quality of life?

D P Francis*,
Gorman M*, Fenstersheib M**, Esposito A** Padian N**, Henke-Quinn W** , et al.*Centers for Disease Control, Berkeley, CA, *Rand Corporation, Santa Monica, CA **Santa Clara County Health Department, San Jose, CA, **Long Beach Department of Public Health, Long Beach, CA **University of California, San Francisco, CA

Objective. We report here the first attempt to field and evaluate a medical, behavioral and psychosocial follow-up program for HIV-positive persons.
Methods. In March 1988, the California Department of Health Services established two pilot AIDS Prevention and Follow-up Centers (APFC), one in Northern California (San Jose) and one in Southern California (Long Beach). Entry into the program, which provides medical/immunological evaluation together with behavioral and psychosocial evaluation and intervention at four month intervals, is open to any HIV-positive person. In addition to services provided at the clinic, personally assigned case managers make outside referrals to a variety of medical and social support programs. The knowledge, psychological adjustment and behavior of clients are measured through standardized questionnaires administered at entry into the program and at each follow-up visit. These include questions about high-risk behavior including sexual activity, needle/syringe sharing activity, drug/alcohol use, knowledge of serologic status of partners and the use of protective devices or materials. The emotional status of clients is measured using Beck's depression and hopelessness scales. The overall effect of the program is measured by comparing the various educational, behavioral and adjustment parameters at entry to those at various intervals after entry. In addition, the effect of a five week education course has been measured by comparing the knowledge, behaviors and emotional adjustment of those who have completed the course to those who have not.
Results. To date 459 persons have been entered into the program 62 have had two visits and 4 three visits. Most (95%) of these are men, most report homosexual activity as their risk behavior for infection, and most (69%) are white.
Conclusion. 1. It has been suggested that both public and personal benefits accrue by establishing long-term follow-up programs for HIV-positive persons which provide medical, behavioral, psychosocial and case management services (Francis, et. al., JAMA, in press). 2. Although second visit follow-up is incomplete, success has been demonstrated by high recruitment and follow-up visits.

W.A.0.29 HIV EPIDEMIOLOGY IN SWEDEN

Böttiger, Margareta
National Bacteriological Laboratory, Stockholm, Sweden

Objective. To follow the HIV epidemic in Sweden and evaluate the impact of preventive measures.
Methods. Establishing and evaluation of report systems and screening programs for surveillance of HIV-infected persons and other sexually transmitted and blood-borne diseases. Main surveillance systems comprise: Reports of HIV-positive persons, Reports of tests and categories of persons tested from laboratories, Surveillance of pregnant women, persons from high endemic areas, STD clinics, centers for IV drug users, blood donors, etc. From 1984 to 1989, 1 million tests (excluding blood donors) were reported (population 8.4 million). Over 20% of the sexually active population may be tested.
Results. Up to 1989, 2,009 persons were reported as HIV-positive, half of them were homosexual men,one quarter IV drug users, close to 200 infected by blood products and the rest mainly heterosexually infected. Five perinatally infected children were seen. Current trends are increasing homosexual transmission, continuous but low spread among IV drug users, and that 1/10,000 of new blood donors and 1/10,000 of pregnant women are seropositive.
Conclusion. Even in a country with comparatively low prevalence of HIV and high ambition to combat AIDS/HIV, HIV continues to disseminate. Efforts to prevent and analyse the course of events must continue.

W.A.0.30 RISK FACTORS AND HIV SEROPREVALENCE IN SCREENING U.S. IMMIGRATION APPLICANTS - 1988

Sankary, Timothy, AIDS Prevention Center, San Francisco, California, USA.

Objective. To assess the demographics, risk factors and seroprevalence of HIV infection in U.S. immigration applicants.
Methods. We surveyed and conducted physical exams on 3266 consecutive applicants for U.S. immigration in 1988 who were required to have HIV antibody and syphilis tests as part of their application. (72% male, 28% female with a mean age of 29.4 +/- 9.8 years, median age 27, mode 22; 88% hispanic, 4.5% asian, and 6.4% other non-white; country of origin was Mexico 56%, El Salvador 15%, Guatemala 6%, Phillipines 4%, Nicaragua 3%, Peru 3%, Other 14%).
Results. The sample was predominantly heterosexual (99%) with 36% married, 3% divorced, 42% unattached singles and 20% attached to one partner. None were hemophiliacs, 2% had received transfusions, 0.1% had abused IV drugs. Last sexual intercourse was a mean of 225 +/-904 days, mean 15, mode 1 day. Approximately 69% had sex in the last 60 days and 75% had sex in the last 90 days. Only 8.6% had used a condom during the last sex. Of those, 19% had unprotected intercourse in the last 60 days. The men had a mean number of 5.9 female partners in the last 5 years and 8.9 in the last 10 years, while the women had a mean number of 1.6 men in the last 5 yrs and 2.1 men in the last 10 yrs. 12% reported having high-risk partners (all prostitutes, 62% local, 38% foreign) and 20% had them in the last 60 days while only 37% used condoms. Approximately 1.7% had serologic evidence of syphilis (RPR+,FTA+) and an additional 1% gave a history of syphilis in the past, while 1.5% reported past gonorrhea. The RPR test had 6/61 (10%) false positives when confirmed by FTA. The ELISA HIV antibody test (Abbott) showed 33 reactive specimens for which 10/33 (30%) were confirmed as positive by Western Blot (Dupont) for an overall seropositive rate of 3 per 1000. The 10 men seropositives: 1 gay, 1 bisexual, 1 heterosexual IV drug user, 1 heterosexual West African, and 6 heterosexual men with no known risk factors.
Conclusion. Applicants for U.S. immigration represent a low-risk population. Mass screening tends to ignore the large percentage of recent sexual contacts within the seroconversion window. The common use of prostitutes without condoms in this population indicates a need for better health education.

Côntrole de l'épidémie de VIH
Monitoring the HIV Epidemic

Th.A.O.1 MONITORING THE HIV EPIDEMIC

Chairpersons: James Chin (Geneva, Switzerland), Timothy J. Dondero (Atlanta, USA)
Panelists: O. Noel Gill (London, United Kingdom), Steve Lwanga (Geneva, Switzerland), Lloyd Novick (Albany, USA)

Increasingly, countries are conducting or planning HIV serologic surveys to help health officials assess and monitor the changing patterns and spread of the epidemic. Survey approaches vary but sentinel surveillance, in which levels and trends of HIV infection are tracked in selected accessible subpopulations, is emerging as a practical approach to monitor the various patterns of HIV spread in the population at large. In the roundtable, a panel of five specialists in HIV serosurveillance will discuss issues related to HIV surveys and reflect on the experience to date. The topics will include 1) the needs for and uses of serosurveillance; 2) surveys in sentinel populations - choice and implications of the populations selected; advantages, disadvantages, and legal/ethical aspects of anonymous unlinked (blinded) surveys compared with surveys in groups who volunteer; interpretation of data from and biases in sentinel populations; and 3) surveys using probability samples of the population - advantages, disadvantages, and feasibility. Time will be reserved for audience participation in follow up discussions.

Modélisation mathématique
Mathematical Modelling

Th.A.0.2 MATHEMATICAL MODELLING

Chairpersons: Roy M. Anderson (London, United Kingdom), Ron Brookmeyer (Baltimore, USA)
Panelists: Carlos Castillo-Chavez (Ithaca, USA), James Curran (Atlanta, USA), John Koran (Atlanta, USA), G. Medley (London, United Kingdom), Andrew Moss (San Francisco, USA)

The five papers in this session examine various aspects of the use of mathematical and statistical methods in the epidemiological study of HIV and AIDS. The topics include the use of statistical methods to make short term (one to two years) projections of the future incidence of AIDS, in back calculation of the number of infecteds underlying a given AIDS cases notification pattern and to estimate the incubation period of the disease in different age classes and at risk groups. Mathematical methods are described to investigate the transmission dynamics of HIV, its potential demographic impact in developing countries and the importance of heterogeneity in sexual behaviour to the pattern of the epidemic. The session will also include a discussion of the estimation of epidemiological parameters, the interpretation of trends in incidence of infections and disease and data needs.

Transmission périnatale
Perinatal Transmission

Th.A.0.3

VERTICAL TRANSMISSION OF HIV INFECTION-EUROPEAN COLLABORATIVE STUDY UPDATE

Catherine Peckham, A.E. Ades, M.L. Newell (coordinators) for the European Collaborative Study. Institute of Child Health, London. Collaborating centres include: Padua, Berlin, Edinburgh, Madrid, Valencia, Amsterdam, Stockholm, and Genoa.

Objective To determine the rates of transmission of HIV infection from mother to child.
Method Children born to mothers known to be HIV positive at or before the time of delivery are enrolled in the study, and examined at three-monthly intervals with laboratory testing by standard protocol. Infection is defined as the clinical presence of AIDS/ARC, the presence of virus or antigen or the persistence of antibody beyond the age of 18 months. Children who have lost antibody and in whom virus or antigen has not been detected are presumed not to be infected. Transmission rates are based on 118 children who have been followed up for over 18 months.
Results 315 children had been enrolled by 20 January 1989. The majority(85%) of these children were born to IVDA mothers. Drug withdrawal symptoms were present in 25% of the babies. Birthweight was related to mother's use of drugs but not to HIV infection status. 13 children have developed AIDS/ARC, 5 of whom have died, a further 27 children showed significant signs or symptoms suggestive of HIV infection. A total of 42 children are known to be infected, 31% of whom developed AIDS/ARC, all within the first nine months of life. Bearing in mind the relative insensitivity of virus and antigen tests, a minimum estimate of vertical transmission rate is 22.9% (95% confidence interval 15.3%-30.5%).

Th.A.0.4

HIV ANTIBODY NEGATIVE CHILDREN WITH POSITIVE VIROLOGY: OBSERVATIONS FROM THE EUROPEAN COLLABORATIVE STUDY

Marie-Louise Newell, C.S. Peckham, A.E. Ades for the European Collaborative Study. Institute of Child Health, London. Collaborating centres include Padua, Berlin, Edinburgh, Madrid, Valencia, Amsterdam and Genoa.

Objective Interpretation of antibody in children born to HIV infected mothers.
Method Children born to mothers known to be HIV positive at or before the time of delivery are enrolled in the study and followed up at three-monthly intervals with a medical and laboratory examination using a standard protocol. Testing for antibody is by ELISA confirmed by Western Blot, detection of virus is by reverse transcriptase activity with antigen capture.
Results Of the 315 children enrolled in the study by 20 January 1989, 149 have lost antibody. The median age at antibody loss among those who lost antibody was 10.2 months. After an average of 14.4 months follow-up none have become and remained positive subsequently. Among the 97 children over 18 months who were antibody negative, 6 must be regarded as infected following at least one virus isolation or positive antigen test. The median age of antibody loss for these children was 14.1 months. These 6 children have been followed up for an average of 8.6 months (range 0 to 25.5) since losing antibody, and all of them were clinically well and immunologically normal at the time of their last visit. Details of these children will be presented and implications of this finding for assessing transmission rates and for follow-up of such children will be discussed.

Th.A.0.5

BREAST FEEDING AND HIV-1 TRANSMISSION

Hira,Subhash*;Mangrola,U.*;Mwale,C.*;Mwansa,N.*;Chintu,C.*; Perine,P.** et al.
*University Teaching Hospital, Lusaka, Zambia,**Uniformed Services University of Health Sciences, Bethesda, USA.

Objective. To assess the risk of HIV-1 transmission by breast feeding.
Methods. At University Teaching Hospital in Lusaka, Zambia, two groups of children were prospectively followed for 2 years:
Group I: 641 women who were HIV-1 (p24 and antibodies) negative at labour were retested after 1 year to determine the incidence of HIV-1. Their mean age was 24.5 years s.d. +/- 7.5. Sixteen (2.5%) women acquired HIV-1 heterosexually during the year. 8 breast-fed children who were born to incident cases prior to acquisition of HIV-1 were followed upto the age of 2 years. Group II: 30 breast-fed children born to HIV-1 (p24 and antibodies) negative mothers whose husbands were HIV-1 seropositive at time of labour. All children in both groups were breast-fed for 15-18 months. ELISA (Dupont) for p24, Recombigen (Cambridge BioScience) for HIV-1 antibodies, and Immunofluorescent assay for confirmation were used.
Results. Of 8 children born of incident women, 2 children seroconverted at 20 and 22 months of age (Group I). No risk factors other than breast-milk were identified. Mothers of both children had developed PGL. Remaining 6 children were negative and healthy upto 2 years of age and their mothers were asymptomatic. Group II: Of 30 women, 3 (10.0%) seroconverted at 8, 10 and 12 months of followup. Child of the later mother was p24 positive at 15 months.
Conclusion. There is evidence of breast-milk transmission from incident cases.

Th.A.0.6

HIGH PERINATAL HIV RATES WITH PREMATURITY OR LOW ANTI-GP120

James J Goedert*, H Mendez**, A Willoughby*, SH Landesman**. * National Institutes of Health, Bethesda MD 20892; ** SUNY Health Science Center, Brooklyn NY 11203, U.S.A.

Objective. To evaluate cofactors and markers of perinatal HIV transmission.
Methods. The 64 offspring of HIV-infected women who were enrolled during pregnancy in a prospective cohort study were evaluated to a median age 12 months (34% >15 months) with serial T-cell subsets, HIV-Ab (EIA), p24-Ab and gp120-Ab (RIA) during pregnancy, postpartum and infancy. HIV infection rates and time-dependent covariate analyses were evaluated both from birth date and estimated conception date.
Results. AIDS was diagnosed in 7, P2A without lab requirement in 3, and asymptomatic HIV-Ab >15 months in 1 at ages 3-15 (median 5) months. Thus 11 of 64 babies were infected, yielding HIV rates since birth of 17/100 person-years (py), cumulative 36%±.7%. The 14 premature (gestation ≤37 weeks) babies were at higher risk than full-terms (≥38 weeks, 42 vs 11/100py p=.02). Transmission rate was not associated with predelivery maternal T cells, EIA, or p24-Ab levels (p≥.51) but was elevated in the lowest gp120-Ab tercile (31/100py p=.06). Full-term babies were only infected by mothers in the lowest gp120-Ab tercile (38/100py), but there was no added risk for premature babies. Adjusted for prematurity, HIV infection was better distinguished by lower infant T4 (<18% or 2200/ul, p≤.01) or T4/T8 (<1.5, p=.003) than by levels of EIA, p24-Ab, or gp120-Ab (p=.16-.74). It was also distinguished by low maternal T4/T8 at the most recent visit (p=.02).
Conclusion. Although based on few cases, premature babies may be at high HIV risk, with some protection for full-term babies of mothers with gp120-Ab.

Th.A.0.7

EARLY PREDICTORS AND RATE OF PERINATAL HIV DISEASE.

Thomas Pauline A., and The New York City (NYC) Perinatal HIV Transmission Collaborative Study Group. NYC, USA.

Objective. To evaluate rate of transmission and early predictors of perinatal HIV disease.
Methods. Pregnant women at risk for HIV are enrolled at 5 NYC hospitals. Evaluation of infants born HIV+ and HIV- includes history, physical, T-cells, IgG, HIV serology, HIV genome detection (PCR), p24 antigen, and viral culture every 2-6 months, for three years.
Results. Of 94 babies born to 92 HIV+ mothers, 14 developed CDC class P2 HIV illness (HIV ill) including 11 (33%) of those born ≥15 mos ago. Twenty two seroreverted (SR) by 11 months on average (including all those ≥15 mos and 5 with symptoms but no laboratory evidence of HIV class P2A). HIV-ill were compared with both 13 well SR and with 53 infants born HIV-:

	HIV ill	Well SR	Born HIV-
Mother:HIV-illness prebirth	9/13	1/13*	0/53*
PCR positive at birth	5/10	0/ 5	0/ 6
At 4 months: mean T4	1314	2596*	3260*
mean IgG	1771	681*	607*
Lymphadenopathy	8/10	4/13	5/42*
Hepatomegaly	5/ 9	3/13	1/47*
Thrush	5/ 9	1/13	8/53*

*p<.05. P-values refer to HIV-ill vs SR or HIV-ill vs born HIV-. Also SR were different from infants born HIV- only in hepatomegaly rate (p<.05).
Conclusions. Transmission rate of perinatal HIV illness is at least 33%. Maternal HIV symptoms predict infant HIV disease. In the infant, immunologic parameters are better early predictors than physical findings.

Th.A.0.8

MATERNAL RISK FACTORS FOR PERINATAL TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS-1 (HIV-1).

Hutto, C., Scott, Gwendolyn, Mitchell, C. and Parks, W. University of Miami, Department of Pediatrics, Miami, FL, U.S.A.

Objective: To examine the association between maternal factors and HIV-1 transmission to infants with perinatal HIV-1 infections.
Methods: Demographic, immunologic and virologic variables were analyzed for HIV-1 seropositive mothers of 17 HIV-1 infected and 39 uninfected Haitian infants enrolled in a population-based prospective study of perinatal HIV-1 infection and clinical outcome. Logistic and multiple regression analysis were used to identify maternal risk factors associated with infant infection.
Results: For the 2 groups of infants, the following maternal variables were analyzed for association with HIV-1 infection in their infants: maternal age, type of delivery (vaginal vs. C-section), number of children, breastfeeding history, maternal hemoglobin, total WBC, absolute lymphocytes, CD4, CD8, and CD11 positive lymphocytes, IgG, IgM, IgA and HIV-1 antibody titer. Of these, an association was found for maternal age and IgA. The relative risk estimate for women older than 30 years was significantly elevated (p<0.02) and an elevated maternal IgA had an odds ratio of 17 (200mg/dl difference), p<0.04.
Conclusion: In this study, maternal age and serum IgA were related to clinical outcome of infants born to HIV-1 seropositive mothers. Although the biological basis of their association is not clear, the role of age and IgA as risk factors should be evaluated in other prospective studies.

Rôle du dépistage et du counseling dans la prévention du SIDA
The Role of HIV Testing and Counselling in AIDS Prevention

Th.A.O.9 THE ROLE OF HIV TESTING AND COUNSELING IN AIDS PREVENTION

Chairpersons: Hunter H. Handsfield (Seattle, USA), Sirkka-Lisa Valle (Helsinki, Finland)
Panelists: Stephen Bowen (Atlanta, USA), Edward W. Hook, III (Baltimore, USA), Gloria Ornelas-Hall (Mexico, Mexico)

In the four years since reliable laboratory tests for HIV infection became available, their utility in AIDS control programs has become increasingly apparent. Nonetheless, numerous questions remain concerning the application and efficacy of serologic testing for HIV prevention and control. What data are available on the efficacy of testing and counseling for disease control? What additional research is indicated, and what are the pitfalls in designing studies? What are the diffential influences of testing versus counseling on behavior change? Are there differences in the efficacy of counseling and testing between different risk group categories, or from one country to another? Are there circumstances in which either pre-test counseling or post-test counseling may be curtailed or deleted? Is there a role for anonymous testing and counseling, or for home-based self-testing? These and related questions will be addressed by a panel of public health authorities from North America, Europe, and Latin America.

Quéstions de Méthodologie
Methodologic Issues

Th.A.0.10 HIV SCREENING IN LOW PREVALENCE POPULATIONS: SHORT TERM SEROCONVERSION EXPERIENCE OF EIA+/WB- INDIVIDUALS

Pres. Robert: McNeil, J.; Burke, D. and The Walter Reed Retrovirus Research Group. Walter Reed Army Institute of Research, Washington, DC, USA.

Objective. To determine if an ELISA positive/WB- test result is a significant predictor of seroconversion after short-term followup in a low prevalence population of US young adults.
Methods. From October 1985 to November 1988, 248,761 soldiers on active duty in the US Army were tested for HIV-Ab on two or more occasions. The average interval between tests was 8 months. Individuals who were EIA- or EIA+/WB- were considered HIV-Ab negative. HIV seropositivity was defined as duplicate EIA+ plus WB+ on two separate specimens.
Results. During the study period, 119 persons seroconverted (0.048%).

		Followup Serostatus		
		Pos.	Neg.	
Initial ELISA	Pos.	13	1,135	1,148
	Neg.	106	247,507	247,613
		119	248,642	248,761

Sensitivity = 10.92%
Pos. predictive value = 1.13%
Specificity = 99.54%
Neg. predictive value = 99.96%
Pos. likelihood ratio = 23.93 ([13/119] / [1135/248,642])
Neg. likelihood ratio = 0.89 ([106/119] / [247,507/248,642])

Conclusion. EIA positivity that is not associated with confirmatory WB reactivity significantly increases the relative likelihood of confirmed seropositivity after a short followup. However, in a low risk population, EIA positivity alone did not strongly predict subsequent seropositivity for specific individuals (less than 1/88 in this case). Demographic, geographic, and behavioral correlates of infection risk could increase the predictive power of EIA+ test results in low prevalence populations.

Th.A.0.11 INCIDENCE OF PEDIATRIC AIDS IN THE UNITED STATES: PREDICTIONS FROM SEROPREVALENCE DATA

Gwinn, Marta*, Rogers M*, Berkleman R*, Willoughby A**, Novello A**, Pappaioanou M*. *AIDS Program, CID, CDC, Atlanta, GA, **NICHD, Bethesda, MD, USA

Objective. To predict incidence of AIDS in the first year of life for infants born in 1988, and compare with reported cases among infants born in 1986 and 1987.
Methods. The population-based Survey in Childbearing Women provided an estimate of the prevalence of HIV infection among United States women delivering live infants in 1988. The proportion of infants born to HIV-infected mothers who develop AIDS by 12 months of age was estimated from ongoing cohort studies. Infants born in 1986 and 1987 who were known to have developed AIDS in the first year of life were those reported to CDC.
Results. In 1988, at least 1 per 1000 childbearing women had antibody to HIV. If between 5% and 10% of their infants develop AIDS in the first year of life, approximately 225 to 450 cases of AIDS in infants under 12 months of age would be expected to occur in the 1988 birth cohort. As of January 1, 1989, 137 children born in 1986 and 130 born in 1987 had been reported to CDC with AIDS diagnosed by age 12 months.
Conclusion. A lag in case reporting complicates the comparison between numbers of AIDS cases occurring among infants born in 1987 and cases predicted among those born in 1988. However, seroprevalence data suggest that more AIDS cases will occur in the 1988 birth cohort than have been reported from previous cohorts to date.

Th.A.0.12 RELATIONSHIP BETWEEN CUMULATIVE INCIDENCE OF AIDS AND PREVALENCE OF HIV IN WOMEN OF REPRODUCTIVE AGE IN THE UNITED STATES.

Pappaioanou, Marguerite*; Buehler, J*; Gwinn, M*; Karon, J*; Wright, A**; Novello, A**. *AIDS Program, CDC, Atlanta, GA; **NICHD, Bethesda, MD, U.S.A.

Objective. To determine whether the cumulative incidence of AIDS reflects the observed prevalence of HIV in women of reproductive age in the U.S.
Method. State-specific HIV prevalence rates (per 100,000 population at risk) in women of reproductive age in 1988 were estimated by results from blinded HIV seroprevalence surveys in childbearing women. The corresponding cumulative AIDS incidence rates in women aged 15-44 years, for 1981-1988, were based on AIDS patients reported to CDC. The Pearson product moment correlation coefficient with 99% confidence intervals, and ratio of HIV prevalence to cumulative incidence of AIDS were calculated. Using simple linear regression, cumulative incidence was regressed on prevalence.
Results. Analysis of preliminary results from 12 states showed cumulative AIDS incidence to be correlated with HIV prevalence (r = 0.88; 95% C.I.: 0.67, 0.95). 75.9% of the variation in cumulative incidence was explained by prevalence of HIV. The ratio of HIV prevalence to cumulative incidence varied by state, ranging in value from 9 to 43 (median = 20.71).
Conclusion. Our results suggest that despite the lengthy incubation period of AIDS, cumulative AIDS incidence rates currently reflect the HIV epidemic in women of reproductive age. The ratio of cumulative incidence to estimated HIV prevalence varied by state. Higher ratios may indicate incomplete AIDS reporting, a higher prevalence of HIV infection in childbearing women than in women of reproductive age, or an increase in HIV transmission.

Th.A.0.13 EVALUATING THE FEASIBILITY OF THE NATIONAL HOUSEHOLD SEROPREVALENCE SURVEY (NHSS)

Ezzati T.; McQuillan Geraldine; Massey J. National Center for Health Statistics, Hyattsville MD, U.S.A.

Objective. To describe the major potential sources of error for the NHSS the possible impact of these errors on HIV prevalence rates, and possible methods to assess and enhance the quality of the survey estimates.
Methods and Results. Major potential sources of error for NHSS include coverage bias, nonresponse bias, misclassification bias and the validity of the serologic test. A sensitivity analysis of the potential impact of differential nonresponse revealed that high nonresponse among high risk persons will have the greatest impact on nonresponse bias. Nonresponse bias could potentially result in an estimated prevalence of from one-third to one and one-quarter of the true prevalence. The coverage bias associated with the under reporting of IV drug users was determined to be less than 10% on the total prevalence of HIV. Misclassification bias does not affect the estimated prevalence for the total population, but does affect the prevalence estimates classified by risk status. The relative bias in the prevalence estimates for high risk persons due to misclassification could be as large as 35%. For low risk persons the prevalence could be as much as 28 times the true prevalence, therefore separate estimates by risk group are not planned for this survey. Risk data will be collected for adjustment of nonresponse bias. To minimize nonresponse bias, a nonrespondent follow up study is proposed. Other methods to evaluate and reduce the bias include a randomized response, geographic stratification, and hepatitis B testing.

Th.A.0.14 APPLICATION OF LOT QUALITY ASSURANCE (LQA) SAMPLING TO HIV AND AIDS SENTINEL SURVEILLANCE

Lwanga, S.[1*], Chin, J.[2*], Mann, J.[3*]
*World Health Organization, Geneva, Switzerland.

Objective: To describe possible applications of Lot Quality Assurance Sampling (LQA) techniques in sentinel surveillance.
Methods: LQA and standard sampling techniques are described with their benefits and limitations in sentinel surveillance for HIV and AIDS.
Results: When sentinel surveillance centres are established to act as a "barometer" for HIV infection and AIDS in a target population group, it may not be necessary to screen very large numbers of people. LQA sampling techniques, with origins in industrial studies, may be used in this case. The strategy in industry is to classify a batch of items as not likely to have a level of defective items higher than a particular value, with a given probability. A similar strategy can be applied to a sentinel surveillance system for HIV infection and AIDS in which, unless a pre-determined percentage of people are found positive among a randomly selected group, one can conclude that the level of infection among the target group is not above a particular level.
Conclusion: Using LQA sampling techniques in HIV and AIDS surveillance greatly reduces the minimum sample sizes which would be needed to determine that a target group is not likely to have an HIV prevalence rate above a pr-determined critical value. In areas with very low levels of HIV infection LQA techniques would be more efficient than methods which would aim at estimating the prevalence levels in the target groups.

Th.A.0.15 Methodological Considerations for Assessing the Impact of Condom, Spermicide and Oral Contraceptive Use on HIV Transmission

Sanie, Ruby T.; Kleinbaum D.; Eaker E.; Lee N. and Peterson H., Centers for Disease Control, Atlanta, Georgia, U.S.A.

Numerous investigations have been initiated or are being planned to investigate the likelihood of HIV transmission in heterosexual couples who consistently and correctly use condoms, spermicides, and/or oral contraceptives. To rigorously study this critical question, a complex composite of methodological concerns must be addressed including: 1) appropriate selection of the study population, 2) knowledge of HIV status at entry of all study participants, 3) the reliability of measures to assess sexual activity and contraceptive use, 4) the temporal correlation of seroconversion with contraceptive use, and 5) the ability to accurately measure and account for other covariates of HIV transmission including the infectivity of some participants and the receptivity to infection of others. If these methodological concerns are not adequately addressed, observed associations between contraceptive use and HIV transmission may be misleading. Most sources of systematic error in such studies will bias toward observations of 1) a reduced efficacy of condoms in preventing HIV transmission and 2) a positive association between oral contraceptives and HIV transmission. To maximize the likelihood of identifying real associations, such biases need to be minimized in design strategiegies and, if not eliminated, considered when study results are interpreted.

Transmission sexuelle du VIH (partie 3)
Sexual Transmission of HIV (Part 3)

Th.A.0.16 EVALUATION OF THE ROLE OF NITRITE INHALENTS IN HIV TRANSMISSION: CONFOUNDING OR EFFECT MODIFICATION?

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OBJECTIVE. To evaluate the potential role of nitrite use in enhancing the risk associated with HIV transmission in a cohort of 329 gay men.
METHODS. Symptomatic (n=54) and asymptomatic (n=275) male homosexuals and their male sexual partners were enrolled from May, 1985 until May, 1988. All participants were interviewed and had HIV serologies. In logistic regression, nitrite use remained significantly associated with HIV infection (OR=2.3, 95% CI=1.2-4.6). Additional nitrite information was obtained including type, frequency, duration, "peak" usage, places of purchase, and use during specific sexual activities. Of the original 329 participants, 275 (84%) were interviewed at their second visit (6 months).
RESULTS. 80% of the respondents had a history of nitrite use. 74% used ampules, 74% used unlabeled bottles, and 38% used labeled bottles. Use of nitrites was significantly associated with HIV infection (OR=2.7, 95% CI:1.4-5.3). Those who practiced receptive anal intercourse (RA) while simultaneously using nitrites were significantly more likely to be infected (OR=1.8, 95% CI=1.1-3.1) than individuals who practiced receptive anal intercourse without simultaneous use of nitrites after adjusting for the number of sexual partners and exposures.
CONCLUSION. Simultaneous nitrite use may significantly increase the likelihood of receptive anal transmission of HIV.

Th.A.0.18 SYPHILIS IS STRONGLY ASSOCIATED WITH HIV INFECTION IN BALTIMORE STD CLINIC PATIENTS INDEPENDENT OF RISK GROUP

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Objective. To evaluate the association between serological tests for syphilis (STS) and HIV infection in Baltimore STD clinic patients.
Methods. During April and May 1988 all STD clinic patients were asked to complete a self-administered questionnaire to elicit selected demographic and HIV risk factor information. Serum samples were tested by HIV-1 EIA (confirmed with WB) and STS (RPR [confirmed by FTA]). The association of STS with HIV was determined after stratifying on gender and risk behavior using logistic regression to control for questionnaire responses significantly associated with HIV infection in univariate analyses.
Results. 175 (5.6%) of the 3150 men and 60 (3.5%) of the 1712 women tested were HIV positive (HIV +); 199 (6.3%) men and 118 (6.9%) women were STS +.

HIV +/# Tested(% Positive)

	RISK	STS +	STS -	OR(95% CI)	P
Men	Homosexual	19/33(57.6)	23/122(18.8)	3.6(1.3,7.4)	0.009
	Het. IVDU	10/22(45.4)	35/227(15.4)	4.6(1.8,11.4)	0.001
	Het. non-IVDU	30/144(20.8)	58/2602(2.2)	8.7(4.9,15.5)	<0.001
Women	Het. IVDU	7/11(63.6)	10/64(15.6)	9.4(2.3,38.4)	0.002
	Het. non-IVDU	11/107(10.3)	32/1530(2.1)	5.4(2.6,11.1)	<0.001

Conclusion. STS positivity is strongly associated with HIV infection in Baltimore STD clinic patients irrespective of age, gender, number of sex partners in the month preceding testing, IV drug use and male homosexual behavior.

Th.A.0.20 HETEROSEXUAL TRANSMISSION OF HIV: A EUROPEAN STUDY. II: FEMALE-TO-MALE TRANSMISSION.

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OBJECTIVE: To determine risk factors of female-to-male HIV transmission.
METHODS: Between March 87 and October 88, 65 couples were recruited from 6 European countries. Data for HIV(+) females (Index Case-IC) and their heterosexual partners (HP) are collected every 6 months. HP presenting risks for HIV infection other than sexual contacts with the IC were excluded. The cross-sectional analysis of data from the first interview is presented.
RESULTS: Of 65 male HP, 7 were HIV(+). Female IC were mostly IVDU (71%) and/or prostitutes (40%). Clinical and biological status of the IC were found to be associated with HIV prevalence in partners. A significant increase in transmission risk was found when couples had sexual contacts during menses. Other sexual practices (including anal sex), duration of relationship (median 2 years), frequency of sexual contacts, history of STD in the past 5 years and contraceptive behaviour were not found associated with partner infection.

		Nb couples	%(+,+)	P trend			Nb couples	%(+,+)	P
Clinical status	:Asymptomatic	42	4.8%		%T4	:≤15%	4	50.0%	
(N=63)	LAS/ARC	16	25.0%		(N=44)	15-20%	14	14.3%	
	AIDS	5	40.0%	0.005		>20%	26	7.7%	0.05
Sex during menses	:Never	40	5.0%		P24 Antigen	:Positive	8	25.0%	
(N=65)	At least once	25	20.0%	0.01	(N=28)	Negative	20	10.0%	NS

CONCLUSION:1)Female transmitters(HP+) were found to have more often clinical/biological symptoms of the HIV infection. 2)Compared with receptive anal sex, insertive anal-sex does not seem to be a high risk practice (for the male HP). 3)The presence of HIV infected blood cells in the vagina could explain the increase of risk observed in couples having contacts during menses.

Th.A.0.17 THE ROLE OF ULCERATIVE GENITAL DISEASES IN PROMOTING ACQUISITION OF HIV-1 BY HOMOSEXUAL MEN

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Objective. To evaluate the role of symptomatic ulcerative genital infections in promoting HIV-1 seroconversion (SC) in seronegative (SN) homosexual men.
Methods. Histories of sexual practices and STDs, physical examination, and EIA and Western blot tests for HIV-1 were available for SNs and SCs from semiannual examinations at 4 MACS centers between 1984 and 1988. We matched 219 SCs with 876 SNs by center, date of SC and level of receptive anal intercourse (RAI). Physical findings and RPR results within 6 months of SC and histories within 1 year of SC were analyzed. Matched data methods were applied in univariate and logistic regression analyses.
Results. Among matched SCs and SNs, 91% had RAI. In the 1 year period herpes was reported in 6.5% (genital only) and 9.2% (genital + anal) in SCs versus 5.1% (genital only) and 7.3% (genital + anal) in SNs. Matched odds ratios (ORs) for an effect of herpes were between 1.2 and 1.4 (All p >0.15). Only 3.2% of SCs and of SNs had syphilis. Neither history of syphilis nor RPR was related to SC (p >0.2). There was evidence for relationships between SC and sexual practices involving trauma (OR=1.8, p <0.05) and SC and condom use (OR=0.5, p<0.05). The relationships with genital ulcer disease remained non-significant after controlling for these factors, age and anal insertive sex.
Conclusion. We observed little association between symptomatic ulcerative genital disease and SC in the MACS. Anorectal trauma from sexual practices appears to have been a more important factor than these conditions.

Th.A.0.19 SEROLOGICAL EVALUATION OF SEXUAL PARTNERS,CHILDREN AND HOUSEHOLD CONTACTS OF HIV INFECTED PERSONS IN YAOUNDE-CAMEROON.

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*Central Hospital Yaounde Cameroon,**University Teaching Hospital

Objective.To determine the modalities of transmission of HIV between an infected person and individuals he or she had contact with.
Methods.The study was conducted in Yaounde from September 1986 to July 1988, on 33 HIV infected persons(assymptomatic or ill) and 365 people who have been in contact with them.These people were tested early after the diagnosis of the patient contact.Amongst them,were: 38 sexual partners(they have never used preventive methods during sexual intercourse;one homosexual was included) 2 who have received contaminated blood(the patient contact was discoverd sero positive later after the blood transfusion); 8 children under two years old of seropositive mothers;and 317 people living in the same house,class-room,or job-site with the patients.
Results:On the 365 people considered, 34 (9,3%)were seropositive:(a)25/38(73%) sexual partners were seropositive,the homosexual was included;(b)the 2 recipients ofcontaminated blood were seropositive;(c)5/8 children were found sero positive;(d)2 positive cases were noted in the household contact group,but these 2 sisters had had sexual intercourse with a seropositive person.
Conclusion.The commonest way of transmission in Yaounde is sexual intercourse. Blood transfusion is a high risk mode of transmission because of inadequate blood screening before transfusion.Materno-foetal transmission too is a major mode in the country.There is no other means of transmission of the virus apart from those previously discussed.

Th.A.0.21 HIGH PREVALENCE AND INCIDENCE OF HIV AND OTHER SEXUALLY TRANSMITTED DISEASES(STD) AMONG 801 KINSHASA PROSTITUTES.

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Objectives. To document prevalence and incidence of STD including HIV in Kinshasa prostitutes and to determine risk factors for HIV acquisition.
Methods. Over a period of 8 months in 1988, 801 female prostitutes were enrolled in a cross-sectional prevalence study on STD including HIV. HIV(-) negative women were then invited to participate in a cohort study with monthly STD exams. HIV serology was repeated every 3 months.
Results. 296(37%) of 801 women were HIV(+). Seventy-six percent of the women presented with at least one STD. There was no difference between HIV(+) and HIV(-) women regarding age (27 Y vs. 26 Y), mean number of partners/week (7.5 vs 7.8), duration of prostitution (54 mos. vs. 52 mos.), oral contraceptive use (12% vs 11%), regular condom use (29% vs 30%), prevalence of N. gonorrhoea(26 vs. 22%), C. trachomatis(15 vs. 11%) T. vaginalis(23 vs. 21%) and syphilis(20 vs. 17%). HIV infection was strongly associated with antibodies against H. ducreyi(54% vs. 21%), the presence of a genital ulcer(GU) (13 vs. 3.6%) and condylomata accuminata(CA) (5.6% vs. 1,2%). 210 initially HIV(-) women have been followed up monthly for a range of 3 to 8 months (1054 women months observation). Ten women seroconverted resulting in an incidence of 14%/year. Incidence of STD was 2 to 3 times higher in HIV seroincident cases (SI) compared to persistently HIV(-) women (PN).

Incidence of STDs*	N. gonorrhoea	C. trachomatis	T. vaginalis	GUD
SI (n=10)	2.6	2.6	4	0.4
PN (n=200)	1.4	0.8	1.5	0.2
	(p=0.1)	(p=0.01)	(p=0.02)	(p=0.9)

(* Expressed as episodes of infection per women year of observation)
Conclusions. HIV and other STD are highly prevalent among prostitutes in Kinshasa. H. ducreyi antibodies, presence of GU and CA were associated with HIV infection in the cross-sectional survey. Increased incidence of STD was concurrently documented with incidence of HIV.

Histoire clinique vers l'infection par le VIH : progression vers l'infection
Natural History of HIV Infection: Progression to Disease

Th.A.0.22 TIME-TO-AIDS AMONG 816 SEROCONVERTERS:

Seroconverters Working Group (by Robert J. Biggar, NCI, Maryland, USA)

Objectives. To examine time-to-AIDS among persons infected by HIV by different routes, in different geographic areas, and at different times.

Methods. 38 investigators provided data on 1115 seroconverters (111 AIDS cases). Analysis was restricted to 816 persons enrolled in prospective studies whose seroconversion date was known within 54 weeks. Subjects were from North America (52.1%), Europe (33.4%), and Australia (14.5%) and included 496 Homosexual men (HO); 265 Hemophiliacs (HP); 46 iv Drug Users (DU); and 10 heterosexually exposed partners (PT). Median follow-up was 3.0 years, and 111 persons had at least 6 years follow-up. AIDS risk was analysed by Kaplan-Meier methods using log-rank tests to compare time-to-AIDS in different groups.

Results. Within risk group, time-to-AIDS was the same in all area and among early (<1985) and later seroconverters. Children (<18 years old) progressed to AIDS more slowly than Adult HP (log rank p=0.003) and other groups. HO men progressed to AIDS more quickly than Adult HP patients (p=0.04) because of a propensity to develop Kaposi's sarcoma. Time-to-Pneumocystis carinii pneumonia was the same among HO men as it was among Adult HP. Too few DU (only 16 had been followed >24 months) and PT were available for assess the time-to-AIDS reliably.

CONCLUSIONS: HIV infection at different times and places was similar. Age is an important determinant to time-to-AIDS. Time-to-AIDS will depend in part on differing risks of the specific diseases seen in AIDS, but the time to same condition appears to be similar in HO and adult HP, suggesting a similar overall pathogensis.

Th.A.0.23 HTLV-I/II CO-INFECTION IS SIGNIFICANTLY ASSOCIATED WITH RISK FOR PROGRESSION TO AIDS AMONG HIV+ INTRAVENOUS DRUG ABUSERS.

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Objectives: Assess demographic & serologic factors that may affect risk of progression to AIDS among HIV+ IV drug abusers (DA) in New Jersey (NJ).

Methods: In 1984 we tested 268 IVDA from Spectrum Health Care in Jersey City for HIV as part of a prospective cohort study. To confirm AIDS outcome during the ensuing 50 months, we reviewed medical records & AIDS registry data. HTLV-I/II Ab was determined by concordance of 3 methods, and is associated with Black race & older age (SH Weiss, 3rd Intl AIDS Conf).

Results: None of 120 IVDA who were HIV- in 1984 had yet developed AIDS. Among the 148 HIV+ IVDA, there were 29 (20%) AIDS cases. AIDS was significantly associated with HTLV:

		# AIDS/TOTAL #	%AIDS	95% CONFIDENCE INTERVAL
HTLV-I/II	Negative	23 / 134	17%	11%, 24%
	Positive	6 / 14	43%	17%, 71%

(Fisher's exact test, p=.03). Kaplan-Meier life table analyses were similar (p=.02 at 50 months). The HTLV association held after adjustments for race, age and sex. Older age was also associated with AIDS.

Conclusions: Our prospective follow-up of prevalent HIV+ IVDA indicates that infection with HTLV-I/II was a significant marker for disease progression among IVDA. These data are consistent with in vitro models of HTLV-I activation of HIV. Since HTLV is associated with both IV drug use & age, it will be important to continue to observe seroconverters (who have yet to develop disease) to assess whether HTLV co-infection is etiologically important, rather than a marker for duration of HIV infection.

Th.A.0.24 CLINICAL PROGRESSION OF HIV-RELATED DISEASE IN INTRAVENOUS DRUG USERS (IVDU) IN A PROSPECTIVE COHORT STUDY: 1985-1989.

Selwyn, Peter A; Hartel D; Schoenbaum EE; Klein RS; Friedland GH. Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY, USA.

Objective. To study the natural history of HIV infection among HIV+ IVDU's (N=288) in a NYC methadone program enrolled in a prospective cohort study from 6/85-1/89.

Methods. Initial and follow-up data were analysed by uni- and multivariate analysis, including demographic, drug use, and clinical variables, to determine rates and risk factors for the progression of HIV-related disease.

Results. 55% patients(pts) were male; 13% white, 29% black, 57% Hispanic; mean age was 34 yrs. Mean follow-up was 31 mos.; 16% pts were lost to follow-up. 34(12%) pts progressed to AIDS(4.5/100 person-yrs.). In 28/34(82%)pts onset of constitutional symptoms (CS) preceded AIDS by a mean of 26 mos. In 25/34(74%)pts occurrence of bacterial pneumonia (BP)(n=6), tuberculosis (TB)(n=3),and/or OT(n=20) preceded AIDS by a mean of 9 mos. AIDS occurred in only 6/97(6%) pts without prior CS and 9/209 (4%) pts without prior BP, TB, or OT. Of 254 HIV+'s without AIDS, 163(63%) developed CS and 54/254(21%) developed BP(n=25),TB(n=4),and/or OT(n=41), at a mean of 20 mos. later than these findings had occurred in AIDS pts. All AIDS pts with results available had prior CD4 counts <400/mm3 vs. 47% pts without AIDS (P<.01). On regression analysis AIDS was predicted by CS (p<.04),BP or TB (p<.001),OT (p<.0001), and CD4/CD8 ratio (p<.03), and not by any drug use or demographic variables.

Conclusion. Data indicate frequent progression of HIV-related disease in our cohort of IVDU's; AIDS was predicted by a progressive pattern of clinical and immunologic findings. These same findings were common, but have occurred more recently, in HIV+'s without AIDS, suggesting that this group may simply be earlier in the course of HIV infection and at high risk for continued progression. Further study of AZT and other interventions in asymptomatic IVDU's is critical.

Th.A.0.25 PROGRESSION TO DISEASE IN WOMEN WITH KNOWN DURATION OF HIV INFECTION

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U. Nairobi, Kenya Medical Research Institute; Nairobi. U. Manitoba, Winnipeg
U. Washington; Seattle.

OBJECTIVE: To determine the rate of development of disease in women with known duration of HIV infection.

METHOD: 111 initially seronegative prostitutes enrolled in a longitudinal study of sexual acquisition of HIV, in Nairobi, were followed at 6 months intervals from the time of documented seroconversion. At each visit women were evaluated for evidence of HIV related disease and classified as CDC HIV stages.

RESULTS:

CDC stages (%)

MONTHS	N	II	III	IV				
				T	Z	HL	CS	D
<6	111	31	65	3	2	-	-	-
6-12	69	17	70	6	4	-	3	-
13-18	52	15	65	10	6	-	4	-
19-24	42	12	60	17	7	-	5	-
26-30	20	5	30	35	15	5	10	-
31-36	14	-	7	50	21	7	14	-
37-42	14	-	-	50	21	7	14	7

T=thrush; Z=zoster; HL=hairy leukoplakia; CS=constitutional symptoms; D=death from AIDS

CONCLUSION: Women develop stage III disease rapidly after infection and after 3 years the majority have overt manifestations HIV infection.

Th.A.0.26 THE EFFECT OF AGE ON HIV PROGRESSION IN HEMOPHILIACS

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Objective. To evaluate the effect of age on two phases of HIV disease--seroconversion to a subclinical marker, then marker to an AIDS diagnosis.

Methods. For 3 age groups we compared 1) the incidence of drop in T4 count, rise in interferon (IFN) and p24 antigen (Ag+, Abbott), and loss of p24 and gp120 antibodies (Ab-, RIA) and 2) AIDS incidence after each marker with actuarial methods and log-rank tests of significance. T4 and p24-Ag data were complete for only N=83, but other assays were evaluable for N=293.

Results. 49 AIDS cases occurred in 319 hemophilic subjects with known HIV-seroconversion dates. AIDS incidence (cases/100 person-years) increased with age at seroconversion: 0.8 for age 1-18, 2.3 for age 19-33, and 4.0 for age ≥ 34, p=0.00005. Older adults progressed to T4<400 faster than young adults (p<.001) with similar findings in rates to T4<300, T4<200, and p24-Ab- (p=.007, .02, .08). In contrast, children's rates to T4<400, <300, and <200 were identical to young adults' rates (p≥.84). Children did differ from older adults in cumulative rate to p24-Ab- (35% vs 78% p=.01) and in total AIDS rates after p24-Ab- (6% vs 63% p=.0007) and after T4<400 (7% vs 100% p=.06). Although few, children also tended toward lower rates of p24-Ag+ (18% vs 29% p=.11) and AIDS after p24-Ag+ (0% vs 70% p=.51). IFN≥20 and gp120-Ab- did not differ by age in incidence (5-28%) or later AIDS (p>.20).

Conclusion. HIV progression to T4<400 is more rapid in older adults than in younger adults or children, and opportunistic infections are less frequent in children than adults with similar degrees of immune deficiency.

Th.A.0.27 THE NATURAL HISTORY OF HIV INFECTION IN A COHORT OF MALE SEXUAL CONTACTS OF MEN WITH HIV DISEASE

Coates, Randall;Johnson, K.;Read, S.;Raboud, J.;Calzavara, L.;Farewell, V.;Fanning, M.;Shepherd, F.;Klein, M.;MacFadden, D. University of Toronto, Toronto, Ontario, Canada.

Objective: To describe current HIV morbidity in this cohort and to estimate the cumulative risk of developing AIDS from estimated time of HIV infection.

Methods: Since 1984, a cohort of 249 male sexual contacts of men with AIDS or HIV-related disease has been monitored three monthly for the development of HIV related illnesses according to the CDC Classification of HIV infections. A Kaplan-Meier analysis was conducted to estimate the cumulative probability of developing AIDS from the estimated date of infection in the seropositive sexual contacts. The surrogate measure of date of infection in these individuals was the date of first sexual contact with the index cases.

Results: According to the most recent clinical data, 159 cohort members are seropositive. Of these, 15 were Group II (9.4%), 104 were Group III (65.4%), and 40 were Group IV (25.1%) (23 IVC1, 5 IVC2, 11 IVD, 1 IVE). Sixty-six percent of Group II infections had normal immune function in contrast to only 30% of Group III infections at their most recent review. Estimates of the risk of developing AIDS following the initial sexual contact with the index cases in seropositives are as follows: 5.4% after 3 years, 9.7% after 4 years, 19.9% after 5 years, 31.5% after 6 years, 34.5% after 7 years, 41.1% after 8 years, 45.7% after 9 years, and 45.7% after 10 years.

Conclusion: Persistent generalized lymphadenopathy is a common manifestation of HIV infection and the cumulative risk of developing AIDS continues to rise the longer one has been infected.

Infection par le VIH et travailleurs de la santé : questions actuelles
HIV Infection and the Health Care Worker: Contemporary Issues

Th.A.O.28 HIV INFECTION AND THE HEALTH CARE WORKER: CONTEMPORARY ISSUES

Chairpersons: Robert J. Pratt (London, United Kingdom)
Walter F. Schlech, III (Halifax, Canada)
Panelists: David M. Bell (Atlanta, USA), J. Louise Geberding (San Francisco, USA) Fred M. Gordin (Washington, USA), Bosenji Ngaly (Kinshasa, Zaire)

Transmission of HIV infection has been documented in the health care setting. This roundtable will discuss real and perceived occupational risks in caring for HIV-infected patients, and the role of universal precautions in decreasing risk, current policies and practice surrounding the infected health care worker (HCW), and the risks of transmission to patients by the infected HCW. Data on the attitudes and practices of HCW's towards HIV infected-patients will be summarized. Discussion will also focus on differences in occupational risks between developed and developing countries and the feasibility of universal precautions in each setting. Emphasis will be placed on the costs of instituting universal precautions in comparison to the costs of selected or universal screening programs for hospitalized patients. Practical and ethical issues will be highlighted in the implementation of universal precautions or screening programs emphasizing the changing demographics of the HIV pandemic.

Autres rétrovirus : le HTLV-I
Other Retroviruses: HTLV-I

Th.A.O.29 HTLV I AND HTLV II INFECTION IN U.S. BLOOD DONORS

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OBJECTIVE. With the advent of large scale HTLV I screening, the rate of HTLV I/II infection was determined in over 300,000 blood donors from all parts of the U.S.
METHOD. A viral based EIA was used in the initial screening followed by confirmation using Western blot (WB), SDS-PAGE RIPA, PCR and lymphocyte coculture in certain subjects.
RESULTS. A total of 301,109 donors were screened by EIA for an initial reactive rate of 0.11% and a repeat reactive rate of 0.08% with 248 EIA repeat reactive donors identified to date. Approximately one-third of these were resolved by WB alone (14% WB positive, 19% WB negative), whereas the remaining two-thirds needed to be tested by RIPA. A further 26% were confirmed to be positive by RIPA (using the FDA/CDC guidelines of antibodies to 2 gene products). The remaining samples (39.6%) were negative by RIPA. None of the WB negative samples tested positive by RIPA.
CONCLUSION. The distribution of confirmed positives indicates a high density of HTLV I infection in metropolitan areas such as San Francisco, LA, New York and Miami, superimposed by a belt in the Southern regions extending from California through Texas and Florida to South Carolina. PCR results using lymphocytes from over 40 donors indicate that both HTLV I and II are present, with the majority being HTLV I. This is in contrast to our findings in IVDA from New Orleans which indicated an overwhelming majority (>90%) of HTLV II infection in the cohort studied.

Th.A.O.31 HTLV-I-ASSOCIATED MYELOPATHY (HAM/TSP) IS ASSOCIATED WITH BLOOD TRANSFUSION

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Objective. To determine whether HTLV-I-associated myelopathy/tropical spastic paraparesis (HAM/TSP) is associated with blood transfusion. Methods. National surveys of HAM/TSP in Japan in 1987 and 1988. A case of HAM/TSP was defined as a slowly progressive myelopathy with antibodies to HTLV-I both in serum and CSF. Results. In the surveys, 589 cases of HAM/TSP were reported. Significantly more HAM/TSP patients reported a history of blood transfusion (26%) than did HTLV-I infected patients with adult T cell leukemia/lymphoma (15/122, 12.3%, p < .002), or than did the general population (Kagoshima district, 41/1290, 3.2%, p < .001). Modeling of the distribution of the interval from transfusion to onset of HAM (median=33 months) followed a log-normal distribution, the expected distribution if transfusion is associated with HAM/TSP. In November 1986, all Japanese blood banks stopped transfusing HTLV-I seropositive blood. Significantly fewer HAM/TSP patients whose symptoms began after screening reported a history of blood transfusion (11/59, 18.6%) than did patients whose symptoms began during a comparable period before screening (33/89, 37.1%, p=.03). Furthermore, only 1 person who developed HAM/TSP in 1987-1988 reported a history of blood transfusion after 1986 compared to 9.2 expected cases if no screening had taken place (p=.007). Conclusions. These results demonstrate an association between blood transfusion and HAM/TSP and suggest that transfusion of HTLV-I-infected blood can cause HAM/TSP.

Th.A.O.33 SIGNIFICANCE OF POSITIVE AND INDETERMINATE HTLV-1 SEROLOGIC RESULTS IN BLOOD DONORS.

Khabbaz, Rima*; Lairmore, M.*; Lee, H.**; Critchley, S.***; De, B.*, and Shulman, G.***. *CDC and ***American Red Cross Atlanta Region, Atlanta, Ga, and **Abbott Laboratories, Chicago, Il, U.S.A.

Objective. To evaluate virologic and epidemiologic characteristics of blood donors whose HTLV-I serologic results were positive or indeterminate. Methods. From June-August 1988, sera from 19996 consenting blood donors of the Atlanta Regional Blood Services were tested for HTLV-I antibody by EIA; all reactive sera were confirmed by WB and RIPA. Interviews and a second blood specimen were obtained from all HTLV-I-positive donors, and from 3 donors with indeterminate and negative serologic results; peripheral blood mononuclear cells were examined by polymerase chain reaction (PCR) using 2 pol primer pairs specific for HTLV-I and HTLV-II, respectively. Results. Of 19996 blood donors tested, 20 (0.1%) showed repeatable reactivity by EIA; 3 (0.015%) were confirmed seropositive (presence of antibody to p24 and env gene product), and 15 (0.075%) had indeterminate results (reactivity to gag only). All 3 seropositive donors were black and from the SE, compared with 1/3 with indeterminate and 0/3 with negative results. None gave a history of iv-drug use, but 1 positive donor had an iv-drug-using sex partner. The HTLV-I seroreactivities remained unchanged 4-7 months after initial donation. Cells from 1 of 2 positive donors showed HTLV-I specific sequences on PCR; cells from the other showed HTLV-II. In contrast, cells from 2 of 2 with indeterminate (both with p19 only on WB) and 3 of 3 with negative serologic results were negative for both. Conclusion. HTLV-I seropositivity in blood donors may be due to HTLV-I or HTLV-II; donors with indeterminate HTLV-I serologic results may not be infected with either HTLV-I or HTLV-II

Th.A.O.30 ANTIBODIES TO HIV-1 AND HTLV-1 IN HAITI

Elie,Robert*;Chout,R.**;Lassegue,A.*;Dorlette,J.*;Cesar,D.*, Delaunay,B..*Laboratoire d'Investigations Biologiques, Port-au-Prince, Haiti; **Hopital du Lamentin, Lamentin, Martinique.

Objective. Determine the seroprevalence of HTLV-1 antibodies (Ab) and the association of HIV-1 and HTLV-1 in Haiti.
Methods. From september 1987 to september 1988, 896 apparently healthy individuals, (16-79 years of age, x: 30 ± 14 years, 503 female, 379 male), 107 adults AIDS patients (43 female, 64 male) and 105 female prostitutes were tested by Elisa for Ab to HIV-1 (Abbott and Dupont) and HTLV-1 (Dupont). Positive specimens were tested by Western blot (Dupont).
Results. Specimens were considered positive only when reactive by Western blot. The following table summarizes the results.

Serology	Healthy (896)	Prostitutes (105)	AIDS patients (107)
HIV-1+	51 (5.8%)	68 (36.7%)	107 (100%)
HTLV-1+	22 (2.5%)	9 (15.7%)	11 (10.3%)
HIV-1+/HTLV-1+	7 (0.79%)	23 (12.4%)	11 (10.3%)

The seroprevalence of HIV-1 and HTLV-1 Ab among apparently healthy haitians is 5.8% and 2.5% respectivly. The prevalence of the HIV-1 / HTLV-1 co-infection is 0.79% among healthy individuals, 10.3% among AIDS patients and 12.4% among prostitutes.
Conclusion. The results indicate that the seroprevalence of HTLV-1 in Haiti is the same as in other Caribbean islands. They also suggest that prostitutes are particularly at risk for HTLV-1 infection. Cohort studies should be carried out in Haiti to determine the influence, if any, of HTLV-1 on the evolution of HIV-1 infection.

Th.A.O.32 HTLV-I INFECTION CORRELATES WITH INCREASED AGE IN INTRAVENOUS DRUG USERS (IVDU)

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Objective. To evaluate risk factors for HTLV-I infection in a cohort of IVDU.
Methods. Subjects were participants in a longitudinal study of HIV infection in IVDU in a methadone maintenance program in Bronx NY. All participants who had blood drawn in 1987 were tested for serologic markers of HTLV-I infection. Samples were screened by enzyme immunoassay and confirmed by Western blot and radioimmunoprecipitation.
Results. Of 270 persons, 21 (8%) were HTLV-I+ (antibody to p24 and env gene product), while 12 (4%) had indeterminate results (antibody to gag gene product only), and 237 were HTLV-I-. HTLV-I+ persons were significantly older than HTLV-I- persons (p=.0001). No significant differences were seen in sex, race, socioeconomic status, transfusion history, birthplace, or travel to HTLV-I endemic areas. Both HTLV-I+ and HTLV-I- IVDU had similar duration and frequency of drug use, history of needle sharing with strangers, and visits to shooting galleries since 1978. Moreover, no differences were seen in number of total, IVDU, or paying sex partners since 1978. HTLV-I+ and HTLV-I- persons had similar rates of HIV infection. Analysis controlling for age did not reveal additional risk factors.
Conclusion. In this cohort of IVDU, HTLV-I seropositivity was more common in older persons; neither sexual nor drug use behaviors since 1978 were associated with the acquisition of HTLV-I.

Th.A.O.34 PREVALENCE OF HUMAN T-LYMPHOTROPIC VIRUS TYPE 1 IN APPLICANTS FOR THE UNITED STATES ARMED FORCES

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Objective. To determine the prevalence of antibodies to human t-lymphotropic virus type 1 (HTLV-1), the cause of adult T-cell leukemia (ATL) and tropical spastic paraparesis (TSP), in civilian applicants for the armed services of the United States.
Methods. Sera from 10,939 applicants collected during the period of March and April 1988 were screened using a enzyme linked immunosorbent assay (ELISA). All repeat reactive and 14 initial reactive ELISA samples were blind tested by Western blots and radioimmunoprecipitation assays (RIPA) to confirm the presence of antibodies specific to HTLV-1.
Results. Of the 233 (2.23%) initial reactives by ELISA, 55 (0.50%) were repeatedly reactive. The Western blot procedure revealed 5(7.2%) positive, 20(29.0%) negative, and 44(63.7) indeterminate. The RIPA confirmed the presence of envelope protein in 2 of the 5 Western blot positives and in 3 of the 44 indeterminates for a total of 5 confirmed positives.
Conclusion. The overall prevalence rate of HTLV-1 antibody in the applicants was 0.45 per thousand.

Études séro-épidémologiques sur la prévalence du VIH
Seroepidemiologic HIV Prevalence Studies

M.A.P.1 PREVALENCE OF HIV INFECTION AMONG U.S. ARMY RESERVE COMPONENT PERSONNEL

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Objective. To evaluate the prevalence of HIV infection among members of the Army Reserve Components (RC), a population which may provide unique insight to the dynamics of the HIV infection epidemic among adults in the U.S.
Methods. As of 30 September 1988 545,114 members of the RC had been tested for antibodies to HIV. Reservists are a primarily civilian group who spend about 10% of their days in a military environment.
Results. Prevalence among males was 1.62 (per 1000), and 0.84 in females. Among whites the prevalence was 0.59, 3.15 among Hispanics, and 4.52 among blacks. Prevalence varied with age, from 0.17 among those aged 19 or less, to a peak of 2.63 in those 30-34. There were 20 positives aged 50 or more, for a prevalence of 0.79. Among females, marital status was not significantly associated with infection. Among males, the prevalence varied greatly by ethnicity and marital status. For whites, the prevalence for currently married and never married was, respectively, 0.30 and 1.09. Among Hispanics, the prevalence was 2.16 and 5.46, respectively, and among blacks it was 3.11 and 6.96. Results of multivariate analyses will be provided to assess independent determinants of seropositivity.
Conclusions. These data demonstrate that risk of infection is significantly higher among males (particularly those never married) and among members of racial/ethnic minorities. While prevalence increases with age from the teens to the thirties, significant infection exists through at least the sixth decade.

M.A.P.2 HIV PREVALENCE AMONG MILITARY WOMEN: An Examination of Military Applicant, Active Duty, and Reserve Testing Data.

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Objective. To evaluate cumulative infection risk and demographic correlates of infection status among young women routinely screened for antibody to HIV.
Methods. Women represent 16% of applicants for military service, 11% of active duty members of the U.S. Army, and 17% of members of the Army Reserve components. Since October 1985, 383,112 women in these military-associated populations have been routinely screened for antibody to HIV. Data from these programs were analyzed to document cumulative infection risks and demographic correlates of antibody status (*i.e*, age, race/ethnicity, marital status).
Results. Crude seroprevalences were similiar among the three groups of women (applicants, 0.7/1000; active duty, 0.9/1000; reserves, 0.8/1000). In each group, prevalences among teenage females were comparable to those among teenage males. Prevalences increased with age from the late teens through the early thirties, and were particularly high among black non-Hispanic women. Marital status was not an independent determinant of antibody status.
Conclusions. Among females who apply for, or who serve in the military, infection risk begins in the teens and continues through young adulthood. Among teenagers, prevalences among females and males are comparable. Black females, especially those in urban epicenters, are at particular risk. These data enforce the need for socioculturally-sensitive prevention efforts targeted at women, regardless of marital status, from adolescence through the childbearing years.

M.A.P.3 HIV PREVALENCE RATES AND TRENDS IN ENDEMIC AND NON-ENDEMIC METROPOLITAN AREAS IN THE UNITED STATES, 1985-1988

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Objective. To determine if geographic and population factors associated with the HIV infection epidemic differ for metropolitan areas with elevated rates early in the epidemic compared to those which exhibited modest rates early in the epidemic.
Methods. Since 1985, approximately 2 million civilian applicants for military service have been tested for HIV antibody, with an overall positivity rate of 1.4 per thousand. Prevalence (prev) rates for birthyear cohorts were calculated for 16 populous counties representing endemic locations (ave. 1985-1986 prev=3.88 per 1000), and for 12 populous non-endemic counties (ave. 1985-1986 prev=1.55 per 1000). The locations were classified down to the level of postal zip code and contrasted for prevalence rates, population density, and other characteristics.
Results. The endemic areas reported progressively decreasing rates (3.88, 3.55, 3.08 per 1000) from 1986-1988, compared to slightly increasing rates (1.55, 1.60, 1.73 per 1000) in the non-endemic areas over the same period. Percent of zip codes reporting at least one case was higher in endemic areas (22.3%) compared to non-endemic areas (11.4%). Average population density of zip codes with cases in affected endemic locations nearly doubled, while that for non-endemic areas dropped by 40%. The average percent of black residents was stable in zip codes with cases in endemic areas but increased by 25% in zip codes with cases in non-endemic areas.
Conclusion. These data suggest that in endemic locations, the HIV epidemic has become concentrated into zip codes with higher population density, wheras in non-epidemic locations, the epidemic is expanding over time into zip codes with lower population density and a greater percentage of black residents. These trends in HIV prevalence and demographic factors associated with zip code of cases provide insight into the natural histories of the epidemics in metropolitan locations in the United States.

M.A.P.4 SURVEILLANCE FOR HIV INFECTION IN THE ACTIVE DUTY U.S. ARMY: OVERALL SEROPOSITIVITY AND TRENDS FROM 1985 TO 1988.

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Objective. To summarize overall U.S. Army HIV seropositivity and secular trends from 1985 to 1988.
Methods. Over 1,131,000 HIV serologic evaluations have been completed on active duty U.S. Army personnel since October 1985. After adjustment for multiply-tested soldiers, data on 727,444 soldiers were analyzed both in the aggregate and after partitioning the tests into those done prior to 1987 (N= 360,922 people), those during 1987 (N= 348,125), and those subsequent to 1987 (N= 249,748). Demographic data from semiannual Army personnel files were merged with test data to complete the analysis data set. Antibody positive soldiers appear only in the seropositivity numerator for the interval the infection was first documented.
Results. A total of 1570 soldiers had HIV antibody (2.16/1000 persons). Reflecting the effect of pre-accession HIV screening and repeat screening while on active duty, the temporal trend showed decreasing rate estimates (2.87/1000 before 1987, 1.22/1000 in 1987, and 0.44/1000 in 1988). Cumulative data showed high rate ratios (RR) for blacks and Hispanics relative to whites (3.83 and 3.33 respectively). Similarly, males (vs. females) had a rate ratio of 2.62. Though single soldiers had a higher risk of positivity (RR=1.70), 50.1% of the HIV positive soldiers either are or were previously married. For none of these variables was a significant temporal trend in the rate ratios noted in univariate analyses. The rate for black female soldiers is higher than that found for white male soldiers (RR=1.22, 95% CI= 0.91,1.64). To adjust for confounding by a variety of variables including age at the most recent test, a logistic regression of the cumulative data was performed with resultant adjusted odds ratios of 3.93 for being male, 3.48 and 3.12 for being black or Hispanic (vs. white) respectively, and 4.76 and 1.97 for being single or previously married (vs. married) respectively.
Conclusions. Consistent with previous reports, high risk demographic groups include black and Hispanic minorities (to include females), males, and those who are unmarried. Preliminary data do not indicate any significant temporal changes in the degree of excess risk for these groups relative to baseline groups.

M.A.P.5 PREVALENCE OF HIV INFECTION IN HETEROSEXUAL PERSONS IN THE UNITED STATES, 1988-89

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Objective. To determine the prevalence of HIV infection in heterosexual persons in the U.S. and to assess risk factors for seropositivity.
Methods. The CDC Family of Surveys conducts sentinel surveillance of HIV infection in segments of the general population and in groups with varying risks of infection. We report data collected through April 1989 from population-based surveys of blood donors, military applicants, and child-bearing women and from surveys of 66 sexually transmitted disease (STD) and 84 women's clinics and 42 drug treatment centers (DTC) in 28 U.S. cities.
Results. Heterosexuals tested in population-based surveys showed low prevalences of HIV infection (0.012-0.66%). Preliminary data from clinic surveys of women attending prenatal, family planning and abortion clinics showed rates of 0-4.5% (median 0%). Heterosexual denying intravenous (IV) drug use in STD clinics had rates of 0.4-5.6% (median 1.4%). The highest rates (35%) were observed in DTC. Areas with high rates of HIV infection in DTC also had the highest rates in STD clinic clients. Rates varied by geographic region and was highest in large cities in the Northeast.
Conclusion. These results suggest that heterosexuals at highest risk of HIV infection are intravenous drug users. In the absence of IV drug use, heterosexuals whose sexual behaviors are associated with STDs had higher rates than other populations tested. In many areas of the US, transmission of HIV is still principally limited to persons practicing well-defined risk behaviors; however, this will continue to be monitored closely.

M.A.P.6 PREVALENCE OF HIV ANTIBODIES IN CHILDBEARING WOMEN IN FLORIDA

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Objective. To obtain an unbiased estimate of the levels and trends of HIV infection in women bearing live children in Florida.
Methods. Utilizing the state metabolic screening program, neonatal blood specimens routinely collected on filter paper were tested for HIV antibodies using the enzyme-linked immunosorbent and mini (Western) blot assays. Demographic data, such as county of birth and mother's race were also collected.
Results. Between July 1 and December 31, 1988, 306 of 65,007 (0.47%) filter paper specimens tested positive for HIV antibodies. The number positive/number tested (% positive) for HIV antibodies by mother's race for selected metropolitan counties and Florida for 1988, is shown below. The cumulative number of female AIDS cases is shown for comparison.

COUNTY OF BIRTH	MOTHER'S RACE		TOTAL	FEMALE CASES (CUM.)
	WHITE	NON-WHITE		
Dade	22/7501(0.29)	81/4980(1.63)	103/12481(0.83)	280
Broward	10/4210(0.24)	41/2067(1.98)	51/6277(0.81)	121
Palm Beach	13/3014(0.43)	37/1276(2.90)	50/4290(1.17)	138
Duval	07/3174(0.22)	06/1392(0.43)	13/4566(0.28)	22
FLORIDA	81/46323(0.17)	225/18684(1.20)	306/65007(0.47)	769

Conclusion. 65,007 (70.7%) of approximately 92,000 samples screened for metabolic disorders were tested for HIV antibodies. Analysis of demographic data on specimens not tested will be completed by March. If detailed evaluation supports the preliminary results, an estimated 1,000 Florida women giving birth in 1989 may demonstrate HIV antibodies.

M.A.P.7 SEROPREVALANCE OF ANTIBODIES TO THE HUMAN IMMUNODEFICIENCY VIRUS (HIV) in APPLICANTS FOR MARRIAGE LICENSES IN ALABAMA

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Objective. To estimate the seroprevalence of antibodies to HIV in marriage license applicants (A presumed heterosexual, low risk population) in a low prevalence AIDS area using repeated studies.
Methods. All specimens submitted to the ADPH-BCL for routinely required premarital syphilis serology from 1 November, 1987, to 31 January, 1988 (study I), from 1 November, 1988, to 31 January, 1989 (Study II) were tested for HIV antibodies in separate anonymous studies using Abbott enzyme immunoassay (EIA). Repeatedly reactive specimens were tested by Western blot.
Results. 4694 specimens from Study I and 4637 specimens from Study II yielded the following:

RESULT	STUDY I (Number)	(%)	STUDY II (Number)	(%)
EIA+/Blot+	10	0.21	5	0.11
EIA+/Blot-	53	1.13	1	0.02
EIA+/Blot Indeterminate	7	0.15	1	0.02
Unsatisfactory	1	0.02	0	0.00
EIA-	4623	98.48	4530	99.85
Total	4694	100.00	4537	100.00

Conclusion. The decline in EIA+/Blot+ specimens from 0.21% to 0.11% does not appear to be statistically significant. These results fall between the observed seroprevalence among Alabama military recruits (0.07%, 1-3-88) and STD clinic clients (2.6%, 10-12-88).
Assuming 100% sensitivity during both study periods an increase in specificity from 98.72% to 99.96% reflects overall improvements in manufacture of the test kits and purification of the antigen.

M.A.P.8 ANONYMOUS HIV TESTING ON NEWBORNS IN 63 ITALIAN HOSPITALS: AN ESTIMATE OF PREVALENCE OF HIV INFECTION AMONG WOMEN IN REPRODUCTIVE AGE.

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Objective. To assess the prevalence of HIV infection in female population in reproductive age and provide a predictive parameter to estimate future pediatric AIDS cases.
Methods. Blood samples were collected on filter paper for routine screenings from 20,683 consecutive newborns in 63 hospital nurseries, in different Italian regions, during the period June- November 1988. Blood saturated disks were punched out from the collection papers, without identification, at the National Blood Transfusion Center of the Italian Red Cross, eluted in PBS and the screened for anti-HIV antibodies (HIV-Ab) in ELISA (Pasteur Labs); the positive results were confirmed in a Western Blot (Dupont Labs).
Results. Among the 20,683 blood samples tested 18 (.00087, Confidence intervals 95%, Poissons Distribution .00052--.0014) were found positive for HIV-Ab.
Conclusion. The distribution pattern of the positive samples among the different regions correlates to the AIDS cumulative incidence rate, with a higher prevalence in northern and central Italy. HIV screening on the newborns, who reflect serological pattern of the respective mothers, can provide an useful tool in evaluating the prevalence of the infection in a relatively unselected population.

M.A.P.9 HIV SEROPREVALENCE ON UNIVERSITY CAMPUSES, U.S.A.

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Objective. To estimate the seroprevalence of HIV infection among university students in the United States.
Methods. We are conducting blinded HIV antibody testing on blood collected for other routine medical purposes in student health centers. A total of 500-1000 blood specimens are being collected on 17 campuses throughout the country and tested for HIV antibodies by ELISA and Western blot. Non-identifying demographic data are linked with test results.
Results. To date, a total 23 (0.2%) of 13,810 specimens are positive for HIV antibodies. All positive results are from students >18 years old; 17 (83%) were >21 years old. Twenty (87%) of students with positive results were male. Seroprevalence rates were higher for males (0.49%) than females (0.04%) and increased with age from 0.06% for 18-21 years olds to 0.66% for 26-29 years olds. Positive results were identified in only 5 of the 17 schools; however, these schools represented all regions of the country.
Conclusions. HIV infection is present on university campuses, although, the rate still appears to be relatively low. These data suggest that older, male students are at greatest risk. Universities provide a challenge to maintain low rates of seroprevalence in what is often a relatively insular setting with high rates of sexual activity, often with multiple partners. Additionally, the risk of exposure to HIV infection may increase for many students as they leave the campus, highlighting the importance of targeting this population.

M.A.P.10 HIV SEROPREVALENCE AT THE BRONX LEBANON HOSPITAL CENTER - A CDC SENTINEL HOSPITAL

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Objective. To monitor levels and trends of HIV seroprevalence in the South Bronx.
Methods. The CDC Sentinel Hospital Surveillance Network's protocol and sampling system was used. From Feb.- Oct. 1988, 2566 bloods were tested. They came from 871 males and 1695 females; 1195 Blacks, 1181 Hispanics, 21 Whites and 169 of unknown origin.
Results. The population's mean age was 41.8; males 43.9 and females 40.1. Western blot positive males had a mean age of 39.8 and positive females 34.8. 70 males and 70 females were positive. The ages and results are listed below:

Age Group	Male	Female	Total	Male WB+	(%)	Female WB+	(%)	Total WB+	(%)
0-4	57	24	81	0		1	(4.2)	1	(1.2)
5-14	12	17	29	0		0		0	
15-24	56	315	371	2	(3.6)	8	(2.5)	10	(2.7)
25-44	245	630	875	46	(18.8)	49	(7.8)	95	(10.9)
45-64	355	426	781	20	(5.6)	12	(2.8)	32	(4.1)
65+	146	283	429	2	(1.4)	0		2	(0.5)
Total	871	1695	2566	70	(8.0)	70	(4.1)	140	(5.5)

Conclusion. Bronx Lebanon Hospital has one of the highest HIV seroprevalence rates in the Sentinel Hospital Network suggesting the urgency of intensive, community-wide interventions to control further transmission of HIV in this high-risk, urban population.

M.A.P.11 INCIDENCE OF HIV SEROCONVERSION IN U.S. NAVY PERSONNEL: RESULTS OF TOTAL NAVY SCREENING

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Objective: To determine incidence rates of HIV seroconversion in a young and apparently healthy population of active-duty U.S. Navy and Marine Corps personnel.
Methods: Using HIV seropositivity data provided by the Naval Medical Command and maintained in the Navy HIV Central Registry at NHRC, and population data provided by the Reportable Disease Database of DEERS, incidence rates of seroconversion were calculated for the period 1986-1988 using person-years at risk as denominators. The period at risk for each individual began with the first negative ELISA test and continued until the first positive Western blot assay or the last negative ELISA test. HIV seroconverters were defined as persons with at least one negative ELISA screening test followed by two positive paired ELISA tests and two positive Western blot assays (criteria for positive Western blot: a specimen that exhibited at least two of three bands at p24, gp41, and gp120/160).
Results: Since 1986, 97% of active-duty Naval personnel have had a routine annual HIV seropositivity screening test (1,070,511 persons; 1,956,631 tests). During the three-year period 1 Jan 1986 to 31 Dec 1988 there were more than 725 seroconversions in active-duty personnel. Incidence rates of seroconversion over time and by age, race, sex, occupation, and other relevant demographic characteristics were determined.
Conclusion: This is one of the largest studies in existence of HIV seroconversion in a non self-selected healthy population. It provides unique information on demographic and occupational factors related to HIV seroconversion.

M.A.P.12 HIV SEROPREVALENCE AMONG PARTURIENTS IN LOS ANGELES COUNTY, 1988

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Objective. To estimate the prevalence of human immunodeficiency virus (HIV) among parturients in County Hospitals in Los Angeles County.
Methods. Between September and December 1988, 9,400 consecutive placental cord blood specimens were obtained from four County Hospitals in Los Angeles County. Specimens were linked to maternal demographic information and, when available, prenatal syphilis serology and risk factors for HIV infection. An ELISA test was done after all personal identifiers were removed. Repeat ELISA positives were confirmed by immunofluorescent antibody and Western Blot.
Results. The combined total births in this sample represents approximately 38% of all Hispanic births, 23% of all black births, and 8% of all white births in LAC in the sampling period. To date, 0.04% (3/7,186) have been confirmed HIV Ab positive. Sixty-two percent of all women had information available on intravenous (IV) drug use, and of these, approximately 5% had a history of IV drug use, but none were HIV Ab positive. Of the women for whom information was available, 2.9% had a positive syphilis test at the time of delivery, but again none were HIV Ab positive.
Conclusion. HIV seroprevalence among parturients delivered at county hospitals in LAC during the sampling period was low, and was not associated with either IV drug use or syphilis. Data from 9,400 births will be presented.

M.A.P.13

DEMOGRAPHICS OF HIV INFECTION IN THE UNITED STATES AIR FORCE (USAF) PERSONNEL

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OBJECTIVE: To describe the characteristics of the USAF HIV cohort.
METHODS: Clinical and immunological evaluation by Walter Reed (WR) staging criteria.
RESULTS: In September of 1988 with completion of force-wide screening of USAF personnel (including Reserve and National Guard), a total of 889,730 sera were tested; of these 841 were positive for HIV antibody by ELISA x 2 and Western Blot, for a prevalence of 0.95/1,000. A total of 609,664 sera from Active Duty (AD) personnel were tested; 582 were positive for a prevalence of 0.95/1,000. Of these, 53% have been whites, 40% blacks, 5.6% hispanic, and 1.4% others. WR stages at diagnosis were: WR-1; 68%, WR-2; 15%, WR-3; 6%, WR-4; 2%, WR-5; 4%, and WR-6; 6%. As of October 1988 there were 845 HIV cases in the USAF cohort (includes dependents and retirees), of these a total of 94 (11%) have developed CDC AIDS. Including non-AD beneficiaries, 443/790 (56%) of patients have had at least 1 yearly re-evaluation with 168 (38%) progressing to a higher WR stage. Discounting progression from WR-1 to WR-2, the rate of significant progression is approximately 15% per year. Significant progression is non-linear, and is increased for patients with higher initial WR stages.
CONCLUSION: The USAF HIV cohort is a well defined population in whom the rate of significant progression is approximately 15% per year.

M.A.P.14

TRENDS IN NEWBORN HIV RATES REVEAL THE TRUE PROPORTION SEEN CLINICALLY

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Objective: To compare the number of HIV positive children under clinical care to the number estimated to have been born in Massachusetts.
Methods: The number of HIV positive children seen clinically, exclusive of cases from blood or derivatives, was determined by survey of pediatric infectious disease specialists, hospital discharge codes, birth and death certificates, and welfare-based reimbursement and placement data. The total number of HIV positive newborns was estimated by extrapolation back from seropositive rates known statewide for 1988 (2.5/1000) and 1987 (2.0/100), and by decremental approximations for earlier years. The statewide figures are obtained from universal anonymous screening using paper-absorbed microsamples of blood (NEJM 318:525,1988).
Results: Extrapolation back from the recently derived figures of 2.5/1000 and 2.0/1000 would approach 0/1000 in 1983. These rates, when applied to 80,000 births annually, indicate that the cumulative total of seropositives is 600. With true infection rates of 40%, there would be 240 such children and another 120 who still have ambiguous maternal antibody (60% of the 200 born in 1988). The actual numbers under follow-up for clinical or epidemiologic reasons are 80 (infected) and 50 (ambiguous HIV antibody).
Conclusion: Referral of HIV positive children based on clinical and epidemiologic factors can be evaluated for completeness by comparison to seroprevalence surveys in newborns. In Massachusetts, the proportion referred is estimated to be approximately 1/3.

M.A.P.15

A PROSPECTIVE SERO-EPIDEMIOLOGICAL STUDY OF HIV IN 30625 PREGNANT WOMEN SCREENED IN THE PARIS METROPOLITAN AREA BETWEEN FEB. 1987 AND JULY 1988.

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PARIS-TOURS Cooperative study group on perinatal HIV infection.
OBJECTIVES : Prevalence of HIV infection in child-bearing women was studied in nine public hospitals and correlated to demographic data and risk factors in order to define a strategy for a nation-wide screening program for reducing perinatal tansmission of HIV.
METHODS : HIV antibody testing was systematically proposed together with an anonymous auto-sealing questionnaire asking for risk factors. Coded questionnaires were daily collected via a telematic network. HIV testing was performed by ELISA and confirmation by W.B. Seropositive women were interwied to precise their mode of infection and assess the validity of the auto-questionnaire.
RESULTS AND CONCLUSIONS : a) Systematic screening was generally well accepted : rate of refusal was 1% for on-going pregnancies and 9% for women seeking abortion. b) 218 women were HIV1 seropositive ; overall prevalence was calculated to be 0.7% and remained unchanged throughout the survey. 5 women were HIV2 seropositive. c) Rate of women who had been screened prior to pregnancy increased during the study period reaching 30% during the third semester. Accordingly, discovery of new cases decreased from 0.2 to 0.05% amongst ongoing pregnancies. d) For HIV1, major route of transmission was drug addition (70% of cases). Heterosexual transmission through random partners remained a rare event and accounted for less than 5% of cases. 4 HIV2 positive cases were women from West-Africa and one had a partner with multiple sexual contacts with Africans. e) Self-reporting of risk factors might work rather well as the basis for an accepted HIV screening if tact and confidentiallity are preserved and as long as well characterized risk factors still account for most of HIV infections.

M.A.P.16

SENTINEL HOSPITAL SURVEILLANCE FOR HIV-1 ANTIBODY VERSUS CLINICAL LABORATORY SUBMISSIONS IN A UNIVERSITY HOSPITAL

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Objective. To compare the results of enzyme immunoassay (EIA) for HIV-1 antibody (HIV-1AB) in specimens which fulfill the Centers for Disease Control (CDC) Sentinel Hospital Surveillance System (SHSS) criteria versus specimens derived from a clinical laboratory (CL).
Methods. The CDC initiated the SHSS in part, to evaluate the distribution of HIV infection in the metropolitan USA. By the use of strict clinical eligibility criteria, patients who have HIV-associated disease or whose medical condition is associated with increased risk of HIV infection are excluded. Discarded blood specimens are labelled with age, sex, service, and race, then blinded prior to testing for HIV-1AB by EIA. In contrast, the CL specimens are from patients clinically suspect for HIV-1 infection. CL EIA reactive specimens were confirmed by Western blot.
Results. During the initial 3-month period at University Hospital, 7.9% of 862 SHSS specimens were repeatedly reactive by HIV-1AB EIA. The male to female ratio for reactives was 3:1 with the highest percentage of reactives in the 25-44 year olds. In contrast, of 2,174 specimens submitted to the clinical laboratory over a 15-month interval, 33.1% were confirmed positives.
Conclusion. These early data suggest a disturbingly high prevalence of HIV infection in this population from which persons with illnesses suggestive of HIV infection or associated with risk factors for HIV infection had been excluded. These findings suggest a critical need for AIDS prevention activities in impoverished inner city communities.

M.A.P.17

EPIDEMIOLOGY OF HIV INFECTION AMONG YOUNG ADULTS IN THE US: REGIONAL VARIATIONS AND TRENDS

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Objective. Since the HIV infection epidemic is evolving, we analyzed data to assess regional variation of, and trends in, seroprevalence among young adults in the U.S.
Methods: Data from routine HIV_Ab screening among male applicants for military service (very young adults) and male members of the US Army Reserve components (older adults) were analyzed to determine demographic correlates of infection risk in different regions of the U.S. Region-specific estimates were then compared with regional data from AIDS case surveillance.
Results. Regional seroprevalences per 1000 varied by region (table). Multivariate analysis controlling for age, marital status, and residence in or outside of AIDS endemic urban areas resulted in adjusted relative odds of seropositivity (Black vs. White) as follows:

Region	Crude Seroprevalence		Adjusted Relative Odds		
	Applicants	Reserves	Applicants	Reserves	AIDS Cases
Northeast	2.3	2.6	7.2	10.3	6.6
Northcentral	0.8	0.8	8.8	8.4	3.2
South	1.5	1.6	4.3	5.6	2.0
West	1.5	1.2	5.4	5.5	1.6

Conclusion. Data from seroprevalence surveillances suggest that the current HIV infection epidemic disproportionately affects young adult members of racial minorities. The relative excess among Black young adults is most significant in the Northeast and Northcentral regions. Based on these data, the impact of the infection epidemic on minority communities is more extreme than suggested by AIDS data.

Le VIH chez les détenus
HIV in Prisoners

M.A.P.18

SEROEPIDEMIOLOGICAL SURVEY OF AIDS,HEPATITIS AND SYPHILIS IN PORTUGUESE PRISONERS

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The arrested population is considered an high risk group in what concerns to transmissible infections,not only by their practices prior to internment in prisonal stablishements (we can't forget that this group comes from promiscuous environment,in wich prostitution,homosexuality and use of drugs are common) but also if we think about life in prison,where sociability is covered by particular aspects.There are about 8000 prisoners in Portugal (7500 men and 500 women) interned in 37 prisonal stablishements spreaded by the Continent and Autonomal Regions.It was in this population that we colected serum samples to detect:HBsAg,Anti-HBs (ELISA);Anti-HIV1 and Anti-HIV2 (confirmed by ELISA+W.BLOT) and VDRL.We also holded an inquiry covering epidemiological aspects that was answered by the recludes.We tested until now 7699 serum samples belonging to 446 ♀ and 7253 ♂.The median age was 30.55±10.23 ranging from 16 to 78 years old with a clear prevalence of the 20 to 30 age group.VDRL was positive in 174 (2.26%);16 ♀ (3.58%) and 158 ♂ (2.17%).HBsAg was positive in 291 (3.77%);15 ♀ (3.36%) and 276 ♂ (3.80%). Anti-HBs was positive in 1842 (23.92%), 105 ♀ (23.54%) and 1737 ♂ (23.94%). Anti-HIV1 was positive in 31 (0.40%),4 ♀ (0.89%) and 27 ♂ (0.37%).In 2 cases we found simultaneous positivity for anti-HIV1 and anti-HIV2 (only tested in 3430).The AA correlated those results with epidemiological data.

M.A.P.19

HIV 1 ET HIV 2 EN MILIEU CARCERAL A DAKAR (SENEGAL)

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Objectifs. Evaluer la situation de HIV1 et HIV2 dans les prisons de Dakar et obtenir des informations en vue de décision de Santé Publique concernant les individus incarcérés.
Methodes. Entre Avril et Mai 1988, 1354 prélèvements de sang ont été effectués sur 1241 prisonniers (1155 hommes et 86 femmes) et 113 agents de l'administration pénitentiaire qui ont servi de population témoin. Tous les sérums ont été passés en HIV1 ELISA (Abbott) et les positifs confirmés par Western Blot sur HIV-1 et HIV-2.
Resultats Aucun des agents de l'administration pénitentiaire n'était séropositif. Par contre 11 prisonniers étaient séropositifs (7 en HIV2 et 4 en HIV1) soit une prévalence de 0,9%. Parmi les femmes la prévalence d'infection était de 2,3% pour HIV2 et de 3,5% pour HIV1. Parmi les hommes les prévalences d'infection étaient respectivement 0,4% et 0,1%, semblable à la prévalence observée dans la population générale. Tous les sujets seropositifs étaient d'origine africaine agés de 25 à 31 ans et avaient une sérologie positive pour la syphillis. De plus 7 d'entre eux avaient des antécédents d'autres MST.
Conclusion. Le milieu carcéral est considéré comme favorisant des activités à haut risque, telles que l'utilisation de drogue par IV et la pratique de l'homosexualité pouvant propager le HIV. Contrastant avec les résultats obtenus précédement en milieu carcéral dans d'autres pays d'Afrique, la prévalence d'infection par HIV parmi les hommes incarcérés était identique à celle observée dans la population générale. Cette information est d'importance pour les responsables de la Santé Publique car du fait des ressources limitées, les campagnes d'éducation et de prévention en milieu carcéral, à l'heure actuelle, devrait se concentrer sur les groupes à risque (femmes).

M.A.P.20

ARRIVE: AIDS PREVENTION TRAINING FOR INTRAVENOUS DRUG USERS PAROLED FROM PRISON

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Objective: To develop, implement and evaluate the outcomes of the first AIDS prevention training program for intravenous drug users paroled from prison. The primary goals are to prevent relapse to IV drug use and associated AIDS risk behaviors, and to help clients become productively reintegrated into the community.
Methods: ARRIVE is based on social learning, self-help and therapeutic community principles. The program model involves training at-risk parolees for entry-level jobs in the AIDS prevention field, e.g., outreach work, peer counseling. The process of learning to help others to solve their problems is an effective means of internalizing constructive attitudes and behaviors. The ARRIVE program consists of an 8-week, 48-hour, 24-session small group curriculum. The major behavioral themes addressed are: general AIDS facts; needles; condoms; HIV-ab testing; relapse prevention; outreach presentations; and job readiness.
Results: A 24-session AIDS Prevention Training Manual has been written and tested with clients during 2 group cycles. The Manual is tailored for use with offender populations with IV drug use histories. An evaluation is in progress that will compare 6-month behavioral outcomes for parolees who participated in ARRIVE vs. a matched sample of non-participants.
Conclusion: At least 25% of U.S. prison inmates have IV drug use histories and are susceptible to relapse at release. ARRIVE is developing a strategy for reducing HIV risks within this difficult-to-treat, relatively neglected population.

M.A.P.21

OCURRENCE OF SEROLOGICAL MARKERS OF DIFFERENT INFECTIONS IN HIV SEROPOSITIVE AND SERONEGATIVE INMATES FROM A PENITENTIARY POPULATION.

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OBJETIVE: To describe the presence of markers against different infections versus HIV serological status and behaviours in a penitentiary population.
METHODS: Sera from 323 inmates previously screened for HIV Ab by EIA and WB test and from 78 blood donors as control group were tested for HBcAb, VHDAb, HBsAg, HBeAg (by EIA test) and Ab against HSV, CMV, EBV (CF test) and T.pallidum (VDRL and FTA-abs).
RESULTS: The global prevalence of markers was as follows: 26% of inmates were HIV positives; 50.8% had VHB markers (42.8% HBcAb, 1.9% HBsAg, 6.8% HBcAb+HbsAg, 1.6% HBeAg); 40.7% of inmates HBsAg had VHDAb; 86.6% had Ab against HSV, 50.6% for CMV, and 20.9 for EBV; and 10% by FTA-abs. We found significant higher rates of VHB infection markers in HIV seropositive inmates (81.7% versus 36.5%) and also against T. pallidum (13.4% versus 4.1%). In the control group we found 2.6% of HBcAb and none for T. pallidum. We did not found any difference in the occurrence and titers of HSV, CMV and EBV Ab between HIV seropositive and seronegative inmates and the control group.The greatest prevalence of VHB and siphilis markers was found among IVDA with homo/bisexual behaviour. This results shows the high frecuency of infections that may facilitate transmission of HIV in the penitentiary population and could act as co-factors in the progresion of the disease.

M.A.P.22

HIV SEROPREVALENCE AND THE EFFICACY OF VOLUNTARY HIV TESTING AMONG MALE PRISON INMATES IN WISCONSIN

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Objective: To estimate the HIV seroprevalence among newly incarcerated male inmates (NIMI) and to assess the efficacy of voluntary HIV testing.
Methods: In Wisconsin, blood serum is obtained from all NIMI for hepatitis B tests; residual sera are stored at -20 degrees C. Since January 1, 1987, NIMI have routinely received HIV-related counseling and have been offered voluntary HIV antibody testing. Sera tested fo: HIV antibody included: a random sample representing 50% of all NIMI admitted 1/1/86-9/29/86 (n=997: all tested blindly), a 100% sample of NIMI admitted 1/2/87-8/31/87 (n=1689: 42% tested voluntarily, 58% blindly), and a 100% sample of NIMI admitted 1/1/88-8/31/88 (n=1651: 75% tested voluntarily, 25% blindly).
Results: In 1986, 3(0.30%) of 997 NIMI tested were HIV+ (ELISA+, Western blot+). In 1987, 9(0.53%) of 1689 were HIV+; 6(0.85%) of 708 voluntarily tested were HIV+, compared to 3(0.31%) of 981 tested blindly (OR=2.79:95% CI 0.59-17.27). In 1988, 6(0.51%) of 1187 NIMI tested voluntarily were HIV+.
Conclusion: From 1986 to 1987, there was a non-significant increase in the HIV seroprevalence among NIMI (OR=1.77:95% CI 0.44-10.22). While the difference in seroprevalence in 1987 between NIMI tested voluntarily and those tested blindly is not significant, voluntary testing detected 67% of all HIV seropositives. In 1988, 71% of NIMI consented to voluntary testing. In regions of lower HIV prevalence, routine HIV counseling with voluntary testing can be a successful strategy for screening male prison inmates.

M.A.P.23

RISK FACTORS ASSOCIATED WITH HIV INFECTION AMONG WOMEN INCARCERATED IN A MEDIUM SECURITY PRISON

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Objective: To determine the relative contributions of needle use practices and unprotected intercourse to HIV seropositivity among female inmates.
Methods: Freely given, informed consent is provided for an individual nurse-administered risk factor questionnaire and tests for HIV, Hepatitis B and HTLV-I. Prisoners and guards are unaware of which prisoners consent to testing. Random code numbers are used. Results are available to consenting participants but not to health service nor prison authorities.
Results: To date 107/217 (49.3%) are injection drug users (IDU). Overall 13 (6%) seropositives (SP) have been detected. All are IDU for a rate among IDU of 12.2%. 11 (84.6%) report needle sharing. Of 60 current prostitutes, 9 (15%) are seropositive. Comparing SP to the total study population no significant differences were found for oral contraceptive use, hx. of anal intercourse. A striking 27.4% of the total study population (vs 30.8% of SP) have had sex since 1979 with a man who has had sex with another man. SP are more likely to be engaged in prostitution (69.2 vs 27.6%), to have used condoms with casual partners (90.9 vs 58%) in the last 12 months, to have had an IDU partner since 1979 (92.3 vs 48.8%), and to have had herpes (23.1 vs 6%) or genital warts (30.8 vs 18.9%).
Conclusion: Recruitment and detailed analysis are ongoing to determine to what extent needle use versus sexual practices explain seropositivity.

M.A.P.24

FREQUENTATION HOSPITALIERE ET INFECTION PAR LE VIH EN MILIEU CARCERAL

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** A.P.S.P.

OBJECTIFS : Décrire les caractéristiques sociales, cliniques et biologiques des malades séropositifs pour le VIH admis à l'hopital de Fresnes de 1985 à 88
METHODES : Etude rétrospective sur les malades hospitalisés de 1985 à 1988 ayant eu une sérologie VIH . Cette étude a déterminé parmi les séropositifs, l'âge des patients, le sexe, le mode de contamination, le motif d'hospitalisation, le stade de l'infection VIH (classification du CDC), le taux des CD4 la présence de l'antigène VIH.
RESULTATS : En 1985, 180 sérologies ont été prescrites. De 85 à 87, 40 cas de SIDA ont été recensés. En 87 140 (3,8%) sur 3669 malades ont été hospitalisés, 905 sérologies prescrites, 326 (9,4%) étaient positives. Parmi ces 326 patients séropositifs, 85% sont des hommes d'âge moyen de 27 ans. 91% sont des toxicomanes par voie parentérale. 3,5% originaires de pays d'endémie, 2% homosexuels, 2% contaminés par voie hétérosexuelle, 1,5% par transfusion sanguine. 32% ont été hospitalisés pour bilan de l'infection VIH. 21% ont des taux de CD4 < 200mm³. 11% ont une antigénémie VIH positive. 56% sont des stades II, 32% des stades III, 11% des stade IV.
CONCLUSION : L'accroissement du taux de séropositifs dépistés de 85 à 88 et l'évolution du nombre de SIDA justifient au sein de l'hopital pénitentiaire l'adaptation des moyens hospitaliers.

M.A.P.25

EPIDEMIOLOGIE DU SIDA EN MILIEU CARCERAL

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INTRODUCTION Les taux de séropositivité en prison sont élevés (6%), soit 20 à 30 fois plus que dans la population générale. L'hopital pénitentiaire (EHPNF) accueille principalement des malades de la région parisienne (3500/an). L'analyse des cas de SIDA hospitalisés est utile compte tenu des prévisions.
OBJECTIFS - METHODES : L'étude rétrospective des dossiers de SIDA correspondant à la définition du CDC d'Atlanta comprend l'analyse des caractéristiques sociales, modes de transmission, les manifestations cliniques, la situation pénale (détention préventive, condamnés), le résultat des procédures de libération, la fréquence des hospitalisations pour complication, évolution.
RESULTATS : De juin 85 au 31.12.87 nous avons recensé 40 cas de SIDA et 35 en 88. Les résultats préliminaires montrent : - Groupe de transmission toxicomanie IV : 85%, africains 6%, partenaire sexuel d'une toxicomane 4%, homosexualité 2%, post-transfusionnel 2%. -Manifestations cliniques parfois associées : PCP prouvée au lavage 27%, tuberculose 27%, candidose oesophagienne 13%, toxoplasmose cérébrale 13%, candidose pulmonaire 4%, cryptosporidiose 2%, encéphalite à VIH 2%, pneumopathie CMV 2%, mycobactérie atypique disséminée 2%, Sarcome de Kaposi 7%. - Biologiquement le taux moyen de T4 était de 152/mm³, présence de l'antigène VIH1 dans 70% des cas testés. Le diagnostic est posé à l'hopital de Fresnes, en milieu pénitentiaire dans 50% des cas, lors du transfert dans un hopital civil dans les autres cas. Dans 52% des cas la séropositivité est découverte en même temps que le SIDA. L'analyse des processus de libération, de la fréquence hospitalière permet d'identifier des préoccupations pour l'avenir en milieu carcéral.

M.A.P.27

INCREASING TUBERCULOSIS IN ASSOCIATION WITH AIDS/HIV AMONG NEW YORK STATE PRISON INMATES

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Objective. To describe the epidemiologic features of the inmate TB cases in association with HIV/AIDS.
Methods. We established a registry of all 230 inmates developing TB in state correctional facilities from 1976-1988 to allow analysis of epidemiologic data (including demographic, disease and HIV/AIDS information).
Results. The incidence of tuberculosis among inmates in NYS correctional facilities has increased dramatically from 15 per 100,000 in 1976-78 to > 130 per 100,000 in 1988. This increase has closely paralleled the increasing incidence of AIDS among inmates (from 8.4 per 100,000 in 1981 to > 500 per 100,000 in 1988). Recent TB cases have had similar characteristics as AIDS cases, occurring primarily among males, aged 30-49 years, from minority populations who have had histories of drug use. Extrapulmonary tuberculosis, common in HIV infection, has been found in 36% of the 1984-88 TB cases. Sixty-three percent of TB cases in the past 4 years have had AIDS or HIV infection; none were known to be HIV seronegative.
Conclusion. The increasing incidence of tuberculosis among prison inmates in association with AIDS and HIV infection, will require enhanced TB control efforts within prison and in communities from which inmates originate.

M.A.P.26

UPDATED TEMPORAL TRENDS OF HIV-1 INFECTION AMONG INMATES ENTERING MARYLAND PRISONS (U.S.A.) 1985-1988.

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Objective To monitor temporal trends of HIV-1 infection among inmates entering Maryland state prisons, and to investigate whether the strength of association between HIV-1 and select demographic factors varied over time.
Methods Excess sera and demographic data were obtained from samples of consecutive inmates entering during the same months over four years. Sepcimens were assayed using ELISA and Western blot techniques. Logistic regression methods were used for multivariate analysis.

Results Year:		1985	1986	1987	1988
N	:	886	756	1486	1386
% HIV-1	:	7.1%	7.7%	7.0%	8.4%
Odds Ratios from final multivariate model:					
> 25 years	:	2.8	3.7	4.6	5.2
Minority	:	4.7	4.6	8.0	9.8
Urban	:	6.2	2.6	2.0	5.5

Evaluation of effect modification by year were all not significant.
Conclusion These data suggest that prevalence and risk groups have remained stable over four years.

M.A.P.28

INCIDENCE AND PREVALENCE OF HIV INFECTION DURING 44 MONTHS OF TESTING PROSTITUTES/IVDU'S IN THE WOMEN'S JAIL, ORANGE COUNTY, CALIFORNIA

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OBJECTIVE: To assess the prevalence and monitor the incidence of HIV infection in sexually active female prostitutes and IV drug users --- a group associated with previous sexually transmitted diseases.
METHODS: Women booked at the Orange County Women's Jail between March, 1985 and November, 1988 were offered an opportunity to obtain a confidential HIV test, if their charge suggested prostitution, IV drug use or drug use-related activity. Laboratory testing utilized ELISA testing (initial) with confirmation using Western Blot or IFA.
RESULTS: A total of 3,014 tests were completed on 1,781 individuals. There were 458 individuals tested on multiple occasions during this time. At the conclusion of testing, 53 individuals with positive results had been identified (ratio of 1.8 positives/100 tests equal to 3.0% of all persons tested). Of those tested multiple times (additional tests were offered only to those with negative tests), a total of 16 individuals converted from negative to positive during the period of follow-up. The rate of positivity per 100 person-years of observation was 2.6 for the entire period.
CONCLUSION: Voluntary, confidential testing in the County Jail provided an estimation of prevalence and incidence of HIV infection in a high risk group of women of great public health concern.

Donneurs et receveurs de sang et de produits sanguins
Recipients and Donors of Blood and Blood Products

M.A.P.29

FREQUENCY OF HIV SEROCONVERSION AMONG BLOOD DONORS: RELATIONSHIP TO RISK OF HIV TRANSMISSION

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Objective To estimate HIV seroconversion and infectivity rates among donors.
Methods. During the period 4/85–9/88, 27 blood centers reported data on 7,675,087 HIV tests identifying 1122 seropositive donors. A seroconverter is a donor who had an HIV(-) donation followed by an HIV(+) donation.
Results. 118 seroconverters were identified, with a range of 1.8 months to 35.8 months between the first HIV(+) donation and the prior donation. The group overall is 81% male, but the sex distribution has changed slightly over time, with no female seroconverters in 1985, increasing to 23% in 1988.

These donors are potentially able to spread HIV infection through their initial HIV(-) donation. The actual number of seroconverters has remained stable over time, but seroconverters in 1985 represented only 3% of all WB+ donors, increasing to 11% in 1986, 14% in 1987, and 21% in the first nine months of 1988. Although this proportion is steadily increasing, the fraction of donors who had a seronegative donation six months or less before their positive donation has decreased over time. In 1985, 78% of seroconverters had a previous HIV(-) donation less than six months prior to their HIV(+) donation, with 39% in 1986, 24% in 1987, and only 17% in the first nine months of 1988. Thus the projected infectivity rate for these donors has decreased from 1 in 200,000 in 1985 to 1 in 240,000 in 1988.
Conclusion. Although the percentage of seroconverters in relation to all WB+ donors has increased over time, there is a definite decrease in the number of donors who have seroconverted within a six month period, thus slightly lowering the projected infectivity rate of HIV seronegative donations.

M.A.P.30

BLOOD CENTER/HEALTH DEPARTMENT COLLABORATION: A METHOD FOR DETECTING INFECTED PREVIOUS DONORS.

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Objective. To compare the relative yield of infected previous donors identified from AIDS case listings obtained from local versus distal regional health departments.
Methods. The listings of reported AIDS cases obtained from 2 local, 4 contiguous, and 2 distal counties were compared with IMBC donor files. The listings of reported AIDS cases obtained from one distal site was also cross referenced with their own donor base (SMFBC).
Results. Overall 317/7973 (4%) of reported AIDS cases were matched as previous IMBC donors. The match rates varied among localities: the match rate for local counties (4.3%) was significantly greater than for contiguous (3.6%) and distal (1.7%) localities (p = .14 and p = .001, respectively). The rate of infected donors detected when a distal site (SFMBC) cross referenced their local AIDS list with their own donor base was however, 7.5% (11/147).
Conclusion. The data demonstrate the utility of regularly comparing donor files with local AIDS listings in both low and high AIDS prevalence areas in order to expedite detection of infected recipients. A significant number of infected former donors may be identified from the listings of health departments adjacent to the area of operation of a regional blood center. This approach warrants national implementation.

M.A.P.31 BLOOD DONATION BY INDIVIDUALS WHO LATER DEVELOP AIDS

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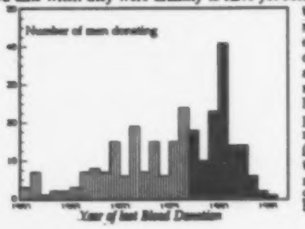
Objective: To determine the past blood donations by individuals who later develop AIDS.
Methods: The UCSF AIDS Registry has collected detailed medical histories since 1985 from 2605 individuals, 992 of whom had had *Pneumocystis carinii* pneumonia, Kaposi's sarcoma, or cryptococcosis at the time of initial evaluation. Patients are asked the date that they last donated blood. It is not known if the blood was discarded after blood bank screening.
Results: 292 patients (29%) had donated blood. 162 patients had not donated blood since 1976, a time when they were unlikely to have yet been HIV infected. The peak year for last donation was 1980 (n=41) and only 4 individuals reported donating blood after 1983. Of these: one patient donated blood 17 months before developing Kaposi's sarcoma; two others 21 and 22 months before PCP; one patient reported donating blood one month after PCP. Of the 992 with AIDS only one other patient reported donating blood after PCP (14 months).
Conclusions: In the era before HIV Antibody testing, blood was donated by 13% of gay men after they were likely HIV infected. Some of this blood was probably discarded. By 1985 donation had ceased.



M.A.P.32 SURVEILLANCE FOR UNUSUAL MODES OF HIV TRANSMISSION IN THE USA — A 5-YEAR MULTICENTER STUDY OF BLOOD DONORS

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Objective. To monitor levels, trends, and modes of HIV infection in blood donors—the largest, low-risk population screened for HIV. Because persons with HIV risk are excluded, infection by uncommon means (eg, from a heterosexual partner without recognized risk) is relatively easily detectable.
Methods. Seropositive donors at 20 blood centers (approximately 2,000,000 donors/yr) are interviewed using a standardized questionnaire; denominators for seroprevalence rates are determined from blood center records.
Results. Since June 1988, 147 seropositive donors have been interviewed. Risk factors for the 114 males were homo/bisexuality (52%), intravenous drug use (IVDU)(9%), previous blood transfusion (BT)(4%), and sexual partner of a person at risk (SPPR)(13%). Risk factors for the 33 females were IVDU (9%), BT (9%), and SPPR (61%). 23% of males and 21% of females had no identified risk (NIR). Demographic characteristics of NIRs were similar to those with identified risk. Using National American Red Cross HIV seroprevalence in first-time donors from 6/87-5/88 (0.057% for males and 0.010% for females), and applying the observed rate of NIRs in this study, we calculated that a maximum of 1 in 7,661 male and 1 in 47,170 female donors had been infected by unidentified means, such as from sexual partners with unrecognized risk.
Conclusion. Most seropositive donors have traditional HIV risk factors, suggesting that heterosexual transmission from partners of unrecognized risk or other possible transmission modes are uncommon. Many NIRs in this study may not have acknowledged HIV risk factors.

M.A.P.33 SEROPOSITIVITE HIV CHEZ LES DONNEURS DE SANG ET ESTIMATION DU RISQUE RESIDUEL EN TRANSFUSION

Couroucé, Anne-Marie et le Groupe de travail Rétrovirus de la Société Nationale de Transfusion Sanguine - Paris France

Objectif : Comparer la prévalence des donneurs confirmés anti-HIV positif entre 1985 et 1988 et évaluer le risque résiduel de transmission du virus par transfusion
Méthode : Les 10 centres de Transfusion (CT) du groupe de travail représentant environ le 1/4 de l'activité de collecte des CT français ont rassemblé leurs résultats en individualisant les nouveaux donneurs (ND) et les donneurs réguliers (DR).
Résultats : 1) Prévalence des dons anti-HIV positifs

	Nbre dons testés	Total (0/00)	ND:Nbre (0/00)	DR:Nbre
1985 (6mois)	510 493	318 (0.62)	181 (2.4)	137
1986	1126 278	479 (0.42)	283 (1.7)	196
1987	1131 316	361 (0.32)	269 (1.5)	92
1988	1065 532	176 (0.16)	128 (0.8)	48

2) Estimation du risque résiduel : Base du calcul = 25 % des dons antiHIV négatif provenant de donneurs dépistés séropositifs dans un délai maximum de 1 an sont infectieux (Jullien, Lancet 1988 ii 1248)

	Intervalle entre dons négatif et positif				Estimation du
	< 2 mois	2 à 4 mois	4 mois à 1 an	> 1 an	risque par don
1987	2	12	49	29	1 pour 72000
1988	3	4	38	5	1 pour 100000

Conclusion : Entre 1985 et 1988, la séropositivité HIV chez les donneurs de sang a diminué de 4 fois, cette baisse ayant porté à la fois sur les nouveaux et les anciens donneurs. Le risque résiduel transfusionnel diminue parallèlement et est estimé à 1 pour 100.000 dons en 1988.

M.A.P.34 THE RISK OF HIV-1 TRANSMISSION BY TRANSFUSION OF SCREENED BLOOD

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Objective: This prospective study will determine the risk of seroconversion to HIV-1 in a cohort receiving multiple transfusions of blood or blood components screened for antibody to HIV-1.
Methods: The study will require fifty-four months to enroll and follow-up approximately 13,000 cardiac surgery patients. Based on current blood product utilization at the three study centers, an estimated 101,000 transfusion exposures will be observed. The probability of HIV-1 transmission will be estimated and the upper bound of the 95% confidence limit will be calculated using the binomial distribution.
Results: To date, serum samples from 3,117 persons representing 29,495 transfusions exposures have been tested. One seroconvertor has been identified; our estimate of the risk of HIV-1 transmission by transfusion is 0.003% per screened unit with a 95% upper bound equal to 0.016% per unit.
Conclusions: The interim results of this ongoing study provide valuable information to clinicians and the blood banking community regarding the effectiveness of HIV-1 screening and permit public health officials to make statements with greater confidence about the risk of HIV-1 transmission by screened blood.

M.A.P.35 THE EPIDEMIOLOGY OF TRANSFUSION-ASSOCIATED (TA) AIDS IN CHILDREN IN THE UNITED STATES, 1981 TO 1988

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Centers for Disease Control (CDC), Atlanta, Georgia. U.S.A.

Objective. To describe the demographic and clinical characteristics of pediatric TA AIDS.
Methods. AIDS cases reported to CDC from 1981 to December 1988 were reviewed. Pediatric TA and perinatally acquired (PA) AIDS cases were compared.
Results. Through 1988, 169 children with TA AIDS were reported to the CDC (13% of the 1346 pediatric AIDS cases). The percent of pediatric AIDS cases attributable to TA infection varied by region from 4% in New York City to 30% in Los Angeles. From 1983 to 1987, the yearly incidence of diagnosed cases of pediatric TA AIDS increased from 40 to 42 cases (5%), while PA cases increased from 147 to 301 (107%). The median age at transfusion in pediatric cases was one month (range, birth to 11 years). The median age at diagnosis was 49 months in pediatric TA AIDS cases and 11 months in PA cases. Pediatric TA AIDS cases are more likely to be male (62%) compared to PA cases (50%). The cumulative incidence of pediatric TA AIDS was 2.4 times higher in blacks and Hispanics than in whites (95% C.I., 1.6-3.2), although TA AIDS cases are more likely to be white than PA cases (37% vs 15%). The observed median incubation period was longer for pediatric TA AIDS cases than for PA cases (36 mos. vs 25 mos., p=.0001). The median survival after diagnosis of pediatric TA AIDS did not differ from that of PA cases (9.3 vs 10.8 months).
Conclusion. Children with TA AIDS are distinct from PA AIDS patients. Pediatric TA AIDS cases are being diagnosed at a slower rate than PA AIDS but continue to develop. Donor screening has nearly eliminated new infections; thus this group is important in the study of incubation period in children.

M.A.P.36 SEROPREVALENCE OF HIV INFECTION AMONG BLOOD DONORS IN ROME

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**"Lazzaro Spallanzani" Hospital for infectious diseases-Rome-Italy

Objective.To estimate the prevalence of positive HIV antibodies in a large blood donor population in Rome (about 50% of total blood supply in Rome), to define the epidemiologic characteristics of seropositive subjects, and to determine the efficacy of voluntary self deferral program.
Methods.Since 1985 blood donations were tested routinely for HIV antibodies, donors have been interviewed by trained personnel and informative materials have been distributed to invite donor belonging to risk groups, to voluntary defer. Seventy-one seropositive subjects were contacted (86.6%).
Results.Confirmed prevalence (%.) by year and percentage distribution of risk factors of positive donors are reported in table.

Year	units	HIV+ve	prev%	homosex	IVDA	Heterosex	Unknown
1985	38323	23	.060	10.5	84.2	-	5.3
1986	50290	29	.058	16.0	44.0	40.0	
1987	47211	16	.034	12.5	62.5	25.0	
1988	45819	14	.030	9.1	36.4	45.4	9.1

Conclusions.The progressive decrease in the prevalence rate among blood donors indicates the efficacy of self-deferral program and emphasize the importance of alternative sites for test performing and the need of anonymous testing opportunities.

M.A.P.37

36 POST-TRANSFUSIONNAL (P-TRF) HIV INFECTION IN A REGIONAL CITY HOSPITAL SINCE 1980.

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* Laboratoire d'Immunologie, **Néphrologie, *** Médecine Interne, **** Maladies Infectieuses, C.H.R.U. Nice, France.

Objective. Nice (400,000 inhabitants) is characterised by a high prevalence of the HIV infection with a rate of seropositive blood donors two times more higher than in France. Blood donors are screened for HIV in our country since august 1st 1985. At the end of 1988, a P-TRF HIV infection was diagnosed in 36 patients (19 to 82 years old, 21 females).
Results. At the first examination, patients were divided 14 in II, 6 in III, 5 in IVa and 11 in IVc according to CDC groups, with low T4 cells count (301 ± 305/mm3),high serum beta-2-microglobulin level (5.7 ± 4.3 mg/l). These results related with p25 antigenemia suggested a bad prognosis which was confirmed by the outcome : 7 more AIDS occured within 24 months and 15 patients yet alive. 35 patients had a presumed date of contamination ranged between 1980 and 1985 and one after the blood donors screening. Most of the patients were transfused during surgery ($\bar{m}$ = 4.1 blood units), 4 patients in emergency, 2 for hematological diseases (30 and 128 units) and 5 hemodialysed patients (2 to 8 blood units). Only two of the investigations required to Blood Bank in search of the infected donors has resulted in a concrete proof.
Conclusion. The P-TRF HIV infection has a bad prognosis compared to others risk groups. Despite the systematic blood donors testing, the risk is low but remains; this should warrant autotransfusion policy in sheduled surgery, or more accurate screening (e.g. antigenemia or PCR).

M.A.P.38

BLOOD SALE AND DONATION BEHAVIOR OF IVDUs

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*University of Miami School of Medicine, Miami FL., USA.

Objective. To describe the blood selling and blood donation behavior of intravenous drug users (IVDUs) between 1978-1988.
Methods. IVDUs (703) in drug treatment in South Florida who were enrolled in a longitudinal study of HIV serostatus were asked items pertaining to the sale and donation of blood.
Results. Of the 703 IVDUs,181 (25.7%), had sold or donated blood since 1978; of these 181, 63.0% had sold and 37.0% had donated blood. There were no significant demographic (age, gender, ethnic) differences between those who donated and those who sold blood. Of the 181 IVDUs, 92 reported their last sale or donation to have occured after 1985, the year HIV screening in blood banks was inititated. Of these 92, 63 had sold blood. The seroprevalence rate among those selling or donating since 1978 was 11.6%; 7.6% of those selling or donating after 1985 were HIV+. There was no difference in seroprevalence between those who sold and those who donated blood.
Discussion. IVDUs continue to sell or donate blood in spite of attempts to persuade them not to do so. A larger percentage sell blood than donate. While it is not known if any of this blood eventually gets into the blood bank supply for human use, the donation or selling of blood by IVDUs, a high risk group for HIV infection, poses a public health threat.

M.A.P.39

IMPACT OF AN AUTO-DESIGNATION FORM ON BLOOD DONOR SELECTION.

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OBJECTIVE: To determine if the use of an auto-designation form would differentiate between blood donors at high and at low risk.
METHODS: From February to May 1988, 21,692 donations were made at a permanent site which used an auto-designation form. Donors designated their blood for transfusion (97.7%) or laboratory purposes (1.5%) after reading a list enumerating high risk activities. Of these forms only 0.8% could not be utilised. The blood from the laboratory group (LG) was tested but not used.
RESULTS: In the transfusion group (TG) 36/21,197 (0.17%) were ELISA positive, while in the laboratory group (LG) 6/325 (1.8%) were positive. WESTERN BLOT confirmation followed for 8/36 (22.2%) in the transfusion group versus 4/6 (66/7%) in the laboratory group. WESTERN BLOT confirmed individuals in the LG were all males aged 17-29 years. The seroprevalence of HIV antibody was .038% for TG and 1.23% for LG. The specificity of our auto-designation form is 98.5%. The negative predictive value was 99.9% and the global efficiency 97.7%.
CONCLUSION: The auto-designation form appears to be a helpful additional screening method allowing to separate donors in two sub-populations, one at high risk and the other at low risk, thus preventing the utilisation of blood from high risk donors and reducing the risk of HIV transmission during the window period.

M.A.P.40

PREVALENCE OF HIV-ANTIBODIES IN BLOOD DONORS IN THE FRG

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Objective. In a multicenter study of the German Red Cross Blood Banks prevalence and epidemiology of HIV-antibodies in blood donors are studied.
Results. From July 1985 to September 1988, 7.5 million donations given by about 1.5 million blood donors were tested for HIV-antibodies routinely and 250 were found to be positive in at least one Western blot (Wb).
Following a rather rapid decrease in 1985/86 the overall seroprevalence remains thereafter constant with rates of less than 2 per 100,000 until the end of 1988. The geographic distribution varies with the highest prevalence in urban centers and correlates well with the geographic incidence of AIDS cases.
More than 90% of the seropositive donors were homo-/bisexual men, drug abusers and heterosexual partners to known AIDS-risk persons. Age and sex distribution were comparable to the patterns in recognized AIDS patients in the FRG.
Conclusion. Our data show that in blood donors, representing one low risk segment of the general population, there is no evidence of a rapid spread of HIV infections. However, they do not imply the absence of new infections but an infection rate on a very low level. At present, we have no indication that unaware heterosexual transmission occurs frequently in blood donors. However, there is a shift to donors infected heterosexually by contact to known risk persons. This suggests a more efficient exclusion of persons with a recognized risk.

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M.A.P.41

A FOLLOW-UP STUDY OF CHILDREN OF ANTI-HIV POSITIVE HAEMOPHILIACS

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Objective. To monitor the progress of 10 children born to 9 anti-HIV seropositive fathers between December 1984 and May 1988.
Methods. Infants were seen soon after birth and then at yearly intervals. Their physical development was assessed with particular attention to growth. Ability and intelligence in relation to expected levels at any given age was measured using WISC/R, WPPSI and other relevant tests. Laboratory tests for anti-HIV, p24 antigen and CD4 lymphocyte count were performed at each visit. The duration of seropositivity and stage of HIV disease of the father at the time of conception was assessed retrospectively from clinical records and results of laboratory tests carried out on stored serum. The anti-HIV status of the wives was checked from 1985 onwards.
Results. Ten children were conceived by 9 seropositive, p24 antigen negative, asymptomatic haemophilic fathers. All 10 children have been anti-HIV negative since birth and have continued to develop normally. Eight wives have remained anti-HIV negative, one of them after two full term pregnancies. One wife chose termination of a second pregnancy when found to be anti-HIV positive.
Conclusion. None of the children appear to have any evidence of overt or latent HIV disease. In spite of being made aware of the risks, some anti-HIV positive haemophiliacs and their wives have chosen to have children.

M.A.P.42

HEMOPHILIACS DOUBLY INFECTED BY HIV-1 AND HTLV-I

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Objective. On the investigation of immune abnormalities and clinical courses of HIV-1 infected hemophiliacs, we found patients infected by both HIV-1 and HTLV-I had a more rapid fall in their immune functions than those infected singly by HIV-1. Subjects and Methods. 185 hemophiliacs are involved in this study. Anti-HIV-1 antibodies are assayed by WB and ENVACOR, and anti-HTLV-I antibodies are also assayed by ELISA, PA, IF and WB method. Immunological parameters such as lymphocyte subsets, 2 microglobulin, immunoglobulin levels and HIV-related markers are measured. Results. 107 of 185 hemophiliacs are seropositive in HIV-1(57.8%). 11 of 185 are seropositive in HTLV-I. Seven hemophiliacs are seropositive both in HIV-1 and HTLV-I. Two of 7 have been at the stage IV-C2(CDC) in 1986, and one other case has been at the stage IV-A in 1987. Another case has been with severe decompensated liver cirrhosis and the stage IV-A. Clinical features are widely varied, such like toxoplasmosis, PCP, CMV pneumonia, IDTP, VZV infection, parvovirus infection, and so on. Conclusion. We have already reported the prevalence of HIV-1 infection were not different in the existence of preceded infection of HTLV-I in Japanese hemophliac populations. But, 4 of 7 double infection cases have shown advanced symptoms in this study. These data strongly suggested preceded infection by HTLV-I might affect *in vivo* on the progress of immune dysfunctions by HIV-1 infection. Further cumulative investigations are urgent.

M.A.P.43

ANTI-HIV SEROPREVALENCE IN BLOOD DONATIONS FROM JULY 85 UNTIL DECEMBER 88 IN SWITZERLAND.

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From July 1985 until December 1988, the Central Laboratory Blood Transfusion Service Swiss Red Cross collected over 1 million units of blood from non-remunerated donors. We tested these units for anti-HIV antibodies with enzyme-linked immuno assays based on viral lysates or recombinant proteins. During this time, 110* units were confirmed positive. We observed, however, a dramatic decrease of seropositive units and of the resulting seroprevalence between the 2nd half of 85 and the 2nd half of 88 (39 and 1* or 38.3 and 0.7* per hundred thousand, respectively). Furthermore, we noted a decrease in each of the following categories:

Seroprevalence (PHT)	2nd half of 85	1st half of 88	2nd half of 88
males (civilians)	14.9	3.0	*
females (civilians)	16.5	2.8	*
males (military)	68.2	15.2	*
repeat donors	18.5	3.8	*
first-time donors	71.9	0	*

74 % of the positive units were donated by 29 years old or younger donors, who provide about 65% of the blood. We found indeterminate confirmation results especially in units from females and those with increasing age. During 1988, we tested 73 units with a repeatedly reactive screening test by using the polymerase chain reaction (PCR) with DNA extracted from about 1 mega peripheral blood mononuclear cells. PCR-negative units were never serologically confirmed positive.
Based on the present seroprevalence figures and the fact that on average 1.4 units per donor per year are collected, we calculate the probability for a false negative unit to be less than 1/500,000.

* The actual figures will be included.

M.A.P.44

DIFFERENT EPIDEMIOLOGY OF HIV INFECTION IN HEMOPHILIACS (H) FROM THREE EUROPEAN COUNTRIES.

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Italy, France and W. Germany are comparable in population (ca. 55 million) and number of H (ca. 3,000). Italy and Germany are also comparable for type of factor concentrates given to H A and B (commercial, from US plasmapheresis plasma). In France, H A use ca. 50% commercial and 50% domestic FVIII, but H B use quasi exclusively domestic FIX. The TABLE shows that at the end of 1987 there were more AIDS and anti-HIV(+) cases among German than Italian H A. Also there were more French H A anti-HIV(+) cases than in Italy, though AIDS cases were similar. For H B, cases with AIDS and anti-HIV(+) were comparable in Italy, Germany and France.

	All hemophiliacs			Hemophilia A			Hemophilia B		
	Total N.	N.AIDS cases	N.anti-HIV(+)	Total N.	N.AIDS cases	N.anti-HIV(+)	Total N.	N.AIDS cases	N.anti-HIV(+)
Germany	2476	148	1172	2152	131	1024	324	17	148
France	2455	58	1038	2067	40	903	388	18	135
Italy	2772	57	637	2459	36	476	313	20	138

The reason for differences between France/Germany vs Italy is unclear. In the early '80s, when most HIV infections occurred, German H A were treated annually with larger average FVIII amounts than Italian H (84,000 I.U/pt vs 25,000). Hence, German H A had a higher cumulative likelihood of being exposed to HIV from 1978 for 1985, when virucidal methods prevented new infections. This explanation, however, would not account for the higher prevalence of anti-HIV(+) in France, because FVIII usage was similar to that in Italy (22.000 I.U vs 25.000). Hence, there appear to be population differences in susceptibility to develop HIV infection in hemophiliacs.

M.A.P.45

HEPATITIS B AND HIV COINFECTION IN HEMOPHILIACS.

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Objective. Like HIV, HBV also infects lymphocytes, alters the immune response, and has reverse transcriptase activity. The clinical significance of HBV and HIV coinfection was investigated.
Methods. Serial HBV and HIV serologies were determined in a cohort of 155 severe Factor VIII deficient hemophiliacs between 1982-1988. Lymphocyte subset analysis and clinical status were evaluated at regular intervals.
Results. By 1982 the majority of severe FVIII deficient patients demonstrated serological evidence of HBV (92%) and HIV (69%) exposure. Seven HIV infected patients reverted from anti-HBs to HBsAg positive suggesting persistence, reactivation, or reinfection of HBV in this population. A trend toward slower immune status deterioration was noted in patients with persistent HBsAg carriage.

	HIV+ HBsAg+ (n = 10)	HIV+ anti-HBs+ (n = 98)	
mean CD4+	396.8	278.0	*p=0.094 (Kruskal Wallis Chi Square)
median CD4+	465.5	259.0	
% developing AIDS	0 (0/10)	22.4 (26/116)	**p=0.09 (Chi Square)

Conclusion. HIV infection may allow HBV reactivation or reinfection which might warrant HBV vaccination of household contacts of even anti-HBs seropositive HIV infected patients. Active HBV infection perhaps by infecting lymphocytes may alter HIV induced immune deterioration.

Le VIH chez les prostitué(e)s et les sans-abri
HIV in Prostitutes and Homeless Populations

M.A.P.46

HIV SPREAD IN PROSTITUTE POPULATION IN TOULOUSE (FRANCE)

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Objective. To assess the risk of contamination through prostitution (male or female) in our city.
Methods. We systematically screened anti HIV-1 antibodies in 97 female prostitutes (9 coming from Ghana and 35 travestites or transsexuals, regularly consulting at the Venereal Diseases Centre since May 1985, to January 1989. Screenings were realised using 2 immunoenzymatics techniques (Abbott and Wellcome). All positive sera were confirmed by the Western-blot assay (Du Pont De Nemours)
Results. 5 of the 97 prostitutes were seropositive : we screened the first one in 1985, two others in 1986, one in 1987, and one who seroconverted in 1988. But two of them were intravenous drug abusers, so it was not possible to incriminate sexual transmission with certainty. None of the Ghanean was seropositive. Among the travestites and transsexuals, one patient seroconverted in 1985, and 3 patients were seropositive (2 in 1986 and 1 in 1987). For these patients drug addiction is unknown.
Conclusion. The prostitue population of Toulouse seems to be relatively free of HIV-1 contamination. But these results do not entirely reflect the true situation as a marginal prostitution also exists with people who are generally not subject to any control. Although these results are relatively reassuring, elementary precautions must be taken to prevent the spread of the disease, since contamination through prostitution has been shown to be a real risk.

M.A.P.47

CLIENTS OF PROSTITUTES:- A REVIEW.

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OBJECTIVE: To study the responses of clients of prostitutes to health risks including HIV and sexually transmitted diseases (STD).
METHOD: The City Hospital HIV Counselling Clinic offers self referred individuals confidential pre/post test counselling. The number of clients of prostitutes using condoms, who have regular sexual partners, history of STD, HIV antibody status and socio-economic status were noted.
RESULTS: Of 1627 patients who have attended between October 1985 and October 1988, 73 were clients of prostitutes. Their socio-economic status was as follows:- 17 Professional/Managerial, 27 Skilled, 16 Semi-Skilled, 2 Un-Skilled, and 11 Unknown. 2(*) clients tested HIV +ve. They were also injection drug users (IDU), still sharing needles, never using condoms and both had regular partners.

Condom Use	N	Regular Partner	History of STD	Client also IDU	HIV Test +ve	-ve	N/T
Always	11	0	1	0	0	9	2
Sometimes	12	10	4	0	0	11	1
Never	50	36	14	2*	2*	41	7

CONCLUSIONS:
1) Safer sex not being practised.
2) Those clients with regular partners tend not to use condoms.
3) Prostitutes are at risk from clients.
4) Given the relatively high socio-economic status of the group it is suprising that education has not altered behaviour.

M.A.P.48

HIV SEROPOSITIVITY AND RISK BEHAVIOURS OF ITALIAN PROSTITUTES

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Objective; To estimate HIV seroprevalence among prostitutes in different Italian areas. To study risk behaviours associated to HIV seropositivity in female prostitutes.
Methods. The study has been conducted in Rome, Milan, Naples and Pordenone. Different sources have been utilised in order to contact female prostitutes: STD clinics, AIDS facilities, organised prostitutes agencies. In particular, a collaboration with the Commitee for Civil Righs of Prostitutes was set up. Serological, clinical, demographic and sociological data were collected. An individual questionnaire was administred in order to collect information about risk behaviours and sexual practices.
Results. Three hundred and five female prostitues were studied. Anti-HIV antibodies were found in 3 out of 192 non-drug-injecting prostitutes (1.5%) one of those developed AIDS, representing the only clinical case reported in a non-addicted prostitute in Italy. Among drug-injecting prostitutes, 41 out of 113 were anti-HIV seropositive (36.2%).
Conclusion. HIV seroprevalence is very low in non-drug-injecting prostitutes. The high prevalence of seropositivity among drug injecting prostitutes might account for the spread of HIV infection in the heterosexual active population.

Session d'affichage
Poster Session

Épidémiologie et santé publique
Epidemiology and Public Health

M.A.P.49 FEMALE PROSTITUTES IN ANTWERP: A RISK GROUP FOR HIV INFECTION

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Objective: To assess the prevalence of STD's, including HIV, among female prostitutes, and to determine their preventive health attitudes and behaviour, and perception of their clients' behaviour.
Methods: Prostitutes were recruited through general practitioners and a prostitute organization. A standard questionnaire was administered and blood was collected for HIV, syphilis and hepatitis B serology.
Results: So far 88 women were recruited, including 20 % street walkers, 20 % windowworkers, 37 % bar and brothel workers, and 9 % call girls. The median age was 31 years and 22 % had started prostitution less than 1 year ago. Only 4 women had ever used IV drugs. One (non IVDU) women was HIV positive (1.16 %, .03-6.3 95 % CI). 6.1 % and 25 % had markers for syphilis and hepatitis B respectively. 37 % had been tested at least once for HIV. 60 % had always been using condoms for at least one year. 4 of 7 women practising anal intercourse always use condoms and 36.5 % of women did not always use condoms during vaginal intercourse. According to 54 % of the women the client rarely proposes the use of condoms. 45 % of the prostitutes had to insist on using condoms and 63 % confirmed to have clients who definitely refuse condoms.
Conclusions: HIV infection seems rather uncommon in Antwerp female prostitutes. Many women have recently changed their behaviour for fear of AIDS. Because of the continuing risk behaviour from both colleagues and clients particular prevention programs are still required.

M.A.P.50 RISK OF HIV INFECTION AMONG HOMELESS IV DRUG USERS (IVDUs) IN CHICAGO

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Objective: To examine the relationship between homelessness and HIV infection in a group of active IVDUs not in treatment.
Methods: Analysis of 404 face-to-face interviews conducted between 3/88 and 8/88 was performed as part of a large-scale prevention and education project funded by the National Institute on Drug Abuse. IVDUs were recruited using street-based indigenous outreach workers and were paid for participation.
Results: Fully 23.6% of the sample considered themselves homeless. Homeless IVDUs were significantly more likely to be HIV-seropositive (33.7%) than non-homeless IVDUs (20.3%); (X^2=7.05, p<.01). This relationship was found across all levels of reported needle-sharing partners in the 6 months prior to interview (Table 1).

Number needle-sharing partners	% HIV-seropositive Home	Homeless	Homeless %	Sample size
0	13.9	25.0	14.3	84
1-2	15.7	26.9	22.6	115
3-6	28.0	39.3	25.5	110
7+	32.4	45.0	37.0	54

Conclusion: Homeless IVDUs are overrepresented among those reporting the greatest numbers of needle-sharing partners. These IVDUs are more likely to be seropositive, suggesting that homelessness exerts an independent effect upon risk for HIV-seropositivity. This relationship was most significant for Puerto Rican IVDUs. The relationship of other risk factors is discussed.

M.A.P.51 HIV INFECTION AMONG HOMELESS MEN IN A NEW YORK CITY SHELTER.

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Objective: Shelters for homeless men in New York City have a high prevalence of intravenous drug use and active tuberculosis. A study was conducted to describe the characteristics of homeless men voluntarily tested for HIV antibodies, between 1985-1988, at a public shelter in NYC, which houses 1200 men.
Methods: One hundred and seven homeless men were voluntarily tested for HIV antibodies. Testing was recommended to men with high risk behavior, if signs or symptoms suggestive of HIV infection were present, or as part of routine physical exam for a work program. Charts were reviewed retrospectively.
Results: Sixty-six percent of homeless men tested were HIV seropositive. Intravenous drug use (IVDU) and active pulmonary (PTB) or extrapulmonary tuberculosis (EPTB) were significantly associated with HIV seropositivity. No significant differences in rates of PPD reactivity, positive RPR or hepatitis B antibody were present:

	HIV Positive No.	(%)	HIV Negative No.	(%)	P Value
IVDU	48	(66)	12	(33)	<0.001
Homo/Bisexual	19	(37)	10	(27)	<0.9 NS
+ PPD	31	(69)	14	(31)	<0.2 NS
Active PTB, EPTB	20	(87)	3	(13)	<0.05

Active tuberculosis was significantly associated with a diagnosis of AIDS or ARC (P<0.001), but not with a diagnosis of asymptomatic carrier or PGL. Mean CD4 counts were lower (196 vs. 531) for HIV positive men with active TB, than without TB. Rates of compliance were similar among HIV positive and HIV negative men; 70% in both groups returned for HIV results.
Conclusion: HIV infection among homeless men in a NYC shelter is significantly associated with IVDU and active tuberculosis. Strategies to prevent homelessness are likely to influence rates of IVDU, TB transmission and HIV transmission.

M.A.P.52 PREVALENCE AND RISK FACTORS FOR HIV-1, HIV-2 AND HTLV-I INFECTION IN PROSTITUTES IN SOUTHERN CATALONIA.

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Objectives. 1.- To estimate the prevalence of HIV-1, HIV-2, HTLV-I, hepatitis B and luetic infection among prostitutes, and 2.- To identify possible risk factors for HIV-1 transmission in this collective.
Methods. Due to both the large number of prostitutes and the easy access to them, an area in southern Catalonia characterized by the lack of street prostitution was chosen. Through the local network all prostitution bars were identified and all their working women request to participate in the study. We used a previously validated questionnaire with 45 items on demographic and behavioral data. After asking for consent, two of the authors interviewed the participants and took blood samples at the workplace. Seventy-five women were identified and 4 of them refused to answer the questionnaire, but blood was drawn from all them.
Results. Sixty-five (91.55%) of the women used condoms with either their clients or their partners. Only 3 out of 46 prostitutes with a stable heterosexual partner used condoms with both the partners and the clients. Eight prostitutes were IVDU and 6 had an IVDU partner. Eight (10.67%) women were positive for HIV-1, 6 (8%) for HBsAg, 24 (32%) for HBcAb, and 3 (4%) for the luetic test; HIV-2 and HTLV-I results will be presented. Only the use of intravenous drugs by the prostitutes was significantly associated with HIV infection, in both univariate (p<0.0017) and multivariate (p=0.0014) analysis. The same association was found after stratifying by condom use and IVDU partner.
Conclusions. We point out the importance of using the most exhaustive population possible in a well defined area. We suggest the use of a multicentric approach, stratifying by type of prostitution, with a bigger population that could allow to identify other associations. In our setting where IVDU account for the majority of AIDS cases, and most of the index cases of heterosexual acquired HIV infection are IVDU, the use of drugs by the prostitutes or by their sexual partners seems also to be the most important risk factor in that collective.

M.A.P.53 SOCIAL AND SEROEPIDEMIOLOGIC SURVEY FOR ANTIBODIES TO HUMAN IMMUNODEFICIENCY VIRUS AND OTHER SEXUAL DISEASES IN PROSTITUTES IN RIO DE JANEIRO.

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Basic Research Centre, National Cancer Institute, Rio de Janeiro, Brazil.

Objective. To evaluate the sexual behaviour, social and economic conditions, and the incidence of HIV-I infection, syphilis and hepatitis B antigen among female prostitutes in Rio de Janeiro.

Methods. Anonymous questionnaires were answered by 49 prostitutes and sera samples collected from 69 female prostitutes. For anti-HIV-I, the samples were screened by ELISA (Organon) and the positive ones were submitted to two other tests, a competitive ELISA (Behring) and a recombinant EIA (Abbott). Syphilis infection was detected by microscopic flocculation and hepatitis B antigen by EIA (Abbott).

Results. Eight out of 69 (11.59%) of samples were positive for anti-HIV-I, 48 out of 68 (70.58%) positive for syphilis infection and only 1 serum (1.44%) presented positivity for hepatitis B. The choice of a promiscuous sexual life has been due to economic troubles in 81.63% and condom use in high rate has been observed only in 20.40% of prostitutes interviewed. The frequency of partners per day shows variation: 40.85% of prostitutes have 1 to 5 partners, 38.77% with 6 to 10, and 20.40% declared to have more than 10 partners per day.

Conclusions. These preliminary results suggest that HIV-I infection and other sexual diseases have a very high incidence among females with a promiscuous sexual life and that can play an important role in the HIV-I heterosexual transmission in Brazilian cities.

Le VIH chez les clients des cliniques de MTS et des centres de dépistage
HIV Among Clients of STD Clinics and Testing Centres

M.A.P.54

HIV SEROPREVALENCE IN HETEROSEXUAL MEN AND WOMEN, DENVER METRO STD CLINIC, 1985-1988.

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Objective. To monitor the course of the HIV epidemic through seroprevalence surveys in an urban STD clinic.
Methods. Each year, 1985-88, sera of consecutive, unselected STD clinic patients in defined risk behavior (RB) groups were tested for HIV antibody (ELISA, WB confirmed). HIV positive patients without a stated risk for HIV infection were reinterviewed to ensure correct RB categorization.
Results.

RB Group	No. HIV Positive/No. Tested (%)				
	1985	1986	1987	1988	Total
Gay Men	58/119(48.7)	60/123(48.8)	72/192(37.5)	67/140(47.9)	257/572 (44.9)
Female Prostitutes	1/12 (8.3)	0/184(0.0)	2/137(1.5)	1/39 (3.0)	4/372 (1.1)
IVDU					
Males	2/29 (6.9)	1/49(2.0)	4/126 (3.2)	0/69 (0.0)	7/273 (2.6)
Females	0/10 (0.0)	0/20(0.0)	0/64 (0.0)	2/26 (7.7)	2/120 (1.7)
Heterosexuals					
Males	0/229(0.0)	1/361(0.3)	1/374(0.3)	3/670 (0.4)	5/1634 (0.3)
Females	0/111(0.0)	1/222(0.5)	1/255(0.3)	0/351 (0.0)	2/ 940 (0.2)

Of 2,574 non IVDU heterosexual men and women at high risk of STD only 7 (0.3%) were HIV positive including 3 with IVDU sexual contact. Three of 4 positive female prostitutes were IVDU.
Conclusions. By 1988, at least 10 years after the first HIV infection in Denver, there is no evidence that the HIV epidemic is advancing beyond gay men, IVDU, and their sexual contacts. Accurate epidemiology requires correct RB categorization using confidential reinterviews.

M.A.P.56

HIV SEROPREVALENCE IN PATIENTS WITH PID

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Objective. 1. To determine the seroprevalence of HIV in women with PID and, 2. To determine whether HIV seroprevalence in PID patients is linked to non-IV cocaine use and/or serologic evidence of past/present syphilis.
Methods. The GYN Clinic Service provides care to indigent minority women from areas of NYC hit hard by AIDS. From 11/1/88-1/15/89, all clinic PID admissions had serum samples, which were drawn for syphilis serology, anonymously screened for HIV antibody. All PID patients were routinely offered HIV testing in addition to routine GC, chlamydia, and syphilis screens. Sexual and drug use history were obtained on all patients.
Results. 21 patients were admitted; 16 had specimens suitable for anonymous testing. 3/16 (18.8%) were seropositive. 12/21 (57%) patients requested confidential screening; 3/12 (25%) were seropositive.
Of the known seropositives:

- All reported illicit drug use
  (1/3 IVDA; 2/3 non IV cocaine)
- 2/3 reported sexual contact of men at risk
  (1IVDA;,1 non-IV cocaine)
- 0/3 had positive syphilis serology
  (3/21 (14.3%) of PID admissions had positive serology; 2/3 (67%) were consistent with acute infection.)

Conclusions. In the small sample of PID patients screened 1. 18.8% seropositive rate. 2. HIV antibody found in non-IV cocaine user without other known risk behavior. 3. No association between HIV seropositivity and positive syphilis serology was demonstrated.

M.A.P.58

HETEROSEXUAL TRANSMISSION OF HIV IS RARE AMONGST ATTENDERS AT AN STD CLINIC IN LONDON

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Objective: To assess HIV seropositivity amongst attenders in an STD clinic.
Methods: All patients undergoing routine blood tests for syphilis between June 1988 and April 1989 were offered an HIV test (Abbot/Wellcome) competitive the result of which could be anonymous.
Results: By the end of December 1988, 4,972 patients had been entered into the study. Of these, 453 patients (9.1%) declined the HIV test. Those declining included a higher percentage of homosexual men but were otherwise similar to those agreeing to the test. 4519 attenders were tested, 814 (18%) of whom wished their result to be anonymous.

35 of 4519 (0.8%) were HIV antibody positive. 27 of 247 homosexual or bisexual men (10.9%) and 8 (3 women, 5 men) of 4261 heterosexuals (0.19%) were positive. 11 homosexual women were negative. 2 of 27 homo/bisexual positives and 6 of 8 heterosexual positives were Afro-Caribbean. 211 patients from Africa (184 from West Africa) were negative for HIV2).

HETEROSEXUAL POSITIVES

	from High-risk area	IVDA/Contact	No risk factors	Total tested
Male	3	1	1	2236
Female	2	1	0	2025

Conclusion: This sexually active population with a higher than average prevalence of gonorrhoea, chlamydia and other STD's has low HIV seropositivity in spite of the potential for importing cases from endemic areas.

M.A.P.55

COMPARISON OF RACE/ETHNICITY, TRANSMISSION CATEGORY IN PERSONS ELECTING HIV COUNSELING AND TESTING SERVICES

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Objective: An evaluation of voluntary HIV counseling and testing services by race and transmission category in the United States.
Methods: Twenty-five States, with a population of 142,000,000 (63% of the total U.S. population), provided demographic and risk factor information on all persons seeking public sector, voluntary HIV counseling and testing services (CT) for the period July-September, 1988.
Results: There were a total of 83,853 persons tested, 5% were seropositive. An analysis of race/ethnicity showed that of the total tested 54% were white, 22% black, 7% Hispanic, <1% Asian, <1% Native American and 17% were undetermined. Compared to the racial/ethnic composition of the population of these States (77% white, 13% black, 7% Hispanic, 1% other), a higher proportion of blacks received CT services than did whites or Hispanics. A higher proportion of Hispanics (11%) who elected testing than blacks (6%) or whites (5%) were seropositive. The transmission category of persons electing testing were: heterosexuals, 40%; homosexual males, 14%; IV drug users, 8%; homosexual males/IV drug users, 0.5%; blood recipients, 2%. Among those electing to be tested, the prevalence of infection was 18% for homosexual men, 12% for IV drug users, 24% for homosexual/IV drug users, 1.5% for heterosexuals and 1.9% for blood transfusion recipients.
Conclusion: The demand for counseling and testing services in the U.S. is increasing rapidly. A higher proportion of persons receiving CT services are from minority populations than their representation in the population. The majority of people receiving CT services are not in the highest risk transmission category; only 14% of those tested were homosexual men and 8% were IV drug users. Eighteen percent of homosexual men and 11% of IV drug users electing testing were infected.

M.A.P.57

RISK FACTORS FOR HIV-1 INFECTION IN A BRITISH POPULATION

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Objective. Determine risk factors for HIV-1 infection and monitor testing trends in attendees at a London sexually transmitted diseases clinic.
Methods. Behavioural characteristics of individuals attending for HIV-1 testing were collected. HIV tests performed by screening with a competitive ELISA (Wellcome®) and antibody capture ELISA (Abbott®) as confirmatory test.
Results. Between September 1985 and June 1988, 6923 individuals were tested, 558 (8%) were seropositive. Of these 523 (94%) were men and 35 (6%) women. The seroprevalence pattern conforms to that currently observed in other industrialized nations. However, risk factors for HIV-1 seropositivity in the women (n=2373) were heterosexual intercourse with an HIV infected partner (RR 141; 95% CI 77-258), intravenous drug use (RR40; 95% CI 18-90) and heterosexual contact with a Central African resident (RR27; 95% CI 10-74). Risk factors for men (n=4550) were heterosexual contact with HIV infected partner (RR116; 95% CI 65-207), being homosexual or bisexual (RR95; 95% CI 58-155), intravenous drug use (RR42; 95% CI 21-83) and heterosexual contact with a resident from Central Africa (RR16; 95% CI 6-46). Testing trends showed a sustained increase in number of individuals tested. This coincided with periods of increased media attention on HIV infections/AIDS, involving both Government and popular press/TV campaigns. The most pronounced increase was observed in heterosexual males and females with no other risk factors.
Conclusions 1) Heterosexual and homosexual transmission were implicated in this British population. 2) The media campaigns have increased awareness of HIV infection/AIDS as a major public health problem.

M.A.P.59

HIV PREVALENCE IN AN AIDS COUNSELLING CENTER IN ISRAEL

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Objective. To determine HIV prevalence among risk groups in an AIDS center in Israel.
Methods. All applicants to the AIDS clinic started at our center in 1983, were interviewed and tested for HIV. They included male homosexuals (MHS), I.V. drug addicts (IVDA), recipients of blood transfusions (BT) as well as non-risk group applicants (N).
Results. The number of individuals tested and results were:

Groups	1985	1986	1987	1988
MHS	347	183	194	233
IVDA	2	7	11	22
BT	1	3	47	9
N	56	106	514	415
Total	406	299	768	681
% HIV + in risk group	10	10	8.7	6.8

Thus, the proportion of non-risk group applicants clearly increased while that of MHS and percentage of HIV seropositively diminished.
Conclusions. a) The low prevalence of HIV infection among risk groups in Israel may be correlated with the still low incidence and growth of AIDS in Israel. b) The AIDS counselling center is being overused by the wide public, while risk group members do not use it sufficiently.

M.A.P.60 TRENDS IN HIV SEROPREVALENCE AMONG SELF-IDENTIFIED RISK GROUPS UTILIZING ANONYMOUS TEST SITES IN SAN FRANCISCO

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Objective. Describe trends in HIV seroprevalence within specific risk groups using Anonymous Test Sites (ATS) in San Francisco.
Methods. During the 36-month period July, 1985 to June, 1988, demographic and risk information was collected by self-administered questionnaire from 41,808 clients visiting the ATS for the first time for HIV antibody testing.
Results. HIV SEROPREVALENCE BY QUARTER (7/85 - 6/88)

	1985		1986				1987				1988	
	3	4	1	2	3	4	1	2	3	4	1	2
Heterosexual	2%	2%	1%	3%	1%	1%	1%	1%	0%	1%	0%	1%
Gay/Bisex.Men	34	36	36	37	35	36	33	37	40	42	36	38
IV Drug Users	9	5	8	4	8	9	5	8	3	7	12	6
Gay/Bi IVDUs	57	72	68	74	54	71	68	55	62	74	65	50
All Clients	27	27	28	30	23	22	18	17	21	20	22	20

Complete risk group data were available for 63% of those tested for HIV antibody. Overall seroprevalence declined from 27% in July, 1985 to 20% by June, 1988 ($p<.001$) due to increasing rates of heterosexuals served (37% of all clients initially vs. 63% during the final quarter) and decreasing usage by gay/bisexual men (76% initially, declining to 24%).
Conclusions. Despite marked shifts in utilization patterns at the ATS, HIV seroprevalence within major risk groups has remained relatively constant.

M.A.P.61 TRENDS IN HIV SEROPREVALENCE IN AN URBAN SEXUALLY TRANSMITTED DISEASE CLINIC, 1986-1989.

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Objective. To determine trends in the prevalence of HIV infection in an urban sexually transmitted disease (STD) clinic over 2.5 years.
Methods. In a public STD clinic, HIV antibody was assayed in initial-visit patients who had syphilis blood tests in Oct-Nov 1986 (N=367), Aug-Sep 1987 (N=352), Feb-Mar 1988 (N=382), and Sep-Nov 1988 (N=1610); 1989 results are pending. Serum and demographic/risk data were de-linked from identifiers prior to HIV ELISA; positives (HIV+) were confirmed by Western blot. Trends were analyzed by chi square for linear trend. HOM=homosexual and bisexual men; HET=heterosexuals; IVDU=intravenous drug users.
Results. HIV+ rates for the 4 periods were: HOM 14/24 (58%), 7/18 (39%), 17/30 (57%), and 41/101 (41%) (P=0.17); HET IVDU 0/12, 0/13, 0/15, and 5/79 (6%) (P=0.06); HET non-IVDU 0/329, 0/291, 1/337 (0.3%), and 7/1418 (0.5%) (P=0.04); all HET 0/341, 1/330 (0.3%), 1/352 (0.3%), and 12/1502 (0.8%) (P=0.02). Among HET in Sep-Nov 1988, HIV+ included 8/967 (0.8%) males and 4/528 (0.8%) females; 2/858 (0.2%) whites and 9/464 (1.9%) blacks (P=0.001); and rose steadily with age through age 35-39 (P=0.02).
Conclusions. From 1986 through 1988, HIV seroprevalence was apparently stable in STD clinic HOM. By contrast, the HIV+ rate rose in HET, primarily in blacks and IVDU, and with increasing age. STD clinic patients, especially ethnic minority HET, IVDU, and their sex partners, are among the highest priority target groups for HIV counseling and testing and other behavioral interventions.

M.A.P.62 EFFECTIVENESS OF VOLUNTARY HIV ANTIBODY TESTING PROVIDED AT A CLINIC TREATING SEXUALLY TRANSMITTED DISEASES

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Objective: To characterize Sexually Transmitted Disease (STD) Clinic attendees who elect to receive HIV antibody testing and fail to return for results.
Methods: Patients presenting at STD Clinic were offered the opportunity to have HIV antibody testing to obtain the results at a second visit. Patients who participate, complete a questionnaire regarding sexual orientation, IV drug use, etc. ELISA positive specimens were tested by Immunofluorescent Antibody.
Results: Between June and August 1988, 1085 patients attending clinic for evaluation of STD were tested for HIV antibody. Forty-six percent returned for test results. Rate of return were as follows: positive-57.6%; negative-41.7%; total males-47.3%; total females-36.9%. Rate of return by transmission category; homosexual males-72%; bisexual males-57.8%; heterosexual males-48.7%; heterosexual male IV drug users-27.9%; heterosexual females-39.9%; female IV drug users-26.9%. Return rates by ethnic group: white-55%; black-29.3%; hispanic-41.8%.
Conclusion: Return for HIV antibody test results among patients tested while seeking STD services are poor. Homosexual and bisexual males, groups with hightened awareness of their risk of HIV infection, were most motivated to return for results. Heterosexual, IV drug users, females and non-whites had high failure rates. Increased educational efforts and improved strategies to motivate these groups must be developed.

M.A.P.63 EPIDEMIOLOGICAL OBSERVATIONS OF A TERRITORIAL HIV SCREENING CENTRE IN MILAN.

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Objective. To study epidemiological patterns of HIV diffusion in open population in an Italian urban territory.
Methods. During the period Dcember 1985-December 1988, a territorial out-patients Department for AIDS prevention had been operating in a town district (Milan 13, population 28.956) dealing with information, spontaneously requested diagnostic examinations and follow-up of people at risk. 2.296 subjects asked for serological assay and were examined (1530 males, 766 females); 551 declared themselves intravenous drug addicts (IVDAs), 168 homo- or bisexual, 1.020 having had heterosexual intercourses partners), 73 family contacts, 57 blood recipients, 91 exposed to professional risk. The determination of anti-HIV Ab was performed by ELISA and WB methods.
Results. Evidence of infection was observed in 270 IVDAs (49.0% of the group), 16 homo/bisexual (9.5%). In the group of heterosexual intercourses 25 cases of seropositivity were registered: among them, 16 were heterosexual partner of surely HIV infected persons.
Conclusions. In the population considered, the group of IVDAs suffers the highest percentage of seropositivity, at comparable levels as to Italian data, whereas the percentage of homo/bisexual is lower than the national average. 9.8% among partners of surely seropositive subjects resulted infected, indicating the important standard of risk of HIV diffusion via heterosexual intercourse.

M.A.P.64 HIV SEROPREVALENCE SURVEYS IN THE SAN FRANCISCO BAY AREA

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Objective. To estimate HIV seroprevalence in the San Francisco (SF) Bay Area.
Methods. Seroprevalence surveys in sexually transmitted disease (STD), women's health, tuberculosis and drug treatment clinics were begun in the 6-county SF Bay Area in 1988. We have collected 16,000 specimens in 1988 and will collect an additional 35,000 in 1989. With active participation from each health jurisdiction and the Centers for Disease Control, standardized research protocols were developed for conducting non-blinded and blinded HIV serosurveys. Available data on blinded HIV antibody testing from 5 health jurisdictions adjacent to SF were analyzed by demographic characteristics and risk group. Comparable data are not yet available from SF clinics.
Results. 52 (1.9%) of 2770 specimens were repeatedly ELISA reactive and confirmed positive by Western blot analysis. Among STD clients, males had a significantly higher rate of positivity (2.7%) than did women (0.7%) ($p=.005$). Homosexual/bisexual men were significantly more likely to be positive (22%) than those with undetermined risk (3%) or all other risk groups (0.7%) for specimens for which risk factors were obtained. Seroprevalence among STD clients did not significantly differ across age groups or across counties.
Conclusion. The 1.9% seroprevalence in selected clinics demonstrates the scope and geographic distribution of the HIV epidemic for counties adjacent to a major AIDS epicenter.

M.A.P.65 HETEROSEXUAL TRANSMISSION OF HIV: PREVALENCE AND RISK FACTORS

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Objective. To determine the prevalence and risk factors associated with HIV infection in heterosexuals requesting HIV antibody testing.
Methods. Between March 1985 and December 1988, risk factors of heterosexuals who tested positive for HIV antibody testing were assessed.
Results. During the 42 month period, 5482 heterosexuals (3544 men and 1938 women) were tested for HIV antibody. Fifty one (0.9%) were found to be HIV antibody positive. These included 37 men and 14 women. The majority (58.8%) were intravenous drug users (IVDU's), with more male IVDU's infected (22) than women (8). Seven clients (5 men and 2 women) were found to be infected by contaminated blood, and one woman by a contaminated artificial insemination. Sexual contact was the only identified risk factor in 25.5% (13). Seven of these were men who nominated prostitute contact as a risk factor, while all of the remaining 6 HIV antibody positive heterosexuals (3 men and 3 women) had sexual partners who were known to be HIV infected.
Conclusion. Intravenous drug use was the major HIV risk factor among heterosexuals. However, sexual intercourse was the only identified risk factor in a sizable proportion of clients. These results indicate that although IVDU's remain a high priority group to be targeted in education and behaviour change programs, sexual behaviour change in the broader population is also necessary if HIV transmission is to be arrested.

M.A.P.66 PREVALENCE OF UNSUSPECTED HIV-INFECTION AMONG STD-PATIENTS IN ANTWERP, BELGIUM.

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Objective. To define the prevalence of HIV unsuspected infections among STD patients unaware of their HIV serostatus.
Methods. In 1988 all new patients consulting an STD-clinic in Antwerp, Belgium, and unaware of possible seropositivity, were screened for the presence of HIV-antibodies. During the same year 50 persons with HIV-infection were being followed at the same clinic. Confidential testing (with patients consent) was offered for those who wanted to know their serostatus, whereas anonymous testing (results were not identifiable for patient and physician) was performed for the others. Only patients residing in Belgium were included in the study. All sera were examined with an Enzyme-Immuno-Assay test (Vironostika anti-HTLV III-microelisa system, Organon technica) and positive sera were confirmed with Western Blot (Dupont de Nemours).
Results. Prevalence of HIV-infected patients : % and 95% confidence interval (CI).

patients	number/total	% (95 % CI)
male heterosexuals	1/345	0.29 (0.01-1.63)
male homosexuals	1/44	2.27 (0.06-12.02)
female heterosexuals	2/255	0.78 (0.10-2.80)
female prostitutes	0/64	0 (0.00-5.60)
seamen	0/45	0 (0.00-7.87)

Of a total of 753 patients tested, 522 (69.3%) were tested confidentially and 231 (30.7%) anonymously. Four seropositive patients were detected (0.53%) and all were tested confidentially.
Conclusion. These data suggest a low prevalence of HIV-infection in heterosexual Belgian patients consulting for STD-related problems, despite a high proportion (>20%) of non IVDU heterosexuals among Belgian AIDS patients.

M.A.P.67 HIV-1 INFECTION IN NEW YORK CITY STD CLINIC PATIENTS: EVIDENCE FOR STABLE SEROPREVALENCE, 1987-1988

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Objective. To determine HIV-1 seroprevalence in patients at New York City STD clinics, and to compare rates over time in one clinic.
Methods. Blinded serosurveys were conducted among STD clinic patients in one clinic in 1987 and in all 12 STD clinics in 1988. The interval between the 2 surveys was 18 months. Specimens were obtained from routine syphilis testing and were analyzed for HIV-1 by ELISA with confirmatory Western Blot. Data on age, race/ethnicity, diagnosis and RPR result were collected.
Results: In 1988, 195/2533 (7.7%) of clinic attendees were HIV-1 positive. The highest rate (12.1%) was found among clinic attendees age 30-39. Among those diagnosed with a genital ulcer (GU) at the time of visit, 23/173 (13.3%) were HIV-1 positive as opposed 123/1782 (6.9%) with other diagnoses ($p<.05$). For the clinic surveyed in both years, 26/348 (7.3%) were positive in 1987 and 34/694 (4.9%) positive in 1988. This difference was not statistically significant. In both 1987 and 1988 patients with GU were significantly more likely to be HIV-1 seropositive than were patients with other diagnoses, OR=2.3, p=.02 and OR=2.9, p=.04 respectively.
Conclusions. HIV-1 is a common infection in New York City STD clinic patients and those with a GU are more likely to be infected. Seroprevalence remained constant in one STD clinic over an 18 month interval. The data support expanding the availability of HIV-1 counseling and testing in all STD clinics.

M.A.P.68 CHARACTERIZATION OF HIV INFECTED STD CLINIC CLIENTS IDENTIFIED THROUGH ROUTINE VOLUNTARY SCREENING: IMPLICATIONS FOR FUTURE HEALTH CARE NEEDS

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Objective. To describe demographic and historical characteristics of HIV infected patients identified by a routine voluntary screening program in Baltimore STD clinics.
Methods. Consenting patients are screened for HIV-1 using commercially available EIA, confirmed using a licensed Western Blot test, and are given appointments to return for test results. During January-October 1988, there were 18,907 patient visits to the STD clinics; 12,795(66%) were tested for HIV. Of patients tested, 531(4%) were HIV-infected and to date, 321(60%) have returned for results and further evaluation.
Results. HIV infected patients were predominately (approximately 2/3) young, black, single males. High risk behavior was common among infected patients: 33% reported homosexual exposure, 37% reported prior IV drug use, and 39% reported exposure to a sex partner at risk for HIV. No traditional risk factors for HIV infection were acknowledged by 18% of infected patients. STDs were also common in infected patients; 42% reported prior syphilis and 17% had been treated for syphilis in the preceeding year. The majority of patients were asymptomatic(71%) or had generalized lymphadenopathy(18%) at the time of diagnosis. Many of these patients have few health care resources available; 93% were unmarried and 69% had either no health insurance(45%) or were covered solely by public assistance health plans(24%).
Conclusion. Routine, voluntary HIV screening is a well accepted, useful means to identify HIV infected individuals in high risk settings such as STD clinics. Identification of these individuals may provide useful information for projecting future health care needs.

M.A.P.69 FREQUENCY OF HIV INFECTION AMONG PATIENTS OF STD OUT-PATIENT CLINIC

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Objective.The incidence of HIV antibodies has been investigated in 1327 patients with various STD,1022 males and 305 females, seen in the STD out-patient clinic.Sixty six males/6.5%/ were homosexuals or bisexuals.Methods.The HIV antibodies were tested by the EIA method,and positive tests were confirmed by the Western-blot technique.Results.The HIV antibodies were found in 15 male patients and 2 females i.e.13% of all individuals studied.Thirteen of men were homosexuals or bisexuals,which represents 19.[illegible]%of patients with such a sexual behaviour one of them was also IV drug addict.Two of 3 heterosexuals cases with positive HIV test were IV drug users.Seven of 13 of HIV-positive homosexuals/bisexuals/53.[illegible]%/ had syphilis recently or in anamnesis,whereas among all homosexuals/bisexuals studied there were 42.4% of cases with history of syphilis.The frequency of HIV infection in homosexual STD out-patients is markedly higher than in heterosexual STD out-patients/0.4%/as well as in another group of homosexuals without STD /2.[illegible]%/.
Conclusion.Patients of the STD out-patient clinic represent high risk group of HIV infection,predominantly homosexuals with diagnosis of syphilis. These patients should be tested for the presence of HIV antibodies.

M.A.P.70 ANALYSIS OF TRENDS OVER TIME IN CLIENT CHARACTERISTICS AT MINNESOTA (MN) HIV-1 ANTIBODY COUNSELING AND TESTING SITES

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Objective. To evaluate the role of Minnesota HIV-1 antibody counseling and testing site programs (CTS) in HIV-1 transmission prevention efforts.
Methods. CTS client demographic and risk factor data were analyzed for 18,483 CTS clients with HIV-1 serology from 7/85-6/88.
Results. The highest seroprevalence rates were in male homosexual/bisexual intravenous drug users (37 of 145; 26%) and homosexual/bisexual men (705 of 5,310; 13%). A significant decrease in seroprevalence for all clients was noted from 14.3% for the first six months of operation to 3.2% for the last six months ($p<0.001$). This corresponds to changes in client characteristics over time: 1) the number and proportion of female first-time clients who were at low risk for HIV-1 infection increased ($p<0.001$); 2) the number and proportion of homosexual/bisexual males decreased and correspondingly the number and proportion of low-risk heterosexual males increased ($p<0.001$); 3) for homosexual/bisexual males, a significant decline in HIV-1 antibody prevalence over time was noted ($p<0.05$).
Conclusions. These data indicate that CTS programs in Minnesota have progressively served fewer clients at high risk for HIV-1 infection over time. Outreach programs that identify and serve persons at highest risk for HIV-1 infection may be a more effective use of limited public health resources.

M.A.P.71 BLIND HIV-AB AND SYPHILIS-AB SEROPREVALENCE SURVEY IN NEW YORK STATE STD CLINICS

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Objective. To monitor over time the HIV and syphilis seroprevalence among STD clients in all regions of NYS, excluding NYC.
Methods. Sera of clients receiving syphilis testing (RPR, FTA) at 19 STD clinics in 8 NYS counties during 1988 were tested anonymously for HIV (ELISA, WB). Clients were excluded if they had been tested within the previous 90 day period.
Results. All sites had a substantial percentage of clients with HIV-ab (1.14 to 3.17%) and syphilis-ab (1.64 to 16.0%) positivity. Of 9011 clients, 179 (1.99%) had HIV-ab+ sera; quarterly period prevalence did not increase over time. HIV-ab was higher in males (139/6198, 2.24%) than females (37/2731, 1.35%) ($p<.001$); Hispanics (15/352, 5.77%) than either white (73/3370, 2.17%) or black non-Hispanics (88/5166, 1.70%); and increased with age, from 0.34%, ages 13-19; 1.8%, 20-29; 3.0%, 30-39; to 4.67% in those 40-49; 6.65% of those 50 or older were HIV-ab+. (test for linear trend, p=.0026). Of 8816 with results recorded, 334 (3.79%) had sera RPR+ and FTA+ for syphilis-ab. Overall, those syphilis-ab+ were 3.4 times more likely to have HIV-ab than those without syphilis-ab (5.99 vs. 1.82%, $p<.001$). Among counties, however, the association between HIV-ab and syphilis-ab varied greatly (odds ratios ranged from 0.56 to 15.3).
Conclusion. The HIV epidemic has spread throughout NYS in the STD clinic population. Although HIV-ab status is strongly associated with sero-evidence of current or previous syphilis infection, this association varies widely between clinic location, and those without evidence of syphilis-ab still have a substantial rate of HIV-ab positivity.

M.A.P.72 HIV-1 INFECTION IN PERSONS ATTENDING SEXUALLY TRANSMITTED DISEASE (STD) CLINICS IN MINNESOTA (MN)

Danila, Richard*; Henry K***; Simpson M**; Osterholm M*; MacDonald K*. *MN Dept. of Health, **Hennepin County Community Health Dept., Minneapolis; ***St. Paul Div. of Public Health, St. Paul; MN, USA.

Objective. To determine HIV-1 seroprevalence and risk factors associated with infection in persons attending STD clinics in Minnesota.
Methods. 1094 patients attending two STD clinics from 4/1/88-11/1/88 were systematically selected; participants were interviewed for HIV-1 infection risks and had blood drawn for HIV-1, syphilis, and hepatitis B serology.
Results. Questionnaire and serology data were completed for 932/1094(85%) participants. HIV-1 infection was associated with male-to-male sex ($p<0.001$), and among homosexual/bisexual males, receptive anal intercourse ($p<0.05$). HIV-1 race-specific rates were: white 1.3% (7/529); black 1.1% (4/352); Hispanic 6.3% (1/16); other 0.0% (0/35).

HIV-1 Seroprevalence by Risk Factors

	Male	Female
Risk Category	HIV-1 Pos./Total (%)	HIV-1 Pos./Total (%)
Homosexual/bisexual	9/70 (12.9)	-
IV drug user (IVDU)	1/52 (1.9)	0/17 (0.0)
Homo./bi./IVDU	1/7 (14.3)	-
Heterosexual	0/561 (0.0)	1/225 (0.4)

Conclusions. In Minnesota, HIV-1 infection in STD patients is primarily limited to those with a history of male-to-male sex or IV drug use. Thus, in low prevalence areas, HIV-1 antibody testing should be targeted to STD patients known to be at highest risk.

M.A.P.74 HIV SEROPREVALENCE IN SEXUALLY TRANSMITTED DISEASE CLINICS IN LOS ANGELES COUNTY

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Objective. To estimate the seroprevalence of human immunodeficiency virus (HIV) among patients attending sexually transmitted disease (STD) clinics in Los Angeles County (LAC).
Methods. Between July and December 1988, consecutive attendees at 4 public STD clinics were screened for HIV Ab. Repeat ELISA positives were confirmed by the immunofluorescent antibody and Western Blot. HIV Ab results were linked without personal identifiers to self-reported demographic and risk factor information.
Results. Of the 2,578 STD patients tested, 2.9% (76) were confirmed HIV Ab positive; the rates were 3.8% (68/1,796) in men, and 1.0% (8/782) in women. The infection rate among Hispanics was 4.5% (32/708); whites 2.5% (5/200); and, blacks 2.4% (39/1608). Hispanics comprised 27.3% of the STD patients tested, but accounted for 42.1% of the seropositives. In contrast, whites and blacks made up 7.8% and 62.6% of the study population, and 6.6% and 51.3% of the seropositives, respectively. Among the 133 persons reporting gay/bisexual behavior, 30.8% (41) were seropositive; 58.5% (24) Hispanic; 34.1% (14) black; and 7.3% (3) white. Seropositivity among heterosexuals was 1.4% (34/2,376); 1.6% (27/1,637) for men, and 0.9% (7/739) for women. The highest rate of infection for heterosexuals was among black men 1.9% (19/1025), and the lowest rate among Hispanic women 0.6% (1/173). Approximately 3.0% of those tested reported recent IV drug use, and 8.0% of those (6/75) were seropositive.
Conclusion. HIV infection among patients at STD clinics in LAC is substantial and warrants routine testing and counseling. The large proportion of minorities attending public STD clinics affords an opportunity to provide AIDS education and risk reduction counseling to high risk members of minority populations.

M.A.P.76 INCIDENCE OF HIV INFECTION IN GAY AND BISEXUAL MEN ATTENDING A COUNSELING AND TESTING SITE OR AN AIDS PREVENTION PROGRAM.

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Objective: To determine incidence of HIV infection in gay and bisexual men (GM) using a counseling and testing site (CTS) or enrolled in an AIDS Prevention longitudinal cohort study (APS).
Methods: GM who attended Denver's voluntary CTS from July, 1985 through December, 1988, and GM enrolled in APS from January, 1987 thru December 1988 (visits every 6 months), were evaluated for incidence of HIV infection, as indicated by seroconversions (SC). Included in the analysis were GM who were seronegative at initial visit and retested at least once. SC was defined as reactive EIA and Western blot antibody tests on a 2nd or later visit.
Results:

	CTS 1985-1986	CTS 1987-1988	APS 1987-1988
No. seroconversions	42	3	4
No. persons observed	396	183	348
No. person-years observed	653.2	151.7	296.5
Mean years/person observed	1.10	0.83	0.85
Rate SC/100 person-years	6.43	1.98	1.35

Conclusion: In Denver, the incidence of HIV infection in GM has decreased significantly between 1985-1986 and 1987-1988. Lower incidence rates were observed both in GM attending a CTS and in GM enrolled in an AIDS prevention program, who likely were self selected for higher motivation for behavioral change.

M.A.P.73 HIV SEROPREVALENCE OF STD CLINICS IN HOUSTON, TEXAS, U.S.A.

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Objective: To present statistical data supporting the growing threat of HIV infection within specific sexually active populations attending an STD clinic.
Methods: A blinded survey was conducted at a large STD clinic servicing a predominantly black area of Houston. All blood samples taken for standard RPR screening were also tested for HIV using the Elisa and Western blot tests. Patients included in the survey were taken consecutively until predetermined gender quotas were attained. No ethnic or age bias was imposed on the selection procedure.
Results: A total of 1,140 samples were collected with 6% HIV positive. Seropositivity is highest in the age groups between 25-34 (23%). Overall, whites are 10% positive with 76 samples tested, blacks are 6% positive with 960 samples tested, Hispanics are 7% positive with 96 samples tested and other ethnic populations are 25% positive with 8 samples taken. Data for heterosexual males (n=543) and females (n=505) indicate whites are 1% positive, blacks are 2% positive and Hispanics are 4% positive. Data for homosexual males (n=92) show whites and blacks to be over 50% positive.
Conclusion: The results of the survey allow us to draw certain conclusions: 1) large sampling from the black population permits us to place greater confidence in the high seropositivity found in that group; 2) homosexual males show a high seropositivity in all age groups and ethnic classifications; 3) samples collected are representative of the clinic population; and 4) persons seeking treatment at Houston STD clinics are showing an overall prevalence of 6% HIV positive.

M.A.P.75 DEVELOPMENT AND FUNDING OF PUBLIC HIV COUNSELING AND TESTING SERVICES IN THE UNITED STATES

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Objective: To describe the history and development of public sector funded HIV counseling and testing (CT) services in the U.S. since 1985.
Method: We reviewed quarterly reports from State HIV/AIDS prevention programs and the CDC funding awards of State AIDS prevention cooperative agreements in order to document funding levels for CT, number and location of CT sites, and the number and seropositivity rates of clients served.
Results: Since voluntary HIV antibody counseling and testing services became one of the strategies to prevent HIV infection in 1985, client demand for such services has increased dramatically. In 1985, there were 874 alternate testing sites that tested 79,083 persons nationwide. There were 917 sites and 180,000 tested in 1986, and 1580 sites and 504,000 tested in 1987. Reports show 215,000 persons were tested (annual rate of 860,000) in 1958 sites during July-September of 1988. Funding for risk reduction counseling and testing services increased from $9.8 million in 1985 to $87.5 million in 1989. The rate of seropositivity has decreased from a high of 17.3% in 1985 and 15.0% in 1986, to 5.8% in 1987 and 4.9% in 1988.
Conclusion: Although the original purpose of HIV antibody testing was to protect the blood supply, risk reduction counseling combined with testing has become one of the important intervention strategies available to change sexual and needle sharing behaviors. The increases in funding for these programs in the U.S. has enabled an expansion of CT services to confidential testing facilities in sexually transmitted diseases, women's health and drug treatment facilities in 1988 and 1989.

Autres rétrovirus : le VIH-2
Other Retroviruses: HIV-2

M.A.P.77 HIV2 INFECTION. SOME CLINICAL AND EPIDEMIOLOGICAL ASPECTS IN PORTUGAL

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Objective. To assess the frequence of HIV2 infection in HIV seropositives studied at our Department.
Methods. The charts of 225 HIV seropositives (ELISA and Western blot) were analysed. Tests for HIV2 were performed in HIV1 negatives with disease, sexual partners of HIV2 positives or possibility of infection in Africa.
Results. Nineteen (8.4%), 8 women, 11 men, were HIV1 negative and HIV2 positive. They all denied homosexual contacts or IVDU. Only 2 had received blood transfusions (1 man in 1974, in Portugal, and his wife was also positive; another man in 1968, aged 3, in Africa, who has lived in Portugal ever since). Nine, 5 women, 4 men, were from Guinea-Bisseau. One man had visited several african countries and his wife was also positive. Four men had been in Africa for military service (2 in Guinea, 1968-69 and 71-73; 2 in Angola, 65-66 and 66-68). One woman, prostitute, could not deny sexual contacts with african men. Eight were asymptomatic carriers, 3 ARC and 8 AIDS. Five of them died.
Conclusion. HIV2 infection may be more common outside Africa than generally accepted, should be thougth in HIV1 negatives suspected of AIDS and excluded in blood donors, at least in those who have ever been in Africa.

M.A.P.78 HIV-2 IN ITALY: NO EVIDENCE, YET.

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Objective. The authors have carried out a wide-scale seroepidemiological survey in the region of Lombardy (Italy) to verify the presence of HIV-2 infection among risk categories.

Methods. 1069 subjects (946 drugs addicts, 80 homosexuals, 25 haemophiliacs and sexual partners) have been screened for HIV-1 and HIV-2 infections (HIV-1 and HIV-2 ELISA and W.B. by Diagnostics Pasteur).

Results. Among the 745 HIV-1 seropositive subjects, 233 sera reacted positively to HIV-2 ELISA test. Confirmation by HIV-2 W.B. has been obtained in 29 cases. When submitted to the specific synthetic peptide assay, the 29 HIV-1/HIV-2 W.B. positive sera strongly reacted to the HIV-1 peptide, while only 2 showed a weak HIV-2 reactivity. The same pattern of serological reactivity has been obtained on the same 29 subjects 10 months later.

Conclusions. Our results don't confirm the existence of HIV-2 among risk cathegories in Italy. This conclusion is also supported by the absence of isolated HIV-2 pattern of seropositivity. The high false positivity rate in ELISA (31,3%) and, to a lesser extent, in W.B. (3,9%) demonstrates the presence of antigenic cross-reactivity among envelope proteins of the two viruses. Specific synthetic assay prooved to be sensitive and specific. The constant presence of weak HIV-2 reactivity in 2 HIV-1+ samples at 10 months interval rules out the possibility of early HIV-2 seroconversion.

M.A.P.79 HUMAN IMMUNODEFICIENCY VIRUS TYPE 2 (HIV-2) SCREENING OF A HIGH RISK POPULATION IN ADDIS ABABA, ETHIOPIA.

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** WHO Reference Center for AIDS, Cairo, Egypt.
*** AIDS Prevention and Control Programme, Ministry of Health, Addis Ababa, Ethiopia.

Objective. The major objective was to evaluate a high risk population from Addis Ababa, Ethiopia, for evidence of HIV-2 infection.

Methods. Sera previously collected from 330 prostitutes residing in Addis Ababa were included in the evaluation. Sixty of these had been previously confirmed as HIV-1 reactive sera. A commercial ELISA (Genetic systems) designed to detect antibodies to HIV-2 and HIV-2 Western Blot (Dupont) were used.

Research. Of the 330 sera assayed, 60 were known to be confirmed HIV-1 positives. Thirty-four of these 60 sera were also reactive by the HIV-2 screening ELISA. Assessment of these 34 HIV-2 reactive sera by Western Blot revealed that 10 reacted in a manner that fulfilled the criteria for HIV-2 positivity; all of these were strongly reactive for HIV-1 by Western Blot.

Conclusion. Almost all HIV reactive sera in this population are characteristic of exposure to HIV-1. However, 10 sera reacted with both assays and could represent either dual infection or cross reactions.

M.A.P.80 DETECTION OF ANTIBODIES AGAINST HIV-2 PROTEINS IN HIV-1 SEROPOSITIVE SUBJECTS FROM FRANCE AND GREECE.

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Objectives: To determine the prevalence of HIV-2 infection in HIV-1 seropositive subjects from France and Greece.

Methods: HIV-1 infection was always confirmed by western blot analysis. Antibodies against HIV-2 proteins were detected by western blot and discrimination between HIV-1 and HIV-2 infection was based on the serum reactivity with synthetic peptides homologous to the 583-609 region of gp 41 (pept 39=HIV-1) and the correspondant region of gp36 (pept 42.2.1=HIV-2).

Results: Western blot analysis of the sera revealed a frequent reaction with isolated HIV-2 proteins. However, frequently they reacted with isolated HIV-2 proteins only 7(16%) and 9 (50%) of 44 and 18 sera of French and Greek origin, respectively, displayed antibodies against all HIV-2 proteins. Among the 15 French sera reactive with the gp of HIV-2 only 4(27%) revealed reactive with both the pept 39 and the pept 42.2.1 whereas none of the 9 Greek sera was reactive with the pept 42.2.1. However, HIV-2 infection was confirmed in an asymptomatic Greek blood donor in the absence of HIV-1 infection.

Conclusions: These findings seem to indicate that although double HIV-1/HIV-2 can be observed in a small number of HIV-1 seropositive subjects and HIV-2 is present in Greece, there is still a different transmission rate of this virus in different European countries.

M.A.P.81 HIV-2 IN DRUG ABUSERS OF SPAIN

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Infectious Diseases and Blood Bank Units. Hospital de Badalona "Germans Trias i Pujol". Universitat Autònoma de Barcelona.Barcelona, Spain. Laboratoires Clonatec**, France.

Objective. HIV-2 is a new AIDS retrovirus identified in West African patients in 1986. Up now, most world cases of HIV-2 infected individuals came from West Africa. Recently several cases of indigenous HIV-2 infected persons have been reported in Europe, usually among classical risk groups for HIV-1 infection. We report the incidence of HIV-2 infection in drug abusers of Barcelona during five last years.

Methods. We studied 433 Spanish intravenous drug abusers. Serum samples were collected between 1984 and 1988 in the cases seeking medical care for the first time in our hospital. Antibodies to HIV-2 were investigated by ELISA and samples repeatedly reactive were studied by Western blot.

Results

TOTAL	1984	1985	1986	1987	1988
HIV-1 + (257/433;59.3%)	21/37	63/98	61/86	112/180	26/32
HIV-2 + (9/433; 2.1%)					
ELISA 47/433	3	18	9	17	3
WB 9/47	0	0	3	5	1

Conclusion. Our results suggest that HIV-2 infection is present among Spanish drug abusers. All cases had HIV-1 and HIV-2 coinfection.

M.A.P.82 EPIDEMIOLOGY OF AIDS IN PORTUGAL

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Objective. As far as AIDS is concerned Portugal is a country with no parallel in Europe due to the prevalence of HIV-2 infection:of 199 cases notified by 31-12-1988, 19 were due to HIV-2.The purpose of this survey is to present the results of sero-epidemiological studies performed to evaluate the prevalence of HIV infection among groups with risk behaviour.

Methods.A total of 3246 sera from male homosexuals,IVDU,prostitutes,heterosexuals,pregnant women and families of AIDS were tested for HIV-1 and HIV-2 antibodies by ELISA,confirmed by Western Blot.

The Results are as shown:

	HIV-1	HIV-2		HIV-1	HIV-2
Homosexuals(210)	28.5%	1.0%	Pregnant v men(572)	0.5%	0.7%
IVDU (1739)	6.5%	0.2%	African connections(287)	2.4%	9.1%
Prostitutes (214)	1.4%	0.9%	Health workers (115)	0 %	0 %
Heterosexuals (75)	16.0%	21.3%	Family contacts (36)	0 %	0 %

Conclusions.HIV-2 infection is endemic in Portugal,although with less expression than HIV-1. Due to past and present contacts with Africa and the presence in Portugal of immigrant African communities, an epidemiological surveillance of the population is in progress to learn the natural history of HIV infection and evaluate the role of co-factors in the infection (STD, behaviour in terms of sex or drug use,other viral infection,etc.)

M.A.P.83 AIDS CAUSED BY HIV-2 IN SOUTHERN AFRICA

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The RAPID ELAVIA MIXT ELISA, a first generation ELISA designed to detect antibodies to both HIV-1 and HIV-2, was introduced into our routine HIV screening laboratory in June 1988. Between June and December, 1593 routine sera were received. Sera repeatedly reactive on the RAPID ELAVIA MIXT assay were further evaluated using indivual ELISAs for HIV-1 and HIV-2 (ELAVIA I or ELAVIA II respectively). Three sera, reactive in the RAPID ELAVIA MIXT assay, were unreactive in the ELAVIA I but reactive in the ELAVIA II ELISA. Western blotting, using the DuPont HIV-2 IgG Blot, revealed reactivity against core and envelope components of HIV-2.

Two of the HIV-2 positive sera were from black Malawian males with symptoms suggestive of HIV infection. One patient had presented with weight loss and neurological symptoms while the second was a patient with miliary tuberculosis that was unresponsive to standard tuberculosis therapy. Blood drawn from the second patient 16 days before he died showed decreasing reactivity with the core protein p26 and loss of reactivity to the glycoprotein gp41. The third specimen was from a black Mozambican male who also presented with tuberculosis that did not respond to therapy. The patient developed Kaposi's and died after refusing further treatment.

Our results demonstrate that HIV-2 has been introduced into Southern Africa and highlight the requirement for sensitive screening assays capable of detecting antibodies to both HIV-1 and HIV-2.

M.A.P.84

HIV 2 INFECTION IN FEMALE AND MALE BRAZILIAN PROSTITUTE GROUPS

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Objective: The identification of the second type of human immunodeficiency virus designated HIV 2 in patients originatig from West Africa with the acquired immunodeficiency syndrome opened a new area of seroepidemiological investigation. Therefore we studied the presence of HIV 2 infection in Brazil.
Subjects and methods: The presence of specific HIV 2 antibodies was investigated in 173 sera obtained from individuals belonging to a risk group: 73 male homosexuals of a cohort of travestites (professional prostitutes) with activity in São Paulo, Brazil; 100 women prostitutes with activity in Santos, Brazil. Sera were tested for HIV antibody by ELISA. Repeated positive ELISA results were confirmed by indirect immunofluorescence assay and Western-blot. Sera giving cross reactivity at the level of HIV 1 and HIV 2 large glycoproteines were further tested for reactivity against a peptide corresponding to the dominant epitope of transmembrane protein (HIV 1 "gp41" glycoprotein and HIV 2 "gp36" glycoprotein).
Results: The number of their partners varied between 1 (minimum) and plus 100 (maximum) partners a week. The average number of partners a week was 27 (standard deviation - 21.1). All the individuals had been practising their activity for at least one year before the study. In the cohort of travestites we found 22/73 (30.0%) seropositives to HIV 1 and 3/73 (4.1%) seropositives to HIV 2. Seropositivity for HIV 1 and HIV 2 was seen in five men (6.8%). In the group of women prostitutes we found 10/100 (10%) seropositives to HIV 1 and 2/100 (2.0%) seropositives to HIV 2. Seropositivity for HIV 1 and HIV 2 was seen in one women (1.0%).
Conclusion: These brazilian cases confirm the presence of HIV 2 in this country.

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M.A.P.85

EFFICACITE DANS LE DEPISTAGE DES SERUMS HIV2

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Objectif : Analyser le gain obtenu dans le dépistage des sérums HIV2 par des trousses mixtes (HIV1 + HIV2) par rapport aux trousses HIV1
Méthodes : 35 sérums HIV2 (dont 11 dons de sang *) provenant de sujets résidant en France ont été étudiés parallèlement avec 2 trousses Abbott (HIV1 recombinant = A1 et Combo HIV1+ HIV2 = A2) 2 trousses Du Pont de Nemours (Env 9 version 1 = D1 et Env9 version 2 = D2) et 2 trousses Diagnostics Pasteur (Elavia 1 = P1 et Elavia mixte = P2)
Resultats : 28 sérums ont fourni un résultat positif avec les 6 trousses. Les 7 sérums donnant un résultat négatif avec au moins 1 trousse HIV1(A1,D1 ou P1) ont tous été reconnus par les trousses HIV1+HIV2 (A2etP2) ou la trousse version 2 (D2). Les résultats de ces 7 sérums sont fournis ci-dessous (Ech/Seuil).

	A1	A2	D1	D2	P1	P2
26 PN*	0.5	>6	1.5	4.1	0.6	>6
35 MJ	1.4	5.0	0.4	>5	1.3	>6
51 GA	0.6	>6	0.5	>5	1.1	>6
5 GRM*	3.3	>6	0.4	>5	4.0	>6
12 MJ	1.5	>6	0.2	>5	3.0	>6
52 CB	2.5	>6	3.7	>5	0.8	>6
LEG	0.3	4.8	0.2	2.5	0.2	>6

Conclusion : Bien que ces 3 trousses HIV1 détectent de 81 à 86 % de sérums HIV2, l'utilisation en transfusion de trousses de dépistage reconnaissant la totalité des HIV2, à condition qu'elles aient une excellente sensibilité HIV1 et une bonne spécificité, est très souhaitable.

M.A.P.86

PREVALENCE OF HIV-1 AND HIV-2 ANTIBODIES IN INDIVIDUALS ATTENDING A CLINIC FOR S.T.D.. A TWO YEAR FOLLOW UP.

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There is in Portugal a population with great contact both in the past and at present with individuals from African countries.
For this reason we decided to determine, during a period of about two years the antibodies to HIV-1 and HIV-2 in individuals attending a clinic for STD in Lisbon.
During this period we tested 1253 sera (640 males and 613 females).
We found 32 seropositive for HIV (20 males and 12 females).
Eight individuals were seropositive for HIV-2 (2 males and 6 females) and 24 were seropositive for HIV-1 (18 males and 6 females).
In the male seropositive group there are 6 homosexuals, 6 bisexuals and 8 heterosexuals. Among the seropositive females 11 are prostitutes (of a total of about 350 prostitutes followed) and one is an IVDU.
We conclude that HIV-1 and HIV-2 are present in all the groups.
The studies are in progress in order to have a better knowledge of the problem and also the role of some of this infected people in the heterosexual transmission of infection specially as sexual behaviour is concerned.

Progression : marqueurs de laboratoire et cofacteurs
Progression: Laboratory Markers and Cofactors

M.A.P.87

THE LEVEL OF EPSTEIN-BARR VIRUS EXCRETION IS A PREDICTOR OF DISEASE PROGRESSION IN HIV INFECTION.

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Objective. To analyze the relationship between HIV and EBV infections in a cohort of homosexual men.
Methods. Twenty seven HIV-seropositive and 25 HIV-seronegative homosexual and 52 age-matched heterosexual men were studied. Patients were classified according to the CDC criteria for HIV infection. Individuals in group IV were excluded. Patients were evaluated at 0, 2, 6, 12 and 18 to 24 months. EBV and human (hDNA) DNA's were measured in oropharyngeal washings by dot hybridization and densitometry scanning.
Results. Twelve individuals among the 27 HIV-seropositive had low level (<0.7ng of EBV DNA /μg of hDNA) and 3 had undetectable levels of EBV DNA in mouth washings. None of these subjects demonstrated progression of the HIV infection. In comparison, 12 of the 27 HIV-seropositive men had high levels of EBV DNA excretion (≥ 0.7ng/μg hDNA) and 9 demonstrated progression of disease. At the 18 month followup, of 16 asymptomatic HIV seropositive (group II), 3 progressed to group III and 1 to group IV. Of the 11 group III individuals, 5 developed AIDS. Patients who progressed to group III or IV disease had significantly higher levels of EBV excretion (2.27 ± 2.0 ng/μg hDNA) on initial assessment than HIV-seropositive individuals in whom progression of HIV-infection was not demonstrated (0.34 ±.30 ng/μg hDNA, p=<0.0015).
Conclusion. The positive predictive value of high levels of EBV excretion for progression of HIV infection was 75% at 18 months. High EBV excretion was found in 3 of 25 HIV-seronegative and 4 of 52 heterosexual men. This would suggest that high EBV excretion is not solely on the basis of HIV-induced immunosuppression.

M.A.P.88

PROGNOSTIC VALUE OF ANEMIA IN ASYMPTOMATIC HIV-POSITIVE MEN

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Objective: To study the prognostic value of anemia in 225 asymptomatic HIV-positive men and to assess the correlation to thrombocytopenia.
Methods: We measured hemoglobin (Hb) and platelets (plt) in 225 consecutive asymptomatic homo- or bisexual men with at least two visits and more than one month follow-up. The progression from early stages (CDC II and III) to advanced stages (ARC and AIDS) was analysed for patients with anemia (Hb < 14.0 g/dl) and without anemia using product limit estimators and the Cox proportional hazard regression model.
Results: The median observation time of the cohort was 617 days (range 28 - 1636). Anemia developed in 8% of the patients after a median observation time of 332 days (range 1 - 1240) and did not correlate with plt counts. The following table summarizes the results obtained:

	with anemia		without anemia	
Number	18	(8%)	207	(92%)
Median age (years)	44	(26-53)	36	(19-67)
Mean hemoglobin [g/dl]	13.3	(SD 0.5)	15.7	(SD 0.87)
Mean platelets [10^9/l]	233	(SD 83.7)	245	(SD 66)
Progression to ARC/AIDS	8	(44.4%)	26	(12.6%)

The one year progression rate after developing anemia was 30% (95% ci. 13-57%), for non anemic patients 5.5% (3-10%). The relative risk for progression to advanced stages was 4.8 (p=0.001) for a 20% decrease in hemoglobin and 1.5 (p<0.001) for a 20% decrease in platelets.
Conclusion: Anemia and thrombocytopenia both have an independent prognostic significance in asymptomatic homo- and bisexual men.

M.A.P.89

AGE AT TIME OF HIV INFECTION AS COFACTOR OF PROGRESSION TO ADVANCED IMMUNE DYSFUNCTION AND AIDS

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Objective. To study whether age at the time of acquisition of HIV infection is associated with progression of HIV infection and to determine the pattern of the age dependency.
Methods. 122 HIV(+) hemophiliacs,included in follow up studies since 1980,seroconverted between 1980-1985.Seroconvercion was documented by ELISA and WB or RIP. By November 1988,30 cases have progressed to advanced immune dysfunction (AIMD) (T4<200μl) and 20 cases of AIDS or ARC2 (ARC plus T4<200μl) have been diagnosed.
Results and Conclusions. Age was a statistically significant variable for AIMD or AIDS/ARC2 progression in univariate and multivariate analyses (allowing for duration of HIV positivity and controlling for the amount of infused factor VIII). However, the age effect, estimated by Cox model,was limited to the age above 50 (RR=5.5, p=0.006,95% CI 1.6-18.3)

TABLE

Incidence	Age(years) <19	20-29	30-39	40-49	>50
Cum. Incid. AIMD(%)	34.4	22.9	19.0	20.0	50.0
Incid.Rate AIDS/ARC2 (cases/1000pers-mo)	2.7	3.1	2.3	3.3	13.9
Rate Ratio of AIDS/ARC2	1.0	1.2	1.1	0.9	5.5

M.A.P.90 HISTORY OF SYPHILIS AS A COFACTOR FOR THE EXPRESSION OF HIV INFECTION

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Thirty-eight of 109 (34.9%) subjects enrolled in a study of the neurological consequences of HIV infection had a history of prior syphilis. A positive history of syphilis was noted in 53.3% of symptomatic HIV seropositives in comparison to 37.3% of asymptomatic HIV seropositives and 10.5% of risk group-matched controls. Analysis of the asymptomatic HIV seropositive group revealed that a history of syphilis and/or a positive serum FTA-ABS correlated with the presence of serum p24 antigen [>20 pcgm/ml] (P=0.029). Only 1/47 (2.1%) with a negative history for syphilis expressed p24 Ag in the serum in comparison to 7/38 (18.4%) with a positive history. There was a suggestion of correlation between T4 lymphocyte count <200 and syphilis infection, as determined by either history or the presence of a positive serum FTA-ABS; however it did not reach statistical significance.

Although syphilis, like other venereal diseases that result in genital ulceration, has been established to promote the acquisition of HIV infection, our findings suggest that it may also be a cofactor for the expression of HIV infection.

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M.A.P.91 EFFECT OF PREVIOUS KNOWLEDGE OF HIV POSITIVITY ON SURVIVAL OF AIDS PATIENTS IN NORWAY.

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Objectives. To study the effect on survival of AIDS patients of three background factors obtained at the time of diagnosis.

Methods. Cases of AIDS are, in Norway, reported to the National Institute of Public Health. From January 1983 to January 1989, 100 AIDS cases have been notified of whom 67 have died within the same time period. The cumulative AIDS incidence was, by Jan. 1st. 1989, 25 per mill. The average delay in reporting from diagnosis has been 1 month. In a Cox regression model, the following covariables, given on the standardized form of AIDS notification, were used: a) year of diagnosis b) initial AIDS related disease and c) whether HIV positivity was known prior to AIDS diagnosis or not.

Results. The median survival time of all AIDS patients was 9 months. An increased median survival is observed during the observation period; from 5 months before 1986 to 11 months after 1986. In the Cox regression model known HIV positivity is the only covariable significantly associated with increased survival. The not-known HIV positive (n=55) had a median survival of 6.5 months, whereas the known (n=45) had a median survival of 13 months. 60% known HIV positives had PCP as initial AIDS disease. That was true for only 30% of the AIDS cases where seropositivity was not known.

Discussion. The observed increased survival by year of diagnosis may be a due to a combination two factors: earlier diagnosis and earlier treatment.

M.A.P.92 CONTINUED INJECTING DRUG USE AS A COFACTOR FOR PROGRESSION OF HIV.

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OBJECTIVE: To determine the effect of continued injecting drug use (IDU) as a cofactor for clinical and laboratory progression of HIV infection.
METHODS: Since 1985, 248 intravenous drug users infected in 1983/84 have been evaluated by history, clinical examination and laboratory markers.
Results: 133/248 (53.6%) had continued and 115/248 (46.3%) discontinued injecting drug use. Clinical progression to a CDC category of worse prognostic significance occurred in 49, 28 injectors and 21 ex-users (Ex); the difference was not significant. Laboratory data are available on 41 patients, showing significant differences in rate of T4 cell loss. Mean duration of follow-up until time of progression did not significantly differ (IDM - 10.4 months, Ex 11.8 months, p = 0.5).

Parameter	Mean Change Per Month IDU	Ex	p value
T4 Absolute (per cu mm)	-46.0	-8.7	*0.02
T4 Percent	- 1.1	-0.7	0.52
T4/T8 Ratio	-0.12	-0.06	0.25
IgG (gm/l)	+0.87	+0.24	0.18
IgA (gm/l)	+0.06	+0.01	0.44

CONCLUSION: Continued IDU is associated with a greater rate of loss of T4 cells amongst individuals with IDU related HIV infection indicating it is a significant cofactor for HIV progression.

M.A.P.93 CO-FACTORS AND COHORT EFFECTS IN PROGRESSION TO AIDS AMONG HIV-1 INFECTED HOMOSEXUAL MEN

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Objective. To evaluate possible co-factor effects on the outcome of HIV-1 infection in a cohort of homosexual men in New York City.
Methods. The incidence of diagnosed AIDS and progression to severe immune deficiency (absolute CD4 cells <400) was assessed separately in men who were infected with HIV-1 early in the epidemic (≤1980) compared with those more recently infected (>1980). The effect of prior or subsequent infections with other agents (such as HBV) on progression to AIDS and severe cellular immune deficiency was also assessed.
Results. The rate of progression to AIDS from the time of anti-HIV-1 seroconversion was virtually identical between men with long-term HIV-1 infection and those more recently infected. Neither prior nor subsequent HBV infection had any impact on outcome.
Conclusion. The epidemiologic data from this study provide no support for other in vitro data suggesting HBV or other co-factor influences on progression of HIV-1 infection to clinical AIDS among homosexual men.

M.A.P.94 PROGRESSION OF ARC TO AIDS IN A POPULATION OF DRUG ABUSERS AND CORRELATION WITH CD4 DECREASE AND RISE OF HIV1 ANTIGENAEMIA.

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Objective.To determine rate of ARC progression into full blown AIDS and prognostic value of immunological factors in drug abusers,in the period 1985 to 1987
Method.The date of progression from HIV1 asymptomatic or LAS to ARC was established in 21 CDC group 4A and 28 CDC group 4C2 patients(pts) and then time and percentage of evolution of ARC into AIDS was monitored prospectively with periodical controls of lymphocyte subsets,by mo. Ab. with EPICS-C cytofluorimeter and of HIV1 antigenaemia(HIV1Ag) by ELISA.

Results

	Six monthly conditional probabilities 6th	12th	18th	24th	30th	36th
ARC CDC group 4A		4.2%				9.5%
ARC CDC group 4C2	28.5%	50%	60.7%	71.4%	75%	78.5%

The different rates of evolution between group 4A and 4C2 appear related to the different absolute number of CD4 in the earlier stages of infection:836-242mm3 in the 4A group v.s.271-327mm3 in the 4C2 group(P)0.05 by T Student test).HIV1 Ag was present in 73% of group 4C2 which progressed to AIDS and only in 33% of pts.remaining stable.Conclusion.Rate of progression from ARC to AIDS appears mainly related to the CD4 depletion during natural history of the infection;HIV1Ag merits further evaluation.

M.A.P.95 PREDICTORS OF PROGRESSION OF HIV-INFECTION

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Objective. To determine the rate of progression to AIDS, in relation to total lymphocyte count, CD4 lymphocyte count, and minor opportunistic infections (herpes zoster, salmonella septicemia, pulmonary tuberculosis)
Methods. All HIV-infected patients observed until 31/12/'88 (638 pts, 59% IVDA) were classified with regard to stage of disease, date of previous minor opportunistic infections, total lymphocyte count, CD4 lymphocyte count. Progression to AIDS was evaluated at 6-month intervals.
Results. Number of pts progressed to AIDS and rate (%) pts progressed/total pts. are reported below

month	6		12		18		24		30		36	
gr 2 CDC	1	1.4	2	4.4	2	6.6	0	0	0	0	0	0
gr 3 CDC	4	1.6	5	3.2	4	3.7	4	6.3	5	12.1	5	21.7
gr 4 (exclud. AIDS) CDC	14	12.1	19	20.7	15	30.6	7	22.5	7	38.8	3	42.8
herpes zoster	0	0	2	12.5	1	12.5	0	0	0	0	0	0
salmonella septicemia	1	20	3	75	1	100	2	100	1	100	0	0
pulmonary tuberculosis	2	40	0	0	0	0	0	0	0	0	0	0
total lymphocyte >1500x10⁶/l	0	0	1	0.6	1	0.8	2	2.0	3	6.0	4	10.7
total lymphocyte ≤1500x10⁶/l	8	9.9	13	18.9	11	19.3	10	26.4	6	37	2	28.5
CD4 lymphocyte >400x10⁶/l	1	0.8	1	0.7	0	0	1	1.0	4	9	3	11.5
CD4 lymphocyte ≤400x10⁶/l	13	16.0	13	22.8	9	24.3	7	35	4	50	3	60

Conclusions. Because of the small number of patients with a long follow-up, 30 and 36-months data must be evaluated cautiously. Our overall results are not proposed to describe the natural history of HIV-infection, but we think they may be useful for a rough prognostic evaluation of our patients

M.A.P.96 USE OF SERIAL T4 LYMPHOCYTE COUNTS TO PREDICT TIME TO DEVELOP AIDS IN ANTI- HIV POSITIVE HAEMOPHILIACS

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Objective. To describe the use of T4 lymphocyte counts in predicting the time to AIDS in anti-HIV positive patients.
Methods. A series of T4 lymphocyte counts was made on 112 anti-HIV positive patients (111 haemophiliacs, 1 sexual contact) under the care of the Haemophilia Centre at the Royal Free Hospital. The subjects were followed for up to 9 years, with a median of 5 years 1 month.
Results. The median number of T4 counts per patient was 7. In most patients the T4 counts fell with time. When linear regression slopes were fitted, giving a good fit in most cases, the gradients were negative in 78% of subjects. Of the total 21 subjects with AIDS, the analysis was confined to the 13 who were diagnosed with AIDS between 2 consecutive T4 measurements. Probabilities of developing AIDS at or above certain T4 cut-offs were estimated.

T4 count ($x10^9$/l)	.25	.20	.15	.10	.05	.03	.02	.01
Cumulative risk of AIDS	0% *(0/43)*	5% *(2/38)*	13% *(4/32)*	38% *(9/24)*	50% *(10/20)*	68% *(13/19)*	76% *(13/17)*	81% *(13/16)*

Since, on an individual basis, a straight line could be fitted through a series of T4 counts taken over one or two years these results can be used to estimate the risk of a subject developing AIDS within a given time. For example, if it is , .jected that someone's T4 count will fall to .05 in five years time then one would estimate that they have a 50% chance of getting AIDS in the next five years.
Conclusion Serial T4 counts can be used to estimate the time to AIDS in anti-HIV positive patients.

M.A.P.97 LABORATORY MARKERS OF PROGRESSION TO AIDS IN A COHORT OF MALE SEXUAL CONTACTS OF MEN WITH HIV DISEASE

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Objective:To investigate the relationship between various laboratory markers (routine hematology, immune function tests) and progression to AIDS.
Methods: At recruitment, 143 cohort members were seropositive and 16 seroconverted during followup. All seropositives had routine hematology, quantitative immunoglobulins, T-cell subsets, and blastogenesis studies (PHA, Con A, PWM) conducted at induction or at the time of seroconversion. Cox proportional hazards models were examined for these variables (individually and in combination) while simultaneously adjusting for smoking and drinking status at induction, age, and estimated time from infection to induction into the cohort.
Results: 35 cohort members have progressed to AIDS. The following were significant when markers were examined singly: T4 cell count ($p<0.01$), hemoglobin ($p=0.01$), T4/T8 ratio ($p<0.001$), PHA ($p<0.0001$), Con A ($p<0.01$), PWM ($p<0.001$), and IgA ($p=0.05$). The final model revealed that only PHA ($p<0.01$) and T4/T8 ratios ($p<0.05$) remained independently and significantly associated with risk of progression to AIDS. Estimated time from infection to induction into the cohort was never significant in any of the models.
Conclusions: A depression of the blastogenic response to the mitogen PHA followed by a depression of the T4/T8 ratio were most significantly associated with risk of progression to AIDS in this cohort.

M.A.P.98 T CELL SUBSETS IN A COHORT OF INTRAVENOUS DRUG USERS (IVDUs): INITIAL LEVELS AND STABILITY OVER TIME.

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OBJECTIVE: To determine changes over time in T cell subsets in HIV-1 seropositive (SP) and seronegative (SN) IVDUs.
METHODS: 170 IVDUs (88% SP, 12% SN) who completed the first and second semiannual follow-up visits of an ongoing cohort study were evaluated. Proportions (%) and absolute numbers ($\#/mm^3$) of $CD3^+$, $CD4^+$ and $CD8^+$ lymphocytes were determined by 2-color flow cytometry.
RESULTS: (Mean ± SD)

	SP (N = 151)		SN (N = 19)	
	Baseline	Change/6 month	Baseline	Change/6 month
CD4%	28.3 ± 11.6	-0.9 ± 8.9	44.1 ± 10.4	-0.4 ± 9.9
CD4 $\#/mm^3$	603.0 ± 359.7	-59.4 ± 301.0	1118.0 ± 231.3	68.8 ± 655.9
CD8%	49.9 ± 14.7	-2.9 ± 12.2	28.2 ± 9.5	-0.02 ± 7.8
CD8 $\#/mm^3$	1108.0 ± 630.4	-144.8 ± 540.0	832.0 ± 632.0	-61.0 ± 431.0

CONCLUSION: SP IVDUs had significantly lower CD4 and higher CD8 cell counts and proportions than did SN. Neither CD4 nor CD8 levels changed significantly over the six month follow-up period in either SP or SN. CD4 and CD8 levels in SP and SN IVDUs were similar to those in SP and SN homosexual men. The study subjects will be followed to determine the duration of the observed stability of the SP group.

M.A.P.99 PRESENCE OF HIV p24 ANTIGEN STRONGLY PREDICTS DEVELOPMENT OF AIDS

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Objective. To correlate prevalent p24 antigen level and other predictors with the subsequent development of AIDS.
Methods. p24 antigen was measured on sera collected in 1985 on a probability sample of 307 HIV seropositive men in the San Francisco Men's Health Study.
Results. Thirty-two percent (13/54) of HIV seropositive men who developed AIDS by 36 months of follow-up versus two percent (6/253) without AIDS were p24 antigen positive. Eight p24 positive men progressed in less than 20 months.

In a Cox proportional hazards model, p24 antigen level is an independent predictor of AIDS development with a relative hazard of 7.2 compared to 5.0 for CD-4 < 400 cells/ul and 2.2 for beta-2 microglobulin > 4 mg/l. The relative hazard increased with increasing p24 antigen level.

p24 antigen positivity is associated with low CD-4 lymphocyte counts (11/89 p24+ with CD-4 < 400 versus 6/244 for CD-4 > 400, p=.007) but not with higher CD-8 (8/173 for CD-8 < 1000 versus 11/134 for CD-8 > 1000, p=.24).
Conclusion. p24 antigen is a strong and independent predictor of subsequent AIDS development. High CD-8 lymphocyte counts do not appear to reduce the prevalence of antigenemia.

M.A.P.100 A COMPARISON OF THE PROGNOSTIC VALUE OF B_2-MICROGLOBULIN, NEOPTERIN, AND SOLUBLE CD8 IN HIV INFECTION

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Objective. In addition to CD4 lymphocyte count and HIVp24 antigenemia, B_2-microglobulin, neopterin and soluble CD8 have been reported to predict progression to AIDS in HIV positives. We assessed the relative prognostic strength of these laboratory indicators.
Methods. In a cohort of homosexual men under prospective study, the association of lab·ratory indicators with a subsequent AIDS diagnosis was analyzed on 215 HIV positives with .edian followup of 30 months using a Cox proportional hazards model.
Results. Strong correlations were found between B_2-M and Neopterin (Spearman CorrCoeff=.51), B_2-M and SolCD8 (.61), and Neopterin and SolCD8 (.59). CD4 lymph count correlated with B_2-M 0.36, with neopterin 0.32 and with soluble CD8 0.31. The best multivariate model is the following:

Laboratory indicator	p-value	Relative hazard
B_2-Microglobulin > 5.0	0.001	8.6
B_2-Microglobulin 3.0-5.0	0.008	2.5
CD4 lymphs < $200/mm^3$	<.001	6.0
CD4 lymphs < 25% lymphs	0.008	2.4
HIVp24 antibody qty < 1000	0.02	3.3
HIVp24 antigen positive	0.03	2.1
Qty soluble CD8 > 3500	0.01	2.4

Conclusions. Quantity of serum B_2-M is a stronger prognostic marker than neopterin or soluble CD8 and is the strongest single indicator for AIDS. The best multivariate model for predicting AIDS uses B_2M, CD4 lymph count, and measures of HIVp24 Ag and Ab. Neopterin added no useful information to this model, but quantity of soluble CD8 did contribute some independent predictive power.

M.A.P.101 IS HLA ASSOCIATED WITH PROGRESSION OF HIV-1-INDUCED IMMUNODEFICIENCY?

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Objective: To detect any association between presence of HLA antigens and rapid decline in T-helper cell counts or AIDS in men infected with HIV-1.
Methods: Decline in T-helper lymphocyte counts were based on each of 5 semiannual visits of AIDS-free HIV-1-seropositive men selected from the 20% with the most rapid decline (R, N=49) and from the 35% with the slowest decline or rise (S, N=59) by visit 5. Standard methods were used for testing 16 A, 22 B, 2 Bw, 7 C, 10 DR, 3 DQ and the MC1 locus antigens. HLA types were obtained in 24 AIDS cases occurring in R during 4 years of follow-up.
Results: A24 was present in 28.6% of R and 8.5% of S. C5 was found in 24% of R with and in none without AIDS. Means of slopes differed among all R and S and among R with and without those antigens (Table).

Mean Slopes (Change in $CD4^+$ cells/6 months) in Subsets of HLA-typed Men

		No.	S	R		
				All	AIDS	No AIDS
A24	+	19	+43	-156^a	-155	-157^b
	-	89	+59	-124^a	-144	-107^b
Cw5	+	17	+59	-186^c	-186^d	--
	-	96	+49	-126^c	-132^d	-120

^{a,b} $p < 0.05$; ^{c,d} $p < 0.01$ (uncorrected for multiple comparisons)

Conclusion: Although these data show weak associations with two Class I HLA antigens, further study is needed to evaluate the role of HLA antigens in HIV-1-induced immunodeficiency.

Session d'affichage
Poster Session

Épidémiologie et santé publique
Epidemiology and Public Health

M.A.P.102 EVOLUTIVE PROCESS TOWARDS AIDS IN THE MAJORITY OF SYMPTOMLESS HIV-INFECTED SUBJECTS.

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Objective. To estimate the prognosis of asymptomatic HIV infection.
Methods. 68 asymptomatic (stage II or III CDC) HIV 1 seropositive subjects, with more than 400 CD4 lymphocytes/mm^3 at the onset of the study, were followed-up during a 4 year period. Nine biological markers considered as predictors of AIDS (CD4 lymphocyte count < 400/mm^3, loss of anti-p24 or anti-p18 antibodies, positive p24 antigenemia, serum IgG>17g/l, serum IgA>4g/l, erythrocyte sedimentation rate>25mm in first hour, serum neopterin>10 nmol/l, serum β -2-microglobulin>2.5 mg/l) were annually evaluated.
Results. Number (and percentage) of subjects having biological predictors of AIDS during the study period :

predictors	1985	1986	1987	1988
None	23 (24%)	8 (12%)	4 (6%)	2 (3%)
One	21 (31%)	19 (28%)	10 (15%)	11 (3%)
Two	17 (24%)	23 (34%)	18 (26%)	14 (20%)
Three or more	7 (10%)	18 (26%)	36 (53%)	41 (60%)

The increase of the number of predictors with time is significant (Chi-2 test: p<0.001). At the end of the study period, 6 subjects (8.8%) were AIDS and corresponded to the cases having at the same time the greater number of predictors (5 or more).
Conclusion. These results strongly suggest an evolution towards AIDS in the great majority of symptomless HIV-infected subjects. This constitutes an important argument in favour of antiviral treatment for all HIV-infected subjects.

M.A.P.104 LACK OF ANTIBODIES AGAINST P17 AS PREDICTIVE VALUE FOR AIDS.

Barrera José, Sanchez C, Mallolas J, Planas I, Miró JM, Gatell JM. and Castillo R. Blood Transmitted Diseases Unit. Univ. Barcelona. and Infectious Med. Dept. Hospital Clinic Barcelona. Spain.

Objective. To determine the relationship of p17 antibodies and disease progression in HIV infected people.

Methods.87 HIV-1 seropositive patients were classified according to the CDC and 61 were followed for 22±17 months. The presence of antibodies against p17 was investigated in an optimized Western Blot using H-9 viral lisate (Organon Corporation. USA).

Results. The loss of reactivity against p17 correlated with the clinical stage of patients. The negativity for p17 was obseved in 43% of patients in CDC-2 stage, 91% in CDC-3 stage and 100% in CDC-4 stage. Progression to AIDS was observed in 37% of patients without p17 Ab and in 10% of patients with p17 Ab(p<0,01) The progression to AIDS in p17 Ab- patients was observed in 13% of CDC-2 patients and 40% of CDC-3, and 37% patients in CDC-2 progress to CDC-3.

Conclusion. The loss of reactivity against p17 seems to have predictive value since it has been observed in patients months before developing AIDS and before antigaenemia could be detected.

M.A.P.106 SIGNIFICANCE OF INCREASE OF CD8 LYMPHOCYTES IN ASYMPTOMATIC HIV INFECTION.

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Objective. To determine the significance of the increase of CD8 lymphocytes in symptomless HIV-infected subjects.
Methods. 98 asymptomatic (stage II or III CDC) HIV seropositive subjects were followed-up during a 24 month period, with controls at the 1st, 6th and 24th month. All had more than 400 CD4 lymphocytes at the 1st control. Two groups were studied : subjects with an increase of 50 percent or more of CD8, between the 1st and the 6th months (group I : n = 20); and subjects without such an increase (group II : n = 78).
Results. A significant decrease of mean CD4 between the 1st and 24th months was observed in the two groups, but the group I subjects had a mean CD4 count at the 1st and 24th month significantly lower than the group II subjects:

	Group I	Group II	
CD4 at 1st month control	444	612	p < 0.001 (Mann-Whitney test)
CD4 at 24th month control	309	411	p < 0.05
	p<0.01	p<0.001 (Wilcoxon test)	

On the whole, for the subjects of the study, no correlation existed 1) between the 1st and 6th months and the CD4 count at the 24th month, 2) between the increase of CD8 between the 1st and 6th months and the decrease of CD4 between the 1st and 6th months. A negative correlation (r=0.3; p<0.003) existed between the CD4 count at the 1st month and the increase of CD8 between the 1st and the 6th months.
Conclusion. The increase of CD8 appears in HIV-infected subjects when the CD4 count decreases below the threshold value of 400/mm^3 and probably indicates an evolutive process towards AIDS.

M.A.P.103 DIFFERENT COURSES OF HIV INFECTION IN PGL/ARC OF FRANKFURT UNIVERSITY OUTPATIENT CLINIC, INFECTIOLOGY

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Objective: To describe courses of PGL/ARC significantly differing in temporal and clinical respect.
Methods: 507 pts (99 fem) with HIV infection were followed up by physical examination, immunological, routine lab, and serological tests. Only non-AIDS pts followed up >6mo, and not taking anti-HIV agents, were evaluated.
Results: We found the following value changes per patient per year (average):

Year	n	CD4	CD8	IgG	IgA	Lymphocytes	Leukocytes
1	169	-15	+68	+139	+14	+123	- 79
2	157	-56	+73	+142	+11	+129	- 62
3	116	-57	+75	+126	+16	- 48	- 10
4	53	-68	+13	+ 89	+21	- 60	-275
5	22	-72	-18	+ 60	+ 1	-109	-173

In cases with monitoring period >30mo and CD4 cell count <1/2 of min. normal value, we found significant correlation between increase in LDH, decrease of ht & leukocytes, immunological changes, and clinical findings (oral thrush, weight loss, regression of lymph nodes, frequency & severeness of herpes infections and bact. pneumonias). We could not find any correlation between varying duration & grade of immunodeficiency, and other investigated factors.
Conclusion: Courses of HIV infection vary in pts with initially equal condition. With increasing immunodeficiency, courses get more uniform.

M.A.P.105 PROSPECTIVE EVALUATION OF HIV PROGRESSION IN EDINBURGH INJECTION DRUG USERS

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OBJECTIVE: To assess the clinical and immunological progression of HIV infection in a cohort of synchronously infected injection drug users (IDU).
METHOD: 248 persons (153 male, 95 female) infected with HIV between 1983 and 1984 via injection drug use have been prospectively evaluated for the last 3 years, with 3 monthly clinical and laboratory assessments.
RESULTS: At 5 years post seroconversion, prevalence of symptomatic HIV infection (CDC IV) and AIDS are 22.1% and 3.2% respectively. There have been 1 AIDS related and 10 non-AIDS related deaths.

Months Post	Mean Values (x 10(9)/1)				(gm/1)	CDC IV	AIDS
Serocon.	Lymph	T4	T8	T4/T8	IgA	(total)	(total)
24 - 30	1.99	0.57	0.62	0.92	1.90	4	0
30 - 36	1.60	0.50	0.56	0.95	2.17	10	0
36 - 42	1.91	0.49	0.71	0.86	2.72	19	1
42 - 48	1.84	0.44	0.77	0.63	2.85	29	2
48 - 54	1.73	0.42	0.72	0.61	3.10	41	4
54 - 60	1.52	0.33	0.70	0.53	3.11	55	8

At 54 - 60 months 28% have T4 counts < 0.2 x 10(9)/l.
CONCLUSION: Progression in this cohort of HIV infected IDUs is occurring at a slower rate compared with other risk groups such as San Francisco homosexuals. However, there is a significant non-AIDS mortality as has been reported in New York.

M.A.P.107 CLINICAL AND LABORATORY PROGRESSION OF HIV INFECTION IN BLOOD RECIPIENTS AND THEIR SPOUSES.

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Objective. To compare laboratory test results of HIV-infected transfusion recipients and their spouses with clinical progression to disease.
Methods. Blood samples were tested every six months for up to four years and compared to physical examination for 75 HIV (+) recipients and 26 partners. Tests incl.p24 antigen, p24 antibody, and absolute CD4 cells.
Results. Infected blood recipients progress to clinical disease (ARC,AIDS) in an average of 40 months. A decline in p24 antibody and CD4 cells and the appearance of p24 antigen predicted progression. 4/26 sexual partners of infected recipients are now anti-HIV positive. Although none of the sexual partners are clinically ill, several have laboratory abnormalities.
Conclusion. Infected blood recipients appear to progress to clinical disease at a rate comparable to that of infected individuals from other high risk groups. The rate of heterosexual transmission is low. Laboratory parameters of viral replication and immune dysfunction correlate with, and may predict, disease progression.

M.A.P.108 PREDICTION OF HIV-RELATED CLINICAL OUTCOMES BY USING BETA-2 MICROGLOBULIN (B2), p24 ANTIBODY (Ab), AND ANTIGEN (Ag) IN A COHORT OF INITIALLY ASYMPTOMATIC GAY MEN

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Objective: To assess the clinical utility of p24 Ab, Ag, and B2 in predicting the likelihood of clinical progression and mortality among initially asymptomatic (ASX) HIV+ persons.
Methods: Statistical methods including logistic regression and survival analyses in a cohort of 84 initially ASX HIV+ gay men followed for more than 3 years who are part of a Boston cohort study (N=322) initiated in 1/85. Subjects are screened every 6 months. p24 Ab levels are determined by competitive EIA using a recombinant protein (Abbott).
Results: A higher % of men who were p24 Ag(+) at entry were symptomatic (SX) after 1 year than those who were p24 Ab(-) alone or those with ↑ B2 (30% vs. 19% vs. 16%), but p > .05. After 2 years, the initial presence of p24 Ag on enrollment was the best predictor of the subsequent development of SX (OR=24), but after 3 years, B2 was the best (OR=14.7). Logistic regression analyses suggested that p24 Ag/Ab and B2 are independent predictors of outcomes. Survival at 3 years was .74 for those with normal B2 vs. .41 for those with high B2; it was .76 for those initially p24 Ab(+) and .45 for those who were p24 Ab(-) on enrollment.
Conclusions: p24 antigenemia predicts clinical progression sooner than ↑ B2. Twice as many Ag(+) subjects became SX in 1 year as those with ↑ B2. Survival at 3 years is similar in ASX HIV+ subjects who are p24 Ab(-) or have ↑ B2.

M.A.P.110 FACTORS ASSOCIATED WITH HIV PROGRESSION IN NAIROBI PROSTITUTES.

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Objective. To determine factors associated with progression of HIV disease in a cohort of HIV seropositive female prostitutes living in Nairobi.
Methods. In February 1985, 595 female prostitutes living in Nairobi were enrolled in a longitudinal cohort study. Continuing recruitment has enrolled a further 382 women. In November 1986, an educational program was introduced which resulted in increased use of condoms. The women attend the clinic for treatment of STDs. They were resurveyed at 6 month intervals for clinical progression of HIV disease. Markov models determined 4 distinct time panels. Women who did not change CDC staging were compared to women who advanced in CDC staging using univariate and multivariate analysis. Factors assessed were age, years prostitute duration, use of oral contraceptives, pregnancy, incidents of genital ulcer disease, episodes of gonorrhoea and use of condoms.
Results. Among the variables evaluated, condom usage correlated with disease progression. Women who used condoms in <50% of their sexual contacts were statistically more likely to advance from CDC stage III to CDC stage IV (p<.05).
Conclusion. In addition to preventing HIV transmission, condom use may also delay HIV progression.

M.A.P.112 NO EVIDENCE FOR RISKFACTORS FOR PROGRESSION OF HIV INFECTION AMONG HOMOSEXUAL MEN

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AIDS study group Amsterdam, The Netherlands.

Objective. To identify riskfactors for progression of HIV infection.
Methods. Between Oct. 1984 and May 1985 746 homosexual men, 234 HIVab+, entered a cohort study on riskfactors for HIV infection and AIDS. During follow-up until 1988 52 men seroconverted. Subjects are seen every 3 mo. for medical history, physical examination and collection of bloodsamples and psychosocial and behavioral data. The 286 HIVab+ individuals were classified in a high and low risk group for progression to AIDS. High risk was defined as the presence of HIVag or the absence of antibody to HIV core or a no. of T4 cells < 0.5 during three or more subsequential sample sera. For statistical comparison high and low risk subjects were matched at random in time, taking the date of the first high risk bloodsample as a reference.
Results. Of the 234 seropositives 40 (17%) were high risk at entry and 98 (42%) became high risk during the study. From the 52 seroconverters 9 (18%) were high risk immediately after seroconversion and 11 (21%) became high risk later. In bivariate analyses herpes zoster was associated positive with risk status (p<.05) while the level of education was associated negative (p<.01). Multivariate analysis revealed that anogenital receptive intercourse was related to low risk status (p<.05). No relation was found with the use of nitrite, alcohol, tobacco, sex with a person with AIDS, history of STD's, expression of emotions and experience of social support.
Conclusion. After primary infection no riskfactors are found for progression of HIV infection among homosexual men.

M.A.P.109 EVALUATION OF GROUP SPECIFIC COMPONENT AS DETERMINANT OF HIV SUSCEPTIBILITY AND PROGRESSION

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Objective. To study whether Group Specific Component(GC)phenotypes are associated with HIV susceptibility and progression.
Methods. 229 hemophilia patients were included in semiannual follow up studies since 1980. Seroconversions to HIV occured between 1980 and 1985 and were documented by ELISA and WB or RIP assays [122 HIV(+),107 HIV(-)]. By November 1988,20 AIDS or ARC2 (ARC plus T4<200/µl)cases have been diagnosed. The GC phenotypes were tested using isoelectric focusing.
Results and Conclusions. The GC phenotypes are not associated with HIV susceptibility (Table). The GC 2-F phenotype was associated to faster progression to AIDS (The age-adjusted RR by Cox model was 3.97,P=0.041,95% CI 1.06-14.86).

TABLE

		GC phenotypes (%)					
Group	n	2-2	F-F	S-S	2-F	2-S	S-F
HIV(-)	107	9.3	1.9	38.3	3.7	29.9	16.9
Healthy HIV(+)	102	9.8	4.9	33.3	4.9	33.4	13.7
AIDS, ARC2	20	-	-	35.0	15.0	40.0	10.0
Incidence Rate (cases/1000 pers-mo)		-	-	4.1	8.3	4.4	3.0

M.A.P.111 THE NATURAL HISTORY OF HIV INFECTION IN A COHORT OF HOMOSEXUAL AND BISEXUAL MEN: COFACTORS FOR DISEASE PROGRESSION, 1978-1989

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Objective. To identify possible cofactors for progression of HIV infection in a cohort of homosexual and bisexual men.
Methods. We evaluated 268 HIV-infected homosexual and bisexual men with well approximated seroconversion (SC) dates, from 1977 to 1988, for cofactors for progression of HIV infection to AIDS using both odds ratios and Cox proportional hazard stepwise analyses. Analysis was restricted to those exposures following estimated date of SC. Spearman rank correlation test compared latency time (from HIV SC to AIDS diagnosis) to survival time (from AIDS diagnosis to death) among the 77 men who died of AIDS.
Results. Univariate analysis showed that HIV-infected men who developed AIDS were more likely to report a history of amebiasis, gonorrhea, and herpes simplex, and less likely to report using AZT. Cox multivariate analysis showed significant association with progression to AIDS and history of amebiasis and gonorrhea. Age at SC, race, history of recreational drug use, use of other antivirals and vitamins, and history of other sexually transmitted diseases (STDs) were not statistically associated with progression to either AIDS diagnosis or death. There was no significant correlation between latency time and survival time.
Conclusion. Infection with certain STDs following HIV seroconversion is associated with progression to AIDS. Investigation into cofactors which increase or decrease the likelihood of progression to AIDS is warranted.

M.A.P.113 COFACTORS OF PROGRESSION TO AIDS IN A COHORT OF MALE SEXUAL CONTACTS OF MEN WITH HIV DISEASE

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Objective: To investigate potential cofactors for progression to AIDS in a cohort of male sexual contacts of men with HIV disease.
Methods: At recruitment, 143 cohort members were seropositive and 16 seroconverted during followup. Data on age, smoking and drinking status, recreational drug use and history of sexually transmitted and other diseases were obtained from interviews at induction into the cohort. Cox proportional hazards models examined the potential effect of recreational drug use and infections one at a time (and then in combination) while simultaneously controlling for age, smoking and drinking status, and either time from first sexual contact with the index case to induction or calendar year of infection.
Results: 35 cohort members developed AIDS while under study. No significant association with risk of progression to AIDS was noted for use of various recreational drugs (singly or in combination), history of specific infections, age, or smoking and drinking status.
Conclusion: We could not demonstrate a significant association of any of the potential cofactors and risk of progression to AIDS. In this analysis, estimated length of time that one has been infected was the only variable associated with risk of progression to AIDS.

Prévention : Politiques et évaluation des programmes
Prevention: Policy Issues, Program Evaluation

M.A.P.114

VIRUS LEAKAGE THROUGH NATURAL MEMBRANE CONDOMS

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Objective. To determine virus leakage from condoms made from processed sheep caecum using two viral probes simultaneously. This study expands on the results presented at the IV International Conference on AIDS.
Methods. A mixture of two viruses, the bacteriophage ΦX174 (@ 4x10 exp 7 pfu/ml) and the human pathogen, herpes simplex virus (@ 1x10 exp 6 pfu/ml), in buffered solution was poured into condoms which were suspended into beakers, also containing buffered solution. Aliquots from the beakers were assayed to measure extent of virus leakage from the condoms.
Results. With one brand of condom, 10 of 24 samples leaked small amounts of ΦX174; with the other brand of condom, 13 of 24 samples gave similar leakage. The extent of leakage varied over two orders of magnitude for both brands of condoms. Of the 23 condoms which leaked the smaller virus ΦX174 (27 nm diameter), two also leaked the larger herpesvirus (120-150 nm diameter).
Conclusion. These data demonstrate that (1) large and small viruses can leak from natural membrane condoms, (2) there is considerable variation from condom to condom in allowing leakage of the viruses, and (3) leakage of a small virus does not necessarily indicate that a larger virus will leak from that particular condom. Some inconsistencies in the published literature are explained by these findings.

M.A.P.115

AIDS STREET NURSES

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Objective To report on the framework, implementation and results of a unique AIDS street program.
Methods In January of 1988, the British Columbia Ministry of Health initiated an AIDS/STD outreach program targeting street-involved persons for education and prevention using specially trained community nurses. This staffing direction was taken at the specific request of the street-involved persons and street support groups already active. Strategies include one-to-one information giving, 'on the street' HIV testing and counselling, prevention packages (containing condoms, bleach bottles, instructions for each, phone and beeper numbers), bus passes, taxi credit cards, recognizable backpacks and shoulder bags, referral manuals, and first aid supplies.
Results The 'AIDS Street Nurse' program has been extremely well accepted by street-involved persons and street support groups. In addition to their information and prevention role, the nurses fill a health-worker role which cannot be done by non-medical outreach workers. This role includes testing (drawing blood) and counselling, STD examination and treatment, health advice, CPR and first aid. In the last five (5) months of 1988, the program recorded 2846 interventions, distributed 18,607 condoms and 992 bleach bottles, conducted 34 educational workshops, and tested and counselled 174 street-involved persons.
Conclusion AIDS information and prevention outreach programs directed at street-involved persons can be especially successful when staffed by nurses who can fill a medical as well as educational role.

M.A.P.116

M.A.P.117

SURVEILLANCE- EDUCATION SANITAIRE DES PROSTITUEES AU SENEGAL

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OBJECTIF : Sensibiliser une population à activité à risque pour rompre la chaine de transmission du HIV et des autres MST.
METHODES. Au Sénégal, 15 % des prostituées sont porteuses d'Ac anti-HIV contre 0,6% dans la population de contrôle. Au cours des visites sanitaires périodiques instituées grâce à la réglementation de la prostitution. 1700 prostituées ont profité des séances d'éducation et d'information où modes de contamination, manifestations cliniques, moyens de prévention des MST et du SIDA sont débattus.
RESULTATS:De plus en plus, nous notons qu'un climat de prise de conscience commence à se répandre parmi elles (souvent en possession de préservatifs, prélèvements vaginaux pathologiques en régression). Mais, le refus des clients d'user de préservatifs, les raisons d'ordre économique qui les poussent à enfreindre les mesures de prévention, le nombre élevé de prostituees clandestines ... sont autant de facteurs qui rendent cet apprentissage difficile.
CONCLUSION: Une information permanente et soutenue, une stratégie permettant de cibler les clandestines, des préservatifs de qualité, peu onéreux et à portée de main contribueront à diminuer considérablement la dissémination du HIV et des autres MST au SENEGAL.

M.A.P.118

CONTROLE DE QUALITE DES TROUSSES ANTI-HIV COMMERCIALISEES EN FRANCE

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[1] Société Nationale de Transfusion Sanguine, France.
[2] Laboratoire National de la Santé (Dept. de contrôle des réactifs), Paris, France.

Objectif. Contrôler la sensibilité des réactifs de laboratoire destinés au dépistage des anticorps anti-HIV commercialisés en France.
Méthodes. Le contrôle de qualité réglementaire est effectué par le Laboratoire National de la Santé (LNS) qui, depuis le 1.1.88, exige des distributeurs un contrôle de chaque lot de réactif mis sur le marché à l'aide d'un panel de 4 plasmas : trois HIV 1 (dont 1 faiblement positif et 1 avec facteur rhumatoïde) et un négatif. En outre, le groupe Rétrovirus a mis en place depuis le 1.12.88 un contrôle interlaboratoires permanent des trousses à l'aide d'un panel de 10 plasmas : 3 HIV 2, 5 HIV 1 dont 3 débuts de séroconversion et 2 négatifs.
Résultats. 1. Le contrôle LNS a permis une amélioration générale des réactifs (17 réactifs/285 lots). La non conformité d'un lot engage les distributeurs à en informer les utilisateurs.
2. Les résultats préliminaires du contrôle interlaboratoires (9 réactifs, 27 lots, 47 déterminations) figurent dans le tableau.

		HIV 1	HIV 2			HIV 1	HIV 2
Elavia I	D.P.	100 %	100 %	Wellcozyme	Wellcome	100 %	20 %
Rapid'Elavia	D.P.	100 %	100 %	Enzygnost	Behring	11 %	0 %
Vironostika	O.T.	100 %	100 %				
HIV Recomb.	Abbott	100 %	100 %	Sorodia	Miles	100 %	17 %
Env. 9	Du Pont	100 %	33 %	Immunocomb	Ortho	50 %	33 %

Conclusions. Ces contrôles permettent d'augmenter la fiabilité du dépistage des anticorps anti-HIV et ainsi d'améliorer la sécurité transfusionnelle.

M.A.P.119

EVALUATION DE L'INTERET D'UN TEST UTILISANT DES PEPTIDES SYNTHETIQUES (IMMUNOCOMB) POUR LE DIAGNOSTIC SEROLOGIQUE DE L'INFECTION A VIH. Michel ROSENHEIM*, M. Ritterband**, D. Kerouedan*, Y. Schwartz****, P. M'Relé***, M. Gentilini* - *Dpt de Médecine Tropicale et Unité INSERM 313, Hôpital Salpêtrière, 47 Bd de l'Hôpital, 75013 Paris, France. **Orgenics Ltd. BP 360. Yavneh, Israël. ***CHU de Brazzaville, Congo. ****PBS Orgenics. BP 209. Ilkirch, France.

Le principe de l'Immunocomb est celui d'un ELISA en phase solide. Ce test est constitué d'un bac de révélation et d'un "peigne" constitué de 12 "dents" sur chacune desquelles sont fixés 2 épitopes synthétiques de la gp41 et un de la gp120. La durée totale de la manipulation est de 35 à 40 minutes. Nous avons testé trois lots de sérums. Sur le lot 1 (914 sérums provenant de patients européens, 635 positifs en ELISA et en Western blot (WB), 279 négatifs), un seul sérum était discordant, négatif par l'Immunocomb et positif en WB. Sur le lot 2 (273 sérums prélevés au Congo, 113 positifs en ELISA et en WB, 160 négatifs), 13 sérums étaient discordants, positifs en Immunocomb et négatifs en WB. Si l'on rassemble les résultats des 2 lots, la sensibilité est de 99,86% et la spécificité de 97,03%. Sur le lot 3 (57 sérums africains douteux contenant des Ac dirigés contre le core sans Ac anti gp), 54 étaient négatifs en Immunocomb et cinq douteux.
Conclusion. L'Immunocomb est un test fiable, sensible et spécifique, d'utilisation aisée, ne nécessitant qu'une micro-pipette et pouvant particulièrement être utile dans les pays en voie de développement, où il est difficile d'installer la structure lourde d'un laboratoire ELISA en dehors de quelques grands centres.

M.A.P.120

Prévalence régionale du VIH
Regional HIV Prevalence

T.A.P.1

VIRUS HIV-1 CHEZ DES ENFANTS DREPANOCYTAIRES POLYTRANSFUSES A YAOUNDE (CAMEROUN). Tetanye Ekoe; Nyouma E; Ndumbe P. et Kaptue-Noche, L. Centre Universitaire des Sciences de la Santé. Université de Yaoundé, Yaoundé, Cameroun.

Au Cameroun, la prévalence des cas de séropositivité au virus HIV est de l'ordre de 0.5%. Jusqu'à récemment, les transfusions sanguines étaient effectuées sans dépistage des anticorps anti-HIV dans le sang des donneurs.
Objectif. Déterminer la prévalence du virus HIV-1 chez des enfants drépanocytaires polytransfusés de la ville de Yaoundé.
Méthodes. Les sérums de 119 enfants drépanocytaires polytransfusés et de 105 enfants n'ayant jamais été transfusés ont été soumis au test MICROELISA VIRONOSTIKA anti-HTLV III avec, en cas de positivité, confirmation au Western blott (WB). Les résultats ont été analysés par le test du chi-carré.
Résultats. Sur 119 sujets drépanocytaires polytransfusés, 18 se sont avérés positifs au test ELISA et seulement 2 se sont confirmés positifs au WB.

		Pts transfusés n=119		Pts non transfusés n=105		
Ages	No pts.	WB+	%	WB+	%	
6-11 mois	5	0	0	0	0	
1-4 ans	58	1	1.7	0	0	p>0.05
5-9 ans	87	1	1.1	0	0	p>0.05
10-14 ans	63	0	0	0	0	
≥15 ans	1	0	0	0	0	
Total	224	2	1.68	0	0	p>0.05

Conclusion. La prévalence du virus HIV-1 est relativement basse chez les enfants de moins de 15 ans à Yaoundé. Cette étude tendrait à minimiser en 1986 le rôle des transfusions sanguines comme facteur de transmission du virus HIV-1.

T.A.P.3

PREVALENCE OF STD AND HIV INFECTIONS IN RISK GROUPS AND CONTROL POPULATIONS IN VARIOUS REGIONS IN SENEGAL
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Objective. In order to slow down heterosexual spread of HIV infection in Senegal, a strategy to strengthen the national STD-programme has been developed,guided by operational research. As initial step, a prevalence study of STD and HIV-infection is carried out, in order to obtain baseline information and to stimulate local decision making.
Methods. Six intermediate level laboratories in urban and rural areas throughout the country, were equiped and trained to carry out culture of Gonorrhea, detection of C. Trachomatis, Syphilis and HIV serology. Risk groups (female prostitutes and male STD patients) and a control population (pregnant women) were screened.
Results. Preliminary prevalence data of STD including HIV infection will be presented and proposals for subsequent changes in the STD and AIDS programme, within the economical and organizational constraints of each region will be discussed.
Conclusion. Median level laboratories are capable to collect valuable prevalence information on STD, and HIV infection if adequate logistic and technical support is provided. These data are of crucial importance for national STD and AIDS programmes and facilitates their application due to participation by local staff in planning procedures.

T.A.P.5

TEMPORAL TRENDS OF HIV INFECTION BY RISK INDICATOR IN THE LATIUM REGION,ITALY.
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Objective. To estimate the incidence of HIV infection by risk category using the data from a general population surveillance system.
Methods. A laboratory-based surveillance system of HIV infection has been active in the Latium region (about 5,000,000 inhab.) since October 1985. Every confirmed anti-HIV seropositivity is anonymously notified to the R.E.U. by blood banks, which screen every donated blood unit, and by laboratories, which test for HIV antibodies subjects referring to the NHS. A file of new notifications has been generated by a record linkage which uses the available individual data as keys. The information on risk indicator available in all the notifications of the same subject, as well as that drawn from the clinical follow-up and the notifications of AIDS cases, has been used to estimate trends of HIV infection by risk category.
Results. By 12/31/1988, 7380 positive test results for adult subjects were reported to R.E.U.,estimated to represent 4952 individuals. Completeness of data on risk indicator increased over time from 60% to 74%. Estimated trends of HIV infection by risk factor and sex are reported.

YEAR		MALES					FEMALES			
		IVDA	HOMO	HETERO	BLOOD	TOTAL	IVDA	HETERO	BLOOD	TOTAL
1986	HIV+	928	175	12	7	1122	388	41	2	483
	%	82.7	15.6	1.1	0.6		80.5	10.1	0.4	
1987	HIV+	1050	158	24	11	1248	348	45	8	443
	%	84.1	12.7	2.0	1.2		78.6	10.2	1.8	
1988 (inc.)	HIV+	658	73	29	15	776	223	53	5	280
	%	84.8	9.4	3.8	1.9		79.5	18.9	1.8	

Conclusions. Features of HIV epidemic in Latium are highlighted. Males/females ratio is < 3; IVDAs represent about 85% of adult HIV+; heterosexual transmission is increasing, incidence among homosexual males decrease. Observations of infection through transfusion must be thoroughly investigated. Cautions in interpreting surveillance data as incidence refer to selection in accessing tests, time lag between infection and 1st notification, completeness and accuracy of the data on risk factor.

T.A.P.2

EPIDEMIOLOGY OF HIV INFECTION IN GREATER TEL AVIV.
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Over a two-year period (mid-1986 to mid-1988) we examined over 14,000 subjects for HIV_1 antibody, using the ELISA method (Pasteur). Positive results were confirmed by Western Blot testing. The examinees were divided into the following groups and the percentage of seropositives was estimated: (1) Prisoners - 0.3 %, (2) Prostitutes 0 %, (3) Homosexuals or Bisexuals 17 %, (4) Heterosexuals, divided into three subgroups: (a) Blood bank donors 0.2 %, (b) Drug abusers 6.5 %, (c) Recipients of blood transfusions 0.6 %, (d) Others 0 %. In this series there were no cases of HIV seropositive females. Not all asymptomatic HIV antibody-positive individuals had reversed T_H/T_S ratios, although all symptomatic patients did have this reversal. Within the seropositive subjects, HIV antigen was present in 46 % of cases, but did not appear to correlate with the severity of the clinical course. It is clear that the greatest risk factor in this study was homosexuality/bisexuality, followed by drug abuse. Within the homosexual/bisexual group, number of contacts, number of sexual partners, and contact with partners overseas were additional risk factors. Interestingly, recent arrival from "high risk" countries was not a significant factor in heterosexual transmission, which itself was not an important mode of acquisition of HIV infection in the population tested.

T.A.P.4

THE EXTENT OF HETEROSEXUAL HIV TRANSMISSION IN ENGLAND AND WALES: EVIDENCE FROM SURVEILLANCE DATA
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Objective. To describe the trend in heterosexual HIV transmission.
Methods. Data used: AIDS cases from 1982-Dec 88, laboratory reports of newly confirmed HIV +ve persons from 1985-Dec 88, and from 10 laboratories additional data on persons found HIV -ve, Oct 86-Sept 88.
Results. There were 68 AIDS cases (42 M, 26 F) in heterosexual contacts out of 1898. Of these 13 had partner(s) with major risk factors, 48 were exposed abroad and 7 (5M, 2F) had no evidence of exposure abroad. There were 418 HIV +ve reports (203 M, 207 F, 8 unk) in heterosexual contacts, out of 7974. Of these 80 (8 M, 72 F) had partners with major risk factors, 254 (155 M, 93 F, 6 unk) were exposed abroad, 25 (12 M, 13 F) had no evidence of exposure abroad, and 59 (28 M, 29F, 2 unk) were heterosexual contacts without further information. Four of the 4638 male and 1 of the 6413 female heterosexuals attending STD clinics tested by the 10 laboratories were infected, as were 32 of 718 male and 20 of 374 female heterosexuals who were sexually exposed in Africa.
Conclusion. The number of recognised HIV infections acquired through heterosexual contact, mostly abroad, in England & Wales is increasing. By end 1988, however, heterosexual HIV transmission beyond direct contact with people engaging in major risk behaviours was still at an early stage. Because the sensitivity of current surveillance may be low, a substantial HIV increase in heterosexuals could escape early recognition.

T.A.P.6

HIV SEROLOGY IN ONTARIO 1985-1988
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We summarize 3 years of HIV antibody testing in Ontario, a North American population group neighbour of the United States.
Method. All specimens for the diagnosis of HIV infection for Ontario are tested in our laboratory in duplicate by an EIA screening procedure. All reactive, grey zone and negative sera from high risk, symptomatic individuals are tested by an in-house immuno (Western) blot procedure.
Results. 139,340 specimens were tested; 5,102 individuals were confirmed reactive. Clinical information was given in only 2,888 cases, which presented the following risks: homosexual/bisexual male 2,207 (76.4%), Hemophiliac 151 (5.3%), blood/blood product recipient 97 (3.3%), IV drug users 54 (1.9%), endemic area immigrant/traveller 32 (1.1%), sexual partner of HIV+ person 88 (3.8%), offspring of HIV+ person 14 (0,5%), referred by blood collection agency 19 (0.5%), 2 or more risks 107 (3.7%), no risk 101 (3.5%). Of 4,862 cases providing age and sex information 202 (4.2%) are under 19 years; 3,210 (66%), between 20-39; 190 (3.9%) are female. Over 75% of cases identified were submitted from the greater Metropolitan Toronto area. The number of reactive females is increasing with time as is the number of seroconversions (87), particularly in homosexual men in the 19-39 age group (48). HIV-2 infection was detected in 3 individuals from Western Africa.
Conclusion. Although these are partial results, they seem to indicate some differences in epidemiological patterns from the United States.

T.A.P.7 HIV INFECTION SURVEILLANCE IN POLAND

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HIV infection surveillance in Poland has gone on since 1985. The highest infection risk groups were investigated first. The first native case of HIV infection in Poland was diagnosed in 1986. Until 1987 and three-quarters of 1988, infection predominated among homosexuals, but from the fourth quarter of 1988, a constantly increasing number of infections among intravenous drug users has been noted. Between 1985 to 1988, over two million people were screened for anti-HIV antibodies, and 111 of them were found positive: 52 homosexuals, 12 drug users, 14 hemophiliacs, and 33 others. AIDS was diagnosed in 5 cases, with fatal course of the disease.

T.A.P.9 The Epidemiological situation of HIV in the Federal Republic of Germany. Results based on mandatory reports of laboratories.

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In the beginning of 1987 our institute started to collect data with formalized mark sense cards of all HIV positive patients diagnosed in all laboratories of the Federal Republic of Germany including West Berlin.On the 1.st of October 1987 this procedure became legal force.

Up to the 31.12.88 78.000 of these formulars have been distributed to approximately 2.000 laboratories.Before these formalized mark sense cards are being processed, each card is checked by a special computer program on 35 plausibilities to reduce wrong information and double reports.

It is asked for the month and year, when the laboratories received the material for testing. To obtain a geographical distribution we use the first two numbers of the zip code of the region where the patient is living.Furthermore of interest is the sex , whether there is a pregnancy,the age in years ,the mode of infection,the reason of testing,the clinical state,the type of material and the type of test.This precautions concerning the personal dates insure a maximum of confidentialness.

Results:Up to the 31st of December 1988 a total of 20215 cases have been reported.There were 3000 female and 12527 male cases.Approximately 40 % of all tests have been made by 6 laboratories. The residual tests were distributed over 224 laboratories.

In 42 % of the patients three tests were performed (One ELISA and two confirmatory tests).

In 36 % we know risk factors of the patients. We found intravenous drug abusers in 44 % and homosexuality in 31 % as the most important mode of infection.

The age distribution shows a maximum for the male and female population between 25 and 34 years .The curve of the age distribution of the homosexuals shows elevated levels in older years.

The curve of the number of the monthley new reported cases between May 1987 and September 88 shows a slight decline We have reason to assume that in reality this decline is steeper, due to double reporting, since the longer the registration is performed the more double reports occur.

At present one can conclude that the number of the new detected of HIV infections in the Federal Republic of Germany is declining. This is only valid for this geographical area and the reported period of time. The further development is still open.

T.A.P.11 ANTI-HIV SEROPREVALENCE IN ADULT RURAL POPULATIONS OF UGANDA AND ITS IMPLICATIONS FOR PREVENTIVE STRATEGIES.

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A nationwide sero-survey to obtain an estimate of the prevalence of HIV positives in the population of Uganda and to gain information about the geographical variations within the country was carried out in 1987/88. This encompassed two different types of stratifications namely urban/rural and purely geographic. The cut off age between adults and children was 15 years. It has been shown that a high concentration of the infection is in urban areas. In some of these, a number of persons in the sexually active age groups have been found to be infected. Although infection is already present in rural areas, the rates have been found to range 0 - 5%. This relatively low rate of infection in rural populations is of paramount significance since 90% of Ugandans population is rural. Gradual and purposeful decentralisation of AIDS control activities in the country is already underway.

T.A.P.8 APPARENT HIGH HIV SEROPREVALENCE AMONG HETEROSEXUAL MEN OF MEXICO CITY.

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Objective: To analyze the sociodemographic pattern, sexual practices and risk factors among heterosexual men attending an HIV Detection Center.

Method: A questionnaire and HIV detection test were done in 619 heterosexual men without antecedents of blood transfusion, hemophilia or I.V. drug abuse.

Results: 93% of the men were aged between 15 and 44 years old, 58% were single and 31% had children. All men had sexual relations with women during the last ten years, 85% were sexually active during the last six months. 67% had sexual relations with prostitutes. 98% practiced vaginal coitus with eyaculation and 28% used a condom. 33% practiced anal coitus and only 10% used a condom. 50% practiced fellatio and 17% practiced fisting. 14 % had < 4 heterosexual partners (pt) during their lifetime, 21% (4-8 pt) . 31% > 8 pt. 28% had had sexual contacts with foreign women. 45% declared having modified sexual behavior because of AIDS. 7.9% were seropositive to ELISA and W. Blot. After excluding men with blood trasmission risk factors (tatoos and use of non sterile syringes), the seroprevalence decreased to 7.3%. Seropositivity was associated with: being sexual partner of an HIV positive woman (OR 2.47), STD (OR 1.79), tatoos (OR 4.92) and use of non sterile syringes (OR 6.82).

Conclusions: The high seroprevalence of this group as compared with Mexican male blood donors (0.1%) may be due to: preselection of sujects due to AIDS orientation of the clinic; promiscous practices, work-exposed health personnel, partners of known HIV women and socially hidden homosexuality.

T.A.P.10 SEROEPIDEMIOLOGY OF HIV-INFECTION IN FRANKFURT/FRG

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Since 1985, about 2500 persons with HIV infection have been detected in the region of Frankfurt/FRG. The prevalence of HIV infection increases by 30-50 persons per month. Among them only 4 cases of HIV-2 infection were found until now (December 1988). Epidemiological analysis is restricted by the general acceptance of HIV tests and by varying medical care. Nevertheless, studies comparing age, sex and risk group distribution in AIDS patients and HIV-carriers detected during the last six months indicate a change in infection kinetics. Today the new HIV-carriers are increasingly found among iv drug users and prostitutes. 20% of all recently detected HIV carriers are females. 4.4% of 1000 prostitutes followed-up between 1985-1988 were found HIV positive. The probability of acquiring HIV infection outside the risk groups is still low. HIV infected persons were investigated for the-seroprevalence of antibodies to opportunistic infections. Compared to HIV seronegative healthy persons without risk factors and prostitutes, HIV antibody carriers (asymptomatic, LAS and AIDS patients), presented increasing prevalence and titres of antibodies to HSV 1 and 2, VZV, CMV, EBV (VCA, EBNA), HBV (HBc, HBs), and treponema pallidum. The pattern of antibodies to opportunistic infections may support HIV markers of pathogeniesty (e.g.p24 antigen and antibody).

T.A.P.12 4 YEAR FOLLOW-UP STUDY OF THE HIV INFECTION IN HIGH RISK AND CONTROL GROUPS IN MARTINIQUE (F.W.I.)

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Objective: To determine the prevalence and the epidemiological pattern of the HIV infection in Martinique we tested differents subjects of high risk and control groups for HIV antibodies from July 1985 to December 1988.

Methods: We tested 18 601 subjects from 15 to 60 years old : 3895 out-patients seen for sexually transmitted diseases (STD) ; 4253 pregnant women (P.W) ; 10453 healthy individuals (H.I.). In all cases sera were tested by ELISA and positive results confirmed by Western Blot Pasteur Diagnostic. So only positive results by Western Blot were finally considered positive.

Results : The prevalence and the male to female ratio (sex ratio) for HIV are shown below.

	1985	1986	1987	1988
	N° Positive/N° Tested(%)			
STD PATIENTS	22/460(4.7)	47/1103(4.2)	52/1207(4.8)	38/1125(3.5)
Homo-bisexuals	11/22(50)	10/33(30)	9/32(28)	9/23(39)
Prostitues	5/15(33)	6/16(37.5)	10/23(43)	5/10(50)
Sex ratio	3.4	1.4	1.1	1.4
H.I.	3/2308(0.13)	8/2503(0.32)	15/2778(0.54)	20/2864(0.7)
Sex ratio	2.0	1.8	1.1	1.8
P.W.	1/1007(0.1)	2/1054(0.2)	5/1103(0.45)	10/1089(0.9)

13 men and 9 women who were positive used intravenous drugs.

Conclusion : The evolution of the prevalence and the sex ratio confirm that the spread of the HIV was from bisexuals to heterosexuals individuals. The increasing rate among pregnant women highlight the need for screening at the first term of the pregnancy. It is of great importance that the staff of the maternity and pediatric service should have a good knowledge of HIV in order to be able to avoid unnecessary worry.

T.A.P.13

ARE MISSIONARIES AT RISK OF AIDS?

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Objective. To ascertain whether Protestant missionaries serving in regions of high AIDS incidence have been at enhanced risk of HIV-1 infection.
Methods. Serum specimens (N=6045) obtained from 3207 Protestant missionaries serving in 57 countries, including 28 African nations, between 1967 and 1984 were assayed for HIV-1 antibodies by ELISA screening and Western Blot (WB) confirmatory testing. A positive WB was defined as one with either band gp41 or p24 in association with either gp120 or gp160.
Results. Seventy sera (1.2 percent) from 51 missionaries (1.6 percent) were ELISA positive; however, none was diagnostic of HIV-1 infection on WB testing. Twenty-two WBs (43 percent) were read as indeterminant, defined as the presence of bands in such a pattern that the criteria for being positive was not met. Band p17 occurred with the greatest frequency (57 percent) followed by p24 (23 percent), either alone or in combination.
Conclusion. The significance of the indeterminant WB results is unclear, but they do not appear to be a consequence of exposure to either HIV-1 or HTLV-I. We conclude that missionary personnel were not at high risk of HIV-1 infection between 1967 and 1984, even when serving in regions of high AIDS endemnicity.

T.A.P.14

HIGH-RISK HETEROSEXUALS: DIFFERENCES BETWEEN PRIVATE AND COMMERCIAL PARTNERS IN SEXUAL BEHAVIOR AND CONDOM USE

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Objective. To study prevalence of HIV, sexual behavior and condom use among heterosexuals with multiple partners. Methods. Heterosexuals with no other riskfactors than $\geq$ 5 partners in the preceding 6 months were recruited through a STD-clinic. Blood was taken, and questions were asked about number of partners, frequency of practising sexual techniques and condom use with private and/or commercial partners. Results. In 1988, 193 women (136 prostitutes) and 157 men (99 customers) entered the study. Prostitutes had 115 customers per month, customers visited 8 prostitutes in 4 months. On average, 171 women had 4 and 122 men had 7 private partners in 4 months. Vaginal intercourse was reported often to always by all participants, anal contact was seldom reported. Non-risky sexual techniques were reported more frequently with private than with commercial partners ($p < .05$). Condom use was reported more frequently with commercial than with private partners ($p < .01$), and prostitutes reported using condoms more often than customers ($p < .01$). Prostitutes had in 4 months with more partners (± 40) unprotected vaginal intercourse than customers (± 7), and men and women with private partners only (± 4). None of the participants was HIV positive, but 16% had positive HBV-markers, 5% was TPHA positive and 43% was diagnosed with $\geq$ STD.
Conclusion. Despite frequent condom use, prostitutes and customers are at higher risk for HIV than heterosexuals with multiple private partners only.

T.A.P.15

SEROPREVALENCE OF HIV INFECTION AMONG MIGRANT FARMWORKERS

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Objective: To determine the seroprevalence of HIV infection in seasonal and migrant farmworkers attending migrant health centers in the United States.
Methods: A total of 3,150 seasonal and migrant farmworkers were tested for HIV antibody in a blinded manner. Basic demographic data were collected and bloods tested by the EIA and by WB at the CDC.
Results: A total of 15 (.5%) HIV seropositives were detected, of whom, 8 (53%) were female. The racial/ethnic background were: Black 1 (7%), Hispanic 5 (33%) Haitian 8 (53%), and white 1 (7%). The state of residence was as follows: Florida 8 (53%), North Carolina 2 (13%), and 1 each from five other states. Of the 15 HIV seropositive, 11 (73%) were migrant workers and 4 (27%) were seasonal farmworkers.
Conclusions: The prevalence of HIV antibody in this population of seasonal and migrant farmworkers was found to be relatively low (.5%). However, it is interesting to note that 13 (87%) of the seropositive were detected in eastern coastal states where a large number of persons move in a migrant stream which emanates from Florida. This survey suggests that sexually active migrant farmworkers in the eastern coastal states may be at greater risk for HIV infection than migrants in others areas of the U.S. and that appropriate testing, counseling and prevention programs should be directed at this population. Due to difficulties inherent in reaching such a mobile and hard-to-reach group, it will be important to develop innovative outreach programs in order to reach them.

T.A.P.16

PREVALENCE OF HIV-1 INFECTION AMONG COLLEGE STUDENTS.

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Objective: To determine the prevalence of HIV-1 infection and high risk practices among undergraduate college students attending a university located in a metropolitan area with a high prevalence of HIV-1 infection.
Methods: In 1988, undergraduate students attending the University of Maryland at College Park were recruited to participate in a voluntary HIV-1 serosurvey and educational campaign. Each student gave informed consent, completed a questionnaire on risk behaviors, donated a blood sample, and received pre- and post-test counseling. Sera were analyzed by ELISA and western blot for HIV-1 antibody.
Results: A total of 3,449 students volunteered for the survey. All students were between 16-40 years old, 47% were male, and 81% were white, 87% of the students were sexually active (88% of males and 87% of females), with a median of 4 lifetime partners (range 0-200). A history of behavior placing a student at risk for HIV-1 infection was acknowledged by 21% of men and 21% of women, when high risk behaviors were defined as male homosexual intercourse (5% of men), IV drug use (1%), previous sexually transmitted diseases (13%), and heterosexual intercourse with a high risk individual (8%). Despite the high frequency of risk behaviors, the HIV-1 infection rate was only 0.6 per 1000 students, with HIV-1 infections documented in 2 homosexual men, both of whom engaged in other high risk behaviors.
Conclusion: Despite the presence of risk behaviors, the rate of HIV-1 seropositivity among this group of college students was low, and infections were confined to high risk homosexual men.

T.A.P.17

SEROPREVALENCE OF HIV AMONG TRANSVETITES IN THE CITY OF SÃO PAULO

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Objective.To define the HIV seroprevalence among transvetites.
Methods.On account of their peculiar characteristics and queer dressing and behaviour transvetites find difficulty in attending regular health care services. In order to minimize this difficulty we move our medical team to their own quarters.There they were clinical and laboratorally studied and provided with educational and psychological help.The tests were made by 2ELISA and confirmed by W.B.
Results.Studies on 37 transvetites,from July to September 1988, have shown a HIV seroprevalence of 62%(23).Of these 5.9%(17) were intravenous cocaine users and 5.4%(2) heroin users.From the 37 only 2 belonged to group IV by the CDC criteria.
Conclusion.Transvetites have an important role in the chain of HIV transmission.Considering that among their clients are married men,this group have a significant potential role in heterosexual and vertical transmission of HIV.

T.A.P.18

DO HOMOSEXUAL MEN EVADE HIV-TESTING?

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Objective. To analyze the change in the sexual preference category of the newly-identified HIV-seropositive individuals in Finland.
Methods. As of Sept. 1985, HIV-testing has been available free-of-charge throughout the country. Anonymous testing is possible in 5 AIDS Support Centers. As of Sept. 1985, HIV infection has been a notifiable disease in Finland requiring mandatory reporting on every HIV case to the National Board of Health. Asymptomatic disease is reported by social security code (SSC) as are gonorrhea, genital Chlamydia infections and hepatitis-B. Symptomatic disease (LAS,ARC,AIDS) is reported by name and SSC. Data is collected on the age, profession and place of residence of the patient as well as on the most likely transmission route of the virus.
Results. As of 1.1.89, there are 241 cases of HIV infection, 41 of whom have AIDS. The distribution of the sexual preference among the annually found HIV cases is the following:

	1983	1984	1985	1986	1987	1988	
HOS	10	14	29	41	33	22	= 149
HES	0	1	5	16	17	20	= 59

Out of the 41 cases of AIDS, 31 (75.6%) have been in homosexual men (HOS). 13 of 17 AIDS cases (76.4%) in 1988 were in HOS. 3/13 had AIDS and 5/13 had ARC when HIV infection was confirmed.
Conclusion. The decrease in the number of newly-identified HIV-seropositive HOS can partly be due to decreased risk-taking, but may also reflect a delay in voluntarily taking the diagnostic test.

T.A.P.19

DIFFUSION DES PRECAUTIONS SEXUELLES ET EVOLUTION DE LA SEROPOSITIVITE DANS LA POPULATION HOMOSEXUELLE FRANCAISE: 1985 - 1988

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Objectif:Suivre la diffusion des précautions sexuelles, et l'évolution du recours au test de dépistage volontaire et de ses et ses resultats dans la population homosexuelle française.
Methodes: Sondage annuel par questionnaire inséré dans une revue homosexuelle diffusée sur tout le territoire (n=1000 en 1985,1550 en 1988),complété par un sondage (n=300) aupres d' homosexuels choisis selon les quotas correspondant à la population masculine.
Resultats: Depuis 1986 le préservatif tend à s' imposer comme mode privilegie de protection contre le VIH. (usage régulier: 1985: 5%; 1988: 39%; usage irrégulier: 1985: -;1986:23%, 1988:29%). Lepréservatif est aujourd' hui bien accepté, y compris dans la tranche d' age des moins de 25%, les plus réticents initialement.Néanmoins de differences subsistent entre Paris et la province, et selon le deg d' education et la categorie socioprofessionnelle. Entre 1986 et 1988 la proportion des homosexuels testés est passée de 33% à 55%, avec une stabilisation du taux de seropositifs à 19%.Les ouvriers sont la seule categorie où ce taux a eu tendance à fortement augmenter (1986: 6%, 1987: 11%, 1988: 31%).
Conclusion: Le retard d' adaptation au risque de contamination obsve dans les classes populaires se traduit rapidement par la progresion de la maladie dans ces groupes.

T.A.P.21

INCIDENCE OF HIV-1 INFECTIONS AMONG HOMOSEXUAL MEN IN DALLAS, TEXAS, 1987-1988.

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Objective: To estimate the incidence of HIV infections among high risk men in Dallas, Texas.
Methods: Between 6/87 and 12/88, 662 homosexual or bisexual men enrolled in a cohort and were to return every six months. All men completed an anonymous questionnaire linked to test results.
Results: The mean age of the cohort was 33.3 yrs; 92% were white; 87% had never used IV drugs. 64% of the cohort members admitted a history of >10 sexual partners since 1980. 178 (27%) were HIV infected at the first visit. Among the 447 HIV negative men, retention in the cohort is 56% at 6 months and 34% at 12 months. Of the 176 previously negative persons who returned for the 1st 6-month visit, 3 (1.7%) had seroconverted; of the 57 who returned for the second 6-month visit, 1 (1.8%) had seroconverted, for an annual incidence of 3.5%.
Conclusions: The incidence of HIV-1 infections is less than 5% per year among homosexual men in this population.

T.A.P.23

TRENDS IN HIV ANTIBODY POSITIVE ADMISSIONS TO A CONNECTICUT COMMUNITY HOSPITAL

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Objective. Identify demographic trends in HIV infected (HI) patients admitted to a Connecticut community teaching hospital over 3 years.
Methods. Data compiled on sex, race, risk-group and average length of stay per admission (ALOSPA) in all known HI patients admitted to our 592 bed hospital from 1986 to 1988 were reviewed.
Results. From 1986 to 1988, HI adult patient admissions increased 488% : 1986 - 50, 1987 - 166, 1988 - 294. The ALOSPA for AIDS patients decreased from 18.9 days (d) in 1986 to 13.9 d in 1988, while the ALOSPA for non-AIDS HI patients increased from 7.5d to 10.7d. 170 adult HI patients were admitted in 1988, 70% IVDU and 85% Hispanic (Hsp) or Black (Blk). Similar percentages of IVDU, Hsp and Blk HI patients were seen in 1986 and 1987. From 1986 to 1988, among the HI patients, females (F) increased from 17% to 31% (P<0.1), Hisp F increased from 2% to 11% (P<0.1), and heterosexual risk-group (HRG) patients increased from 0% to 5% (P<0.05). HI pediatric cases increased from 0 in 1986 to 9 in 1988, all were children of IVDU.

Year	Total	Blk	Hsp	IVDU	F	Hsp F	HRG
1986	41	24	10	27	7	1	0
1987	112	59	33	78	23	4	1
1988	170	91	52	119	52	19	9

Conclusions. From 1986 to 1988 the black, hispanic, and IVDU composition of our HI adult admissions remained similar, but there were statistically significant increases in HI F, HI Hsp F, and HI adults with heterosexual contact as their only risk factor.

T.A.P.20

CHANGES IN SEXUAL BEHAVIOR CONNECTED TO STRONG DECLINE IN HIV INCIDENCE AMONG HOMOSEXUAL MEN

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Objective. Study of the relation between changes in sexual behavior and the incidence of HIV infection among homosexual men.
Methods. Between October 1984 and May 1985 746 homosexual men were entered in a prospective study on HIV infection and AIDS in Amsterdam. From these 234 (31.4%) were HIVab+ at entry. Subjects are seen every 3 months for the collection of bloodsamples. Every 6 months a written questionnaire is completed regarding the sexual lifestyle in the preceding half year.
Results. During follow-up until December 1988 59 seroconversions were seen, 34 in 1985 (incidence 7%), 16 in 1986 (incidence 3.9%), 3 in 1987 (incidence 0.8%) and 6 in 1988 (incidence 1.7%). The cumulative incidence rose from 31.4% in 1984 to 40.1% in 1988. During the study period the mean no. of partners with whom seronegatives practiced anogenital receptive intercourse declined from 3.7 to 0.4. Among seropositives the number with whom anogenital insertive intercourse was practiced declined from 10.6 to 1.4. The majority of subjects restricted anogenital intercourse without a condom to a steady partner. Anogenital intercourse with non steady partners was practiced more frequently by seropositives, but in a majority of cases while condoms were used.
Conclusion. This study shows that it has been possible to bend the course of the HIV epidemic through the modification of sexual behavior. A strong reduction of sexual activity during a long period of time was needed to affect the incidence of HIV infection.

T.A.P.22

PREVALENCE AND SEROCONVERSION FOR HIV INFECTION IN HOMOSEXUAL AND BISEXUAL MEN IN MADRID.

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OBJECTIVE: To study the changes of prevalence of HIV infection in homosexual and bisexual men who attended the clinic between January 1985 and december 1988. The incidence of seroconversion was also studied in the cases that returned for follow-up.

METHOD: In the first visit information about medical and epidemilogical aspects was recorded and a sample of serum was obtained for HIV test. All the patients recieved health education in a personal and individualized interview. Annual follow-up was offered.

RESULTS: In 625 homo and bisexual men the prevalence of HIV infection was of 16.4%. 148 HIV seronegative initial patiens returned for subsequents controls and among them 14 HIV seroconversions were found. The results are summarized in the following table:

	FIRST HIV TEST			INTERVAL(MONTHS)=X		LAST HIV TEST			ANNUAL SEROCONVERSION
YEAR	N	(+)	(%)	Σx	X̄	N	(+)	(%)	RATE
1985	166	17	10.2	1495	20.8	72	9	12.5	7.2
1986	184	40	21.7	792	18.4	43	3	6.9	4.5
1987	213	33	15.5	427	12.9	33	2	6.0	5.6
1988	65	13	20.0	---	----	--	-	---	---
TOTAL	628	103	16.4	2714	18.3	148	14	9.4	6.2

CONCLUSIONS: In 1986 an increase in HIV seroprevalence was found when compared with 1985 (p<0.01). After 1986 no significant changes were found in HIV seroprevalence. The seroconvertion rate (see table) was similar over the period of time studied in spite of health education activities.

T.A.P.24

HIV SCREENING IN AN URBAN HOSPITAL OUTPATIENT POPULATION

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Objective. To ascertain seroprevalence of and risk factors for human immunodeficiency virus (HIV) infection in the general population.
Methods. Patients attending the outpatient clinics at Bellevue Hospital Center, Manhattan, New York City, were offered HIV screening. Male patients who had injected non-prescription drugs at any time since 1/1/77, or who had engaged in sex with other men since this date were asked not to participate. Sera were tested for HIV antibodies via ELISA with Western blot confirmation.
Results. 1119 subjects with no prior indications of HIV infection were interviewed and HIV-tested. After exclusion of 2 subjects with indeterminate HIV serology, seroprevalence was 7.1% (26/368) among men, and 5.9% (44/749) among women. Seroprevalence among heterosexuals without other risk factors was 3.3% (10/305) among males and 2.4% (15/619) among females. Rates were substantially higher among Blacks and Hispanics than among Whites. The data were suggestive of an HIV risk among men associated with sexual contact with prostitutes. Among heterosexual women, the primary risk factor was sex with a male intravenous drug user (IVDU). The most common method of birth control reported to be used by both men and women was "no method." 37% of 74 female IVDUs were HIV seropositive; a primary risk factor was the number of years since last injecting illicit drugs. Logistic regression analysis identified significant risks among all women screened associated with years since last injecting drugs and years since last having sex with a male IVDU; a significant negative interaction between these two terms was found.
Conclusions. Heterosexual HIV transmission has been documented, particularly from male intravenous drug users to non-drug-using women. HIV seropositivity among drug users in the general population may be less than previously reported because of the importance of the number of years since last injection. Mathematical modeling of data obtained from women suggests that intravenous drug use and a history of sex with male IVDUs have not been synergistic in their association with HIV infection.

T.A.P.25

SURVEILLANCE HOSPITALIERE DE L'INFECTION PAR LE VIH A BORDEAUX, FRANCE: TENDANCES EPIDEMIOLOGIQUES, 1985-1988

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Objectif: Un système de surveillance épidémiologique des sujets infectés par le VIH a été mis en place au CHRU de Bordeaux; il permet d'étudier les caractéristiques régionales de l'épidémie et l'histoire naturelle de la maladie.
Méthode : Les services hospitaliers participants incluent leurs patients séropositifs depuis 1985. A chaque consultation, les données sont recueillies de façon anonyme sur un questionnaire standardisé, puis sont informatisées. Les caractéristiques épidémiologiques suivantes sont enregistrées pour chaque patient: âge, sexe, date du diagnostic sérologique, groupe ou comportement à risque élevé et mode de contamination probable. La classification utilisée est celle des Centers for Disease Control.
Résultats : Au 10 octobre 1988, 648 adultes séropositifs ont été inclus. Le sexe ratio Homme/Femme est de 3:1, l'âge median est de 28,5 ans, et 50% des sujets sont âgés de 20 à 29 ans au moment de l'inclusion. Le délai moyen entre le diagnostic sérologique et l'inclusion augmente régulièrement d'année en année, passant de 40 jours en 1985 à 9 mois en 1988. En 1985, 16% des cas ont été diagnostiqués par les médecins libéraux; cette proportion est de 44% en 1988. Les comportements à risque les plus fréquemment retrouvés chez les hommes sont l'utilisation de drogues parentérales (42%) et l'homo/bisexualité (42%). Chez les femmes, la toxicomanie IV est le comportement à risque le plus fréquent (54%). Depuis 1985, la proportion d'homo/bisexuels masculins a diminué de 45% à 32%; dans le même temps, les transfusés -incluant les hémophiles- sont passés de 6% à 11%, et celle des partenaires hétérosexuels d'un sujet à risque ou séropositif de 4% à 11% (deux sexes confondus). Aucun cas de contamination professionnelle n'a été enregistré. La répartition par groupe de l'infection au moment de l'inclusion est: groupe II: 57%, groupe III: 10%, groupe IV: 33% (N=626). Cette répartition est restée stable depuis 1985.
Conclusion : La prise en charge hospitalière des sujets séropositifs apparait de plus en plus tardive par rapport au diagnostic sérologique. Un tel système de surveillance a permis d'identifier la toxicomanie IV comme le principal comportement à risque à ce stade d'évolution de l'épidémie; il reflète de façon plus exacte que la simple déclaration des cas de SIDA l'evolution de l'infection par le VIH en Aquitaine.

T.A.P.26

INCREASE IN THE REPORTED NUMBER OF HIV-INFECTED PATIENTS IN U.S. DIALYSIS CENTERS FROM 1985 TO 1987.

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Objective: To determine trends in the number and types of U.S. dialysis centers that report dialyzing HIV-infected patients and the number of HIV-infected patients.
Methods: From 1985-1987, mail questionnaires were sent annually to all licensed centers in the U.S. to obtain information on the number of patients with HIV infection. Ninety percent of the centers responded in all years.
Results: The percentage of centers that reported providing dialysis for HIV-infected patients increased from 11% (134/1254) in 1985 to 24% (351/1486) in 1987; the number of reported HIV-infected patients increased from 0.3% (244/80,151) to 1.0% (924/97,225). The ratio of clinical asymptomatic HIV infection changed from 1.6:1 in 1986 to 1:1 in 1987. Centers that dialyze HIV-infected patients were located in 34 states, and the geographic distribution of HIV-infected dialysis patients was similar to that reported for all AIDS cases. HIV-infected patients were more likely to be in centers that provided both dialysis and transplant services; were located in hospitals; were government operated; were nonprofit; had larger patient populations (>40); and accepted HBsAg-positive patients for dialysis.
Conclusion: The number of centers that reported dialyzing HIV-infected patients and the number of dialysis patients with HIV infection continue to increase. The characteristics of centers providing dialysis to such patients remain the same.

T.A.P.27

HIV ANTIBODY IN CHRONIC HEMODIALYSIS PATIENTS, UNITED STATES.

Marcus, Ruthanne and the Cooperative Dialysis Study Group. Centers for Disease Control, Atlanta, USA

Objective. To estimate the prevalence and incidence of HIV infection and possible risk of nosocomial transmission of HIV in hemodialysis patients.
Methods. In June 1986, we began a voluntary multicenter study of HIV infection in chronic hemodialysis patients in the U.S.A. Epidemiologic data, risk factor information, and serum for HIV antibody testing were collected from patients on entry into the study and one year later.
Results. As of November 30, 1988, data and serum were collected from 1261 patients in 28 dialysis centers. On entry, 21 patients were reactive for HIV antibody by EIA; 10 of these were positive by Western blot (WB+). Seroprevalence (WB+) was 7/335 (2.09%) for patients tested in 8 centers located in areas from which a high incidence of AIDS has been reported (>500 cases/million population) vs. 3/926 (0.32%) for patients in other areas (p=.005). No center had >2 WB+ patients. The risk factor questionnaire was completed by 1170 patients. All WB+ patients had received transfusions; 5 reported IV drug use. WB+ patients were not more likely to have received a transfusion than WB- patients (10/10 vs. 993/1251; p=.23), but WB+ patients were more likely to report IV-drug use (5/9 vs. 16/1113; OR=85.70, 95% CI=17.75-430.34). Follow-up data have been collected from 542 patients, including 228 in 7 centers with a WB+ patient and 157 in 7 centers located in high AIDS incidence areas; no HIV seroconversions have been documented in dialysis patients.
Conclusions. All seropositive patients had recognized risks for HIV infection. No case of possible nosocomial transmission has been identified. Routine use of infection control precautions is recommended.

Le VIH Chez les consommateurs de drogue par voie intraveineuse
HIV in Intravenous Drug Users

T.A.P.28

PREVENTION OF HIV-INFECTION IN PARENTERAL DRUG ABUSERS (PDA'S): ABOUT EVALUATION AND EFFICACY OF OPIATE-SUBSTITUTION-TREATMENT

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Objective: To evaluate the risk of HIV-infection of PDA's under opiate-substitution (here: codein).
Methods: In 1988, four cohorts of PDA's under continous out-patient opiate-substitution-treatment in a private medical praxis were tested for HIV (Elisa, positive results confirmed by WB). Months under observation from seronegative status at 1st consultation to the last HIV-test were counted (for the 1975-84 cohort, time under observation was counted from 1985 onwards only). Similarly to the "Pearl-index" broadly used in obstetrics, a "seroconversion-index" was measured as the seroconversion-rate per 100 years of observation.
Results: From all 323 clients (215 m, 108 f), 32 were HIV-positive at 1st consultation and 54 excluded for other reasons. 237 cases could be evaluated, in which three seroconversions occurred.

	Year of 1st consultation	cases (months under observation) male	female	Seroconversions
Cohort I	1975-84	73 (3219)	32 (1400)	1
II	1985	55 (1946)	30 (1168)	0
III	1986	13 (338)	9 (250)	0
IV	1987	16 (216)	9 (143)	2
	total:	157 (5719)	80 (2961)	3

With a total of 8680 months (or 723 1/3 years) under observation, the HIV-seroconversion-index of these opiate-substituted patients is 0,41 seroconversions per 100 years. Although biases have to be discussed, this seems low compared to the few PDA-HIV-seroconversion-studies available.
Conclusions: 1) The HIV-protective value of opiate-substitution - possibly as result of less or more controlled illicit drug use - can't be neglected; this treatment should be available in the local drug-therapy-spectrum. 2) In the field of HIV-monitoring and evaluation of HIV-preventive measures, also a private praxis - with its limited means, but aided by a research institute - can take part and should therefore be encouraged to do so.

T.A.P.29

HIV AND HEPATITIS B INFECTION ASSOCIATED WITH DIFFERENT RISK BEHAVIORS

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Objective: To examine the prevalence of hepatitis B markers (HB) and HIV among persons reporting IV drug use (IVDU), sexual contact with an IVDU (SC) or none of these behaviors (N) in community with a relatively low HIV Ab prevalence and with a history of a delta hepatitis outbreak in 1983.
Methods: A community wide surveillance for HIV infection and related behaviors in Worcester, MA occurs at drug treatment centers, prison, public health clinics, and community health centers. A standardized interview is used and blood samples tested for HIV and HB markers.
Results:

Marker	IVDUs(N=215)	SC(N=62)	N(N=176)
HIV(+) Ab	18%	7%	1%
HBsAg±HBcAb	8%	8%	4%
HBsAb±HBcAb	62%	19%	13%
delta Ab	4%	0%	1%

Among IVDUs, a higher percent of HIV(+) had HBsAb ± HBcAb (83%) compared to HIV(-) (57%) (p=.003). 14% of HIV(+) had delta Ab compared to 2% of HIV(-) (p=.01). Data on an additional 300 participants will be presented.
Conclusion: HIV(+) IVDUs were more likely to have had a past hepatitis B or delta hepatitis infection or to have been immunized compared to HIV(-) IVDUs. The prevalence of HBsAg among IVDUs and SC are similar, although IVDUs have 3 times and 2 times higher prevalence of HBsAb and HIV, respectively.

Session d'affichage
Poster Session

Épidémiologie et santé publique
Epidemiology and Public Health

T.A.P.30 REPORT ON AN EXTREMELY LOW RATE OF SEROPOSITIVITY AMONG I.V. DRUG USERS (IVDU) IN A LOCAL HEALTH DISTRICT (LHD) OF NORTH-EAST ITALY.

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From September 1985 to December 1988 the center for drug addicts of the LHD 26 of Veneto Region (North-East Italy, near Verona) tested IVDU for HIV-1 antibodies. The population of this district is 130.000. Population at risk for addiction (age 15 - 39) is 52.000. In this group the amount of IVDU is estimated ranging from 600 to 800. The IVDU tested (ELISA plus Western Blot if positive) were 345. Only 32 (9%) addicts resulted positive. This is a very low rate in comparison with the nearby districts and the lowest reported in whole country (Italy's mean rate is 50%). Patients were studied with regard to age, sex, length of i.v. addiction, methadone treatment, therapeutic community program, convictions, kind of work, kind of partner relationship. Seropositive and seronegative groups showed no significant difference in any.
There is no evidence for a delayed arrival of the HIV in this district which is in a tourist and well developed area of North-East Italy. Yet the first reported case of LAS in Italy occurred in this district. The following treatment strategies may be accounted for the extremely low rate of seropositivity as suggested by the staff of the Center:

1 - A methadone maintenance program was extensively implemented between 1981-86;
2 - a carefully designed psychosocial program, implying a one-to-one long term therapeutic relationship was performed in these years;
3 - sterile syringes are easily available day and night in the local drugstores;
4 - an intensive campaign against viral hepatitis transmission was incessantly performed by the center.

T.A.P.31 LONG TERM FOLLOW-UP AND ASSESSMENT OF HIV SEROSTATUS AND RISK TAKING IN A COHORT OF 203 INTRAVENOUS DRUG USERS

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OBJECTIVE: To evaluate current infection and immune status in a group of intravenous drug users previously known to have high seroprevalence (1985 report). Also to evaluate current risk taking and behaviour change.
METHODS: A phased recruitment was carried out between 1983 and 1985 into a cohort study. Between 1987 and 1988 follow-up was carried out and individuals were interviewed and, where appropriate, venesected. Validation included a questionnaire for the primary care physician responsible for the patient at the time of follow-up.
RESULTS: Two hundred and three individuals were contacted, 137 men (67.5%) and 66 women (32.5%). One hundred and sixty four had HIV antibody tests subsequent to 1984 (when the virus is thought to have entered the group). One hundred and five (64%) of those tested were HIV antibody positive, 41.8% had been injecting drugs in the 12 months prior to interview and 28.3% were prolonged abstainers (>2 years). Fifty four percent of the group had children and 40% had a sibling who had used drugs. Sixty six per cent had been in prison; 50% of the group had started injecting between 1980 and 1983; 57% thought they were at risk of HIV from needle sharing but only 23% due to possible sexual transmission. Fifty three percent had not changed sexual practices and only 18% had told sex partners test results. Forty five percent used no contraception (23% of whole group had used a barrier method). Forty six percent had had more than one sex partner since test (range 2->100). Detailed demographic and immunological data are recorded.
CONCLUSION: The natural history of drug injecting had important implications for understanding HIV transmission. Behaviour change was considerable in drug taking and needle sharing but not noticeable in sexual risk factors. The implications for future heterosexual spread are discussed.

T.A.P.32 PREVALENCE OF SYPHILIS(S), HTLV-I(I), HTLV-II(II) & HIV-1 AMONG CRACK(C) AND OTHER DRUG USERS(DUs).

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Purpose: To study prevalence rates of S, I, II and HIV-1 among C & other DUs in view of concern of S-enhanced heterosexual retroviral transmission.
Methods: During 1988, all 957 admissions (624M; 517 white) to RMH detox unit underwent RPR. S was confirmed by MHA-TP. Voluntary retroviral testing was offered. I & II was documented by polymerase chain reaction (PCR). I, II and HIV-1 ELISA were also done. HIV-1 was confirmed by western blot.

Results	S	I PCR+	II PCR+	HIV-1+
C alone	15*/321 (4.7%)	1/37 (2.7%)	2/37 (5.4%)	7/141 (5.0%)
IVDU alone	10#/388 (2.3%)	6/58 (10.3%)	6/58 (10.3%)	79/274 (28.8%)
C & IVDU	1/110 (0.9%)	2/18 (11.1%)	1/18 (5.6%)	28/82 (34.1%)
Other DU	1/138 (0.7%)	0/10 (0.0%)	0/10 (0.0%)	0/54 (0.0%)

*7/8 tested were HIV-1 negative. #6/7 tested were HIV-1 positive.

For HIV-1+ C users: All 35 belonged to high risk groups (28 IVDUs, 3 male homosexuals, 3 long-term sex partners of IVDU, 1 from endemic region) and only 1 had S. Four DUs had both I & II. For both I & II, 2/9 (22%) DUs were PCR+ but ELISA-. Two male C users with prostitute contact had either I or II. One black female C user with no known risk factor had II. No C user with I or II had S.
Conclusions: C and IVDUs had a high rate of S. S in C users was not associated with HIV-1. The high rate of HIV-1 among C users was related to concurrent risk factors and not widespread heterosexual transmission.

T.A.P.33 NEEDLE SHARING PRACTICES AMONG INTRAVENOUS DRUG USERS IN A STATE ALLOWING THE PURCHASE OF INJECTION EQUIPMENT

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Objective. To determine the frequency of needle sharing practices among intravenous (IV) drug users in Louisiana, a state which does not control needles by prescription.
Methods. During March-August 1988, 380 self-identified IV drug users seeking treatment in a large public hospital in New Orleans were interviewed regarding needle sharing practices, frequency of drug use and drug(s) of choice. Hospital records were reviewed to obtain demographic information and HIV serologic status.
Results. Eighty-one percent of subjects were male and 73% were black. Mean age of subjects was 32.5 yrs (range 16-69 yrs). The most frequent drug injected was cocaine (31%). Drugs were injected ≥ once per day by 76%. Overall 66% of subjects admitted that they regularly used needles which had been used by others. No significant differences in needle sharing were found by sex, race, frequency of injection or drug of choice. Two of forty (5%) subjects tested were HIV seropositive.
Conclusion. Needles are not controlled by prescription in Louisiana. More than 65% of subjects admitted to sharing needles, similar to the rate found in areas in which needles are controlled. This suggests that legal availability of injection equipment does not significantly reduce sharing behavior in this population.

T.A.P.34 THE AIDS PROBLEM AND DRUG-REHABILITATION IN THERAPEUTIC COMMUNITIES (TC)

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Objective: Determine rate of infection and the effects of AIDS on the members of TC's and their human relations.
Methods: The study covers 523 heroin-addicts who were treated in 40 TC's in Switzerland in 1986. N=433 patients were tested.
Results: Rate of infection of the tested persons: 55% HIV-positive and 11.3 % of the positive patients already suffered from typical symptoms related to the infection. Of particular interest was to study the communication and discussion about AIDS preventing measures and their implementation in TC. The findings were, that large and hierarchically structured TC's were more conscious of AIDS and its effects than small and family-like structured TC's.
Discussion: Prevention efforts should be established as a regular issue within the therapeutic programs of TC's. But as well, there would be opportunities of talking in private atmosphere with a therapist and other residents in a trustful relationship.

T.A.P.35 COORDINATED COMMUNITY PROGRAM FOR HIV SURVEILLANCE AMONG IVDUS

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Objective: To conduct a community-wide surveillance for HIV/high-risk behaviors among an estimated 3000 IVDUs and sexual contacts in the second largest city in New England (175,000).
Methods: The Worcester (MA) AIDS Consortium, a network of drug treatment, public health and criminal justice organizations enrolls, interviews, counsels and tests IVDUs at multiple sites. Active and passive follow-up is implemented for HIV+ and admissions to drug treatment and public health programs. This project is implemented in the context of a city-wide AIDS risks reduction program including HIV education, counseling, testing and support, distribution of bleach/condoms and priority admission to drug treatment for HIV⊕.
Results: Of 1200 tested, 48% were needle users (77% male, 13% female). 18% of needle users tested ⊕. Of Hispanic IVDUs 35% tested ⊕, Blacks 30%, Whites 80%; of IVDUs in jail 21%, in drug treatment 14%. Use of bleach has increased from 5% to 64%. Over 100 persons testing ⊖ entered drug treatment. Results on 3000 participants will be presented.
Conclusions: HIV prevalence among IVDUs has increased by 2% over the past year to 18% with the greatest increase in the jail (5%). Higher seropositivity among minority groups may in part be explained by differences in drug-use behavior. The surveillance has been instrumental in targeting resources to the minority community. This model has applicability to moderately-sized cities where HIV prevalence is still low.

T.A.P.36 NO TREND IN YEARLY HIV-SEROPREVALENCE RATES AMONG IVDU IN AMSTERDAM: 1986-1988.

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Objective. To describe and explain HIV-seroprevalence rates over time.
Methods. From december 1985 till december 1988, 560 IVDU entered a long term follow-up study. Yearly HIV-seroprevalences among these IVDU at entry into the study, were analysed.
Results. In 3 consecutive years (1986-1988) HIV-seroprevalence rates were 33.3%, 28.3% and 27.8% respectively, showing no significant trend over time (p=0.22). Since a selection-bias might be covering up an actual increase here, in that cases with the highest risk for HIV-infection participated earlier in the study than others, an attempt was made to control for this possible bias. Previously determined independent riskfactors for HIV-infection were multivariately controlled for, resulting in odds-ratio estimates for HIV-infection in the consecutive years (relative to 1986) that hardly differed from the uncontrolled ones: 1987 OR=0.79 vs OR=0.84; 1988 OR=0.75 vs OR=0.87 for uncontrolled and controlled respectively. However, conventional confidence-intervals encompass even quite large increases in the rate of HIV-infection from 1986 onwards, so caution is needed in interpreting these results.
Conclusion. HIV-seroprevalence rates among IVDU in Amsterdam appear to be relatively stable since 1986. This result needs confirmation by larger scale seroprevalence studies to be conclusive.

T.A.P.37 EPIDEMIOLOGY OF AIDS ASSOCIATED WITH INTRAVENOUS DRUG USE, UNITED STATES, 1979-1988.

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Objective: To describe characteristics of, and trends in, AIDS cases in intravenous drug users (IVDUs) in the United States (US).
Methods: We reviewed AIDS cases reported to CDC through 1988.
Results: There were 21,914 cases of AIDS in IVDUs (57% heterosexual men, 27% homosexual men, 16% women), 1,657 in sex partners of IVDUs, and 761 in children born to mothers who are IVDUs or sex partners of IVDUs. From 1984 to 1988, heterosexual IVDUs increased from 17% to 23% of adult AIDS cases (in part due to the 1987 revision of the case definition), while homosexual IVDUs declined from 9% to 6% of adult cases. For heterosexual IVDU cases, relative risk for cumulative incidence among blacks and Hispanics compared to whites was 19 and 23 for males and 19 and 14 for females, respectively. In the northeast, cumulative incidence for IVDU AIDS cases was as high as 1/200 among blacks and Hispanics in some urban areas, and cases in IVDUs and other IVDU-associated cases exceeded all other AIDS cases by the end of 1988. Age at diagnosis of AIDS has been increasing for minority heterosexual IVDUs (black males 5.8 and Hispanic males 4.3 months per year since 1983) but not for other IVDUs.
Conclusion: Heterosexual IVDUs represent an increasing proportion of the AIDS epidemic in the U.S. The burden of AIDS associated with drug use falls most heavily on blacks and Hispanics, particularly in the northeast.

T.A.P.38 SECOND NATIONAL SURVEY ON HIV INFECTION, AT RISK BEHAVIOURS AND BEHAVIOURAL CHANGE AMONG ITALIAN DRUG USERS.

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Objective: To estimate, among drug users attending public assistance centres in Italy, the prevalence of HIV-1 infection and of at risk drug use behaviours and sexual lifestyle; to evaluate tendency to change behaviours at risk and determinants of the change.
Methods: In each centre attending subjects during October 1988 have been interviewed according to a standard questionnaire, collecting information on personal characteristics, on syringes/needle sharing on kind of sexual relationships. Moreover change of any at risk behaviours and reason for changing were investigated. Presence of serum antibodies against HIV-1 was assayed for all enrolled subjects.
Results: Fifty four centres (out of a total of 467 in the country) completed the survey. A total of 1350 subjects from 16 regions were included. Detailed elaboration is in progress. According to results of the first national survey, expected seroprevalence is around 40% of tested subjects, with increased risk associated to sharing of syringes/needles either for preparing or for injecting the drug.
Conclusion: Although prevalence studies among subjects attending public health assistance centres can be affected by biases such as self-selection of drug users, onset confounding bias, reliability of answers, a series of surveys conducted with the same methodology is a useful tool for monitoring trends in the spread of infection and in behaviours at risk, more than for estimating absolute prevalence of such changing factors.

T.A.P.39 INTRODUCTION OF HIV INFECTION AMONG INTRAVENOUS DRUG ABUSERS (IVDAs) IN LOW PREVALENCE CITIES

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Objective. To examine possible modes of introduction of HIV into IVDA populations in areas with low HIV infection rates.
Methods. IVDAs admitted to methadone treatment in 1987-88 in Trenton, NJ, Chicago, IL, San Antonio, TX, and Los Angeles, CA were tested for HIV antibodies by ELISA, confirmed by Western blot (n=1,154). Demographics, drug use, and sexual history were obtained by standardized interview. Seropositives (n=54) and demographically matched seronegative controls were compared on relevant AIDS risk factors.
Results. Seropositives and seronegative controls did not differ in frequency of IV use, needle sharing or needle cleaning, or number of drugs injected. There were also no differences between the two groups in rates of males reporting sex with other males, blood transfusions since 1982, injecting drugs or having sex in high HIV prevalence areas, and acquaintance with persons with AIDS. Seropositives were, however, more likely to report sharing a needle with a homosexual or bisexual male (25.0%) than were seronegatives (3.8%) (p<.002) (OR 8.5; 2.2-33.0). Differences between seropositives and seronegatives reporting injecting in shooting galleries (52.8% vs. 35.2%) approached statistical significance (p<.07).
Conclusion. Comparisons of seropositives and seronegative controls suggest that transmission of HIV infection by needle sharing between homosexual/bisexual IVDAs and heterosexual IVDAs may be an important means by which HIV is introduced among heterosexual IVDAs in low prevalence areas.

T.A.P.40 HETEROSEXUAL TRANSMISSION OF HIV AMONG INTRAVENOUS DRUG ABUSERS (IVDAs)

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Objective. To examine the extent to which HIV is transmitted among heterosexual IVDAs through sexual contact.
Methods. IVDAs admitted to methadone treatment in New York City during 1987-88 were tested for HIV antibodies by ELISA, confirmed by Western blot. Demographic, drug use, and sexual history were obtained by standardized interview. Heterosexual IVDAs who reported having sex with IVDA sex partners (IVSPs) (n=214) were compared with those who reported having no IVSPs (n=175) using bivariate and logistic regression analyses.
Results. Initial bivariate analyses indicated that IVDAs with any IVSPs were more likely to be HIV+ than those with no IVSPs (p<.02), while the number of IVSPs was not related to infection. Analyses by gender indicated that the relationship between IVSP and HIV+ held for males (p<.01), but not females. There was no statistically significant relationship between having an IVSP and seropositivity, for either the total sample or males, when selected demographic and drug use variables were controlled.
Conclusion. The increased HIV risk associated with having IVSPs appears to be due to differences in drug use practices, not sexual transmission. The study supports needle sharing as the primary mode of HIV transmission among IVDAs. The possible contribution of sexual transmission should not be ruled out. Possible effects may be too subtle to be detected in these analyses.

T.A.P.41 INCIDENCE AND RISK FACTORS OF HIV INFECTION IN A COHORT OF ITALIAN DRUG ADDICTS (NISDA STUDY).

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Objective. To study the incidence of HIV infection in a population at risk, to identify risk factors, to describe natural history of infection and transmission dynamics.
Methods. Intravenous Drug Abusers (IVDA) are recruited from methadone clinics, hospital departments of infections diseases and various outpatient services. IVDA who agree to participate to the study are first administered a questionnaire about lifestyle habits, medical and laboratory examinations, and a psychiatric interview. They are subsequently followed up.
Results. 653 IVDA have been recruited from January 1987 to December 1988 and followed for different periods of time. 20 seroconversions have been observed. The prevalence is very high of makers of HBV infections (68%), of Herpes Simplex (83%), of CMV (86%), of EBV (45%) in the entire population. The mean number of T4 lymphocytes was 1199, with 30% of subjects presenting less than 900 cells. Previous infections, type of drug used and patterns of drug assumption, sexual behavior and immunologic variables have been related to seroconversion in order to verify their role in the risk of HIV infection.
Conclusions. The number of seroconversions is not sufficient yet in order to draw firm statistical infruences about risk factors, although a low number of T4 cells at first visit was significantly lower in individuals who later seroconverted. Recruitment and follow-up are continuing, thus allowing a more detailed study of risk factors as well as of behavior and preventive attitudes of IVDA.

T.A.P.42

HIV SEROSTATUS AND RISK BEHAVIORS OF STREET IVDUS

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Objective. To determine pre-intervention seroprevalence, drug usage, daily activities, sexual behaviors, and AIDS attitudes among street IVDUs in Long Beach, CA.

Methods. Personal interviews were conducted with 325 street IVDUs (66% male, 34% female) between June and September 1988; 44% were White, 35% Black, 16% Hispanic, and 5% Asian/Other. HIV-antibody serostatus was obtained on 193 persons.

Results. Drugs commonly injected were heroin (75%), cocaine (34%), speedballs (28%), and amphetamines (13%). Needles were shared by 88%. 70% of IVDUs said they cleaned their works at least three-fourths of the time. Of those cleaning, 73% reported using bleach or alcohol and 27% using water alone. 42% reported having non-IVDU sex partners, and 18% said the partner did not know of their drug use. 38% of IVDUs were prostitutes or had traded sex for drugs. 70% of IVDUs rated good health as highly important. 61% had been in a drug-treatment program at some time (40% within the prior 9 months). Ten (5.2%) of the 193 persons tested for HIV-antibody were seropositive (9 males, 1 female). There was no difference between the proportion of homosexual/bisexual vs. heterosexual males with respect to serostatus ($p = .178$). HIV serostatus, sexual orientation, or whether one was a prostitute bore no significant relationship to reported degree of concern about AIDS or change in sexual behavior because of AIDS ($p > .10$).

Conclusion. The large number of IVDUs who indicated health was of high personal importance, who cleaned needles with bleach/alcohol, and who reported recent drug treatment suggests this population will be receptive to targeted AIDS-prevention efforts.

T.A.P.43

A COMPARISON OF HIV-1 INFECTION RATES IN MINNESOTA (MN) IV DRUG USERS BETWEEN 1987 AND 1988

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Objective. To determine HIV-1 seroprevalence and risk factors associated with HIV-1 infection for IV drug users (IVDUs) in a low prevalence area.
Method. Cross-sectional surveys of IVDUs were conducted at chemical dependency treatment clinics in MN in 1987 and 1988. All clients were asked to participate; approximately 80% were enrolled each year.
Results. In 1987, 231 IVDUs participated and in 1988 335 participated. Demographic characteristics in the 2 groups were not significantly different. Prevalence of HIV-1 infection was: 3/231 (1.3%) in 1987 and 5/335 (1.5%) in 1988. For the 1988 survey, characteristics associated with seropositivity were male-to-male sex ($p<0.005$), history of residence in NYC since 1977 ($p<0.001$), and sex with an HIV-infected partner ($p<0.001$). Rates of needlesharing were similar in the 2 groups (93.3% in 1987 and 90.9% in 1988). However, for both years, those who shared were likely to share < 50% of the time and to share with only one person. Use of bleach to clean needles increased from 8.3% of respondents in 1987 to 33.0% in 1988 ($p<0.001$). 132 of the participants in 1987 also participated in 1988; 3 (2.3%) seroconverted in the intervening year.
Conclusion. This study demonstrates low HIV-1 prevalence, probably due to late introduction of HIV and tendency to share needles with only one person at a time. However, the 1-year incidence rate of 2.3% indicates a gradually increasing problem.

T.A.P.44

IS CONDOM USE AN INDEPENDENT RISK FOR HIV IN IV DRUG USERS?

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Objective. To determine the relationship between reported recent condom use and HIV risk behaviors among IV drug users (IVDUs).
Methods. IVDUs being screened in Baltimore for a study of the natural history of HIV infection in IVDUs (the ALIVE Study) were interviewed about their history and recent use of condoms as well as behaviors that increase or reduce risks for HIV infection associated with IV drug use. We report on the results from the initial 1,5175 (1,301 males) persons screened.
Results. Among male IVDUs, 60% report never using condoms, as compared to 55% of females. Among men, frequency of drug injection and the number of persons with whom needles are shared were modestly associated with frequency of condom use, although there was no relationship with needle cleaning practices. Among women, frequency of drug use, borrowing needles and disinfection practices were independent of condom use, although needle sharing was associated with less frequent condom use. For both men and women, there was no relationship between recent condom use and HIV serostatus (with 25% overall being HIV positive). Further, awareness of serostatus prior to this screen was independent of recent condom use for both sexes. Importantly, knowledge and attitudes about the effectiveness of condoms in preventing HIV transmission were high, yet they were unrelated to reported condom usage.
Conclusion. Significant barriers to condom use exist in the IVDU community. These results demonstrate that the adoption of condom use to reduce the risk of HIV transmission is independent of other HIV risk behaviors among IVDUs. Unlike gay men, awareness of serostatus does not promote condom behavior.

T.A.P.45

RISK FACTORS FOR HIV-1 INFECTION AMONG INTRAVENOUS DRUG USERS (IVDUS) (1978-1987).

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Objective To reconstruct risk factors over a nine year period for current HIV-1 infection among a sample of currently active IVDUs.
Methods IVDUs recruited from the community for an HIV natural history study (ALIVE), at baseline underwent venipuncture and interview. Data on drug use patterns from 1979-87 were summarized in 9 variables: number of shared injections (SI), number of non-shared injections (NSI) and use of shooting galleries (SG) during 3 periods (1979-81, 82-84, 85-87). Analyses were performed using logistic regression methods.
Results Among 1736 IVDUs, 24.7% had WB confirmed anti-HIV-1. Three variables (SI:79-81, the change in SI from 79-81 to 82-84, and SG:85-87) were significant in the multivariate model. Relative Odds (RO) for 2 SI/day vs. no SI in 79-81 was 1.44 (95% C.I.=1.02, 2.04). RO for increasing to 2 SI/day in 82-84 from no SI in 79-81 vs. no SI in both periods was 1.99 (95% C.I. = 1.30, 3.07). RO for any SG in 85-87 was 1.58 (95% C.I. = 1.24, 2.02). For IVDUs initiating in 85-87 (n=258), no variables were significant, but SI was positively associated with seropositivity.
Conclusions In this sample, behavior throughout all nine years is associated with current infection. Nonsignificant NSI and small ROs for SI suggest sharing and not frequency of injections is associated with infection. These data indicate that different practices over time have contributed to current HIV-1 infection.

T.A.P.46

ASSOCIATION BETWEEN FORMER PLACE OF RESIDENCE AND SEROSTATUS OF IVDUs IN SOUTH FLORIDA

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Objective. To examine mobility patterns of a sample of IVDUs in South Florida and to determine if place of past residence is associated with HIV seroprevalence.
Method. IVDUs (722) in drug treatment in South Florida were tested for antibodies to HIV and administered a questionnaire which included a history of place of residence since 1/1/78.
Results. Seroprevalence varied by ethnicity: 7.6% non-Hispanic white, 36.4% non-Hispanic black and 26.8% Hispanic. Of 722 subjects enrolled in the study, 478 (66.3%) had lived in an area(s) other than Miami at some time between 1/1/78 and baseline testing. Past residence in New York City (NYC) was associated with seroprevalence for non-Hispanic whites. Of 60 non-Hispanic whites who had previously resided in NYC, 14 (23.3%) were HIV AB+ while 24 (5.5%) of 439 non-Hispanic white IVDUs who had not lived in NYC were HIV AB+. This association was not seen among non-Hispanic blacks or Hispanics who had a higher seroprevalence than non-Hispanic whites. There was no association found between seroprevalence for HIV and prior residence in areas other than NYC.
Discussion. IVDUs are a mobile population and can carry the virus from one geographic area to another. Migration between high prevalence areas and low prevalence areas may be responsible for an increase of rates in the low prevalence areas.

T.A.P.47

HIV INFECTION IN FEMALE INTRAVENOUS DRUG USERS IN SAN FRANCISCO

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Objective. We examined risk factors for HIV seropositivity in female intravenous drug users in treatment in San Francisco.
Methods. IVDUs in methadone and detoxification treatment in SF are offered anonymous HIV testing with notification of results. Here we report on 220 female IVDUs studied in 1988.
Results. Median age of female IVDUs was 36. 55% were white, 23% black, 22% hispanic/other. Median number of children was 1.7. 54% had been in jail in past 5 years; 27% had been paid for sex in past year. Median times in treatment was 5.
26/220 female IVDUs were HIV Ab+ (12%) (White 6%; Black 28%; hispanic 11%).
Seropositivity was associated with needle sharing with >10 people in past year ($p=.02$), shooting gallery use in past year ($p<.001$), and splitting drug by drawing it into syringe ($p<.001$).
Seropositivity was also associated with sexual risk factors including history of syphilis ($p=.04$) and PID ($p=.04$) and number of sex partners in previous year (none verus any; $p<.01$), but not with paid sex. 0/23 women with no partners in previous year were Ab+ versus 19/159 (12%) of those with 1-5 partners and 7/32 (22%) of those with >5 partners.
117 women reported bleach use to sterilise needles. 9/52 (17%) reporting <1 yr of use were positive versus 5/47 (11%) with 1-2 years use and 0/18 (0%) with > 2 years use.
Conclusion. HIV seropositivity in female IVDUs was associated with sexual-transmission risk factors as well as with drug-use risk factors. No women reporting no sexual partners in previous year and none reporting more than 2 years bleach use were seropositive.

T.A.P.48

DRUG ABUSE PATTERNS AND ETHNICITY IN IVDA DURING THE EARLY YEARS OF THE HIV EPIDEMIC

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Objective. To determine factors associated with HIV infection in intravenous drug abusers (IVDA) during the early years of the HIV epidemic in New York.
Methods. Records from studies of chronic liver disease (CLD) in IVDA during 1978-83 were reviewed. In these studies, limited clinical and demographic data had been linked to code numbers of sera which had subsequently been tested for HIV antibody by ELISA (Abbott) and Western blot. Available data included age, sex, race, sexual preference, heroin only vs. heroin and cocaine, and duration and age of onset of IVDA and of alcohol abuse.
Results. Only 2 (11%) of 18 white patients with CLD were HIV-infected, compared with 34 (39%) of 88 black or hispanic patients ($p=0.03$). Among injectors of cocaine with heroin, 30 (52%) of 58 had anti-HIV compared with 6 (13%) of 48 injectors of heroin only ($p<0.0001$). No other factors listed above were linked to anti-HIV. In a multiple logistic regression, anti-HIV was associated with injection of cocaine with heroin ($p<0.0001$), black patients ($p=0.02$), and hispanic patients ($p=0.049$).
Conclusion. IV cocaine users as well as black and hispanic IVDA were disproportionately HIV-infected during the early years of the epidemic. Cocaine with heroin and ethnicity were independently linked to anti-HIV.

T.A.P.50

INTRAVENOUS DRUG USE AS A RISK FACTOR FOR AIDS AND HIV INFECTION IN LOUISIANA, 1981-1988

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Objective. To determine trends in intravenous drug use (IVDU) as a risk factor for AIDS and HIV infection in Louisiana (LA).
Methods. AIDS cases are identified by an active hospital-based surveillance system. Case data is collected by hospital record review, and physician and patient interview. Seroprevalence data is from blinded testing of new entrants at two drug treatment centers in New Orleans.
Results. As of 12/30/88, 1062 adult and 14 pediatric cases of AIDS were identified. IVDU was associated with 172 (16%) of all cases in adults (65IVDU, 100-homo/bisexual and IVDU, 7-heterosexual contact with IVDU). Four (29%) of pediatric cases were from IVDU in a parent. IVDU was the primary risk factor for AIDS in 14% of blacks vs. 3% of whites. The proportion of AIDS cases with IVDU as the primary risk factor increased from 3% in 1985 to 9% in 1988. Of 175 new entrants to IVDU treatment centers in New Orleans in 1988, 6.3% were found to be HIV seropositive.
Conclusion. IVDU accounts directly or indirectly for 16% of AIDS cases in LA. The proportion of AIDS attributable to IVDU has increased significantly in the past three years. Blacks account for a disproportionate number of cases among IVDUs. The prevalence of HIV in IVDUs in New Orleans in 1988 is relatively low (6.3%).

T.A.P.52

COMPARISON OF PREVALENCE OF HIV INFECTION IN IV DRUG USERS (IVDU) FROM FOUR DIFFERENT TESTING AND TREATMENT PROGRAMS.

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Objective: To compare the prevalence of HIV infection in IVDU accessed through 4 different testing and/or treatment programs in Denver in 1988.
Methods: In 1988, HIV counseling and testing was offered by DCS to IVDU through 4 programs: 1) Counseling and Testing Site (CTS), 2) Sexually Transmitted Diseases (STD) Clinic, 3) Substance Treatment Services (STS-a methadone maintenance program), and 4) Project Safe (PS- an indigenous street outreach program for IVDU not in treatment).
Results:

	No. HIV positive / No. tested (%)							
	CTS		STD		STS		PS	
Gay/bisexual men	20/51	(36)	17/50	(34)	0/1	(0)	2/5	(40)
Female prostitutes	2/40	(5)	3/89	(4)	1/6	(16)	1/22	(5)
Heterosexual men	14/305	(5)	3/227	(1)	1/73	(1)	3/100	(3)
Heterosexual women	2/168	(1)	1/123	(1)	0/34	(0)	0/37	(0)
TOTAL	38/564	(7)	24/489	(5)	2/114	(2)	6/164	(4)

Conclusion: The prevalence of HIV infection in IVDU who are not gay or bisexual men is low in Denver, and rates are comparable in programs with different selection criteria. Determining prevalence rates among different programs is useful both to monitor secular trends and to better estimate the community burden of HIV infection in IVDU.

T.A.P.49

DEMOGRAPHIC AND BEHAVIORAL FEATURES OF HIV INFECTION IN INTRAVENOUS DRUG USERS (IVDUs) IN NEW YORK CITY DRUG TREATMENT PROGRAMS: 1985-1988

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Objective. To examine the trends in demographic and HIV-related behavioral factors of IVDUs enrolled in methadone treatment.
Methods. Following informed consent, standardized questionnaires of drug use, sexual behaviors, and medical history were administered to IVDUs recently admitted to drug treatment. Sera was analysed for HIV-1 using ELISA and western blot techniques.
Results.

Year	Number Tested	Number (%) HIV Seropositive
1985	469	255 (54)
1986	262	159 (61)
1987	218	131 (60)
1988	223	115 (52)

The tendency in ´85, ´86 and ´88 toward higher infection rates for non-whites, as compared to whites, did not hold for ´87. Differences in HIV infection rates between these cohorts were most appreciated in black and male IVDUs. Between 1987-8, there were important differences between drug and sexual behaviors.
Conclusion. While these findings suggest modification of behaviors among IVDUs, the HIV infection rate may be equally explained by saturation.

T.A.P.51

TRANSMISSION OF HIV BY MOBILITY IN INJECTION DRUG USERS (IDU)

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OBJECTIVE: To establish those areas in which Edinburgh based IDU had shared injection equipment.
METHOD: All IDU attending the Edinburgh Counselling Clinic were asked about injection practices including sharing equipment in non-Edinburgh locations.
RESULTS: By the end of 1987, 1143 patients had attended the clinic of whom 396 (34.6%) were IDUs, 17 had never injected in Edinburgh. The mean age of the remaining 379 was 26 years (16-46) with a M/F ratio of 1.72:1. In 351 HIV status was determined and 110 (48.8%) of the 225 males and 73 (55.3%) of 139 females were positive. 101 (26.6%) IDU, 73 males and 28 females, admitted to sharing equipment in 140 non-Edinburgh sites. Three had shared in Southern Europe and retrospective tests of stored sera showed that one seroconverted for HIV shortly after returning to Edinburgh. This individual went on to share with numerous other users with later seroconversion dates.
CONCLUSION: The IDU related HIV epidemic in Southern Europe began in 1981 and the unexpected mobility of drug users explains the pockets of IDU related HIV infection as well as other blood borne viruses in Northern Europe. This mobility must be taken into account when considering preventative strategies for HIV.

T.A.P.53

HUMAN IMMUNODEFICIENCY (HIV) AND HUMAN T-LYMPHOTROPIC (HTLV-I/II) VIRUS INFECTIONS ASSOCIATED WITH INTRAVENOUS DRUG ABUSE (IVDA).

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Objective. To describe the prevalence of HIV and HTLV-I/II infections among people in N.Y. State with IVDA as a risk factor for the transmission of blood born infection.
Methods. Specimens submitted for HIV test from anonymous subjects with a history of IVDA (3463 sera) or with no acknowledged risk for infection (1965) were tested for HIV and HTLV-I/II antibody by EIA and western blot. EIA reactive sera with HIV blot bands at 24 and 41 and/or 120/160 Kd or HTLV-I/II bands at 24 and 46 and/or 61/68 Kd were recorded as positive. Results were merged with age, sex, geographic origin and race/ethnicity data and analyzed on a main-frame computer.
Results. In IVDA subjects the prevalence of antibody to HTLV-I/II or HIV and HTLV-I/II was 5.6 and 4.1% respectively. In people with no acknowledged risk it was 0.86 and 0.75. For both populations studied, HIV prevalence was highest at age 30-39; HTLV-I/II or both HIV plus HTLV-I/II was higher at age 50 or greater. Proportion of IVDA sera positive for HIV also positive for HTLV-I/II was 142/1845 or 7.6%; of sera positive for HTLV-I/II also positive for HIV, it was 142/196 (72.4%).
Conclusions. About 1 in every 13 IVDA subjects infected with HIV in N.Y. State is also infected with HTLV-I/II. Conversely, about 72% of HTLV-I/II infected IVDA subjects are infected with HIV.

T.A.P.54 HIV INFECTION AMONG INTRAVENOUS DRUG USERS (IVDU's) IN NYC

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Objective. To compare current HIV seroprevalence and risk factors among "new entrants" and "old clients" of Methadone Maintenance Treatment Programs (MMTP's) in New York City (NYC).

Methods. Since June 1988, sera from IVDU's at 28 MMTP clinics were tested blindly for HIV by ELISA and WB. Non-identifying demographic and treatment data were collected at entry or on annual physicals. Logistic regression models identified risk factors for infection in "new entrants" and "old clients".

Results. As of Jan. 1989, 33.4% of 1062 clients were HIV+. Data were complete for 403 "new entrants" (45.9% HIV+) and 305 "old clients" (27.2% HIV+). "New entrants" have higher infection rates than "old clients" in all subgroups.

	RACE			BOROUGHS OF RESIDENCE					Ever
	Bl.	Hisp.	Wh.	Bronx	Brook.	Manh.	Queens	St. Isl.	Treated?
New	52.8	41.2	39.4	31.0	46.0	49.7	43.8	33.3	51.4
Old	32.1	37.9	17.0	28.6	19.4	35.2	14.6	12.5	NA

HIV infection was associated with a history of previous treatment for drug abuse among "new entrants" [OR(95% CI)=1.6(1.1,2.5)], and with Black race [2.2 (1.1,4.5)] hispanic ethnicity [2.5(1.2,4.9)] and Manhattan residence [2.8(1.2, 6.9)] among "old clients".

Conclusion. In NYC MMTP's, "new entrants" are 1.7 times as likely as "old clients" to be HIV+. Prevalence was lower than previously reported by both groups.

T.A.P.55 HIV SEROPREVALENCE IN INJECTING DRUG USERS IN SOUTH LONDON 1985-88

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Objective. To estimate the HIV seroprevalence in injecting drug users as monitored by an HIV testing laboratory in South London.

Method. The frequency of HIV antibody positivity in injecting drug users attending clinics and General Practitioners in the South London area was estimated. 555 men and 286 women were tested. 619 of those tested were over 25 years of age.

Results.

Prevalence of HIV antibody in IDU's

	1985		1986		1987		1988		1985-88	
	No	(%)	No	(%)	No	(%)	No	(%)	No	(%)
Male	0	13(0)	11	203(5)	8	198(4)	9	141(7)	28	555(5)
Female	1	6(11)	7	90(8)	4	115(3.5)	2	75(3)	14	286(5)
Total	1	19(5)	18	293(6)	12	313(4)	11	216(5)	42	841(5)

Those results compare with a seropositivity of 19% among homosexual men and <1% in heterosexual men and women tested in the same centre over the same period. Most of those found to be HIV Ab positive (57%) were patients attending the sexually transmitted disease clinic requesting HIV antibody testing.

Conclusion. The HIV antibody seroprevalence in this group rose very suddenly but appears to have levelled off. The majority of those tested were over 25 years of age and gave evidence of having changed their needle sharing habits. More younger addicts need to be tested and outreach methods are being used to reach them.

T.A.P.56 HIV SEROCONVERSION IN A GROUP OF IVDAs (1985-1988)

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Objective. To demonstrate the incidence of seroconversion for HIV in a cohort of IVDAS.

Methods. Since first months of 1985 a group of 491 drug addicts, followed by Drug Abuse Surveillance Organisms of Abbiategrasso (USSL 73), Crema (USSL 53) Magenta (USSL 72), Vigevano (USSL 78) and Voghera (USSL 79) in southern Lombardy, has been tested every six months for HIV antibodies.

Results. At June 1985 we found 253 seropositive IVDAs (202 males and 51 females); at December 1988 28 of the previously negative drug addicts (16 males and 12 females) were found positive.

In the cohort of earliest HIV positive subjects 21 developed AIDS until now.

Conclusion. These data suggest that intravenous drug abuse put IVDAs at increased risk for HIV infection as long as drug behaviour continues, even followed by appropriate centers, and this is not a good result of preventive measures.

So the possibility of sexual spread from IVDAs (many drug addicts, either women, either men, sell themselves for buying drug) to common people requires great attention.

T.A.P.57 HIV PREVALENCE AMONG DIFFERENT GROUPS OF INTRAVENOUS DRUG USERS IN SEATTLE, WASHINGTON.

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Objective: To estimate HIV antibody seroprevalence among different groups of intravenous drug users (IVDU's) in Seattle and King County.

Methods: IVDU's were tested at the AIDS Prevention Project (APP), a testing site promoted for persons at high risk of HIV infection, at the King County Jail, from the streets of Seattle, and at the County's drug and alcohol detoxification facility.

Results:	APP Tested (%+)	Jail Tested (%+)	Street Tested (%+)	Detox Tested (%+)	TOTAL Tested (%+)
Gay/bi men	356 (30.3%)	31 (6.5%)	11 (27.3%)	10 (30.0%)	408 (28.2%)
Other men	265 (4.2%)	82 (2.4%)	15 (0%)	101 (5.0%)	463 (3.9%)
Women	234 (2.6%)	48 (4.2%)	7 (0%)	56 (1.8%)	345 (2.6%)
TOTAL	855 (14.6%)	161 (3.7%)	33 (9.1%)	167 (5.4%)	1216 (11.8%)

Conclusion: Preliminary data indicate that HIV seroprevalence among IVDU's varies greatly by site. The prevalence is greatest among male IVDU's who report having had sex with other men.

T.A.P.58 SEXUALLY TRANSMITTED DISEASES (STD's) AND HIV SEROPREVALANCE IN A COHORT OF IV DRUG USERS

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Objective. To correlate the history of a sexually transmitted disease and HIV seroprevalence in a cohort of active IV drug users (IVDU's).

Methods. A cohort of IVDU's, without AIDS, was recruited for a study of the natural history of HIV infection by community outreach. Histories of STD's at baseline were correlated with HIV seroprevalence.

Results. Overall 441 (24.7%) of 1785 participants were HIV seropositive at baseline. STD histories by HIV serostatus were as follows:

	HIV +	HIV -	P-Value (Chi-square/Fishers)
Syphilis	17.5%	12.2%	0.005
Gonorrhea	56.7%	52.9%	0.15
Genital HSV	3.6%	2.2%	0.09
Genital Warts	7.7%	6.4%	0.34
Other STD's	18.8%	19.6%	0.77

Among male homosexual/bisexual IVDU's a syphilis history was strongly associated with HIV seropositivity (20/44; 45%) compared with HIV negatives (18/114, 15.7%; p = 0.001). Among heterosexuals, (53/372, 14.2%) of HIV seropositives and (141/1184, 11.9%) of HIV seronegatives had a history of syphilis (p = N.S.).

Conclusion. Our study suggests that sexual transmission may account for some HIV infections among active IV drug users, especially in those who are male homosexuals/bisexuals. Prospective studies are required to more clearly define the risks of sexual transmission of HIV in IVDU's.

T.A.P.59 SERO-EPIDEMIOLOGY OF HIV-1 INFECTION AMONG INJECTION DRUG USERS SEEKING MEDICAL HELP IN MONTREAL: 1985-1988.

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Objective: To determine the prevalence and trends of HIV-1 infection among IDUs hospitalised for detoxification and correlate seropositivity with risk factors.

Methods: Every IDU hospitalised between March 1985 and Sept. 1988 had a serum taken, tested for Hepatitis B markers and saved frozen at - 20°C in a serum bank. Sera were retested for HIV-1 antibodies using ELISA and RIPA & IFA confirmation tests. Patient records and serologic results were matched and analysed anonymously using an unlinked method.

Results: From a total of 294 patients, 13 were HIV-1 seropositives (4.4%). There were no association between HIV-1 infection and sex, age, ethnic origin, sexual orientation, prostitution, drug of choice or needle sharing. Of 234 patients with known sexual orientation, 226 were heterosexual. Only one of the seropositive was bisexual. Twelve of the thirteen seropositive were hepatitis B markers positive in contrast to 111 of the 281 negative (p < 0.001). The annual prevalence of HIV-1 infection at the Detox Unit was: 1985, 7.1%; 1986, 3.0%; 1987, 2.0%; 1988, 6.6%; overall, 4.5% (confidence limits: 2.2 - 6.7%).

Conclusion: HIV-1 infection prevalence in Montreal IDUs seeking detoxification remained stable between 1985 and 1988 and is associated with the presence of hepatitis B markers. The opportunity for preventive strategies is great.

Surveillance du SIDA et marqueurs de l'infection
Surveillance of AIDS and Marker Infections

T.A.P.60 COMPARATIVE MONITORING OF HIV-SPREAD IN THE IVDU POPULATION OF BERLIN AND HAMBURG

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Objective: Local monitoring of HIV-spread in IVDU population
Methods: Since 1985 nearly all cases of drug related deaths in Berlin(West) were HIV-AB tested; N=362; Test ratio (=TR) 97%. Since 1988 we try to broaden the HIV-indicator-mosaic by including data of defined groups of living IVDU's on a voluntary basis: entrants in detoxification, admissions in prison.
Results: In the autopsy cases the following seropositivity rates were

Found:	1985	1986	1987	1988
Berlin	30%	49%	49%	38%
Hamburg	0%	23%	16%	13%

Because of selfselection the data-gathering in the groups of living IVDU's was full of gaps, especially in Berlin. In Hamburg the positivity rate in detox-cases 1988 was 13% (TR 73%), in prison cases 12% (TR 93%), results very close to the autopsy rates. In Berlin the difference was great: detox cases 1988 24% (TR 50%), prison cases 19% (TR not known).
Conclusion: Seropositive rates in drug related deaths seem to represent quite a realistic picture of the HIV-situation. In Cities of similar structure the HIV-spread in the IVDU population may show great differences.

T.A.P.61 UNDERREPORTING OF AIDS CASES, SOUTH CAROLINA, 1986-1987.

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Objective: To assess the completeness and accuracy of AIDS case reporting in South Carolina.
Methods: Approximately 600,000 hospital discharge billing records from January 1986 through June 1987 were searched by computer for AIDS-defining conditions. The resulting 1,513 clinical records were manually reviewed.
Results: Of these, records for 351 discharges for 163 individuals were classified as being definitely AIDS-related by the 8/87 revised CDC AIDS case definition. 153 of these individuals met the older (pre 8/87) case definition, and should have been reported to the State AIDS case registry. After controlling for reporting lags, 92 of these were indeed reported. Thus, 39.9% of all AIDS cases from the State for the study interval were not reported. Reported versus non-reported groups were not significantly different by age, race, sex, risk behavior, primary clinical diagnosis, or employment status. Individuals receiving AZT were significantly more likely to have been reported (p< .001). Percentage reporting by hospital ranged from 18/20 (90%) down to 0/4 (0%). There was also a considerable range in reporting compliance among physicians.
Conclusion: There was considerable underreporting of AIDS cases in South Carolina for the study interval. Similar studies should be repeated in other states, and may have important implications for the interpretation of surveillance data and for planning in the epidemic.

T.A.P.62 USING DEATH CERTIFICATES (1985-1987) TO ESTIMATE THE COMPLETENESS OF AIDS CASE REPORTING IN ONTARIO

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Abstract. The completeness of AIDS case reporting in Ontario was assessed by reviewing all AIDS death certificates compiled by the Registrar General between January 1, 1985 and December 31, 1987. Several demographic variables were used to match death certificates with cases reported to the provincial AIDS registry and the Chandra Sekar and Deming method was used to estimate the completeness of case reporting. The estimated completeness of case reporting was 80.9% in 1985 (95% C.I.=75.9% to 85.9%), 71.6% in 1986 (95% C.I.=67.6% to 75.6%), 75.3% in 1987 (95% C.I.=72.4% to 78.2%), and 75.1% overall for 1985-1987 (C.I.=72.2% to 78.0%). The completeness of reporting in 1985 was significantly higher than in 1986 (chi-square, p<0.01) but was not significantly different from that calculated for 1987 (chi-square, p>0.05). Cases who were never married were 1.5 times more likely to be reported in 1985 than in 1986, and there was a significant increase in the promotion of such unreported cases from 1985 to 1986 (chi-square, p<0.02) Reporting was not associated with the patient's age, sex, occupation or place of residence. The deficiency in AIDS case reporting could adversely affect the long-term planning of health care resources and the development of programmes to prevent and control the spread of AIDS.

Key Works: AIDS, Case reporting, Death Certificates, Registry

T.A.P.63 RISK GROUP DIFFERENCES IN REPORTING DEATHS IN AIDS PATIENTS

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Objective. To determine any variation among risk groups in the percentage of AIDS cases diagnosed at death and in the delay in reporting deaths.
Methods. Deaths of known AIDS patients are reported to CDC by state and local health departments. All deaths in adult AIDS patients diagnosed between 1984 and 1988 were examined. Patients with death in the same month as diagnosis were classified as diagnosed at death. The number of months between death and report was calculated for all deaths reported in 1988 (date of death report was first recorded in October, 1987). Risk group was defined by the mode of HIV transmission.
Results. For cases diagnosed in each of the years 1984 and 1987, 10%-11% of AIDS cases in homosexual/bisexual males who were not intravenous drug users (IVDU) were diagnosed "at death," compared to 16%-18% in heterosexual IVDUs diagnosed in the same years. Roughly one fifth of all transfusion related AIDS diagnoses were made "at death" between 1984 and 1987. Deaths among heterosexual IVDUs were 50% more likely to be reported after a delay of 12 or more months than deaths in non-IVDU heterosexuals. Eleven percent of the known deaths occurring among homosexual/bisexual non-IVDUs in 1986 were not reported until 1988 compared to 19% of the heterosexual IVDUs who died the same year.
Conclusion. Both the proportion of cases diagnosed at death and the delay in reporting deaths may vary among risk groups. Survival estimates must consider these possible sources of bias. It may be desirable to estimate survival only among AIDS patients with reported survival of at least one time period (month or calendar quarter).

T.A.P.64 HIGH PERCENTAGE OF NON-REPORTED CASES OF AIDS IN HEMOPHILIACS OF THE FEDERAL REPUBLIC OF GERMANY

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Objective. Estimation of non-reported AIDS-cases in the FRG.
Results. Questionaires sent to all hemophiliac treatment centers in the FRG revealed in October 1987 the presence of 183 hemophiliacs with AIDS (ellipse 156-158, 1987). Only 82 clotting factor associated cases of AIDS were officially registered at that time (44.8 %). In a similar evaluation done end of October 1988, the number of cases was 351, but only 133 (37.9 %) were registered. Between first and second evaluation the number of hemophiliacs with AIDS increased by 168, the number of registered cases by 51 (30.4 % of new cases registered). The data suggest an increase in percentage of non-reported cases. In addition, reported cases in hemophiliacs show a misleading trend: doubling time decreased to 18 months, but is still 13 months in reality. Assuming the same percentage of non-reported cases for all risk groups, not 2580 reported but 6807 cases of AIDS might have occurred in the FRG till November 1988. The doubling time of case might still be 12 months instead of 15 months, as deduced from reported figures.
Conclusion. Probably more than half of all diagnosed cases of AIDS are not reported and the percentage of non-reported cases seems to increase. The completely voluntary reporting system of the FRG will not give sufficiently reliable data.

T.A.P.65 ACTIVE SURVEILLANCE FOR PEDIATRIC HIV INFECTION IN LOS ANGELES COUNTY

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Objectives. To describe the development and implementation of an active surveillance system for pediatric HIV infection in Los Angeles County (LAC), California, and to present data collected from January 1982 through December 1988.
Methods. As of March 1988, pediatric and adult cases satisfying the CDC's surveillance criteria for AIDS were reported through a combination of active and passive surveillance measures. In March 1988, an active surveillance system for all aspects of pediatric HIV infection (HIVI) was initiated. Cases were classified using the classification system for HIV in children <13 years (April 87). Twelve hospitals that routinely report pediatric HIVIs are contacted on a bimonthly basis and a supplemental information form is filled out on each case.
Results. As of December 31, 1988, 139 (HIVIs) (P0-P2) had been reported; 50 (36%) of which had AIDS. This represents a 79% increase in reported pediatric AIDS since March 1988. From 3/88 to 12/88, adult AIDS cases increased overall by 29% and 40% among women. Sixty-three percent of all pediatric HIVIs were male; 24% are dead. Almost one-third (n=38) of HIVI cases were symptomatic (P-2) yet not classifiable as pediatric AIDS. Thirty-six percent had a parent at risk and 55% were among minorities. In contrast, among the 13 most recently reported HIVI cases since September 1988, 77% had a parent at risk, and 77% were among minorities. Of the pediatric AIDS cases, over 90% had opportunistic infections, 14% had Lip and only 4% had Kaposi's sarcoma.
Conclusion. An active surveillance system for pediatric HIV infection and the use of the new classification system substantially increased pediatric AIDS case reporting in LAC. Although LAC has small numbers of pediatric HIV infections, recent increases in cases in minority groups with parents at risk are evident, which permit the targeting of health education efforts.

T.A.P.66

MEDICAL SCHOOL SUBCONTRACT ENSURES STATE-WIDE ACTIVE AIDS SURVEILLANCE IN NEW JERSEY

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Objective. To expand New Jersey Health Department capacity to obtain accurate AIDS surveillance data.
Methods. Unique subcontract with state medical school effected to produce increase in active AIDS surveillance activities on a state-wide basis.
Results. Two years of experience with subcontract resulted in:

1. State-wide active surveillance sites increased as responsibility for 12 sites (affiliated hospitals) was shifted to medical school.
2. Concentration on active rather than passive surveillance within New Jersey made possible.
3. Partnership provided data on approximately 40% of New Jersey AIDS cases.
4. Accessibility to hospital AIDS data improved by use of medical school personnel.
5. Teaching hospitals provided with accurate AIDS census data.
6. Retroactive surveillance activities made possible.
7. More complete and accurate AIDS data made available for CDC, state and hospital planning, resource allocation and development of intervention programs.

Conclusion. This unique partnership between a state health department and a state medical school has proven a successful method for expanding active AIDS surveillance efforts and has enabled New Jersey to lead the nation with the first total active AIDS surveillance system.

T.A.P.68

USE OF AUTOMATED SECONDARY DATA SETS FOR AIDS SURVEILLANCE

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Objective: To describe an evaluation method for AIDS surveillance using alternate data sources to identify unreported AIDS cases.
Methods: Maryland hospital discharge records from January 1, 1985 to December 31, 1987 were selected from automated discharge summaries from Maryland hospitals, using a developed set of ICD-9-CM codes including: pneumocystis carinii pneumonia (136.3); malignant neoplasm of skin (Kaposi's Sarcoma) (173.0-173.9); immune deficiencies (279.2-279.9); AIDS (042.); and others. The selected records were matched to the Maryland AIDS case registry by birthdate, sex, race, ZIP code, and service dates. Records which did not match were sorted by hospital and then reviewed by surveillance staff of the AIDS Administration and the Baltimore City Health Department. These medical records were identified by birthdate and hospital medical record number.
Results: of 2,256 discharge records falling within the ICD-9-CM code set, 1,425 (63%) were identified as previously reported Maryland AIDS cases. A total of 831 admissions from 54 hospitals were then investigated. By December 1988, 623 (75%) had been resolved. Of these 623 records, 55 (8.8%) were previously reported AIDS cases, 162 (26.0%) were AIDS cases who were not Maryland residents, 255 (40.9%) were cases with non-HIV related conditions, 109 (7.2%) were seropositive for HIV with no AIDS-indicative opportunistic infections, 20 (3.2%) records were not locatable, and 22 (3.5%) cases were found which were not previously reported.
Conclusions: According to this method of evaluating the surveillance system, 879 (97.6%) of 901 Maryland AIDS cases diagnosed between January 1, 1985 and December 31, 1987 were reported. It was found that the earlier coding methods were being used after the establishment of the ICD-9-CM 042. code for AIDS in October 1986. In addition, it was shown that a much higher number of Maryland non-residents were using Maryland hospitals than anticipated. Finally, based upon this pilot study, this evaluation technique can be used on a periodic basis to routinely evaluate the surveillance system.

T.A.P.70

EVALUATING COMPLETENESS OF NEW YORK CITY'S CASE REGISTRY.

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Objective. To categorize, as CDC AIDS cases or non-cases, persons with NYC death certificates (DCerts) giving AIDS, Pneumocystis carinii pneumonia (PCP), or Kaposi sarcoma (KS) as cause of death but not reported through routine surveillance.
Method. All New York City DCerts 7/86-6/87 with AIDS, PCP, or KS as underlying cause of death were identified. The hospital records of those not already in the AIDS Surveillance Registry are being reviewed.
Results. Three thousand and one such records were identified of which 882 were not in the Registry. Follow-up is completed for 616: For 130 there is no hospital record and 4 were excluded. Among the other 482, 168 were missed by routine surveillance (I); 67 were reportable cases only according to the 9/87 expansion of the CDC case definition (CDC def) (II); 98 did not fulfill the CDC def only because of no serology (III); 146 had other HIV-related illness not fulfilling CDC def (IV). HIV risk factors for these 482 by group (I-IV) and for cumulative NYC cases (17,754 as of 12/88) (V):

Risk Category	I	II	III	IV	V
Man Sex w/Men (MSWM)	43%	21%	29%	13%	51%
IVDU (IV Drug Use)	36%	46%	50%	62%	34%
MSWM & IVDU	5%	6%	8%	6%	4%
Other	15%	27%	13%	18%	10%

Conclusion. Risk factor distribution differs significantly by type of HIV-related illness. DCerts are useful for evaluating routine surveillance.

T.A.P.67

EVALUATING RACIAL CLASSIFICATION AMONG NATIVE AMERICAN INDIANS WITH AIDS IN LOS ANGELES COUNTY, CALIFORNIA

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Objective. To evaluate race classification, method of race assessment and case ascertainment of Native American Indians (NAI) with AIDS in Los Angeles County (LAC).
Methods. Nine community-based AIDS service organizations (CBASO) in LAC were surveyed to determine the number of NAI AIDS cases in their client population and methods of race assessment. Death certificates for all male NAIs age 15-54, from 1980 to 1987, were reviewed to identify causes possibly related to AIDS. The names of suspect deceased NAI AIDS cases were compared to the LAC AIDS surveillance registry. Personal identifiers were not available for active CBASO clients.
Results. The CBASOs responded that of their clients with AIDS, 63 were NAI (30 active and 33 deceased or inactive), compared to 6 AIDS cases (2 living and 4 deceased) among NAIs reported to the LAC AIDS surveillance registry as of January 18, 1989. Twenty-five of 30 active NAI clients were re-interviewed regarding their race; 8 (32%) clients were confirmed to be NAI and 17 were reclassified to other races. The 17 racially misclassified clients had selected *Native American* from a list of race categories included on the CBASO intake form. The names of deceased CBASO NAI clients were matched to the LAC AIDS surveillance registry; 27 of 33 (82%) were reported, of which only 1 was recorded as NAI. Of 108 deaths reported among NAI males age 15-54 between 1980 and 1987, 3 were AIDS-related and had been reported to the LAC AIDS surveillance registry; 1 was reported as NAI.
Conclusion. Race was reclassified for 68% of CBASO clients initially recorded as NAI. If the proportion of racially misclassified deceased clients is the same as that of re-interviewed active clients, then NAIs may be under-represented by as much as 50% in LAC AIDS surveillance statistics.

T.A.P.69

A RECORD LINKAGE STUDY TO DETERMINE THE DEGREE OF UNDER-REPORTING OF AIDS CASES IN CANADA.

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Objectives: To estimate the rate of under-reporting of AIDS to the Bureau of Epidemiology & Surveillance, Federal Centre For AIDS (FCA), Canada.
Methods: In January and October 1988, initials, birthdates and place of residence of 66 cases of AIDS known to the Toronto Sexual Contact Study (TSCS) and 64 cases known to the Vancouver Lymphadenopathy-AIDS Study (VLAS) were sent to the FCA along with comparable information on 1041 other study participants who were not known to have AIDS. A manual record linkage was conducted by the FCA linking this data to the national registry of reported cases.
Results: The rate of under-reporting ranges from 10.9% (7/64) (VLAS) to 18.2% (12/66) (TSCS). The TSCS data show that under-reporting has increased from 0% in 1984 to 40% in 1987, whereas rates have been stable in the VLAS. In the TSCS, AIDS diagnoses are established and reported by physicians not involved in the research in contrast to the VLAS where physicians involved in the research are also responsible for reporting cases.
Conclusions: If the under-reporting rates observed in this study are reasonable estimates of the national rate then 253 to 423 cases of AIDS have not been reported as of January 1, 1989. Differences in responsibilities for case reporting between centres may explain differences in observed rates of under-reporting.

T.A.P.71

LINKAGE OF RECORDS OF PERSONS IN THE NEW YORK CITY (NYC) AIDS CASE REGISTRY WITH DEATH CERTIFICATES FILED IN NYC.

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Blum S.**; Rautenberg E.*; and the others in the *New York City (NYC) Dept. of Health (DOH) AIDS Surveillance Unit, NYC, USA,**NYC DOH Office of Epidemiology and Statistical Services, NYC, USA.

Objective. To analyze a data set which links AIDS Registry (AR) records of New York City (NYC) cases with their NYC death certificates (DCerts).
Methods. A computerized search of all NYC DCerts 1980-87 linked cases in AR to DCerts. The linking process was iterative and utilized sequentially less stringent criteria for the identification of possible matches.
Results. Among the 11,132 files with name known in AR, 7,052 (63%) were linked to DCerts. Among the 7,052, 17% had not had vital status updated prior to linking the files. Dcert underlying causes of death for the 7,052:

ICD-9 Code/Illness	Number (%) of 7052 cases
279.1,042-044 136.3, 173/ AIDS, HIV-related, PCP,KS	6274 (89.0)
485-486/Broncho/Pneumonia, organism unspecified	128 (1.8)
117.5/ Cryptococcosis	45 (.6)
010-018/ Tuberculosis	28 (.4)
Other HIV-associated conditions (cf. MMWR 36 No.S-7)	87 (1.2)
304.9/Unspecified drug dependence	102 (1.4)
Other ICD-9 Codes	388 (5.5)

Codes 485-6 and 304.9 are more common causes of death among AIDS cases whose risk factor is intravenous drug use than among cases with other risk factors.
Conclusion. Linkage of AR files with DCerts is a useful tool for increasing the information available for individual cases and for updating vital status.

T.A.P.72

TRENDS IN THE OUTPATIENT DIAGNOSIS OF AIDS: IMPLICATIONS FOR EPIDEMIOLOGIC ANALYSIS AND SURVEILLANCE

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Objective. We sought to monitor trends in the site (inpatient vs. outpatient) of AIDS diagnosis. This information is used in targeting active AIDS surveillance programs and interpreting epidemiologic data.
Methods. The site of initial AIDS diagnosis was determined as part of routine AIDS surveillance and entered into the ARS computerized database.
Results. An increasing proportion of AIDS cases in King County are diagnosed outside of hospitals. Prior to 1986, 6% of cases were diagnosed as outpatients (OPDx), rising by year to 25% of cases diagnosed in 1988.
Conclusions. Most local AIDS surveillance programs depend heavily on hospital-based reporting and validation studies of reporting completeness generally use hospital-based methods such as discharge databases. Our data indicate that the proportion of AIDS cases with an outpatient diagnosis is rapidly increasing, making hospital based surveillance systems less effective. Outpatient diagnosis may also influence the analysis of epidemiologic parameters. For example, of Washington State AIDS cases diagnosed prior to 1988, cases with outpatient diagnoses survived significantly longer than other cases (41.1 months vs. 14.8 months). Confirmation of these trends in other jurisdictions is needed. Provider and clinic-based surveillance and validation techniques should be developed in light of these findings.

Year	# AIDS Cases	No.OPDx	(%)
1982-85	155	9	(6%)
1986	183	19	(10%)
1987	244	52	(21%)
1988	219	55	(25%)

T.A.P.73

HOSPITAL-BASED AIDS REPORTING IN A HIGH INCIDENCE AREA, HOUSTON, TEXAS, USA

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Objective: To provide a mechanism to facilitate and evaluate the timeliness and completeness of AIDS reporting in selected hospital areas of an indigent care hospital.
Methods: The selected hospital areas were evaluated through observing and interviewing staff to assess current reporting practices. Recommendations were made based on the assessment. Recommendations included implementing a new reporting system utilizing a re-designed report form and protocol. These changes were carried out in a pilot study for two months. The pilot consisted of three stages, education, implementation, and evaluation of the program.
Results:

	Before Pilot May-June 1988	During Pilot Nov-Dec 1988
Number of cases	10 cases	20 cases
Mean lag time (Dx to Report)	6 months	3.9 months
Completeness	0%	37%

Conclusion: It has been generally excepted that in areas of high AIDS incidence hospitals are experiencing limitations in time and staff to report AIDS cases. With the implementation of this pilot, there has been and increase in case reporting at this facility. Through assessment, education and tailored procedures, hospitals in high incidence areas can continue to meet their legal obligation to report AIDS cases to the local health authority.

T.A.P.74

EVALUATION OF AIDS CASE REPORTING IN MASSACHUSETTS

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OBJECTIVE. To assess completeness and timeliness of MA AIDS case reporting.
METHODS. To validate completeness of reporting, BMASP audited infection control logs and case lists at 20 reporting sites with >25 cumulative cases. Unreported cases were recorded. Death certificates (DC), tumor registry (TR) and Mycobacteria (M) reports were also reviewed for unreported cases. The timeliness (reporting delay)of cases reported in 1987 and 88 was calculated as months between diagnosis and report.
RESULTS. Completeness. Ninety-three unreported cases were found in the audit, representing 7% of all cases diagnosed at audited hospitals. No differences were found in underreporting rates by risk, sex, race, or case definition. Rates differed by site; 3 hospitals had 68% of unreported cases. Underreporting was mainly due to a lack of individuals assigned the duty to report at those sites. DC, M, and TR reviews found 59 cases, 3% of all cases diagnosed. Underreporting in MA is estimated at 8%.

Timeliness. Of reported cases, 76% are received within 2 months of diagnosis; 90% within 6 months. No differences in reporting delay were found by risk, sex, race, or case definition; however, differences by site were significant.
CONCLUSION. Regular audits of hospital infection control logs as well as reviews of M, DC, and TR reports are needed to maximize reporting completeness. MA AIDS case reporting is 92% complete, with 90% of reported cases received within 6 months after diagnosis.

T.A.P.75

DMAC : A software for cooperative epidemiology of HIV infection

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Objective : The French Ministry of Health has set up a national system of information on HIV infection based on 23 major hospitals (Centres d'Information et de Soins sur l'Immunodéficience Humaine: CISIH) scattered all over the country. Concerning epidemiology, the aim of the system is to provide a global view of the infection at its different stages and to be a core for further collaborative clinical/epidemiological studies.

Method : A software (DMAC : Dossier Minimum Anonyme Commun) has been devised to facilitate the cooperative epidemiology between all collaborating centers. It runs on IBM PC compatibles, with Ms Dos.

Results : The functions of the software include : derivation of an anonymous code corresponding to each patient (see Thirion, Sambuc, San Marco, Rev Epid et Santé Pub,1988,36,36-42) which protects confidentiality but allows to automatically retrieve the patients who consult in different places and correct accordingly the national database ; data entry and edition of the information at each visit of follow up; automatic computation of the stages of the patients according to CDC or ICD 9 ; automatic production of the notification of AIDS to the General Direction of Health when/if the patient satisfies the criteria of AIDS ; coding of the file using the technique of the Vernam cypher in order to fully guarantee the security when data are exchanged between the clinical centers and the Coordinating Data Center ; statistical facilities to allow each participating center to analyse locally its own data. The computerized informations include only those biological measurements and clinical data which, by consensus, have been found to be routinely recorded on seropositive patients. Modifications of the software can easily be performed for those clinical centers who want to devise collaborative studies for which additional informations have to be collected.

The system has received the agreement of the Commission Nationale de l'Informatique et des Libertés. The written and informed consent of the patient must be obtained.

The software may be obtained upon request to the coordinating data center.

T.A.P.76

TEMPORAL TRENDS FOR PAST SEXUALLY TRANSMITTED DISEASES IN MEN WITH AIDS AND ARC IN SAN FRANCISCO

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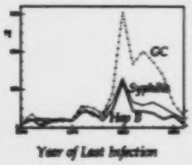
Objective: To describe the temporal trends of the last prior sexually transmitted diseases (STDs) in patients who developed AIDS and ARC which correlate with cessation of sexual practices which may also transmit HIV.
Methods: The UCSF AIDS Registry has collected detailed medical histories since 1985 from a cohort of 2605 individuals, who are asked the dates of their last episode of syphilis, gonorrhea (GC), and hepatitis B as well as dates of HIV associated conditions and onset of AIDS.
Results: Dates of last GC (n=1497), syphilis (n=775), and Hepatitis B (n=324) each peaked in 1980 and by 1982 were approximately 50% of the 1980 rates. The hepatitis B rate fell most rapidly, even though affecting the smallest proportion of the cohort possibly reflecting saturation of infection in a subgroup with the riskiest behaviors. The mean time from hepatitis B to AIDS onset was 8.0 years (n=240) and from syphilis 7.8 years (n=344) which corresponds to estimates of the mean incubation time of HIV to AIDS. Of 645 men with GC who developed AIDS 45 (7%) had GC within 1 year, 55 (8%) 2 years before, 82 (13%) 3 years before AIDS onset. The decreasing rate of infection may reflect safe sex education and /or the development of prodromal symptoms.
Conclusions: The time of last prior STD peaked and began declining even before there was an awareness of AIDS. However, as indicated by GC which was newly acquired within one year of onset of AIDS by 1 in 14 patients, there is a need for continued interventions to stop transmission through safer sexual practices.



T.A.P.77

IMPACT OF THE REVISION OF THE CDC AIDS CASE DEFINITION ON CASE REPORTING

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Objective: To describe the impact of the September 1987 revision of the CDC AIDS case definition on case reporting through December 31, 1988.
Methods: Following the AIDS case definition revision in 1987, the Division of AIDS Surveillance categorized all reported cases on whether they met the older case criteria or the newer, broader definition. Retrospective case investigation was accomplished by an evaluation project using hospital discharge records and by reinvestigation of previously-reported cases which had not met the older definition.
Results: The percentage of cases meeting each case definition by December 31, 1988 is as follows:

Definition	Year of Diagnosis					
	Before 1985	1985	1986	1987	1988	Total
Old	125 (99%)	169 (89%)	236 (86%)	336 (75%)	339 (73%)	1205 (80%)
Revised	1 (1%)	21 (11%)	38 (14%)	110 (25%)	123 (27%)	293 (20%)
TOTAL	126	190	274	446	462	1498

The 293 revised definition cases do not include 41 cases that were reported as revised definition cases but developed conditions which reclassified them under the old definition. Of these 293, 137 (46.7%) had died by the end of 1988 without having been reported as progressing to old definition AIDS. This resulted in a 10.9% increase in reported cases (1498 total cases/137 permanent revised definition cases) due to the revised AIDS case definition, in the 16 month period after implementation.
Conclusion: The revision has had a number of consequences. First, patients now can meet case criteria without admission to a hospital. To maintain accurate reporting, surveillance systems should place greater emphasis on out patient clinics and private physicians' offices. Second, revised definition cases who succumb before meeting old definition criteria merit special attention. Third, estimates of future cases need to reflect the revision. The increased sensitivity of the revised definition must be taken into account by those planning for future resource needs of AIDS patients.

T.A.P.78 EFFECT OF THE CDC REVISED DEFINITION ON AIDS CASE REPORTS IN NEW JERSEY

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Objective. To determine the effect of the September, 1987 revision of the CDC surveillance definition of AIDS on case reports received by the New Jersey State Department of Health (NJSDOH).
Methods. Information on AIDS cases newly reported to the NJSDOH in the time period prior to the definition revision (Time I - May 1986-August 1987) were compared to those reported between September 1987 and December 1988 as retrospectively reclassified reports were excluded.
Results. During Time II, there were 2,617 case reports received, 46% of all cases ever reported in the State; 1,091 reports were received during Time I. There were significant differences (p .01) in the composition of reported cases during the 2 time periods. The proportion of females reported during the 2 time periods increased from 19% to 23%; blacks increased from 48% to 53%; heterosexual IVDAs increased from 47% to 55%; homosexual/bisexual males decreased from 32% to 25%. The proportions of Hispanics (13%) and children reported (3%) did not differ. Fully half of all reported cases in Time II were classified due to the new definition, with over 23% associated with wasting syndrome or HIV encephalopathy, and a decline in the proportion of PCP from 63% to 47%.
Conclusions. There have been significant changes in the reported cases of AIDS since the definition revision, most of which seem associated with an increasing number of IVDAs being reported. The proportion of heterosexual IVDAs, women, and blacks, has increased. In half of these cases, these reports would have been excluded during Time I, as OIs not previously included were diagnosed.

T.A.P.79 RETROSPECTIVE REVIEW OF NON-AIDS REPORTS IN NEW JERSEY BASED ON CDC REVISED SURVEILLANCE DEFINITION OF 1987

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Objective. To determine the significance of the September, 1987, revision of the CDC surveillance definition of AIDS on previously reported suspected AIDS cases, which could not be classified as AIDS under the 1985 definition.
Methods. Reports of suspected AIDS received by the New Jersey State Department of Health (NJSDOH) prior to September, 1987, which could not be classified as AIDS had been classified as AIDS Related Complex (ARC)—a reportable condition in the State— or lacked suitable information to be classified. A file and/or medical record review was conducted on 1,781 such reports received between May, 1985 and August, 1987.
Results. A total of 713 (40%) of the reviewed cases were reclassified as AIDS, based on the revised definition. This represents an increase of 20% over previously reported AIDS cases in New Jersey through September, 1987. Of 1,431 ARC reports reviewed, 666 (47%) were now considered AIDS, and 47 (13%) of the 350 other reports were likewise reclassified. Nearly two-thirds of these 713 reclassified cases involved 3 opportunistic infections: 26% reported presumptively diagnosed PCP, 32% reported wasting syndrome, and 8% reported HIV encephalopathy. In all, 40% reported a previously required OI diagnosed presumptively, 44% reported a newly added OI, and 16% were found to now meet the requirements of the 1985 definition.
Conclusion. A substantial number of the reviewed reports were reclassified as AIDS. Research involving historical case counts need to consider these results and their implications, as case reports based on the previous definition will grossly underestimate the extent of severe clinical manifestation of HIV infection.

T.A.P.80 THE EFFECT OF THE REVISED AIDS 1987 CASE DEFINITION ON THE CHARACTERISTICS OF CASES REPORTED IN UPSTATE NEW YORK

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Objective. To compare the characteristics of AIDS cases meeting criteria for the 1987 revised case definition only (87CD) with those meeting the old 1985 case definition (85CD).
Methods. Data were obtained from the state registry of upstate AIDS cases and limited to cases diagnosed between 10/1/87 and 12/31/88.
Results. Of 965 cases diagnosed in this period, 285 (30%) met the revised case definition. The percentages of cases who were females (87CD=16%;85CD=14%) and minorities (87CD=56%;85CD=50%) were minimally increased; age distributions were similar. The 87CD group demonstrated increases in the rate ratios (RR) for intravenous drug use (IVDU) among adult cases (RR=1.6;95%CI=1.3,1.8) for maternal IVDU associated with pediatric cases (RR=2.7;95%CI=1.1,6.6) and for the adult case fatality rate (87CD=37% vs 85CD=28%;RR=1.3;95%CI=1.1,1.7). Of the 285 87CD cases, 187 (66%) were presumptive and 98 (34%) definitive. Preliminary follow-up of 52 87CD cases diagnosed between 10/87 and 1/89 showed 4 cases (8%) subsequently met the 1985 definition.
Conclusion. Use of the 1987 revised AIDS case definition has led to increases in females, minorities, IVDU's and in the case fatality rate. Although 30% of cases met the revised definition, the actual increase in case reporting may be less as suggested by the observation that some cases convert to the old case definition with time and by changes in medical practices which may have resulted in an increase in presumptive diagnoses.

T.A.P.81 CAN THE INFECTION RATE OF HBV SERVE AS A PREDICTOR OF HIV INFECTION?

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Objective. To compare HIV and HBV infection rates in various risk groups for HIV infection.
Methods. Serum samples were collected from 123 hemophilia patients, 49 homosexual men and 32 drug abusers. All samples were tested for anti-HIV antibodies, HBsAg, anti-HBc and anti-HBs.
Results.

Risk Group	HBV+		HVB-		Total	
	No. tested	%pos	No. tested	%pos	No. tested	%pos
Hemophilia	105	52	18	0	123	41
Homosexuals	15	6.7	34	0	49	2
Drug Abusers	25	24	7	0	32	22

There is a significant difference in HIV rate of infection between HBV+ and HBV- individuals in all 3 risk groups. None of 59 HBV- sera was found positive for anti-HIV while 57/145 (39%) of HBV+ sera were also positive for HIV.
Conclusion. Populations at risk for HIV infection are also at risk of infection with HIV. The infection rate of HBV, which is more easily transmitted than HIV, can serve as a predictor for HIV infection rate. Presently, hemophilia patients with very high rate of HBV infection (85%) were also highly infected by HIV (41%), drug abusers with a high rate of HBV infection (78%) were highly infected by HIV (22%) while in the homosexual men population a much lower rate of HBV infection (31%) was associated with a low infectivity rate of HIV (2%).

T.A.P.82 DECLINING INCIDENCE OF ACUTE HEPATITIS B AMONG DRUG USERS IN AMSTERDAM MAY INDICATE A CHANGE IN RISK BEHAVIOR

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Objective. To evaluate the AIDS-preventionprogramme among drug users (DU) in Amsterdam with the incidence of acute hepatitis B (AHB) as a surrogate marker.
Methods. AHB-cases in Amsterdam are notified to the municipal health service (MHS) and for each case background data (including possible drug use) are gathered with a interview. All drug users involved in a methadone programme (MP) are reported to the MHS. The estimation of DU not participating in a MP is based on the number of DU arrested by the police. The probability of arrest is considered to be the same for MP and non-MP DU. The number of exchanged needles/syringes is used as a criteria for the preventionprogramme among DU.
Results.

	1983	1984	1985	1986	1987	1988
AHB cases among DU	17	26	24	11	13	5
Estimated number of DU	7900	9300	7800	7400	8200	±8200
AHB incidence among DU per 100,000	216	278	309	149	159	62
Exchanged needles x 1000	-	25	100	400	700	650

Conclusion. The decrease of AHB-incidence among DU may indicate that a significant change in risk behavior has occurred among this group in Amsterdam.

T.A.P.83 FEAR OF AIDS AND INCIDENCES OF GONORRHEA, SYPHILIS AND HEPATITIS B, 1982-88.

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Objective. To compare incidences of gonorrhea, syphilis, and hepatitis B as measures of changing sexual behavior resulting from fear of AIDS.
Methods. Yearly incidences of gonorrhea and syphilis in Denver Metro STD Clinic patients, and of hepatitis B in Denver residents were determined for gay men (GM), heterosexual men (HM), and heterosexual women (HW) for 1982 through 1988.
Results.

Year	Gonorrhea (No.)			Syphilis (No.)			Hepatitis B (No.)		
	GM	HM	HW	GM	HM	HW	GM	HM	HW
1982	1,809	1,260	636	138	48	40	22	21	16
1983	1,149	1,255	681	106	45	15	22	18	10
1984	897	1,407	720	101	59	29	34	32	16
1985	785	1,456	753	55	60	21	26	35	15
1986	270	1,340	658	52	52	12	18	44	21
1987	166	984	391	59	87	44	13	35	41
1988	92	789	313	20	111	49	9	19	18

During the 6 year AIDS epidemic in Denver, gonorrhea incidence in GM has declined 95%, but in HM and HW peaked in 1985, then declined 46% and 58% respectively. Syphilis incidence has declined 86% in GM, but recently has increased in HM and HW. Hepatitis B has decreased each year since 1984 in GM and in 1988 in both HM and HW.
Conclusions. Owing to high incidence, short incubation, easy detection, and quick cures, gonorrhea is the most accurate indicator of recent changes in sexual behavior. Syphilis and hepatitis B are much less useful because of low incidence, long incubation, subclinical infection, and, for hepatitis B, non-sexual transmission. GM and white, but not black or Hispanic, HM and HW continue to reduce their risk of HIV infection.

Transmission hétérosexuelle (partie 1)
Heterosexual Transmission (Part 1)

T.A.P.84

CHANGING SEXUAL BEHAVIOUR IN THE 1980'S

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Objective To examine trends in reported cases of gonorrhea and infectious syphilis in British Columbia from 1980-1988 as a surrogate marker for high-risk behaviour.

Methods Reports of gonorrhea and infectious syphilis were examined from 1980 to 1988 and total cases were compared with cases occurring in homosexual males. In order to 'control' as far as possible for an increase in under-reporting - the same trends were examined in a large metropolitan VD Clinic.

Results

Table I	1980	1981	1982	1983	1984	1985	1986	1987	1988
Gonorrhea-Total	10,144	9,220	8,623	6,137	6,359	5,556	3,564	2,942	1,928
Gonorrhea-Homosexual	1,246	1,244	1,099	678	521	280	132	120	67
% Homosexual	12.3	13.5	12.7	11.0	9.5	5.7	3.7	4.1	3.5
Syphilis-Total	234	190	234	183	149	224	157	88	55
Syphilis-Homosexual	154	130	175	136	100	114	20	15	17
% Homosexual	65.8	68.4	74.8	74.3	67.1	50.9	44.6	17.0	30.9

There were similar trends noted in the Vancouver VD Clinic.

Conclusion Risky sexual behaviour in the 1980s has decreased substantially in British Columbia, probably initiated by the attention surrounding herpes in the early years and intensified by AIDS in the later years. This change has been equally dramatic in the gay community. Information and education on STDs and AIDS is effective in changing sexual behaviour to stop new transmissions of HIV, gonorrhea, and syphilis.

T.A.P.85

AIDS PATIENTS WITH NO IDENTIFIED RISK--LACK OF EVIDENCE FOR NEW MODES OF TRANSMISSION

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Objective. To identify new or unrecognized modes of HIV transmission.

Methods. AIDS patients with no identified risk (NIR) for HIV exposure are investigated by health departments using a standard protocol.

Results. As of January 1, 1989, investigations have been completed for 1,971 adults initially reported with NIR. Risk factors were identified for 1,632 (83%) persons. Of the 2,662 adults who remain with NIR (3% of all adult cases), 1,854 (70%) are still under investigation; 469 (18%) died, refused interview, or were lost to follow up; and 339 (13%) had no risk identified after investigation. Like heterosexual contact patients and IV-drug users (IVDUs) with AIDS, most (65%) of the 339 investigated adults with NIR were black and Hispanic; the sex distribution was similar to that of IVDUs with AIDS (22% women, 78% men). Interview data were available for 228 (67%) of the 339 investigated adults. Blood exposure via needlesticks was reported by 16 (36%) of 45 health care workers. Other possible parenteral exposures to blood were reported by 9% of the interviewed adults (12 had tatoos and 3 had acupuncture). Illicit non-IV drug use, excluding marijuana, was reported by 22%. One third reported a history of a sexually transmitted disease, and 46 (32%) of 142 men reported sexual contact with a prostitute.

Conclusion. NIR patients have demographic characteristics similar to those of other heterosexual AIDS patients; follow-up of these patients suggests possible sexual or blood exposure to HIV.

T.A.P.86

THE RELATIONSHIP BETWEEN MALE CIRCUMCISION AND HIV INFECTION IN AFRICAN POPULATIONS

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Objective. To examine the relationship between HIV seroprevalence and the proportion of uncircumcised males in African countries to determine whether circumcision practices play a role in explaining the large existing variation in the sizes of African HIV epidemics.

Methods. A review of the anthropological literature yielded estimates on circumcision practices for 409 African ethnic groups from which corresponding national estimates were derived HIV seroprevalence rates in the capital cities were used as indications of the relative level of HIV infection in 37 countries.

Results. The correlation between these two variables in the 37 African countries was high ($R=0.9$; $P<0.001$). This finding is consistent with existing clinic based studies that indicate a lower risk of HIV infection among circumcised males.

T.A.P.87

HIV-1 INFECTION IN SEXUALLY EXPOSED WOMEN: RISK FACTORS FOR PREVALENT AND INCIDENT INFECTIONS

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OBJECTIVE: To determine risk factors for HIV-1 infection in women and the incidence of male-female transmission of HIV-1.

METHODS: 238 randomly selected women presenting to a sexually transmitted diseases (STD) clinic were interviewed about sexual behaviour, past STD, contraceptive use, parenteral exposures and examined for STD and HIV infection. HIV seronegative women (HIV-) with genital ulcers (GU) were followed for 6 months.

RESULTS: 30 (12.6%) of women were HIV seropositive (HIV+). HIV+ women were more often single (19/30 vs 55/208, OR=4.8, p<.01), recently prostitutes (6/30 vs 4/208, OR=12.8, $p<10^{-6}$), had a greater mean number of sexual partners in the past 3 months (SP3M) (HIV+ 4±6 vs HIV- 1±3, p<.001), had more past GU (7/30 vs 16/208, OR=3.6, p<.01), past STD (7/30 vs 9/208, OR=2.7, p<.05). Among women with >2 SP3M 6/12 HIV+ vs 7/33 HIV- (p=0.7) reported recent oral contraceptive VS 2 of 33 HIV- women with GU seroconverted.

CONCLUSION: HIV+ is associated with degree of sexual activity, past GU and STD. In Nairobi, 25% of men with GU are HIV+: a crude male-female transmission rate after one sexual exposure of 25%.

T.A.P.88

HIV TRANSMISSION IN STABLE SEXUAL PARTNERSHIPS IN KENYA

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OBJECTIVE: To identify the frequency of and risk factors for heterosexual transmission of HIV within couples.

METHODS: HIV+ individuals attending a Nairobi STD clinic were enrolled in a prospective study along with their spouse.

RESULTS: Of 75 couples, 35(47%) were concordant (CON) for HIV infection. Of 40 disordant (DIS) couples, in 24 the index case was male and in 16 the index case was female. HIV- women more frequently lived in a city different from their spouse than HIV+ women (9/24 vs 7/61 p=.01). HIV seropositivity was not significally associated with past genital ulcers, injections, blood tranfusions, scarification, circumcision, oral contraceptive use, or number of sex partners. CON and DIS couples were similar with respect to presenting diagnosis, frequency of sex, sex during menses, sex with prostitutes, and CDC stage of HIV disease. Compared to CON women, DIS/HIV+ women were more often single (7/16 vs 2/35 p=.004), more often had a history of STD (11/16 vs 7/35 p=.002), and reported a shorter duration of stable partnership (2.8 vs 7.8yrs p<.001) and a greater number of sex partners since 1980 (4.7 vs 2.5 p<.05). In follow up of 25 couples for a mean of 3.8 months (range 1-18), 3 seroconversions occurred.

CONCLUSION: A high proportion of couples were concordant for HIV. The incidence of new infections is higher than that observed in North American studies.

T.A.P.89

HIV INFECTION AND CIRCUMCISION STATUS

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Objective. To examine the relationship between HIV infection and circumcision.

Methods. An analysis of two studies done in New York City's Sexually Transmitted Disease(STD) Clinics. Study #1 is a case-control study of 352 men attending 2 STD clinics from 8/87-3/88. Study #2 is a cross-sectional study of 1374 men attending 2 STD clinics from 12/86 to 12/88. All study participants were interviewed. Circumcision status was determined by self-report(both studies) and by physical exam in Study #1.

Results. The prevalence of circumcision by physical exam in Study #1 was 39.1%. In Study #2 the prevalence of circumcision by self-report was 52.0%. The differences in circumcision rates can be explained both by the racial compositions of the two studies and by misclassification in the self report group. Men in Study #1 who were uncircumcised were twice as likely to misclassify themselves as those who were circumcised(17.7% vs 8.4%). The prevalence of HIV infection in Study #1 was 18.2%, and in Study #2 was 13.2%. Logistic regression analysis adjusted for age, race, homosexuality, number of sexual partners, drug use, diagnosis and circumcision status(physical exam and self-report) was done for both study populations. There was no association between circumcision status and HIV infection.

Conclusions. In two studies in NYC STD clinics, with a total of 1726 men, no independent relationship was found between circumcision status and HIV infection.

T.A.P.90 HIV RISK FACTORS IN STEADY MALE SEX PARTNERS OF KINSHASA PROSTITUTES

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Objectives. To determine HIV infection rate and associated risk factors among steady male sex partners of prostitutes.
Methods. As of January 1989, 77 steady male sex partners of female prostitutes (who participated in a study of STD and HIV) were interviewed, examined and tested for HIV and syphilis.
Results. 8 out of 29(27.6%) male partners of HIV(+) women were HIV(+) vs. 4 out of 48(8%) male partners of HIV(-) women (p(.001) 3(3.9%) of the men had active syphilis and 6(8%) had a history of syphilis. HIV(+) and HIV(-) men did not differ regarding age (31 yrs vs 33 yrs), transfusions (0 vs 3%) or contacts with other prostitutes (16% vs 29%). Characteristics of couples of HIV(+) prostitutes and their steady male partners (HIV(+) or HIV(-)) were compared:

	F(+) M(+)	F(+) M(-)	P value
Male characteristics:			
Always condom use	8%	6%	NS
Circumcision	100%	97%	NS
Syphilis (TPHA+)	25%	0	0.02
Female characteristics:			
History of ulcer (last 5 years)	87%	33%	0.01
Cervical erosion	37.5%	19%	NS

(F=female, M=male, (+)=HIV(+), (-)=HIV(-))

These characteristics were similar for duration of relationship (26 mos. vs 22 mos.) and mean number of sex contacts per week (1.6 vs. 2.7).
Conclusion. A high HIV infection rate is found among steady partners of female prostitutes who have high prevalence of HIV and other sexually transmited disease. Genital ulcer disease in the woman and history of syphilis in the men were risk factors for HIV infection.

T.A.P.91 SEROLOGIC CONCORDANCE AND INCIDENCE OF HIV IN REGULAR SEXUAL PARTNERS IN NAIROBI, KENYA

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Objective. To identify serologic concordance and correlates of acute HIV infection among regular sexual partners.
Method. Persons referred to a dermatovenerology clinic were screened for HIV antibody in studies, on request or as indicated with consent. Sexual contacts of HIV positive persons had clinical, microbiological and serologic evaluation initially and in monthly follow-up. Marital couples were informed and counselled about HIV and sexual transmission, and provided condoms.
Results. During a one year period, 82 couples were observed. 42 (51%) were initially serologically concordant for HIV antibody. Concordance was not statistically significantly associated with HIV related disease. Duration of sexual relationship was associated with concordance (p<0.05). 40 (49%) partners were initially seronegative. Without subsequent unprotected intercourse, seroconversion occurred in 7/35 (20%), in association with clinical and/or microbiologic evidence of other sexually transmitted diseases (p<0.05).
Conclusion. Classic sexually transmitted diseases may facilitate heterosexual HIV transmission between regular sexual partners.

T.A.P.92 POTENTIAL ROLE OF SPERMATOZOA IN THE TRANSMISSION OF HIV

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Objective : To further elucidate the mechanism of the sexual transmission of HIV, we investigated whether spermatozoa from healthy men could be infected in vitro by HIV.
Methods : Fresh motile spermatozoa separated from mononuclear cells and seminal plasma, were obtained by swim-up from 12 HIV antibody negative men. In 14 experiments, they were incubated at 37°C for one hour with HIV and then, washed trice in RPMI 1640 containing 10 fetal bovine serum. They were cocultured with normal activated peripheral blood mononuclear cells. In 3 experiments they were preincubated with and without anti DC4 antibodies. Presence of HIV was assayed by detection of reverse transcriptare activity (R.T.A.) in supernatants.
Results : R.T.A. was detected in all cultures by day 9 to 11. Similar results were obtained after preincubation of spermatozoa with CD4 antibodies.
Conclusion : These results indicate that HIV can at least bind to human spermatozoa by non specific membrane absorption. These in vitro results also suggest that artificial insemination of non infected women with isolated spermatozoa from their HIV infected husband may prove dangerous.

T.A.P.93 ETHNIC DIFFERENCES IN THE HETEROSEXUAL TRANSMISSION OF HIV IN CALIFORNIA.

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Objective: To examine disproportionate rates of heterosexual transmission of HIV in nonwhite women.
Methods: We examined heterosexual transmission of HIV in the female sexual partners of men infected with HIV or diagnosed with AIDS or ARC, and compared transmission rates and associated risk factors in three ethnic groups: black, latino, and white. Both partners in couples examined were of the same ethnic group. 165 couples were studied.
Results: Black women had slightly higher rates of infection than whites (27% compared to 21%, not significant), whereas latina women had significantly higher rates than whites (46%, p=.04). Both black and latina women were more likely to have intravenous drug users as their index case than white women (p=.0007 and .04, respectively), and latina women practiced anal intercourse with their partners more frequently than either white or black women (p=.004 for each comparison). Increased risk of transmission for latina women disappeared in a logistic regression that controlled for the practice of anal intercourse.
Conclusion: It has commonly been observed that intravenous drug users have higher rates of heterosexual transmission of HIV than infected men from other risk groups. Although nonwhite women in our sample were more likely to have intravenous drug using partners; higher rates of infection among these women can be attributed primarily to higher infection rates among latina women and the more prevalent practice of anal intercourse in this group. These findings remain to be verified in larger more representative samples.

T.A.P.94 HETEROSEXUAL TRANSMISSION OF HIV FROM INTRAVENOUS DRUG USERS TO THEIR SEXUAL PARTNERS.

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Objective: To examine the potential for heterosexual transmission from intravenous drug users to their sexual partners.
Methods: Intravenous drug users (IVDUs) who were screened for HIV seropositivity over the last six months in 5 drug treatment centers in San Francisco, were interviewed about sexual partners. If the IVDU was HIV-positive and had heterosexual partners, we recruited their partner for screening.
Results: 330 female and 248 male IVDUs were screened. Approximately 70% returned for their test results. These included 22 seropositive women with male sex partners, and 26 seropositive men with female partners. 20 of the 48 (42%) infected IVDUs could not reach their partners to inform them of their risk. The remaining 28 individuals reported a total of 33 sexual partners. We were able to enroll 10 of these sexual partners, including 5 women and 5 men; 7 (70%) reported IV drug use and all reported having sexual contact with their seropositive partner within the last year. Two of the 10 partners (20%) were HIV positive both of whom were IVDUs.
Conclusion: Many sexual partners of IVDUs experience the double risk of HIV exposure through both drug use and sexual contact with infected persons. A sizable proportion of IV drug users do not return for test results, and of those who do, many are unable to contact their sexual partners. Nevertheless, partner referral at the time of test result notification remains an effective method of reaching individuals who might otherwise be unaware of their risk.

T.A.P.95 STATISTICAL ANALYSIS OF INFECTIVITY BASED ON PARTNER STUDIES

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Objective. To develop parametric and nonparametric statistical methods for analysis of data on HIV transmission in partners of infected individuals.
Methods. For data on infection status of partners of infected index cases in which number of sexual contacts following infection of the index case is known, a nonparametric estimate of the hazard of transmission is developed viewing number of contacts as a natural time scale and applying discrete survival analysis techniques. In addition, a generalized linear model (GLM) of transmission probability incorporating covariates is developed. The GLM is based on a simple model for transmission which assumes a constant per contact infectivity. Diagnostic procedures are proposed to test validity of the simple model, examine evidence for heterogeneity in infectivity across partnerships and to assess the effect of measurement error in the number of contacts on the GLM estimates.
Results. The methods were applied to data from the California Partner's Study (Padian, et al 1987). The nonparametric hazard estimate indicated that infectivity is not constant for this data, and evidence of heterogeneity was provided by lack of fit of the simple model. In addition, independent contributions to the GLM were observed for condom use (p=.01), bleeding during sex (p=.02), mode of sexual practice (p=.07) and the log number of concacts (p=.001). Similar results were reported by Padian (1989) with another model.
Conclusion. The nonparametric and parametric statistical methods developed provide an effective means of analysis of data on HIV transmission from partner studies and are easily implemented with available software.

T.A.P.96 COMPARISON OF RISK FOR HIV INFECTION AMONG SELF-REFERRED AND PROVIDER-REFERRED HETEROSEXUALS IN A STUDY OF HIV TRANSMISSION

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New England Behavioral Health Study, Pawtucket, RI. U.S.A.

Objective. To assess risk for a self-referred population-based cohort compared to a provider-referred group in a prospective HIV transmission study, and to assess efficiency of outreach recruitment in reaching at-risk groups.
Methods. Risk assessment interviews and serologies from the first 215 participants in a prospective study of the heterosexual spread of HIV. Outreach includes TV and radio announcements, newspaper ads, brochures bookmarks, matchbooks, talks on college campuses and informing providers serving populations at risk.
Results. Of the first 215 enrollees, 91 were provider-referred and 124 were self-referred. 41% of the provider-referred participants are HIV+, compared with 7% of self-referreds. Self-referred participants were more likely to be female (52% vs 48%), young (71% in the 18-24 age group vs 55% in the older age groups), and white (61% vs 45% for all other ethnic categories). Self-referreds were almost twice as likely to have had 2 or more partners in the last year, but less likely to know their partners' risk (62% vs 38% of provider-referred did not know their partner(s)' risk). Self-referreds were also more likely to have had 10 or more lifetime partners (56% vs 44%). Self-referred participants were less likely to use condoms (59% reported "rarely" or "never" vs 41% of provider-referred), and were twice as likely to consider themselves at no or slight risk for HIV infection (67% vs 33%).
Conclusion. Self-referred enrollees are less likely to perceive themselves at risk but may be, due to having multiple partners of unknown risk status, and not practicing safer sex.

T.A.P.97 HETEROSEXUAL BEHAVIOR AND HIV STATUS IN A COHORT OF PERSONS AT INCREASED RISK FOR HIV INFECTION

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New England Behavioral Health Study (NEBHS), Brown University, Providence and Memorial Hospital, Pawtucket, RI, USA.

Objective: To correlate heterosexual activity and hiv status in a cohort from a region where almost ½ of the new PWA's are heterosexuals.
Methods: Cross-sectional analyses of interviews and serologies from the first 215 enrollees of a community-based prospective study of the heterosexual spread of HIV in S.E. New England.
Results: 22/109 (20%) of the women and 24/106 (23%) of the men were HIV+. 40/46 (87%) of the HIV+ subjects and 39% of the whole cohort are or were IVDU 81% of the cohort is White. Other results included:

Behavioral Parameters	HIV+ Men N=22	HIV+ Women N=24	HIV- Men N=87	HIV- Women N=82
Same sex contact in the past year	8%	5%	5%	1%
> 10 partners in the past year	13%	10%	10%	2%
≥ 50 lifetime partners	32%	54%	14%	32%
History of STD (ever)	63%	50%	28%	30%
Sex with known high risk partners	67%	50%	40%	44%
No condom use in the past	20%	37%	50%	49%

Conclusion: Although 77% of the HIV- subjects perceived themselves to be at increased risk to develop AIDS, > ½ had unprotected sex with known high risk partners in the past year, usually steady, non-paying partners. Most of the HIV+ subjects in this cohort are IVDU, but many who are HIV- knowingly engage in unsafe sex. Risk reduction programs may have to target couples and do more than identify risky behaviors.

T.A.P.98 HETEROSEXUAL TRANSMISSION OF HIV: A EUROPEAN STUDY.
I: MALE-TO-FEMALE TRANSMISSION.

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OBJECTIVE: To determine risk factors of male-to-female HIV transmission.
METHODS: Between March 87 and October 88, 201 couples were recruited from 6 European countries. Data for HIV(+) males (Index Case=IC) and their heterosexual partners (HP) are collected every 6 months. HP presenting risks for HIV infection other than sexual contacts with the IC were excluded. The cross-sectional analysis of data from the first interview is presented.
RESULTS: Of 201 female HP, 49 were HIV(+). Male IC were mostly IVDU (64%) or bisexual (19%). The following 3 risk factors were identified: practice of anal sex (Odds Ratio=4.2 [1.9-9.6]); male index with full-blown AIDS (O.R.=4.1 [1.3-13.3]); history of sexually transmitted diseases (STD) in the past 5 years for the IC and/or the HP (O.R.=3.0 [1.3-6.8]). Lymphocyte counts were available for 133 male IC. HIV male transmitters (IC+,HP+) had lower %T4 (p=0.02) than non-transmitters (IC+,HP-). Total lymphocyte counts tended to be lower in transmitters but the difference was not significant. P24 antigen test was performed for 102 male IC. The risk linked to a positive test was 1.8 [0.9-6.8]. Duration of relationship (median 3 years), frequency of sexual contacts, sexual practices other than anal sex, and contraceptive behaviour were not found to be associated with partner infection.
CONCLUSION: The great influence of the 3 identified risk factors on male-to-female transmission is shown by differences in HIV prevalence in partners:

	No.couples	%(+,+)		No.couples	%(+,+)
None of the 3 risks	68	5.8%	2 or 3 of these risks	42	50.0%
History of STD for IC and/or HP	54	24.1%	Unknown	5	
Anal-genital sex	24	29.2%			
Male IC: AIDS	8	37.5%	TOTAL	201	24.4%

T.A.P.99

Alberto Saracco, and the Italian Multicenter Study Group on HIV Heterosexual Transmission, Infectious Diseases Clinic, University of Milan, Milan, Italy.

Female steady partners of HIV-infected subjects, without other risk factors for infection, have been enrolled since January 1987 in a study of the role played by behavioral and biological variables in heterosexual transmission of HIV infection. Every HIV positive subjects observed at partecipating centers was considered an index case (IC) and asked about this heterosexual partners. Every partner not already known as HIV infected was invited for screening test and interview. The interview concerned sexual behaviour and contraception in the contacts with IC. previous sexually transmitted diseases (STD) and HBV hepatitis were investigated as well. HIV infection was checked by two immunoenzymatic assays and confirmed by western blot. Data about the IC were collected through medical records. Preliminary analysis on 235 females has confirmed previously reported risk factors such as: history of STD and genital infections and anal sex. Other more controversial possible risk factors such as length of relationship and frequency of sex have been investigated and found, with some limitations, to be associated with HIV transmission. Condon use has been thoroughly investigated and found to be protective. Data on recruited population by May 89 will be presented and discussed, with particular reference to controversial matter.

T.A.P.100 BEHAVIOR MODIFICATION IN COUPLES ENROLLED IN A STUDY OF HETEROSEXUAL TRANSMISSION

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Objective: To evaluate behavior change in couples who participated in a prospective study of heterosexual transmission.

Methods: We provided education and counseling about safe sex practices as a component of our heterosexual partner study. Participants were evaluated every six months following entry into the study. Behavior at enrollment and last follow-up is compared.

Results: 54 couples were interviewed of which 43 were discordant (index HIV+, the partner HIV-). Amount of sexual intercourse among the discordant couples at last follow-up is as follows: no intercourse = 3/43; less intercourse = 30/43; same amount of intercourse = 3/43; more intercourse = 7/43. Condoms were used by 24/30 of the discordant couples having less intercourse, by 3/3 of those having the same amount of intercourse, and by 5/7 of those engaging in more frequent intercourse. Anal intercourse was practiced by 8 of the discordant couples at intake, only 4 of whom used condoms. Only 2 of these couples continued this sexual practice by the time of last follow-up, both of whom used condoms.

Conclusion: Partner referral and provision of education and counseling in a heterosexual partner study continues to remain an effective vehicle for behavior modification. Failure to practice safer sex resulted primarily from unwillingness, on the part of the partner, to adopt such measures of risk reduction.

T.A.P.101 CHANGES IN SEXUAL AND REPRODUCTIVE BEHAVIOR IN HETEROSEXUAL COUPLES AFTER HIV TESTING

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Objective. To determine the impact of HIV testing on sexual behavior in heterosexual couples, using data from a prospective study of heterosexual transmission.
Methods. Partners (Ps) of infected individuals (Is) were enrolled if Ps had never used IV drugs, had ≥ 10 episodes of vaginal intercourse (VI) with Is, were not separated from and were capable of additional intercourse with Is.
Results: 31 couples were evaluable with a mean duration of follow-up of 12.4 months. Is's were intravenous drug users (23), bisexuals (3), and prior partners of infected heterosexuals (5). 17 Ps were HIV- at entry; none seroconverted during the period of observation. 54% of HIV+ and 25% of HIV- Ps had used non-IV drugs in the year prior to entry. There were no significant differences in marital status, length of relationship, education, or family income between HIV+ and HIV- Ps. All couples were primarily monogamous. All but two reported a change in sexual practices after testing. 4 HIV- and 3 HIV+ Ps became abstinent. The others instituted condom use for VI, but 66% of HIV+ and 40% of HIV- Ps reported inconsistent use. Half of the couples reported anal intercourse (AI) prior to testing; only one couple continued to have AI after testing. Seven Ps were pregnant at the time of their first test, 4 of whom were HIV+. One HIV+ and 3 HIV-s completed the pregnancies. Two pregnancies occurred after HIV testing, both in HIV+s who claimed to be using safe sex practices.
Conclusions: HIV testing of Ps resulted in safer sexual practices, however Ps using condoms for VI did so inconsistently. Because such lapses were especially frequent among HIV+ Ps vertical transmission of HIV remains a persisting risk.

T.A.P.102

HIGH PREVALENCE OF HIV-1 ANTIBODIES IN STD PATIENTS WITH GENITAL ULCERS

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Objective. To determine the prevalence of HIV-1 infection in STD patients with genital ulcers.
Methods. Patients attending an STD clinic were randomly selected. Blood specimens were obtained from patients with a past and present history of genital ulcer disease screening for HIV-1 antibody was tested using ELISA (Wellcozyme) and confirmed by Western Blot (BLORAD).
Results. Of the 226 (75 females and 151 males) tested, 63 (27%) were seropositive for HIV-1. The seroprevalence rate in those with past history of genital ulcer disease was 34.7% and 28.6% in patients with gonorhoea.
Conclusion. The high seroprevalence rate is indicative of the role other STDs play in the transmission of HIV infections in hyperendemic STD areas. The prevention of other sexually transmitted diseases and the behavioral change along with this may be one way of curbing the AIDS epedemic in these areas.

Transmission hétérosexuelle (partie 2)
Heterosexual Transmission (Part 2)

T.A.P.103

HIV-1 TRANSMISSION IN HETEROSEXUAL COUPLES

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Objective - To study immunological features and transmission risk in heterosexual couples with one seropositive partner.
Methods - 43 heterosexual couples were evaluated; one partner was seropositive at the first medical check who previously belonged to a high risk behaviour category. The study included 34 seropositive at risk males and 9 females. Number of sexual intercourses, condom use, sexual behaviour, immunological features were evaluated for each couple.
Results - At the first control 17 couples were found to have both positive partners, whereas 26 had seronegative partner not belonging to a risk category. After one year follow up 2 out of 26 seronegatives were infected (77%).
Conclusions - Among the evaluated parameters condom use was found to be important to prevent HIV transmission: 95% of couples with both infected partners did not use condoms, whereas in 62% of couples with one seronegative partner the condom was not commonly applied. Among the immunological parameters CD4+ T lymphocytes and skin tests were found to be relevant biological conditions favouring HIV-1 transmission from a seropositive subject to a seronegative one.

T.A.P.104

PRELIMINARY ANALYSIS OF FACTORS ASSOCIATED WITH SEROCONVERSION IN A STUDY OF HETEROSEXUAL SEXUAL TRANSMISSION OF HIV IN MONOGAMOUS COUPLES

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Objective. To present a preliminary analysis of factors associated with seroconversion in a study of heterosexual sexual transmission of HIV in a cohort of monogamous couples.
Methods. The Northern Brooklyn Partner Study, begun in September 1988 with funding from the CDC, is a three year longitudinal study of monogamous heterosexual couples in which one partner has as his/her only risk factor sexual contact with the other partner. The sample is drawn from a community based primary health care facility which services a population that is 93% black or Hispanic and 86% IVDU's and their sexual partners. Data gathered are retrospective as well as prospective, and include sexual and drug use behaviors, psychological measures, and medical parameters (stage of disease of index partner, p-24 antigen, HIV cultures, concurrent VD, etc). All subjects are reinterviewed and examined at 3 month intervals.
Results & Conclusions. Preliminary data presented here will be a comparison between couples where sexual transmission has already occurred (concordant couples), and couples where the exposed partner is seronegative at the time of entry into the study (discordant couples). Data will be presented on at least 10 discordant couples, with at least 10 concordant couples used as a comparison.

T.A.P.105

THE RISKS FOR HETEROSEXUAL HIV TRANSMISSION FROM INFECTED BLOOD TRANSFUSION RECEIPIENTS

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Objective. To identify risk factors for heterosexual HIV transmission.
Methods. HIV-infected transfusion recipients and their partners were asked about sexual practices, medical history, and examined and tested for signs of infection; polymerase chain reaction (PCR) with SK 38-39 primer pairs was used to identify HIV genetic material in peripheral mononuclear cells.
Results. Through 1988, 74 HIV-seropositive recipients were identified and 39 had partners; 5 (19%) of 30 female partners and none of 9 male partners were HIV-seropositive. When tested by PCR, specimens from 26 seronegative partners were PCR-negative; 20 of 24 specimens from seropositive recipients and 3 of 3 from seropositive partners were PCR positive. The 39 recipients with partners had been infected for a median of 60 months (range 11-108 mos.); 14 (36%) had AIDS. Partners of recipients with AIDS were not more likely to be infected compared to other partners (2/14 vs. 2/25). Although compared to uninfected female partners, infected wives tended to be older (58 yrs. vs 50 yrs.), to have fewer sexual contacts (median 84 vs. 186, p=.17), and to more likely bleed after intercourse (1/4 vs. 3/25, p=.46), these differences were not statistically significant.
Conclusion. HIV-seronegative partners had no evidence of occult infection. A recipient having AIDS was not associated with HIV heterosexual transmission. Older age and bleeding after intercourse suggest that age-associated changes in the vaginal mucosa may facilitate HIV transmission.

T.A.P.106

RISK OF HETEROSEXUAL TRANSMISSION OF HIV-1 FROM RECIPIENTS OF BLOOD AND BLOOD PRODUCTS

Transfusion Safety Study Group* represented by Donegan, Elizabeth**.
*Participating institutions, New York City, Miami, Detroit, Seattle, San Francisco, Los Angeles, USA, **University of California, San Francisco, California, USA.

Objective. To assess the potential for transmission of HIV-1 by persons infected by contaminated blood, to heterosexual contacts before and after learning about their status.
Methods. The Transfusion Safety Study is a longitudinal study of recipients of blood and blood products. Information concerning sexual behavior prior to and at 6-month intervals after enrollment was obtained by interview and evaluated for anti-HIV-1 (+) subjects.
Results. 522 anti-HIV-1 (+) subjects probably infected through blood reported one or more heterosexual contacts between 1979 and enrollment. This potential sexual exposure of others included prostitutes (20 subjects). After informed of positivity, 387 of 469 with follow-up continued to have sexual contacts. Of these, 80 (21%) reported that they were sexually active with multiple partners. Two (10%) of 21 anti-HIV-1 (+) primary sexual partners also continued having sex with additional partners.
Conclusion. Transfusion-transmitted HIV-1 infections, although responsible for a small percentage of all infections, increase the reservoir in the community and the potential for further transmission through heterosexual contact. (Sponsored by Contract No. N01-HB-7003 of the National Heart, Lung, and Blood Institute.)

T.A.P.107

NO MORE SEROCONVERSIONS AMONG SPOUSES OF PATIENTS OF THE BONN HEMOPHILIAC COHORT STUDY.

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Objective. To evaluate the risk of heterosexual HIV-transmission.
Methods. In 1986, 150 HIV-negative female partners of HIV-positive hemophiliacs were informed about possible transmission risks and enrolled in a prospective study. Both Elisa and Western Blot were performed at intervalls of 6 to 12 months.
Results. 7 couples stopped having sexual contact. Regular condom use was reported by all but 6 of the remaining couples. On one occasion, one woman had a borderline Western Blot result which was not reproducible. All other women always tested negative.
Conclusion. Barrier contraceptives used in monogamous relationships seem to be efficient in preventing heterosexual HIV-transmission.

T.A.P.108 REAL VALUE OF SERONEGATIVITY IN LONG-TERM-EXPOSED SEXUAL PARTNERS OF HIV-INFECTED HEMOPHILIACS

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Objective. To investigate,using a sensitive virus culture method,whether seronegativity in females(spouses of HIV Ab pos.hemophiliacs)(hem) was due to undetectable Ab levels or was really reflecting absence of infection.
Methods. Virus culture was performed on PBMCs from:Group(G)A:2 hem with AIDS; GB:5(2 hem, 2 female-sexual partners and 1 newborn)asymptomatic HIV-pos individuals; GC:2 hem with PGL. Four sexual partners were defined as asymptomatic HIV Ab-neg individuals who had maintained a monogamous sexual relationship with an HIV Ab-pos hem for a minimum of 2 years without the use of barrier contraceptives. Virus culture was also performed on 2 low-risk HIV Ab-neg individuals. HIV Antigen (Ag) (Abbott) presence was tested in all samples.
Results. From GA, both individuals resulted culture-pos (100%), only 1 Ag pos. From GB, 4 out of 5 resulted culture-pos (80%). From GC, both individuals resulted culture-pos (100%), only 1 being Ag pos. The 4 sexual partners as well as the 2 neg controls resulted both culture- and Ag neg.
Conclusion. Absence of infection (Ab neg) can be confirmed in the 4 sexual partners which resulted virus culture-neg, Ag neg. The Ag capture assay proved to be less sensitive than virus culture (2 out of 8 pos cultures) (25%).

T.A.P.109 RESULTS OF HIV ANTIBODY TESTING IN SEXUAL PARTNERS OF SEROPOSITIVE HEMOPHILIACS OVER A 5 YEAR PERIOD

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Objective: To determine the rate of serconversion among sexual partners of hemophiliacs tested between September, 1984 and January, 1989.
Method: 75 sexual partners of 73 HIV antibody positive hemophiliacs were identified over a five yr. period. 69 of the hemophiliacs were requested to inform their partners about confidential HIV antibody testing done at the New England Hemophilia Center (NEHC). 7 refused to inform their partners (9 partners), 5 partners refused testing, 5 partners were lost due to death of the hemophiliac or divorce, 43 agreed to be tested at NEHC and 9 revealed their test results performed at an alternate test site. Of the 52 tested, 31 were tested at least twice (range 1 to 8 tests) and 30 had their initial or most recent test done since July, 1987. Medical Records were examined to determine clinical status, presence of antigenemia and CD4 cell level of the hemophilic partner.
Results: 51 out of the 52 tested (98%) were HIV seronegative. This group includes the sexual partners of 9 hemophiliacs with AIDS, 4 with p24 antigen positivity and 8 with CD4 cell levels ≤ 200 cells/ul. One spouse was seropositive at time of first testing in 1985. At the time of her positive test, her hemophiliac husband had no clinical illness or antigenemia and a CD4 cell level of 996 cells/ul.
Conclusion: In this group of sexual partners it appears the rate of transmission is low and the rate as not apeared to increase as hemophiliacs deteriorate clincally and immunologically. This rate may be lower than in other clinics in the U.S. The reasons for this are not clear. Extensive counselling regarding safer sex practices begun in 1985 may be a factor in this lack of serconversion among sexual partners.

T.A.P.110 HETEROSEXUAL TRANSMISSION OF HIV-INFECTION FROM HEMOPHILIACS TO THEIR SPOUSES

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Objective: To determine rate and cofactors for heterosexual transmission of HIV-Infection in hemophiliacs.
Methods: 176 female and one male partner of HIV-seropositive hemophiliacs were examined serologically. 13 infected as well as 39 uninfected partners have been examined clinically and immunologically. Regarding the index cases, 12 transmitters and 119 non-transmitters have been examined.
Results: 18 female and one male partner (12%) were anti-HIV-positive in ELISA and Western blot analysis until september 1st 1988. 86 have been retested in until january 1st 1989, no additional seroconversions have been observed.All infected partners have stage CDC II-III disease. In 17/39 seronegative partners CD8+ counts were >700/µl.Regarding the index cases, CD4+ counts are significant lower in transmitters than nontransmitters. Virus isolation was successfull in 6/11 transmitters and 11/60 non-transmitters. In 308 hemophiliacs, who have been examined at least twice, the CD4+ count is declining by 110±19/µl/year.
Conclusions: Low CD4+ counts, successfull virus isolation,and p24 antigenemia are important risk factors for heterosexual transmission of HIV in hemophiliacs. Additional factors will be discussed.

T.A.P.111 TRANSMISSION HETEROSEXUELLE DE L'INFECTION VIH CHEZ LES PARTENAIRES DE TOXICOMANES VIH-SEROPOSITIFS (VIH+).

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Objectif. Evaluer le risque de transmission hétérosexuelle de l'infection VIH et l'efficacité des mesures de prévention chez les partenaires habituels de toxicomanes VIH+.
Méthodes. Entre décembre 1985 et décembre 1988 on a déterminé la sérologie VIH chez les partenaires hétérosexuels habituels (relation de couple supérieure à 6 mois), sans facteurs de risque connus sauf la contamination sésuelle de 103 toxicomanes VIH+. Le test a été effectué par méthode ELISA et par Western Blot. Ensuite on a contrôlé 34 partenaires VIH - tous les 6 mois, pendant une période d'un minimum de 12 à 30 mois. A tous les couples on a conseillé l'usage du préservatif.
Résultats. Dans 91 cas le partenaire toxicomane VIH+ était un homme (85 asymptomatiques, 4 LAS, 2 ARC), dans 12 cas une femme (11 asymptomatiques, 1 ARC). Au premier test aucun partenaire masculin n'était infecté, tandis que 10 femmes, partenaires de toxicomanes VIH+ asymptomatiques, résultaient séropositives. Seulement 34 partenaires VIH- se sont soumis à la surveillance sistématique de la sérologie VIH. Vingt-huit couples ont utilisé régulièrement le préservatif, 6 couples, au contraire, non. Dans ce dernier groupe on a observé 2 séroconversions (33.3%) au cours de 12 mois.
Conclusions. Les toxicomanes VIH+ peuvent représenter une source importante de contamination par voie hétérosexuelle, indépendamment du stade clinique de l'infection VIH, surtout à cause des résistances à l'utilisation du préservatif.

T.A.P.112 RISK FACTORS FOR HIV-1 INFECTION IN STD CLINIC PATIENTS: EVIDENCE FOR CRACK-RELATED HETEROSEXUAL TRANSMISSION

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Objective. To evaluate heterosexual transmission of HIV-1 in STD cilinic patients in an area of New York City where the cumulative incidence of adult AIDS is 44.5/10,000 and drug use including crack (cocaine) is common.
Methods. Volunteers enrolled in an ongoing study beginning 1/88. HIV-1 antibody was measured and data on demographics and sexual and drug use behavior were collected by an interviewer using a structured questionnaire.
Results. HIV-1 INFECTION BY RISK AND GENDER (N=1041)

RISK	MEN HIV+	(%)	N	WOMEN HIV+	(%)	N
Gay/Bisexual	37	(37)	99	-	-	-
IV Drug User (IVDU)	36	(44)	82	17	(55)	31
Sex Partner Person at Risk (SP)	17	(14)	122	13	(11)	115
No Identified Risk (NIR)	12	(3)	440	6	(4)	152
TOTAL	102	(14)	743	36	(12)	298

NIR HIV+ men were more likely (8/12) to report prostitute contact than HIV- men (174/428), O.R.=2.2, p=.07; 1/12 was a crack user and 3/12 had sexual contact with known crack users. NIR HIV+ women were more likely to be crack using prostitutes (4/6) than were HIV- women (3/146), O.R=95, p<.001.
Conclusions. Although most HIV-1 infection in this population occurred in gay/bisexual men, IVDU, or their heterosexual partners, sexual behavior associated with crack use may be related to transmission among persons who deny other AIDS risk factors (NIRs).

T.A.P.113 TRANSMISSION OF HIV INFECTION IN HETEROSEXUAL PARTNERS OF HIV+ DRUG ADDICTS.

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Objective. To evaluate the prevalence and incidence of HIV infection in heterosexual partners of HIV+ i.v. drug addicts (d.a.) with no other known risk factor.
Methods .The sexual partner of each HIV+ d.a. attending our out patient clinic was tested every six months by commercial ELISA kits (Abbot) ;positive results were confirmed by Western Blot (W.B.).Advice on effective means of prevention of sexual transmission of HIV was given to each couple.
Results.Thirteen of 60 monogamous partners ,52 F and 8 M, of an equal number of HIV+ d.a. (3/5 partners of Aids cases,8/40 of LAS/ARC and 2/15 of asymptomatic subjects were found positive when first tested .The seronegative partners were followed for a median of 12 months but none seroconverted .Of the 47 couples with a negative member,35 couples used condoms while 12 used no preventive measure during the follow up period as evidenced by 5 pregnancies.
Conclusions .Our data confirm the importance of heterosexual transmission of HIV infection; the absence of seroconversion observed can be explained by the short period of follow up .Moreover the tests used are not able to evidence the early stages of infection .

T.A.P.114 INCREASING IMPORTANCE OF HETEROSEXUAL TRANSMISSION OF HIV DUE TO IVDU IN CATALONIA

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Objectives: 1.- To describe the evolution of heterosexually acquired AIDS cases in Catalonia. 2.- To describe the characteristics of index cases of patients infected through heterosexual contact.
Methods: Data from the population-based registry of Catalonia were used to identify all AIDS cases with heterosexual contact as the reported route of infection. After validation of this information the characteristics of their possible index cases were recorded, when possible. Data from an on-going study on risk factors for heterosexual HIV transmission were also used for this purpose.
Results: In contrast with data from Spain as a whole, until 1986 the majority of AIDS cases in Catalonia were found among homosexual men, but afterwards IVDU became the first group. In 1986 heterosexually acquired AIDS cases accounted for 1.9% of all cases diagnosed during that year, in 1987 5.5% and in 1988 3.5% (but probably underestimated because of the delay in the reporting). Nine of 12 cases were confirmed as heterosexually transmited AIDS cases, 4 men and 5 women. Two men have had sexual contacts with IVDU women, and 2 women had a IVDU heterosexual partner. We studied 104 stable heterosexual partners of HIV infected patients, with no other known risk factors. Seventeen (16.4%) of them were also HIV infected. All index cases (12 men and 5 women) were IVDU.
Conclusions: After the introduction of HIV infection among IVDU of our community, an increase of heterosexual and vertical transmitted AIDS cases has been observed. In all of the selected HIV positive couples, the index case has been an IVDU patient. Preventing the spread of HIV among young IVDU seems to be the best way of decreasing heterosexual and vertical transmission of HIV in our population.

T.A.P.115 TRANSMISSION OF HIV INFECTION IN HETEROSEXUAL PARTNERS OF HIV INFECTED DRUG ABUSERS.

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Objective. To determine rates and risk factors of heterosexual transmission of HIV.
Methods. From January 1985 to December 1988, 83 drug abusers who were anti-HIV positive (index case =IC) and their respective heterosexual partners (HP) were studied. Only couples who reported a stable sexual relationship for at least 12 months and in which the HP did not present other past or present risk factors were included in the study.
Results. In the 83 couples studied 74 of the HP were women between the ages of 17 and 32 and 9 were men between the ages of 21 and 33. 15/74 women (20.2%) and 1/9 (11.1%) for a total of 16/83 (19.3%) were found to be seropositive, 14 at the first control. 28 of the HP who were negative at the first control were followed for 6-48 months (mean 14.4 months). Seroconversion occurred in 2 cases (6 per 100 subjects/year). No case of seroconversion were observed in 10 HP followed for 67 months (mean 7 months) whose IC partner was being treated with Zidovudine. 2/20 (10.0%) HP of asymptomatic IC, 7/45 (15.5%) HP of IC with PGL, 1/7 (14.2%) HP of IC with ARC (CDC group IV A) and 6/11 (54.4%) HP of IC with AIDS were positive. Heterosexual transmission was associated with very low (<100) T4 cell counts (P<.001) and with positivity for HIV-Ag in the IC (P<.001). Length of relationship, frequency of sexual contacts, anal intercourse, oral sex and genital diseases were not significantly associated with HIV infection.
Conclusions. Clinical stage of the IC, low T4 cell counts and HIV-Ag positivity are factors which significantly influence heterosexual transmission of HIV. Treatment of IC with Zidovudine considerably reduces the probability of HIV infection in the respective HP.

T.A.P.116 ABSENCE OF HIV TRANSMISSION THROUGH CASUAL CONTACTS IN FORMER DRUG USERS

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Objective: to study whether HIV can be transmitted through casual contacts. Methods: between 1985 and 1988, anti-HIV was measured by ELISA at six month intervals in 686 residents in the S.Patrignano Community (Rimini). During residence (median 25 months), former drug users were forced to be off drugs and, except for 25 married couples, had no sexual contacts,either. 307 seronegative drug users and 37 staff members were not exposed sexually to the 293 seropositive residents (72% stage II, 17% stage III and 11% stage IV, CDC) for a median of 19 months (6-44). All residents were using and cleaning the same facilities, such as toilets, restaurant, medical and dental clinics and kindergarten. Results: there were no cases of HIV seroconversion during follow-up. Conclusions: HIV was not spread through casual contacts in this Community for drug users. Therefore, seronegative drug users were safely enrolled with seropositive individuals in our rehabilitation programs based on Community residence.

T.A.P.117 ANAL INTERCOURSE: A RISK FACTOR FOR HIV INFECTION IN FEMALE PARTNERS OF BISEXUAL MEN, RIO DE JANEIRO, BRAZIL.

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** FIOCRUZ

Objective: To evaluate the association between anal intercourse and male-to-female HIV transmission.
Methods: Among 176 women at risk for HIV infection, 131 (74,4%) were female partners of bisexual men infected by HIV. We analized their sexual life, social and demographic characteristics. We excluded women who had any history of intravenous drug abuse or blood transfusion. The association between modes of intercourse was assessed statistically by Chi-Square test and the 95% confidence limits of the odds ratio were stimated by Cornfield's Method.
Results: Data are presented in the following table:

MODE OF INTERCOURSE	ANTI-HIV ANTIBODIES REACTIVE n (%)	ANTI-HIV ANTIBODIES NON REACTIVE n (%)	TOTAL
VAGINAL / ANAL	36 (62 %)	22 (38 %)	58
VAGINAL ONLY	18 (24,7 %)	55 (75,3 %)	73

χ^2 = 17,158 P < 0.0001 OR = 5,00 [2,22 - 11,44]

Conclusion: Anal intercourse represents a risk factor 5 times greater then vaginal intercourse in female partners of bisexual men.

T.A.P.118 HIV-1 IN PATIENTS WITH GENITAL LESIONS ATTENDING A NORTH AMERICAN STD CLINIC: ASSESSMENT OF RISK FACTORS.

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Objective. To assess risk factors associated with HIV-1 infection.
Methods. Patients (n=177) with genital lesions were tested for antibodies (Ab) to HIV-1, HSV type 2, and T. pallidum (RPR confirmed by FTA-ABS). Lesion specimens were examined by darkfield microscopy and cultured for herpes simplex viruses (HSV).
Results. Lesions were due to HSV (54%), syphilis (7%), non-venereal dermatoses (8%), and other/unknown (31%). Antibodies to HIV-1, HSV type 2, and T. pallidum were detected in 13 (7%), 106 (60%), and 24 (14%) individuals, respectively. Infection with HIV-1 was associated with a reactive RPR (RR 7.4 [3.5-18.2, 95% CI]), but not with current syphilis. Among all men, Ab to HIV-1 was associated with homosexual/bisexual preference and lack of circumcision (3.5 [1.2-10.6]). HIV-1 infection was not associated with initial HSV genital lesions; high prevalence of Ab to HSV type 2 in this cohort limited analysis. In heterosexuals, Ab to HIV-1 (7 [4%] of 167 patients) was associated with reactive RPR (5.8 [1.6-21.3]) and in men, lack of circumcision (8.4 [1.4-50.1]). In heterosexual men, lack of circumcision was associated also with Ab to HSV type 2 (1.4 [1.0-2.0]) and reactive RPR (2.8 [1.1-7.2]).
Conclusion. Associations were found between Ab to HIV-1 and syphilis Ab and lack of circumcision. The later may indirectly increase risk for HIV-1 acquisition by increasing the likelihood of acquiring ulcerative genital lesion diseases such as herpes and syphilis.

T.A.P.119 GENITAL HERPES AS A POSSIBLE RISK FACTOR FOR HIV TRANSMISSION

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Objective: To review the evidence for a role of genital herpes and herpes simplex virus type 2 (HSV-2) infection as a risk factor for HIV transmission.
Methods: Detailed review of relevant studies in 2 homosexual populations in the U.S. and 3 heterosexual populations in Africa, Haiti and the U.S.
Results and Conclusion: Such studies require HSV-2 antibody testing, since most genital herpes cases are asymptomatic. However, the prevalence of HSV-2 antibodies is so high in sexually active populations throughout the world (4 to 10X greater than for syphilis antibodies), that large study numbers are required. This high prevalence of HSV-2 infection suggests that, if HSV-2 does increase HIV acquisition, the population attributable risk would be expected to be great, particularly in Western countries where other causes of genital ulcers are much less frequent. The correlation between prevalence of HSV-2 antibodies and sexual behavior patterns makes a biological role for HSV-2 difficult to prove. Nevertheless, both prospective and case-control studies, which accounted for other measures of sexual activity, still demonstrated a higher prevalence and, in one study, incidence of HSV-2 in HIV+ individuals. So far, current studies suggest that HSV-2 may increase the risk of susceptible individuals to acquisition of HIV. Although the reverse is also likely, studies,such as those in couples, are needed to test this hypothesis. Recently initiated intervention studies for HSV-2, as well as further prospective, case-control, biological and immunological investigations are needed to define more fully the nature and extent of the HSV-2/HIV associations.

T.A.P.120 EPIDEMIOLOGY OF HIV INFECTION IN HONG KONG

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Materials and Methods: Between April 1985 to December 1988, a seroepidemiological study was performed to assess the prevalence of HIV infection in Hong Kong. Blood specimen were first screened with a commercially available ELISA test and repeatedly positive results were confirmed by immunofluorescence and Western Blot methods.
Results: 134 of 114,624(0.117%) specimens were positive by all three techniques. 130 samples were from males and 4 were from females.

Results of HIV
Serological Screening

Source of Referral	No.Tested	No.(%)+ve
STD Clinics		
Male patients	76522	12(0.016%)
Female patients	18251	0(0 %)
Female prostitutes	6909	0(0 %)
IV Drug Abusers	3139	0(%)
Haemophiliacs	163	53(32.5 %)
Health Care Personnel	540	0(0 %)
Semen Donors	152	0(0 %)
Government Clinics	7219	38(0.53 %)
Private Clinics	1721	3(1.8 %)
Total	114624	134(0.117%)

Risk Factors in HIV
Seropositive Individuals

	AIDS	No.AIDS	Total
Homo/Bisexual	10	42	52
Heterosexual	2	10	12
Transfusion	0	3	3
Haemophiliac	1	52	53
IV Drug Abusers	0	2*	2
Unknown	3	9	12
Total	16	118	134

*IV drug abuse outside Hong Kong.

Conclusion: Haemophiliacs, homosexuals and bisexuals, and heterosexuals with sexual contact with prostitutes constitute high risk groups for HIV infection in Hong Kong. Since August 1985, a donor screening programme had been started in the transfusion service in Hong Kong and only donor-screened heat-treated clotting factor concentrates were used for the treatment of haemophiliacs. Although HIV infection had not yet been detected among the local IV drug abusers, they remain potentially at risk. Intensive health education campaign has been in progress to inform the public of the role of sexual exposure and IV drug abuse in the transmission of HIV

Prévalence du VIH chez les femmes et les enfants
HIV Prevalence in Women and Children

W.A.P.1

SEROPREVALENCE OF HIV ANTIBODIES IN NEONATES AND CHILDREN

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Objective: To assess the magnitude and scope of HIV Infection in neonates and young children from low socio-economic populations in Miami, Florida.
Methods: Between 5/20/88 and 1/11/89, 2941 children in two age groups (0-6 Weeks and 15-24 Months) attending Public Health well-baby clinics for routine examination, were also blindly screened for HIV antibodies by EIA and confirmed by Western Blot.
Results: Demographic characteristics of the mothers and HIV test results of their neonates/children are as follows:

Variable	Neonates (0-6 weeks)	Children (15-24 months)
Mothers age	13-49 yrs (median 28)	17-50 yrs (median 30)
Mothers race	Hispanic 47%,blk/Hai 42%	Hispanic 44%, blk/Hai 45%
All HIV +	12/1672 (0.7%)	4/1269 (0.3%)
90% CI	(0.4%-1.2%)	
blk/Hai HIV +	12/735 (1.6%)	3/605 (0.5%)
90% CI	(1.0%-2.7%)	

Conclusion: These results suggest that between 100 and 270 of the approximately 10,000 black and Haitian neonates born in Miami during 1989 will be exposed to HIV. The rate for 15-24 month old black and Haitian children (0.5%/1.6%) is similar to other studies that suggest approximately 30% of those children born to HIV seropositive mothers will be infected.

W.A.P.2

ROUTINE HIV ANTIBODY SCREENING IN LOS ANGELES COUNTY PRENATAL CLINICS: A DEMONSTRATION PROJECT

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Objectives. 1. To offer HIV antibody (AB) screening to all pregnant women as a means of primary prevention and/or early detection of pediatric AIDS. 2. To evaluate a model program of HIV testing for pregnant women using universal screening and culturally sensitive education materials.
Methods. Five Los Angeles County (LAC) Health Centers are participating in a pilot project to offer optional HIV antibody testing as part of routine prenatal care, starting in January 1989. A bilingual (English/Spanish), multi-item consent form was developed, incorporating 7 routine prenatal laboratory tests along with HIV. Patients received pre-test counseling and informed consent for HIV testing in the form of an 8-minute bilingual video tape shown in group education sessions during their first prenatal visit. HIV AB testing is done at LAC public health laboratory using ELISA, with immunoflourescent antibody and western blot as confirmation of repeat ELISA positives. HIV AB positive pregnant women are counseled individually and then interviewed to assess previous high risk behavior. Positive women are referred to a tertiary center for continued prenatal care.
Results. 1. Preliminary results show that 285 pregnant women, (n=355), consented to HIV testing, giving an acceptance rate of 85%. 2. Of 170 HIV antibody tests performed to date, one woman is positive. The patient is 18 years old, single, black, 31 weeks pregnant and denies all high risk behavior for both herself and her partner.
Conclusion. 1. The acceptance rate for HIV AB testing in LAC prenatal clinics is high, reflecting general acceptability of the format of presentation of the HIV test. 2. We recommend universal prenatal screening for HIV AB, as HIV positive women frequently do not acknowledge high risk behavior, and may not be detected in programs targeting only high risk individuals.

W.A.P.3

EPIDEMIOLOGY OF HIV INFECTION IN WOMEN FROM FRANKFURT AREA

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Objective: To investigate the spread of AIDS in women from Frankfurt area.
Methods: Epidemiological and clinical examination of 317 HIV-positive women of HIV outpatient clinic Frankfurt.
Results: The no. of HIV-infected women increased from 2 (1984) to 21 (1985), 102 (1986), 103 (1987) to 91 (1988). In the years mentioned, the female proportion of all HIV-infected patients was 4%, 13%, 26%, 27%, and 25%. 74% were drug addicts, 22% got infected through heterosexual contacts, 2% through blood or coagulation factors, resp., 2% had no known risk. The proportion of heterosexually infected patients increased from 14% in 1985 to 29% in 1988. At the same, time, proportion of drug addicts decreased from 100% to 69%. 38% of drug addicts and 9% of heterosexually infected women were prostitutes. 10 of 63 heterosexually infected women are Africans; in 23% male index persons were drug addicts, in 16%, bisexuals, in 10%, hemophiliacs, and in 8%, Africans. For the rest, risk of male index partners was not known. 77% women were asymptomatic, 6% had AIDS. Most common opportunistic infection was PCP (65%). Remarkable was the occurrence of Kaposi's sarcoma in 2 cases.
Conclusion: The no. of HIV-positive women in the Frankfurt area has increased significantly since 1985. The increase in heterosexually infected women is most remarkable.

W.A.P.4

EPIDEMIOLOGY AND OUTCOME OF HIV SEROPOSITIVE CHILDREN IN MADRID COMMUNITY.

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* H. G. Gregorio Marañón; ** Regional Health Service; *** H. Cruz Roja; **** H. Clinico S. Carlos; ***** H."La Paz"; ****** H. 12 de Octubre. MADRID SPAIN.

Since 1988 the Madrid Regional Health Service has required, every six months, a report of all cases of HIV seropositive (HIV+) children of Madrid Hospitals. Up to the present date the reports at Feb. 1988 and at Jun 1988. have been studied.

In Feb. 1988, 205 HIV seropositive children were reported (ELISA and Western Blot), aged between 0 and 16 years, the 60% were males. Risk factors for HIV transmission were: 80% HIV+ parents; 13% hemophiliacs; 1.5% blood transfusion. Children were clinically classified (CDC 1987) into: P-0 143; P-1 32 and P-2 30.

In Jun. 1988, 202 children were reported, classified into P-0 125; P-1 30 and P-2 47. In that period (Feb-Jun.) 69 new HIV seropositive children were found. Fifty there children became seronegative, 43 before 15 months old and the remaining after this age. Fourteen were lost during the follow up. There were 5 deaths, 3 out 5 without direct relation to AIDS. All children with hemophilia were included into P-2 status. Twenty one out for 202 children lived in public institutions. The last reports (Dic. 88) are presently analysed.

W.A.P.5

NEWBORN SCREENING FOR HIV ANTIBODY SEROPOSITIVITY IN THE SOUTH BRONX.

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Objective. HIV antibody seropositivity (HIV +) was studied anonymously in a group of healthy (n=84) and critically ill newborns (n=96) in the South Bronx, N.Y. a socioeconomically disadvantaged area, to obtain incidence data and identify risk factors in this high risk population.
Methods. Histories and physical exams were performed on all newborns, matched with cord blood samples, and anonymously coded before screening for HIV antibody using an ELISA with Western blot confirmation.
Results. The incidence of HIV+ in healthy newborns without a history of maternal drug abuse was 6.0%. The incidence of HIV+ in newborns admitted to the neonatal intensive care unit (NICU) was 12.5%. There were significant differences between the HIV+ and HIV- NICU groups for incidence of smallness for gestational age (33% vs 2.4%, $p<.001$) and microcephaly (25% vs 1.2%, $p<.005$). Maternal drug abuse as defined by a positive history and/or urine toxicology was found in 66% of HIV+ and 27% of HIV- infants, <p.02.
Conclusion. There is an alarmingly high incidence of HIV+ in our screened population. Growth failure and microcephaly appear to be related to HIV+ either through effects of the virus on the fetus or associated factors such as maternal drug abuse. The fact that 34% of our HIV+ NICU population and none of our well baby population had a maternal drug history implies an increasing percentage of perinatal AIDS may be transmitted by heterosexual contact rather than by maternal drug usage. This study highlights the need for universal HIV screening in high risk areas to ensure the best health care for these infants.

W.A.P.6

HIV Risk Factor Prevalence Among Young Women of Child-Bearing Age Attending Women's Primary Care Clinics

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Objective: To estimate the HIV risk factor prevalence among women of childbearing age.
Methods: In December 1988, we asked clients of 3 Seattle-area women's clinics to complete anonymous questionnaires regarding their age, race, sexual activity, condom use, IV drug and needle use and transfusion history.
Results: The first 384 participants were young (age≥14,median=22) mostly white(85.7%), unmarried(76.0%), and of low family income (range=$0-$59,000, median=$12,500). Reasons for the clinic visit included "Birth control"(68.8%), "Pregnancy test"(17.2%), "Sexually transmitted disease (STD) check"(9.4%), "Prenatal care"(6.3%), "AIDS test"(2.9%) and "Other"(20.8%). Of these 384 women, 145(37.8%) reported sex with multiple partners (number of partners, range=2-10, median=3), and 172(44.8%) with casual partners in the past year. Among those reporting sex with casual partners, 131(76.2%) either "seldom" or "never" used condoms. Also, since 1978, 186(48.4%) had at least one STD, 40(10.4%) had an intravenous drug using (IVDU) or bisexual male sex partner, 20(5.2%) disclosed IV drug use, 17(4.4%) shared needles, and 23(6.0%) had sex for drugs or money. By contrast, for the past 12 months, merely 8(2.1%) disclosed IV drug use and 11(2.9%) shared needles. Only one woman indicated that her partner was HIV positive. We will present these and early 1989 data to profile women who are practicing behaviors which place them at risk for HIV infection.
Conclusions: Clients of Seattle women's clinics have taken significant risks with regard to HIV acquisition: unprotected sex with multiple/casual partners.

W.A.P.7 HERPES SIMPLEX, SYPHILIS, AND HEP B: ASSOCIATION WITH HIV-1 AND HTLV-I IN PREGNANT HAITIAN WOMEN

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Objective. To determine associations of HIV-1 and HTLV-I infections with herpes simplex types 1 and 2, syphilis, and hepatitis B in pregnant women residing in a periurban slum.
Methods. Pregnant women were screened for HIV-1 and HTLV-I and a weighted sample was selected for further antibody testing.
Results. Percent Positive:

	HIV-1 pos.(n=95)	HTLV-I pos.(n=44)	Neg.(n=89)
Syphilis	21.5%+	14.3%	8.0%
HSV-1	95.8%	97.7%	97.7%
HSV-2	88.4%++	81.8%++	53.4%

+p=0.02, ++p = 0.0001, vs. seronegative women
Based upon the 9.2% seroprevalence rate for HIV-1, approximately 56.6% of pregnant women in this population were HSV-2 seropouitive, similar to inner city populations in other countries.
Conclusion. Both HTLV-I and HIV-1 infections were associated with HSV-2 seropositivity suggesting sexual transmission of these viruses in this population.

W.A.P.8 HIV INFECTION IN PREGNANT WOMEN AT A PUBLIC HOSPITAL IN NEW ORLEANS, LOUISIANA

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Objective. To determine the rate of HIV infection among prenatal clients in a public hospital in New Orleans from May 1988 to December 1988.
Methods. Routine HIV counseling was given to all prenatal clients. Clients consenting for testing (CFT) were administered a risk assessessment questionnaire and were categorized as low risk (LR) or high risk (HR) for acquiring the HIV infection. Basic demographic data was collected from each CFT. HIV antibody tests were performed using ELISA and Western blot methods.
Results. A total of 3,908 were counseled. 3,846 (98.4%) clients agreed to be tested, 62 (1.6 %) declined testing. Of clients tested, 2,981 (78%) were black females, 606 (16%) whites and 111 (3%) hispanics. Five hundred twenty-four clients (13.6%) were categorized as high risk and 3322 (86.4%) as low risk. Prevalence of HIV infection in prenatal clients was found to be 20/3846 (0.5%). Of the twenty positive, 16 (80%) were black females and 4 (20%) were whites. Among the high risk clients, 7 (1.3%) were seropositive for HIV. There were thirteen (0.4%) low risk clients testing HIV positive.
Conclusion. These data show that high risk prenatal clients appear to be at a greater risk for testing HIV positive. This study also shows a lower HIV seropositivity rate compared with similar studies in inner-city hospitals. Although the risk assessment questionnaire was used as a method for identifying high and low risk clients, it should not replace the availability of HIV counseling and testing for all pregnant women. Routine HIV counseling and testing should be an important component of total obstetrical screening during pregnancy.

W.A.P.9 THE SEROPREVALENCE OF HIV INFECTION IN NEW YORK CITY CHILDREN.

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OBJECTIVE. To determine the seroprevalence of HIV infection in selected NYC pediatric populations.
METHODS. Two populations of children were surveyed: children aged 1 to 10 screened in their households by neighborhood teams testing for lead poisoning and 1 to 3 year old children attending pediatric clinics run by the New York City Department of Health. All specimens were collected on filter paper and tested for HIV by ELISA and Western Blot. Both surveys were blinded.
RESULTS. To date, 990 specimens from the lead screening survey have been collected. Results are available on 920. Of these, two children were positive by ELISA and Western Blot (0.2%, 95% C.I. 0.05% - 0.35%) and 2 others ELISA positive and Western Blot inconclusive. In the pediatric clinic survey, 20 of the 55 clinics are being surveyed and approximately 2,000 children tested.
CONCLUSIONS. Based on newborn screening surveys in New York City showing an infection rate among pregnant women of about 1.5%, a seroprevalence of HIV in these children of less than 1% is expected. Furthermore, these surveys demonstrate further uses of the filter paper technology for HIV testing.

W.A.P.10 HIV INFECTION IN LESBIANS.

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HIV infection and AIDS is a leading cause of morbidity and death in women aged 25-34 years in New York City. To date, studies have considered only heterosexual and pregnant women in transmission and seroprevalence data.

Lesbian women have not been studied for transmission risk and seroprevalence despite national U.S. AIDS surveillance data indicating 101 cases of AIDS in lesbians.

At a community-based, primary care AIDS assessment clinic and in a support group for women with HIV infection, ARC and AIDS, there are 31 cases of HIVAb seropositivity in lesbians. Their self-reported risk factors for HIV infection are as follows: IVDU-16; prior sexual contact with infected men (by consent, by force or by sperm donation)-7; prostitutes-5; female to female transmission-2 and contaminated transfusion recipient-1.

It is clear that there are lesbians with HIV infection and AIDS, and, it is important to include them in transmission studies and seroprevalence statistics. The false notion that women who define themselves as lesbians are not at risk for HIV infection can lead to tragic misdiagnosis by providers and lack of risk awareness by the women themselves.

W.A.P.11 NO CHANGE IN HIV-1 SEROPREVALENCE AMONG PARTURIENTS AND WOMEN HAVING INDUCED ABORTIONS IN NEW YORK CITY, 1987-1988

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OBJECTIVE To determine the change in HIV-1 seroprevalence in a population based sample of women giving birth and having induced abortions in New York City in 1987 and 1988.
METHODS A repeat serosurvey of a representative sample of 3,556 women giving birth or having induced abortions in 20 obstetric and 15 abortion facilities in NYC from July to December 1987 and July to December 1988 was conducted. Currently, 1988 data are available for 2357 women from 23 facilities and are compared to 1987 data from the same facilities.
RESULTS HIV-1 antibody seroprevalence did not change significantly [1.41% (95% CI: 1.07%-2.03%) vs. 1.53% (95% CI: 1.09%-2.13%), p=0.90] between 1987 and 1988, nor by pregnancy outcome, racial, age, nor payment status categories. Similar to 1987, multiple logistic regression identified receiving Medicaid and being between 25-29 years of age as significantly associated with HIV-1 seropositivity.

	1988 HIV+/Total (%)	1987 HIV+/Total (%)	p-value
Total	36/2357 (1.53%)	34/2357 (1.41%)	0.90
Births	21/1257 (1.67%)	19/1257 (1.51%)	0.87
Abortions	15/1100 (1.36%)	15/1100 (1.36%)	0.85
Medicaid Recipients	12/ 519 (2.31%)	26/ 774 (3.36%)	0.36
25-29 years	11/ 506 (2.17%)	12/ 640 (1.89%)	0.88

CONCLUSIONS HIV-1 seroprevalence among pregnant women remained stable during a one year period in the city with the highest reported incidence of adult female and pediatric AIDS.

Incidence du SIDA
AIDS Incidence

W.A.P.12 THE EVOLVING EPIDEMIOLOGY OF AIDS IN NEW YORK CITY: TRENDS IN AIDS CASE SURVEILLANCE DATA.

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Objective. To monitor trends in the epidemiology of AIDS in New York City.
Methods. In NYC, AIDS cases are counted through active surveillance conducted by the Dept of Health in collaboration with 77 hospitals. A transmission category is assigned for each case and trends are monitored.
Results. As of 12/88, NYC had reported a total of 18,022 AIDS cases, or 22% of the USA total. Trends in specific categories were assessed.

Transmission	Mean Number of AIDS Cases Diagnosed Monthly in NYC							
Category	1981	1982	1983	1984	1985	1986	1987	1988*
Total	9	43	87	151	224	317	362	394
MWHSWM(1)	6	25	50	88	125	170	170	161
IVDUs(2)	2	10	22	41	68	101	129	165
MWHSWM/IVDUs	1	4	6	7	12	12	14	10
Heterosexuals(3)	0	1	1	3	5	9	12	15
Children <13	0	1	3	4	4	7	8	6

* Through 8/88 (1) Men who have sex with men (2) Intravenous drug users (3) 99% of heterosexual cases represent male to female transmission
Conclusion. NYC continues to serve as an epicenter of the AIDS epidemic in the USA; as of 12/88, the number of cases reported to CDC from NYC (18,022) exceeded the combined total from San Francisco (6,602), Los Angeles (6,010), Houston (2,578), and Newark (2,460). The number of cases diagnosed monthly among total cases, IVDUs, and heterosexuals has increased, whereas the number of cases among MWHSWM appears to have stabilized.

W.A.P.13 THE EPIDEMIOLOGY OF AIDS IN SAN FRANCISCO'S ELDERLY POPULATION

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Objective. To describe the epidemiology of AIDS among San Francisco (SF) residents aged 60 and older.
Methods. We analyzed the demographics and transmission categories of 5,834 AIDS patients reported to the SF Department of Public Health between July 1981 and December 31, 1988.
Results. 125 (2.1%) of patients were $\geq$ 60 years, corresponding to an incidence of 90/100,000. Of these 125 patients, 107(85%) were 60-69 years, 16(13%) were 70-79 years, and 2(2%) were $\geq$ 80 years. Among patients 60-69 years, 76% were homosexual/bisexual males, 17% were transfusion recipients, and 7% were in other risk groups. Among patients $\geq$ 70 years, 31% were homosexual/bisexual males and 69% were transfusion recipients (p<.001). AIDS patients $\geq$ 60 years were more likely than younger patients to be female (7% vs 1%, p<.001); transfusion recipients (24% vs <1%, p<.001); to have a primary diagnosis other than KS (82% vs 67%, p<.001); and to live outside SF (18% vs 10%, p<.01). Older AIDS patients did not differ from younger patients by race/ethnic group. Among homosexual/bisexual patients, patients $\geq$ 60 years were less likely to be intravenous drug users than younger patients (5% vs 12%, p<.05).
Conclusion. SF AIDS patients $\geq$ 60 years were more likely to be female, transfusion recipients and have a primary diagnosis other than KS. AIDS patients 60-69 years were primarily homosexual/bisexual males, while patients $\geq$ 70 years were primarily transfusion recipients.

W.A.P.14 THE EPIDEMIOLOGY OF AIDS-RELATED NON-HODGKIN'S LYMPHOMA IN SAN FRANCISCO

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Objective. To describe the epidemiology of non-Hodgkin's lymphoma (NHL) in AIDS patients diagnosed in San Francisco (SF).
Methods. We evaluated 5834 AIDS cases reported in SF from 1981 through 1988 with respect to an initial or subsequent diagnosis of NHL. All patients with NHL met the CDC definition of AIDS-indicative NHL. Median survival was calculated using the Kaplan-Meier product-limit method.
Results. 179 (3.1%) AIDS patients were initially diagnosed with NHL. NHL as an initial diagnosis rose significantly (p<0.01) from 1.0% of total cases in 1983 to a peak of 4.3% of cases in 1987, then declined slightly to 3.3% of cases in 1988. These trends do not appear to be a reporting artifact since a significant (p<.05) rise in NHL was also found for patients diagnosed at three active surveillance hospitals where prospective laboratory and medical record review has been conducted since 1983. 238 (4.1%) AIDS patients had NHL at some point during their illness. AIDS patients with NHL did not differ significantly from those without NHL with respect to age, gender, race/ethnicity, risk group, or residence in 19 contiguous census tracts with the highest incidence of AIDS in SF. Median survival for AIDS patients presenting with NHL (6.6 months) was significantly shorter than that for patients without (12.6 months) (p<.001).
Conclusion. NHL has risen significantly as an AIDS-related manifestation. Demographics of AIDS patients with NHL are similar to patients without. Survival is shorter for AIDS patients with NHL.

W.A.P.15 THE AIDS EPIDEMIC IN EUROPE

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Objective. To determine the trends of the AIDS epidemic in Europe.
Methods. Cumulative quarterly surveillance data are collected from 31 European countries. Variations in trends between December 1984 and 1988 are analysed and presented for Europe as a whole and by country.
Results. By December 1988 over 18,000 cases had been reported to the Centre. There has been a yearly 2-fold increase in reported cases between Dec. 1984 and Dec. 1987 and a 1.5-fold increase between Dec. 1987 and Dec. 1988. The rates per million population are highest in Switzerland (106.4), France (101.7) and Denmark (70.2), and lowest in eastern European countries. The overall doubling time of the number of cases reported in Europe is 12.7 months (June 1988). Doubling times have lengthened since the start of the epidemic in all countries except Greece. Distribution of cases by country shows a predominance of the IVDU transmission group reported in the southern European countries and the homosexual group in the northern countries. A continuous increase in the percentage of cases reported in Europe among IVDU is noted: Dec. 84: 1%; Dec. 85: 7%; Dec. 86: 14%; Dec.87: 20%; Dec. 88: 25%. In the global data, variations over time in the distributions of disease categories, age, sex, transmission groups of children's mothers are directly related to this increase.
Conclusion. Doubling times of the number of cases have lengthened since the start of the epidemic. Geographic variations persist, with a majority of IVDU in southern countries. Variations noted in global European surveillance data are directly related to the steady increase in the percentage of IVDU.

W.A.P.16 FOUR-FOLD INCREASE IN TUBERCULOSIS/AIDS PATIENTS IN NEW YORK CITY, 1985-1988

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OBJECTIVE To evaluate the prevalence of Tuberculosis/AIDS and to assess its contribution to TB morbidity in New York City (NYC).
METHODS A computer match was performed using culture diagnosed adult cases (age >15) reported to the NYC TB Registry from 1979 through 1988 and CDC defined adult AIDS surveillance cases from 1981 through 1988.
RESULTS A total of 1116 patients with TB/AIDS were identified. TB/AIDS cases increased 4-fold since a similar study was conducted in 1985 wherein 261 patients were identified. The proportion of TB/AIDS as a percentage of AIDS cases between 1985 and 1988 remained fairly stable, from 5.2% to 6.3%, whereas the proportion of TB/AIDS among TB cases increased significantly from 2.2% to 8.1%. The proportion of TB/AIDS cases with IVDU histories or with extrapulmonary TB alone remained stable between 1985 and 1988.

	1979-1988	1979-1985	p-value	O.R.
TB/AIDS/AIDS	1116/17,749 (6.3%)	261/ 4980 (5.2%)	.007	1.21
TB/AIDS/TB	1116/13,820 (8.1%)	261/11,640 (2.2%)	$<10^{-6}$	3.83
% of TB/AIDS				
w/extrapulmonary TB	203/1116 (18%)	58/261 (22%)	.016	0.78
IVDU only	581/1116 (52%)	127/261 (49%)	.357	1.15

CONCLUSION AIDS remains a significant risk factor for clinical manifestation of Tuberculosis in New York City. The proportion of TB/AIDS cases with extrapulmonary TB was less than expected. The increase in TB/AIDS patients is most likely due to the increase in the number of IVDU.

W.A.P.17 EPIDEMIOLOGY OF AIDS-ASSOCIATED LYMPHOMAS: UNITED STATES

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Objective: To characterise patients with AIDS-associated lymphomas and evaluate whether these lymphomas might be due to an infectious agent.
Methods: We reviewed cases of AIDS reported to CDC by 3 December 1988.
Results: A lymphoma considered indicative of AIDS was reported for 2185 (2.7%) patients with AIDS, including: immunoblastic, 1,248 (1.6%); Burkitt's, 474 (0.6%); and primary lymphoma of the brain (PLB), 463 (0.6%). The three types differed in age distribution: No cases of Burkitt's and only one case of immunoblastic were reported in children < 2 years of age but 6 cases of PLB were reported in this age group; all types peaked at ages 5 to 19; after age 25 immunoblastic rose again while PLB and Burkitt's remained constant. In other respects, the distributions of the types of lymphomas were similar. After stratifying by age, heterosexual drug users or cases attributed to heterosexual transmission had rates half that of homosexual men, while men with hemophilia had rates twice that of homosexual men. Lymphomas were twice as common in white as black patients with AIDS in the same age and risk group.
Conclusion: The age differences in AIDS-associated lymphomas are the most striking epidemiologic finding. The other differences could be attributable to differential medical care. If these lymphomas are due to an infectious agent, it does not appear to be sexually transmitted.

W.A.P.18 CHANGING PATTERNS OF HETEROSEXUALLY ACQUIRED AIDS IN FLORIDA

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Objective. To describe secular trends in heterosexually acquired AIDS in Florida by demographic and risk group characteristics.
Methods. Based on the CDC surveillance definition for heterosexual transmission (HT), secular trends among HT cases in Florida were analyzed over the interval 1980-88.
Results. As of January 12, 1989, Florida reported 567 (9% of total) non-US born HT AIDS cases and 304 (5%) US-born HT AIDS cases. Among men, the proportion of non-US-born HT cases (N=415) decreased from 33 to 5% from 1980-88 (p < 0.001). Among women, the non-US-born HTs declined from 67 to 13% over the same interval (p < 0.001). In contrast, the proportion of US-born HT men (N=141) increased from .6 to 3.5% from 1980-88 (p < 0.001), with a comparable increase among women from 9 to 23% (p = 0.01). The majority (61%) of US-born HT women reported intravenous drug use (IVDU) among their partners. Further, the proportion of female cases attributable to sexual contact with an IVDU increased from 6 to 18% over the interval (p = 0.002). Most (69%) of these women were black; this percentage did not vary significantly over time. Among US-born HT women, no secular trends in age at diagnosis were observed, nor were age differences apparent by race.
Conclusion. The proportion of cases among non-US-born HTs is declining in Florida, while coincident increases are occurring among the US-born HTs. The trends in the US-born HTs do not seem to be influenced by demographic factors at this time. Continued surveillance may help to explain these trends.

W.A.P.19 THE RELATIVE RISK OF AIDS FOR THE BLACK AND HISPANIC COMMUNITIES IN NEW JERSEY

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Objective. We sought to determine the relative risk of AIDS in New Jersey's population by age, gender, and racial/ethnic group and risk behaviors compared to the U.S. population.
Methods. To measure the relative risk of AIDS in a given age, gender, or racial/ethnic group, we used the cumulative incidence of AIDS for that age, race and gender group, reported to the Centers for Disease Control for a national comparison to the AIDS cases gathered by the New Jersey Department of Health's AIDS Registry. For our analyses the reference group was non-Hispanic U.S. Whites. Case reports from 1981 to November 30, 1988 were included in the analysis. The population of each racial/ethnic group was that reported by the Bureau of the Census of 1980.
Results. Overall, the relative risk of AIDS in NJ for Blacks and Hispanics was 12.4 and 5.8 times as great, respectively, as that in U.S. Whites. The cumulative incidence rates of AIDS for Black and Hispanic men (6960,3577) women (2187,605) and children (402,249) in New Jersey are unmatched by any other populations yet studied in the United States. The greatest risks for AIDS were associated with IV drug abuse.

RELATIVE RISK (Cumulative Incidence)

	IVDA, Men	IVDA, Women	Male IVDA Sex. Part.	IVDA, Mother
U.S. WHITE	1 (33)	1 (10)	1 (3)	1 (1.7)
NJ BLACK	140 (4616)	152 (1520)	148 (444)	162 (276)
NJ HISPANIC	59 (1966)	28 (276)	80 (240)	89 (151)

Conclusion. The differences in the risk for AIDS for various racial/ethnic groups were greatest for heterosexual Blacks and Hispanics in association with IV drug abuse.

W.A.P.21 HETEROSEXUALLY TRANSMITTED AIDS IN NEW YORK STATE

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Objective. To describe the demographic characteristics and trends of AIDS cases having heterosexual transmission as their risk factor in NYS.
Methods. We analyzed all AIDS cases attributed to heterosexual transmission in NYS. Cases were defined as heterosexually transmitted if they had no other risk and were born either in the U.S. (US), or in a foreign country (FC) where heterosexual transmission is thought to occur commonly.
Results. As of 12/31/88, 1003 (4.9%) of 20,476 NYS AIDS cases met the definition for heterosexual transmission (623 Heterosexual US and 380 heterosexual FC).The characteristics of these two groups have differed widely. Of the 380 heterosexual FC cases, 76.1% were males and 99.7% were Black. Among heterosexual US cases, 95.6% were females, 40.1% Black, 40.8% Hispanic and 18.3% White. The most common risk factors for the heterosexual US cases were sexual partner of Intravenous Drug Users(IVDU)-83.6%, and sexual partner of bisexual males-8.9%. Since 1981, the proportion of cases that have been heterosexually transmitted has remained steady at about 5%. However, the proportion of total cases attributed to heterosexual US has increased from 1.5% in 1981-83, to 2.6% in 1984-86, to 3.8% in 1987-88.
Conclusion. Though the proportion of heterosexual AIDS has remained constant, the proportion of heterosexual US cases has grown steadily. This has occurred primarily among persons who are sexual partners of IVDU's and parallels the rapidly growing numbers of AIDS cases diagnosed among IVDU's.

W.A.P.23 RISK OF AIDS AND HIV INFECTION IN AMERICAN INDIANS AND ALASKA NATIVES

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Objective: To assess available information on the risk of AIDS and HIV infection for American Indians (AI) and Alaska Natives (AN).
Methods: Cumulative race-specific U.S. AIDS case incidence rates were compared with race-specific HIV seroprevalence rates from 1) U.S. military recruit applicants and 2) patients (excluding those with AIDS-, STD- or drug-related conditions) in the CDC Sentinel Hospital HIV Surveillance System.
Results: AIDS Case Cumulative Incidence Through January 9, 1989

Race	Total Cases	Population	Cases/100,000	Relative Risk
AI/AN	89	1,700,000	5.24	0.15
All other	83,142	243,600,000	34.13	1.00

HIV Seroepidemiology Data

Setting	Race	#Positive	#Tested	Seroprev.1,000	Relative Risk
Military	AI/AN	12	9,888	1.2	0.9
Recruits	All other	2,139	1,516,005	1.4	1.0
Sentinel	AI/AN	3	374	8.0	2.9
Hospitals	All other	9	3,226	2.8	1.0

Conclusion: HIV seroprevalence is disproportionately higher for Native Americans compared with other groups than is the cumulative incidence of AIDS in Native Americans. Preliminary data indicate this to be true in men and women. This raises at least two possibilities: 1) widespread racial misclassification in AIDS cases among American Indians and Alaska Natives, and/or 2) more recent entrance of HIV into this population.

W.A.P.20 CHANGES IN MODE OF TRANSMISSION AMONG AIDS CASES IN HOUSTON, TEXAS, USA

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Objective: To describe AIDS transmission over time in a high incidence area.
Methods: The Houston area is comprised of six counties with a population of 2.9 million. Passive surveillance reports are received daily from hospitals, physicians and state surveillance programs. Active surveillance reports are obtained by telephoning hospitals, hospital-based surveillance in two hospitals, death certificate review and tuberculosis linelist review. Validation studies are ongoing.
Results: From 1981 to 1988, 2,684 AIDS cases were reported. A dramatic change in percent is seen from diagnosis years 1986-1988 among males whose mode of transmission is IV drug use. Among females, the two modes of transmission showing changes in percent are IV drug use and heterosexual contact.

(Note: 0% = less than 1%)

	YEAR OF DIAGNOSIS								
Transmission	1981	1982	1983	1984	1985	1986	1987	1988	CUM
male - male	88%	89%	71%	87%	85%	81%	81%	76%	81%
IV drug user	-	-	5%	1%	1%	2%	4%	8%	4%
male-male & IV drug user	12%	11%	21%	8%	10%	10%	7%	5%	8%
treat. of hemophilia	-	-	-	-	-	0%	0%	-	0%
male-female/female-male	-	-	1%	1%	0%	1%	1%	3%	1%
transfusion	-	-	1%	1%	1%	3%	3%	2%	2%

Conclusion: While the modes of transmission demonstrate that male-male sexual contact predominates in the Houston area, increases among the IV user group as well as the heterosexual contact group indicates transmission modes in Houston are changing. Examination of modes of transmission over time is important to help target intervention programs.

W.A.P.22 HEPATITIS DELTA(HDV)AND AIDS IN RISK COMMUNITIES IN ARGENTINA

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Objective. To study the evolution of HDV epidemiological penetrance together with HIV's in risk communities, as compared with previously recorded epidemiological data as per population.
Methods.HIV(ELISA),(WB)and HDV(ELISA)serological markers in drug addicts (IVDA),homosexuals(HS) and hemophiliacs(HF) were recorded as at September 30,1988.

Community	HBsAg(+) HIV	NR	Anti-HDV(+) NR	%	TOTAL
IVDA	(+)	34	3	8.8	11(8)
	(-)	136	9	6.7	
HS	(+)	9	2	22	9(19)
	(-)	43	7	17	
HF	(+)	28	4	14	8(12)
	(-)	40	4	10	

Out of 1,168 voluntary HBsAg(+) blood donors,18(1.37%)were anti-HDV-positive until 1984,and out of 345 HBsAg(+) hepatic pathology-patients,7(2%)were anti-HDV-positive.

Conclusion. HDV penetrance in the above risk communities is significantly higher than among healthy and/or HBV-hit carriers. These communities represent an HDV reservoir liable to strike at any time, thus increasing the attack rate on the exposed population. HBsAg control is a way of detecting the risk of catching HDV which should be widely promoted. HBV prevention measures,specially vaccines, must be intensified in the case of health workers into contact with these HIV-risk communities. Detection of HBV-carriers among risk communities will reduce the possibility of catching HDV and, consequently, its propagation.

W.A.P.24 DECLINE IN RATE OF NEW AIDS CASES AMONG HOMOSEXUAL AND BISEXUAL MEN IN SAN FRANCISCO

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Objective. To analyze changes in the incidence of reported AIDS cases in homosexual and bisexual men (HBM) in San Francisco (SF).
Methods. We reviewed AIDS cases reported by December 31, 1988 in HBM (including IV drug users) in SF by half-year of diagnosis from 1985 through June 1988, and examined 3 possible causes for a decline in the rate of new cases: late reporting, under-reporting, and a decrease in the proportion of non-SF residents diagnosed in SF. We defined cases found through death certificate searches, validation studies, and retrospective reviews as "unreported cases" and considered them to be markers of under-reporting.
Results. The incidence of AIDS in HBM appears to level in 1987 and early 1988. We could find no indication that this was due to reporting delays, under-reporting, or a change in the proportion of cases in non-SF residents.

	1985(1)	(2)	1986(1)	(2)	1987(1)	(2)	1988(1)
Total AIDS cases, HBM	410	433	556	667	693	699	671
% Change, from previous 6 mos.	+18	+6	+28	+22	+2	+1	-4
%Reported > 2 mos. after diagnosis	22.2	30.0	26.4	24.2	24.1	25.5	17.4
Unreported cases (%)	12.8	9.0	14.0	10.6	10.9	8.0	6.6
Cases in non-SF residents (%)	7.6	9.9	12.8	9.7	9.8	8.7	9.2

Results were similar when analyzed by date of report.
Conclusion. We observed an apparent decline in the rate of new AIDS cases in HBM in SF. This could not be explained by late reporting, under-reporting, or a decline in non-SF residents coming to SF for diagnosis.

W.A.P.25

ANALYSE DES TENDANCES DES CARACTERISTIQUES SOCIO-DEMOGRAPHIQUES DES CAS DE SIDA RAPPORTES EN FRANCE

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Objectif: A partir des caractéristiques socio-démographiques des cas de SIDA, étude de la dynamique de développement de l'épidémie en France.

Méthodes: Analyse des 5527 cas de SIDA diagnostiqués de Janvier 1984 à Décembre 1988, présence des différents groupes de transmission, en fonction du temps et des variables socio-démographiques.

Résultats: Les tendances globales sont: un viellissement de la population des cas de SIDA (diminution de la classe 30-49 ans,augmentation de la classe des plus de 50 ans); une persistance de la diffusion géographique en 3 zones (région parisienne, sud de la France, région Antilles-Guyane); un glissement des catégories professionnelles intellectuelles et commerciales vers les catégories des ouvriers et des sans profession. Les modifications de la part relative des différents groupes de transmission (baisse de celle des homosexuels et augmentation de celle des toxicomanes) par année de diagnostic ainsi que la modification des caractéristiques de ces groupes au cours du temps expliquent les tendances globales.

Conclusion: L'épidémie de SIDA en France est la somme de plusieurs épidémies indépendantes et décalées dans le temps. Certaines modifications des variables démographiques traduisent une augmentation de la proportion des cas à incubation longue.

W.A.P.26

AIDS IN THE DEPARTMENT OF VETERANS AFFAIRS: DEMOGRAPHICS AND EPIDEMIOLOGY

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Objective. To describe the characteristics of the individual AIDS patients cared for in one of the largest national health care systems in the world, the Department of Veterans Affairs (DVA) of the United States.
Methods. The DVA has collected data on AIDS patients since 1979. The reporting form is identical to those used by the Centers for Disease Control (CDC). From these forms computerized data has been collected to describe the age, sex, ethnic and risk groups for these patients. The results of these analyses will be reported.
Results. At the end of 1988 the DVA had cared for 3,634 AIDS patients in 141 VA medical centers across the USA. This represents approximately 6% of all of the AIDS patients reported in the USA. VA patients are different in risk behavior for the disease in the following way: Intravenous (IV) drug users account for 27% of all of the DVA cases, 7% are both IV drug abusers and homosexual. In other characteristics they are very similar, e.g. 48% are white, 97% are male and they are on the average 41 years of age. In addition, the AIDS epidemic has also been concentrated in epicenters, i.e. 52% of the patients have been cared for in 11 of the VA medical centers. The details of these findings will be further explained at the meeting.
Conclusion. The AIDS epidemic continues to involve an ever increasing number of patients in the USA. The DVA cares for 6% of these cases. These patients differ from the USA reported AIDS patients in risk group percentage. The IV drug users account for 27% of all of the patients cared for since 1979. These data will be presented and discussion encouraged.

Mortalité liée au SIDA
AIDS/HIV Related Mortality

W.A.P.27

IMPACT OF AIDS ON MORTALITY IN SAN FRANCISCO: 1979-1986.

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Objective: To describe the increase in AIDS-related deaths and years of potential life lost before 65 years (YPLL-before age 65) for San Francisco residents between 1979 and 1986.
Methods: Death certificate data for San Francisco residents for 1979-1986 were used to calculate the number of deaths and YPLL-before age 65 for the following six AIDS-related diseases: cytomegalovirus infection (ICD-9 078.5); cryptococcal infection (ICD-9 117.5); *Pneumocystis carinii* pneumonia (ICD-9 136.9); other malignant neoplasms of the skin, site unspecified (ICD-9 173.9); immunodeficiency with predominant T-cell defect (ICD-9 279.1); and immunodeficiency unspecified (ICD-9 279.3).
Results: The number of AIDS-related deaths (both sexes, all ages) increased from 5 (0.1% of all deaths) in 1979 to 534 (6.6%) in 1986. YPLL-before age 65 increased from 123 years in 1979 to 13,276 years in 1986. AIDS-related deaths increased between 1979 and 1986 from 0 to 44 (24.7% of all deaths); 0 to 257 (43.6% of all deaths); 0 to 150 (35.2% of all deaths) in males aged 20-29 years; 30-39 years; and 40-49 years respectively. In 1986 AIDS-related diseases were the third leading cause of deaths and the leading cause of YPLL-before age 65 among San Francisco male residents.
Conclusions: There was a dramatic increase in AIDS-related deaths in San Francisco residents between 1979 and 1986 especially in males aged 20-49 years.

W.A.P.28

HIV-ASSOCIATED MORTALITY IN ENGLAND AND WALES IS GREATER THAN THAT IDENTIFIED BY AIDS SURVEILLANCE

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Objective. To estimate the total number of deaths resulting from HIV infection.
Methods. Ninety-five causes of death were identified as possibly HIV-related. Trends in death rates due to these causes by age, sex, marital status and geographical distribution were identified for 1984-87. Reports to CDSC of HIV infected people who have died but who were not included in the AIDS surveillance programme because they did not meet the WHO definition were analysed. The AIDS surveillance programme was extended in February 1989 to include deaths among HIV-positive people who did not meet the WHO AIDS definition.
Results. Standardised mortality ratios due to HIV-related causes increased for single men aged 15-54 years from 100 in 1984 to 118 in 1987, but there was no similar increase for men of other marital states or for single women. This increase was only partially accounted for by deaths for which AIDS was stated as the cause. Geographical distribution was similar to that of reported AIDS cases. Preliminary results from the extended surveillance programme will be presented.
Conclusion. People in England and Wales are dying as a result of HIV infection without developing AIDS as defined by the WHO. There is a need for surveillance programmes to be extended to include HIV infection severe enough to cause death but not meeting the WHO definition if the true size of the epidemic is to be identified.

W.A.P.29

ESTIMATE OF HIV-RELATED DEATHS IN YOUNG ADULT MEN, UNITED STATES, 1986

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Objective: To estimate the number of HIV-related deaths in 1986 in the U.S. among young adult men.
Methods: Using multiple cause of death records for men 25-44 years of age for the years 1980-1986, we calculated excess deaths in 1986, based on mortality rates in the year with the lowest rates, for selected causes.
Results: In 1980, there were 68 deaths (0.21 deaths/100,000) with any mention of cell-mediated immune deficiency, Kaposi's sarcoma, or *Pneumocystis carinii* pneumonia, and 7,737 such deaths (20.3 deaths/100,000) in 1986 (excess = 7,655). In the absence of these diagnoses, excess deaths occurred in 1986 (following a nadir in rates in 1980-1983) for other conditions in the AIDS definition: infections, 132; non-Hodgkins lymphoma, 158; encephalopathy, 15; and for other conditions that are increasing in association with the HIV epidemic: pneumonia and influenza, 193; pulmonary tuberculosis, 32; septicemia, 136; other infections, 110; other immune deficiency, 135; blood disorders, 57; and non-specific causes, 369. Thus, 7,655 to 9,192 excess deaths may be HIV-related, compared to 7,023 deaths in men 25-44 reported through AIDS surveillance for 1986. Estimated HIV-related deaths may be high if excess deaths are not all due to HIV and low if baseline rates are declining, rather than stable, or if increases in other conditions (e.g., respiratory, drug abuse) are HIV-related.
Conclusion: National surveillance of AIDS cases detected roughly 75-90% of HIV-related deaths in 1986 among men 25-44 years of age.

W.A.P.30

CAUSES OF DEATH IN A LARGE COHORT OF I.V. DRUG USERS (IVDUs) IN MILAN: AN UPDATE

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Objective. To evaluate the variations of causes of death during the last two years in a large cohort of IVDUs recruited in Milan between Nov.80 and Dec.87.
Methods. All the IVDUs attending 4 Hospital Centres were included; 101 subjects deceased before '87; 3604 IVDUs have been followed-up with repeated investigations at registry offices.

Results. (%)	Overdose	AIDS	Liver cirrhosis	Violent death	Other*	Total
1980-1986**	39(39)	11(11)	5 (5)	20 (20)	25(25)	101
1987	18(32)	19(34)	1 (2)	8 (14)	10(18)	57
1988***	20(38)	22(43)	3 (6)	5 (10)	2(2)	52
TOTAL	77(37)	52(25)	9 (4)	33 (16)	37(18)	208

* Only two cases of so-called HIV-related deaths (bacterial pneumonitis) were recorded; **retrospective data; ***Up to Dec.1988 informations were available in 2033. HIV serology was available in 42 AIDS unrelated deaths (88.1% were HIV pos.).

Conclusions. Despite the increasing number of overdose related deaths in Italy during the last two years, in this cohort AIDS is now the first cause of death, so reflecting the large spread of HIV infection among IVDUs in Milan.

W.A.P.31 MORTALITY AMONG 1862 HIV-INFECTED PERSONS IN A GEOGRAPHICALLY DISPERSED U.S. POPULATION: PRELIMINARY RESULTS

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Objective:A case-control study is ongoing to assess cause-specific mortality among civilian applicants excluded from military service due to the presence of HIV antibody (cases) or other unrelated medical conditions (controls).
Methods: The 1985-87 files of the National Death Index (NDI) were searched for 1862 cases and 5583 controls (matched 3:1 with cases on age, race, sex, and date and location of screening) identified by US Department of Defense (DOD)screening between 10/85 and 12/87. The cases were 93.6% male, 42.0% white, and 51.3% black. The age range was 17-55 years (median 23.5). Identifiers and HIV status of living applicants were known only by DOD.
Results: Based on a mean follow-up time of 13.5 months (range 0-27), the NDI identified death records for 24 of 1862 cases (12.9/1000) and for 10 of 5583 controls(1.8/1000)($p<.0001$). The death rate for cases (but not controls) was higher ($p<.0001$) than the expected all-cause death rate of 2.6/1000 based on age-,race- and sex-specific 1986 US death rates. Based on death certificates obtained as of 1/30/89 from state vital statistics offices, cases died from AIDS (n=14), pneumonia (2), suicide (2), homicide (1) and drug abuse (2), while controls died from unintentional trauma (4), suicide (1), homicide (1) and drug abuse (1). Annual mortality follow-up of this cohort is planned.
Conclusion: While these preliminary data are insufficient to calculate death rates for non-AIDS causes such as suicide, they suggest an increased all-cause short term risk of death in HIV-infected persons, primarily from AIDS.

W.A.P.33 THE IMPACT OF NON-OPPORTUNISTIC INFECTIONS ON MORTALITY IN A NATIONAL SAMPLE OF AIDS HOSPITALIZATIONS

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Objective. To determine the importance of non-opportunistic infections (NOI) as a predictor of mortality in hospitalized AIDS patients.
Methods. Discharges with an AIDS or PCP diagnosis were selected from the 1986 Hospital Cost and Utilization Project's (HCUP) national sample of U.S. hospitals. Additional ICD-9-CM diagnosis codes identified pathophysiologic processes and organ system involvement. Logistic regression was used to estimate the relative effects of NOI and opportunistic infections (OI) on in-patient mortality, controlling for the presence of other conditions (wasting syndrome, secondary cancers, hematologic disease, dementia, organ failure), patient demographic characteristics, and region of the U.S.
Results. In 1986, AIDS discharges appeared in 196 of the 400 HCUP hospitals. Of 3230 hospitalizations, 40% had one or more NOI, 39% had PCP, 27% had one or more other OI, and 14% had KS. Overall, in-patient mortality was 18%. OI involving the lung (mostly PCP) or the CNS increased the risk of dying by 106% and 104%, respectively. NOI involving the lung or brain or disseminated NOI increased the risk of dying by 36%, 103%, and 152%. The likelihood of dying in the hospital was generally greater outside of California. Whether the effects of OI and NOI on mortality vary across regions will be examined.
Conclusion. NOI, which are less understood as complications of AIDS, are common and significantly increase in-patient mortality.

W.A.P.35 COMPARISON OF U.S. HIV MORTALITY TRENDS FROM VITAL STATISTICS AND AIDS SURVEILLANCE

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Objective. To compare trends in U.S. HIV/AIDS mortality from vital statistics and AIDS surveillance.
Methods. Death certificate information is collected by the States and reported through vital statistics (VS) to the National Center for Health Statistics (NCHS) of the Centers for Disease Control (CDC). The States also report AIDS cases and deaths through AIDS surveillance (AS) to the Center for Infectious Diseases (CID). We compared U.S. HIV mortality from 1983-87 from the VS (multiple cause-of-death data coded to ICD-9 No. 279.1, Deficiency of cell-mediated immunity, for 1983-86; underlying cause-of-death data coded to new U.S. codes *042-*044, implemented in 1987 for HIV infection) to deaths occurring in 1983-87 and reported to date through the AS.
Results. The numbers of deaths reported through VS and AS were 1,141 and 1,405, respectively, in 1983; 10,900 (the most recent final data from VS) and 10,383, in 1986; and 13,130 (provisional, 10% sample of mortality data) and 13,431, in 1987. The ratios of AS to VS deaths decreased from 1.23 in 1983 to 0.95 in 1986 and then increased to 1.02 in 1987. In 1987, the sex distribution (90% male) was the same in both.
Conclusions. The number of HIV/AIDS deaths reported to VS and AS are comparable despite differences in the two systems. VS data depend on the reporting and coding of diagnoses on death certificates; AS depends on reporting for persons who meet the AIDS surveillance definition.

W.A.P.32 AIDS MORTALITY AMONG PUERTO RICAN-BORN RESIDENTS OF NEW YORK CITY: 1981-1987.

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Objective. To compare AIDS mortality patterns and rates among Puerto Rican-(PR) born residents of New York City (NYC) to those of Blacks (Blk), whites (Wht), and other Hispanics (Hsp).
Methods. Death certificates for NYC residents with AIDS (n=8187) are analysed by age, sex, race/ethnicity, and place of national origin for the period 1981-1987. This permits differentiation of individuals born in PR from Blk, Wht, and other Hsp. 1980 U.S. Census provides the denominator for cumulative age-adjusted and age-specific AIDS mortality rates. Secular trends for 1981-1987 were examined for AIDS proportional mortality.
Results. Cumulative age-adjusted AIDS mortality rates (per 100,000 pop.) are highest among PR-born males*(362) compared to Blk (267), Wht (182), and Hsp (217). For PR-born females, the age-adjusted rate (59) is highest compared to Blk (56), Wht (14)* and Hsp (25)*. Age-specific rates are highest for PR-born males in all age groups, and in females for ages 35-44.* Secular trends indicate that AIDS proportional mortality from 1983 to 1987 (among minorities) increased most dramatically for PR-born (846%) compared to Blk (656%) and Hsp (682%).*[p<.05]
Conclusion. The disproportionate impact of AIDS on the mortality experience of PR-born New Yorkers suggests high rates of HIV infection in this group and continued risk for the Puerto Rican community in NYC and PR.

W.A.P.34 STABILIZATION OF AIDS MORTALITY IN NON-DRUG USING MEN IN NEW YORK CITY (NYC)

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Objective: To assess the course of the AIDS epidemic in New York City homosexual men by analyzing mortality trends from 1980-88.
Methods: Mortality from AIDS and all other causes in men 20-54 not known to be IV drug users (IVDU) was analyzed using the NYC Vital Records. Mortality was also determined in a cohort of 8,331 homosexual males enrolled in a NYC hepatitis B serosurvey in 1978-79.
Results: From 1980-88, 9.3% (6,294/67,535) of deaths in non-IVDU white and non-white (black and hispanic) men were attributed to AIDS. From 6/83 to 12/85, the average AIDS mortality per half-year for whites increased 43%, while from 12/85 to 12/88, the increase was only 5.6%. During the same two time periods AIDS deaths in non-whites increased 44% and 14%. No similar trends were noted in IVDU or women. In the homosexual male cohort, 69% (436/620) of deaths from 1980-88 were attributed to AIDS. The average annual increase in total deaths was 47% for 1983-86, and 1% for 1986-88. The proportion of AIDS deaths increased from 32% (6/15) in 1982 to 78% (65/83) in 1985 where it remained essentially unchanged through 1988.
Conclusion: Stabilization of AIDS mortality in non-IVDU males 20-54, and in the homosexual male cohort suggests a plateau in the epidemic of AIDS in NYC homosexual men. The contribution of outmigration to this stabilization will be examined in the cohort. Behavioral change may be one explanation for the occurrence of this phenomenon before the widespread use of AZT.

Transmission homosexuelle
Homosexual Transmission

W.A.P.36 RISKFACTORS FOR TRANSMISSION AND IMPACT OF KNOWLEDGE OF HIV-AB SEROCONVERSION ON SEXUAL BEHAVIOR AMONG HOMOSEXUAL MEN

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Objective. Study of riskfactors for transmission and impact of knowledge of HIVab seroconversion on subsequent sexual behavior among homosexual men.
Methods. Between Oct. 1984 and May 1985 512 HIVab- homosexual men were entered in a cohort study in Amsterdam. Subjects are seen every 3 mo. for medical history, physical examination and the collection of bloodsamples and psychosocial and behavioral data. During follow-up until Jan. 1989 59 men seroconverted for HIVab, 34 in 1985, 16 in 1986, 3 in 1987 and 6 in 1988. For each HIVab seroconversion 2 HIVab- controls were selected at random and matched in time, taking the seroconversion date as reference.
Results. Compared to controls seroconversions show a peak in anogenital receptive activity during 12-6 mo. prior seroconversion. Seroconversions increase from a mean of 1 to 6 partners while controls remain stable around 1. Changes in sexual behavior during 6-36 mo. after knowledge of seroconversion appear to be relative because sexual activity returns to the initial level before the peak-period. Anogenital insertive intercourse is the only activity which goes below the initial level. In multivariate analysis anogenital receptive intercourse was the only significant riskfactor for seroconversion. No evidence was found that orogenital contact or a history of (ulcerating) STD's were riskfactors.
Conclusion. Data suggest peak-periods in sexual behavior 12-6 mo. prior seroconversion. Sexual behavior after seroconversion should therefore be studied by comparing it with the initial level of sexual activity before the peak-period. Anogenital receptive intercourse remains the primary riskfactor.

W.A.P.37

RETROSPECTIVE STUDY OF FACTORS RESPONSIBLE FOR HIV TRANSMISSION IN MALE HOMOSEXUALS

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Objective.To study factors affecting the prevalence of HIV infection in male homosexuals.
Methods.Male homosexuals self-selected for counselling and HIV screening at the National Center for AIDS were asked to complete a detailed questionnaire. The sample included 90 anti-HIV positive and 100 anti-HIV negative male homosexuals.All of them were also screened for serological evidence of HBV infection,syphilis and history of past gonnorhea.
Results.Table 1 showes epidemiological characteristics and the prevalence of STD in the examined anti-HIV positive and negative male homosexuals.

Characteristics/Disease	Anti-HIV(+)n:90	Anti-HIV(-)n:100
Median age(years)	28	28
Number of sexual contacts / month	5	5
Use of condom (%) last year	28.9	76.0
I.V. drug use (%)	6.7	2.0
Active and passive sexual behaviour (%)	73.3	56.0
Hepatitis B	73.3	58.0
Syphilis	33.3	15.0
Gonnorhea	55.0	40.0

Conclusions.There is a close correlation between HIV infection and other sexually transmitted diseasesUnprotected sex and both passive and active sexual behaviour are mainly responsible for HIV infection in male homosexuals.

W.A.P.38

RISK FACTORS FOR HIV INFECTION AMONG MALE PROSTITUTES IN ATLANTA

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Objectives To assess HIV seroprevalence among male prostitutes and to identify risk factors for HIV infection.
Method Between July 1988 and January 1989, 147 active male street prostitutes were recruited in two locations in Atlanta. Standardized interviews were conducted and blood samples collected in the respondents' natural setting. Interviews focused on sexual history, drug-use history, social networks, and health issues. Blood specimens were tested for HIV antibodies by EIA and Western Blot, and for syphilis by RPR, MHA-Tp, and FTA-Abs. Risk factors associated with HIV antibody seropositivity were identified using step-wise logistic regression analysis.
Results Of the 147 hustlers 28% were seropositive for HIV. Residing in a predominantly black area, rather than race, was the most significant predictor of HIV infection. Intermittent condom use (use between 33% and 66% of time), was significantly associated with HIV infection while infrequent and frequent condom use were not significant. In our most parsimonious model predictors for HIV infection were:

Risk Factor	% of Sample	% HIV Pos.	Odds	95% C.I.
Black Area of Residence	11.6	61.8	2.31	1.51-3.11
Receptive Anal Sex	24.5	47.2	2.25	1.66-2.84
Syphilis Seromarker	22.4	55.3	2.03	1.51-2.54
Intermittent Condom Use	38.8	38.7	2.01	1.46-2.55
Hustling >= 10 years	27.9	46.1	1.98	1.33-2.63
Acquaintance W/ P.W.A.	52.4	35.8	1.76	1.24-2.28

Age (median 23 years), race (48% black), IV-drug use (46.3%), and self-reported sexual orientation (31% homosexual, 40% heterosexual, and 27% bisexual), were not significant.
Conclusions: Preliminary results indicate that male prostitutes represent a possible conduit of HIV infection to both the heterosexual and homosexual populations. Additionally, residence in a predominantly black area and receptive anal intercourse are better predictors of HIV infection than race and sexual orientation.

W.A.P.39

RELATIONSHIP OF STD HISTORY TO HIV SEROPOSITIVITY IN A COHORT OF HOMOSEXUAL MEN IN DALLAS, TEXAS.

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Objective: To determine the relationship between STD history and anti-HIV.
Methods: Between 6/87 and 12/88, 644 homosexual or bisexual men volunteered to return every six months for HIV testing. All answered questions about previous episodes of syphilis, gonorrhea, genital warts, and hepatitis.
Methods: 320 (50%) of the men had a history of either syphilis, gonorrhea or warts; 153 (19%) had a history of hepatitis.

History of a Sexually Transmitted Disease:

	Syphilis	Gonorrhea	Warts	any 3	Hep B	Non A hep
N	104	238	131	320	65	110
HIV+	49(47%)	95(40%)	51(39%)	120(38%)	30(46%)	46(42%)
RR	1.9	1.9	1.5	2.0	1.8	1.6
95% CL	1.5-2.5	1.5-2.4	1.2-2.0	1.5-2.6	1.3-2.4	1.3-2.2

When stratified by the number of partners in the year before learning of AIDS, the RR for HIV infection in those with a history of syphilis, gc, or warts was 1.8 (95% CL: 1.4-2.4) and for those with a history of non A hepatitis was 1.4 (95% CL:1.1-1.8). HIV infections were related to the number of episodes of gonorrhea (x^2trend=32; p<.001) and to the number of partners (x^2trend=8; p<.01).
Conclusions: HIV infections may be related to history of STD due to the facilitation of HIV transmission, but the similar relationship with non-A hepatitis suggests that HIV infections and STDs may be independant events associated with a common mode of transmission.

W.A.P.40

HIV-1 DISCORDANT COUPLES IN THE BALTIMORE MACS STUDY

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Objective To determine infection status, sexual practices and coinfections of HIV-1 serologically discordant couples in the Baltimore MACS.
Methods Thirty-four self-identified serologically HIV-1 discordant, 5 HIV-1 seropositive and 17 seronegative concordant couples had detailed sexual histories taken and blood drawn for laboratory tests.

Results	Concordant Seropositive	Discordant Sero+	Discordant Sero-	Concordant Seronegative
Number of persons	10	34	34	34
X CD4	607	585	1183	1180
X CD4/CD8 ratio	0.6	0.6	1.9	2.1
HIV-1 culture positive	6/10	28/33	2/33	1/34
HIV-1 DNA detected (PCR)	1/1	7/7	0/7	1/4
Anal insertive sex:				
- with primary partner	8/10	27/34	29/34	30/34
- never using condom	2/8	13/27	9/29	20/30
Anal receptive sex:				
- with primary partner	10/10	29/34	28/34	30/34
- never using condom	3/10	11/29	12/28	17/30

Conclusion Sexually active HIV-1 discordant couples exist without evidence of viral transmission. The presence of 3 virus positive seronegative persons in this high risk population requires further investigation.

W.A.P.41

FAILURE TO CONFIRM HERPES SIMPLEX VIRUS TYPE 2 (HSV-2) INFECTION AS A RISK FACTOR FOR HIV-1 SEROCONVERSION AMONG HOMOSEXUAL MEN.

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Objective. To determine if prior infection with HSV-2 is associated with HIV-1 seroconversion in homosexual men.
Methods. Western blot confirmed HIV-1 seroconverters (n=49) were matched with non-HIV-1 seroconverters (n=49) for the number of partners with whom anal receptive intercourse was performed and the visit of HIV-1 seroconversion. HSV-2 Ab testing was performed on blind-coded sera utilizing immunoaffinity-purified gG-2 in an immunoblot assay.
Results. At the visit of HIV-1 seroconversion, the same prevalence of HSV-2 infection was observed for both HIV-1 seroconverters and non-seroconverters (23/49, 47%). Matched pairs analysis failed to detect any association between HSV-2 infection and HIV-1 seroconversion (odds ratio = 1.0). Self-reported rates of genital and ano-rectal sores were very low (≤4%), as well as physical exam findings suggestive of HSV infection (≤2%).
Conclusion. No evidence was found in this study to support the hypothesis that prior/current infection with HSV-2 is a risk factor for HIV-1 seroconversion among homosexual men. A suggested explanation is that anal intercourse is the major risk factor for both HIV-1 and HSV-2 ano-genital infection, HSV-2 infection among homosexual men may be only a marker of, not a risk factor for, acquisition of HIV-1 infection. Due to both cultural and biologic differences in heterosexual transmission of HIV-1, these findings should not be generalized to other risk groups.

W.A.P.42

SEROEPIDEMIOLOGIC STUDY OF HIV INFECTION AMONG HOMOSEXUAL MEN ATTENDING A MEDICAL PRACTICE IN MONTREAL

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Objective. To determine the prevalence of HIV infection and characterize sexual behaviour, socio-demographic factors and knowledge about AIDS among homosexual men.

Methods. A cross-sectional study of HIV infection, comprising anti-HIV testing and a self-administered questionnaire including information on lifetime sexual history, current sexual behaviour, knowledge about AIDS and lifetime history of STD's.

Results. Over a 2-month period, 84 men entered the study. The study cohort included subjects 18 to 60 years of age who were mostly French-speaking (69%) and Montreal island residents (96%). The median number of lifetime sexual male partners was: 110 (total) and 7 (with whom they had receptive anal intercourse). Subjects aged 30 to 39 years had the most number of partners per year of sexual activity. Anti-HIV was found in 21 (25%) of subjects. There was no significant difference in HIV status or any other characteristic between men who visited the clinic for HIV-related reasons and those who consulted for non-HIV-related reasons. Anal receptive intercourse, younger age at first homosexual experience, use of sex toys, poppers and drugs, history of STD's including hepatitis B were strongly correlated with a seropositive result. During the one month period prior to the study, unprotected anal insertive intercourse was reported by 3 (14.3%) of 21 seropositive men; unprotected anal receptive intercourse was reported by 12 (19.1%) of 63 seronegative men. Seventy-two percent of subjects who had prior knowledge of a positive HIV status scored above the overall median score on questions relating to knowledge about AIDS, compared to 47% of subjects who knew they were negative and none of those who had no previous knowledge of their HIV status (p<0.002).

Conclusion. This study provides evidence that an important proportion of homosexual men in Montreal have still not adopted safe sex techniques and lack adequate knowledge about AIDS. Use of drugs might be an important factor in HIV transmission.

W.A.P.43 RISK FACTORS IN HOMOSEXUAL TRANSMISSION OF HIV

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Objective. To evaluate the risk factors linked to HIV infection in a cohort of Italian homo-bisexual men enrolled in 1985-1988, and to look for their modifications during that period.
Methods. We have studied 856 homo-bisexual men (i.v. drug addicts excluded) from Northern Italy that refer of one's own free will to HIV screening program. All answered an epidemiological interview about sexual habits (# partners/year, "safe-sex", sexual intercourse behavior) and underwent HIV test (performed by ELISA, WB confirmed). A cohort of 375 subjects which were HIV AB -ve at first examination have periodically repeated the interview and HIV test every six months for a follow up period of 12-36 months.
Results. HIV Ab prevalence during Jan 1985-Dec 1987 is reported in TABLE I.

TABLE I	#	HIV Ab +ve	%
1985	256	33	12.9
1986	129	17	13.1
1987	211	10	4.7
1988	268	9	3.4

Seventeen from the follow-up group (375 subjects) seroconverted during 1985-1988, with annual rate of 2.3%. During 1987-1988 the interviewed homo-bisexuals have reported a more drastic reduction of promiscuity rather than t he observance of "safe sex".
Conclusion. The major behavior change seen in Italian homo-bisexual community is mainly the reduction of promiscuity, which can explain the slow diffusion of HIV in this group.

W.A.P.44 EPIDEMIOLOGICAL, IMMUNOLOGICAL AND BEHAVIOURAL PARAMETERS IN A COHORT OF HOMOSEXUAL MEN; SEQUENTIAL CHANGES OVER SIX YEARS.

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Objective: To determine rates of seroconversion and predictors of immune deficiency and their relation to sexual life-style.
Methods: In 1983 a cohort of 100 asymptomatic homosexual men was recruited for a prospective study at a major teaching hospital. HIV seroconversion and immune function assessments were performed at six monthly intervals. In addition, all members were counselled and information on sexual life-style was elicited by questionnaire.
Results: The prevalence of antibody to HIV rose from 22% in 1983 to 31% in 1985. There have been no further seroconversions. Five patients have developed group IVc disease, and five AIDS.
Modelling analysis demonstrates the predictive value of repeated measurements in the seropositive group, for CD4 T cells (t=2.3, p=0.02) and immunoglobulin concentrations (t=3.36, p=0.002). There has been a highly significant decrease in the number of sexual partners and the number of reported STD's (p<0.01). There has also been a significant fall in the frequency of unsafe sex, though not to zero, and an increase in the use of condoms. This applies to receptive and active anal intercourse, but not to oral intercourse.
Conclusions: 1. The spread of HIV into and within this group has been halted.
2. Although there are clear group trends; for a single individual, serial and not point-measurements are required to predict immunodeficiency.
3. The combination of motivation and counselling has resulted in a reduction of practices perceived to be unsafe.

W.A.P.45 THE DEVELOPMENT OF ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) AMONG TWO COHORTS OF SEXUALLY TRANSMITTED (STD) PATIENTS WITH DIFFERENT VENEREAL DISEASE HISTORIES.

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OBJECTIVE: To assess the risk of acquiring HIV infection among 2 cohorts of homosexual men treated for syphilis and other venereal infections in Dallas County, Texas.

METHODS: Two groups of homosexual male patients with venereal exposures were analyzed by a retrospective chart review. The first included 302 individuals with a history of early (primary or secondary) syphilis during 1986; the second, 114 controls (matched by first initial of last name) with a history of culture-proven gonococcal urethritis but without any history of syphilis. The rate of AIDS in the 2 groups was assessed by reviewing a registry of local AIDS cases that had been diagnosed by mid-1988.

RESULTS: The number of AIDS cases among the two groups was similar: 14 (4.6%) among the patients with a history of early syphilis during 1986 and 6 (5.3%) among the matched control patients with a history of gonorrhea during 1986 (χ^2 = 0.252, p>0.25).

CONCLUSION: Among American homosexual men, a relationship between a history of early syphilis and an increased rate of AIDS cannot be conclusively established 2 years after the episode of early syphilis and suggests that a history of syphilis does not serve as conclusively as a risk factor for HIV infection and AIDS among American homosexual men as it does among AIDS patients belonging to other at-risk populations such as those treated and reported from central Africa.

W.A.P.46 RECENT HIV SEROCONVERTERS (SC) IN A SAN FRANCISCO COHORT OF HOMOSEXUAL/BISEXUAL MEN: RISK FACTORS FOR NEW INFECTION.

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Objectives: To describe homosexual/bisexual men (HBM) who recently seroconverted to HIV antibody (Ab) and behavioral risk factors for these SC.
Methods: Since 1983, follow-up studies have been conducted on a cohort of HBM recruited from 1978-1980 for hepatitis B studies. Eleven HBM whose estimated year of seroconversion was during 1986 (6) or 1987 (5) were compared to 288 persons who remained seronegative (SN).
Results: During an interview period of 12-33 months (median=19) preceding the estimated date of seroconversion, SC reported a median of 20 sexual partners (range=1-425); 3 SC reported only 1-2 partners. 8/11 SC reported engaging in receptive anal intercourse without a condom, 2/11 SC reported only insertive anal intercourse without a condom, and 1 SC denied anal intercourse and reported only receptive and insertive oral-genital contact with multiple partners. Prior to the date of seroconversion, 7 SC had been told that they were HIV-Ab negative based on a previous sample. Compared to SN, SC had a greater number of both steady and nonsteady sexual partners; SC were also more likely to have engaged in both receptive and insertive anal intercourse without a condom. SC and SN did not differ with respect to age, race, education, sexual contact with a female, or use of IV drugs.
Conclusion: A small number of HBM continue to seroconvert to HIV, primarily in association with unprotected receptive or insertive anal intercourse. Although multiple partners are also associated with an increased risk of seroconversion, some SC reported only 1 or 2 partners.

Transmission verticale
Vertical Transmission

W.A.P.47 MATERNAL FACTORS AND NEONATAL CHARACTERISTICS ASSOCIATED WITH HIV INFECTION IN INFANTS OF SEROPOSITIVE WOMEN.

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Objective. To correlate maternal and neonatal characteristics with perinatal tranmission of HIV.
Methods. In a prospective study of perinatal transmission infants born to seropositive women were assayed for anti-HIV IgG, IgM, and HIV antigen at 2, 4, 6, 9 and 12 months of age. Data on 35 infants born to HIV positive women, 15 of whom show evidence of being infected, are presented.
Results. All mothers of infected infants and 90% of mothers of non-infected infants had history of I\V drug use. There was no significant difference in age, education, type of family, marital status, parity or age at first pregnancy. The incidence of STD infections during pregnancy was higher in mothers of infected babies (40% vs 25%) and their participation in methadone treatment programs was significantly lower (37% vs 55%). Birth weights, gestational ages and perinatal problems were similar in both groups except for neonatal abstinence syndrome due mostly to methadone withdrawal which was higher in the non-infected group (55% vs 27%).
Conclusion. In this group of infants transmission of HIV appears to be associated with maternal lifestyle characteristics.

W.A.P.48 RISK FACTOR(RF) IN SYMPTOMATIC HIV SEROPOSITIVE (SP) CHILDREN IN THE SAN JUAN CITY HOSPITAL (SJCH), PUERTO RICO

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The SJCH is the only public hosp. which serves the medically indigents (aprox. 225,000 pts./yr.) residents of the SJ metro. area (total pop. 425,749, 1985) many of them with a serious public health probelm of IVDU.
Objective: To determine the RF and mode of transmission of HIV infection in symptomatic children from 0-13 years of age at SJCH.
Method: Data from the medical records of the Ped. HIV Clinic was analysed, SP pts. were identified form 1985 to 1988 (ELISA, WB.).
Results: 95 SP pts. were identified. P-0=39 (41%), P-1=4 (4%), P-2=52 (55%). Of the 52 symptomatic pts., 48 (92.3%) were perinatally infected (PI) and 4 (7.7%) blood acquired. The RF of parents in the PI children were:

IVDU....................45 (93.5%)—
19 (42%) father
19 (42%) mother
4 (9%) both parents
3 (7%) previous husband
Several Sex Partners...2 (4.2%)
Unknown................1 (2.0%)

Heterosexual infection in mothers was 50% (n=24) and ↑ in the last 3 yrs (44% 82-84 vs 58% 85-88), 92% of them (n=22) was related to IVDU in sex partners.
Conclusion: Perinatal infection was found to be the predominant mode of transmission (92.3%) in the symptomatic pts. at SJCH. IVDU was the most important RF in parents and directly related to this mode of transmission. The mayority of the SP mothers were infected by a IVDU sexual partner. Both perinatal infection and IVDU are higher in SJ metro. area than in the rest of P.R.

W.A.P.49

PROSPECTIVE STUDY OF THE VERTICAL TRANSMISSION OF HIV.

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Objective : To evaluate prospectively the vertical transmission of HIV.
Methods : Infants born to HIV infected mothers are followed up clinically since birth and tested at 3 months intervals for HIV antibodies (Ab) by a quantitative anti P24 assay as well as for the presence of virus in cultures of lymphocytes and proviral DNA by PCR.
Results : Since 1985, 32 children have been included.Twenty two were born from parents originating from Central Africa. Mean follow up is 12.5 months (range 1-36). To date 1 child has AIDS, 4 have mildly enlarged lymph nodes and the rest of the cohort is asymptomatic. Fifteen children have become seronegative at ages ranging from 4 to 18 months. Half-life of anti P24 Ab in these children was comparable (30 days) and the age at which they became seronegative was dependent on the amount of anti P24 Ab present at birth. Two children, (1 with AIDS and 1 asymptomatic) have significant immunologic impairment and anti P24 Ab that do not decrease over time, suggesting active production. Seventy eight HIV cultures have been performed in 22 children : 3 were positive (2/4 in the child with AIDS and 1/6 in an asymptomatic child). Detection of proviral DNA by PCR using primers in the GAG and LTR genes has been attempted in 15 infants. Two different samples have been tested in 9 children (5 positive, 2 negative and 2 discordant results) and 1 sample in 6 (5 positive and 1 negative).
Conclusion : 1) quantitative follow up of anti P24 Ab correlates with clinical and immunologic outcome; 2) proviral DNA is detectable by PCR in seronegative asymptomatic children. The significance of this finding remains to be elucidated.

W.A.P.50

PERINATAL TRANSMISSION OF HIV-1 IN LUSAKA, ZAMBIA.

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Objectives.1.To determine perinatal transmission rate; 2.To determine morbidity and mortality of HIV-1 infection in children.
Methods. A prospective study was conducted on 1954 women in labour at University Teaching Hospital in Lusaka, Zambia. 227 (11.6%) of women were Western blot confirmed seropositive for HIV-1. Excluding pregnancy wastages and those lost to followup, 105 sets of seropositive mothers and their children and 40 sets of seronegative mothers and their children (control) were followed monthly for 2 years.
Results. Of 227 seropositive women, 49 (21.6%) had PGL or ARC. Low birth weight was significantly encountered among infants born to seropositive women. During followup, 22 children died under age of 8 months; 14 with clinical AIDS. Remaining 83 children were retested at 8 months of age and 23 (27.7%) were seropositive. Thereafter, fewer children became seronegative and few others became seropositive. By 18 months of age, another 4 died with AIDS, 5 were terminally ill, 22 had ARC and 2 were asymptomatic seropositive. Thus, including those 14 who had died under 8 months of age with clinical AIDS, the perinatal transmission rate was 47/105 (44.8%). The mortality rate among infected children was 18/47 (38.3%) in first 2 years of life. Significant clinical features among infected children were failure to thrive (72.4%), anemia (20.7%), hepatosplenomegaly (20.7%), adenopathy and candidiasis (6.9%).
Conclusions.1.Perinatal transmission occured in 44.8%; 93% developed illness.

W.A.P.51

PERINATALLY ACQUIRED HIV INFECTION AND THE RISK OF VERTICAL TRANSMISSION IN RIO DE JANEIRO - Brazil.

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Objective: To study the natural history of perinatally acquired HIV infection and evaluate the risk of vertical transmission.
Methods: The study comprised 10 HIV infected pregnant women (positive both at ELISA and IF) who were admitted to our Hospital from June 1986 to December 1988. Clinical classification was based on CDC criteria. Children were examined shortly after delivery and at 3-monthly intervals.
Results: Mothers were 20 to 41 years of age (28,8 ± 7,4), 6 (60%) were white and 4 (40%) non-white. Risk factors were as follows: 6 (60%) IVDU, 2 (20%) had a history of blood transfusion and 2 (20%) had bisexual partners. Eight (80%) were classified as group II, 1 (10%) as group III and 1 (10%) as group IV. One mother died during gestation and one delivered a stillborn. From the 8 children born, 5 (62,5%) were male and 3 (37,5%) were female. Mean ± SD birthweight was 2826,6 ± 725,8 g (1600 to 3580g). Mean gestation was 38,9 ± 4,4 weeks (31 to 42 weeks). Six (75%) had positive anti-HIV antibody tests and 2 (25%) were negative at birth. All children were well clinically at delivery. We observed congenital abnormalities in the fetus from the mother who died during gestation. At the end of study, 2 (25%) were still negative after 15 months, 4 (50%) were positive but had less than 15 months of follow-up, 1 (12,5%) had asymptomatic infection and 1 (12,5%) developed AIDS. The 2 non-infected children were born by vaginal delivery and were breast-fed.
Conclusions: Our data suggest that: a) Perinatal HIV transmission does not appear to affect weightbirth and gestational age. b) Mode of delivery and breastfeeding do not appear to affect the rate of vertical transmission. c) We could not yet estimate the rate of vertical transmission, since only 4(50%) children have reached 15 months of age.

W.A.P.52

HIV-ISOLATIONS IN PREGNANT WOMEN AND THEIR OFFSPRING

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Objective: To study the relationship between HIV-viremia in pregnant HIV-positive women and HIV-transmission to the child or foetus.
Methods: From HIV seropositive women, heparinized blood was drawn at the time of abortion for HIV-isolation from plasma and peripheral blood mononuclear cells (PBMC). The aborted foetus was subjected to HIV-isolation. In seropositive women who continued their pregnancy HIV-isolation was performed similarly at gestation weeks 12,20,36, after partus, and six months later. The children were tested by isolation during the first week of life, at 6,12,18 and 24 months of age. Whereas all children were tested around birth few have been followed the whole period of 2 years.
Results:

No of pair of		HIV-isolation in the woman from plasma	PBMC	either	or in the child/foetus any site
women and child:	7	5/7	5/7	6/7	0/7[1]
women and foetus:	7	3/6	4/7	5/7	1/7[2]
Total:	14	8/13	9/14	11/14	1/14

1) HIV was isolated at 6 months of age in plasma in 1 child. 2) HIV was isolated from brain.

Conclusion : Despite the high rate of viremia during pregnancy there was no virus recovered from the neonates and from only one foetus.

Progression de l'infection à la maladie
Progression from Infection to Disease

W.A.P.53

FOLLOW UP OF HIV-INFECTED HOMOSEXUALS WITH LYMPHADENOPATHY SYNDROME (LAS).

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OBJECTIVE: To look for the incidence of developement of AIDS in a cohort of homosexual men with LAS.
METHODS: Between 1982 and 1984 26 homosexual men were examined clinically and immunologically, inclusive a lymphnode biopsy. Epidemiological factors, clinical symptoms and immunological parameters were correlated to the clinical outcome.
RESULTS: The 26 homosexuals were prospectively observed over a period of 58 months (median, range 53-69 months). None of the patients was treated with HIV-specific therapies. 16 (61.5 % developed full blown AIDS within a median period of 41 months (23-63 months). 12 of them died 50 months (median, range 29-67 months) after the first examination. 10 patients showed no symptoms of AIDS after a median observation time of 57 months (54-63 months). A decreased proportion of CD4-cells and a lower CD4/CD8-ratio in the lymphnode suspensions at the first examination in patients with disease progression were the only parameters which correlated with the development of AIDS.
CONCLUSION: The incidence of AIDS is rising continuously with increasing observation time.

W.A.P.54

RISK OF AIDS IN PATIENTS WITH HERPES ZOSTER, PGL OR 'OTHER' FEATURES OF ARC.

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Objective.To study the risk of developing AIDS in patients presenting with herpes zoster, PGL, or those with 'other' features of ARC.
Methods.Three cohorts of patients at University Teaching Hospital in Lusaka were followed for periods varying from 6 to 40 months: I. 212 with herpes zoster;II. 200 with PGL; III. 168 with 'other' features of ARC like diarrhoea, fever, weight loss, cough etc. All patients were confirmed seropositive for HIV-1 using Immunofluorescent assay. Using patient-months of observation as the denominator, rates of progression to AIDS among cohorts were extrapolated.
Results.Of 212 herpes zoster patients, 62 (29.7%) progressed to AIDS. By comparison, 19 (9.3%) of 200 PGL patients and 17 (10.1%) of 168 patients with 'other' features of ARC also progressed to AIDS. Age, sex, number of sexual partners, past STDs etc were not significantly different among the cohorts. The rate of progression to AIDS per 12 patient months were:

	Months of Observation			
	1-10	11-20	21-30	31-40
Herpes zoster	0.49	0.24	0.21	0.19
PGL	0.18	0.06	0.07	0.09
'Other' features	0.15	0.15	0.25	——

Conclusion. The fast rate of progression of patients with herpes zoster to AIDS suggests that it is an indicator of poor prognosis.

W.A.P.55 INCIDENCE OF AIDS IN SPANISH HIV INFECTED PATIENTS

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OBJECTIVE. To describe the incidence of AIDS (CDC criteria of August 1987) among persons infected with the HIV in Barcelona (Spain) where drug addicts are the most frequent risk group and tuberculosis the most common initial manifestation of AIDS.
METHODS. A total of 2100 people who were at high risk for AIDS, had enrolled in cohort studies of homosexual men, parenteral drug users and hemophiliacs before december 1986. A total of 922 were either HIV seropositive at enrollment or seroconverted subsequently, and could be followed-up. 646 (70%) of the 922 were parenteral drug addicts.
RESULTS. The AIDS developed in 95 (10.3 %) during a median follow-up period of 30 months (range 12 to 72 months). Using actuarial survival calculations, the estimated 6-year cumulative incidence of AIDS among all HIV seropositive subjects was 23 % (range 14% to 44%; 95% confidence interval). Among the homosexuals, drug addicts and hemophiliacs cohorts the incidence at 6 years was 15%, 15% and 32% respectively (P>0.05). Comparing the survival functions the risk of developing AIDS was significantly greater among those presenting with, or developing during the follow-up period, a disease included in the CDC stages IV A and IV C-2 (P<0.0001).
Conclusion. The risk of AIDS development after 6 years of HIV infection was 23% and the progression rate among drug addicts was not significantly different than the progression rate of male homosexuals or hemophiliacs.

W.A.P.56 NATURAL HISTORY OF HIV INFECTION IN WOMEN OF CHILD BEARING AGE IN UGANDA.

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Objective: To determine the morbidity and mortality rates associated with HIV infection among women of child bearing age.

Methodology: 87 HIV Seropositive mothers were recruited from an antenatal clinic at Nsambya Hospital in Kampala City. These were prospectively followed up at monthly intervals for 0 - 35 months.

Results: During the follow-up period most of the women had delivered twice, 4 mothers had died, 3 of whom had enteropathic AIDS (SLIM), 1 had neuropsychiatric manifestations, 41 are still being followed-up out 4 of whom currently have ARC/AIDS was 5.9% per year. The rate of progression in this cohort of women who delivered children and lactated is comperable to what has been found for the general population in other studies elsewhere.

Conclusion: From this study pregnancy and lactation did not accelerate the rate of progression to ARC/AIDS.

W.A.P.57 DEFLECTION OF AN AIDS PROGRESSION CURVE IN A GAY COHORT

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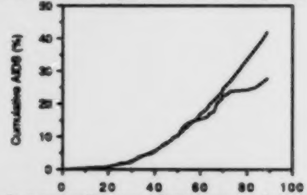
To study patterns of AIDS progression, we fit a Weibull distribution to the first 60 months of AIDS progression in a cohort of 351 HIV+ men [233 seroprevalent (SP); 118 seroincident (SI)]. We first estimated 18 months of lead time for SP based on laboratory parameters and by comparing with SI. The model was then fit (lambda=0.009; β=2.75), extended to 88 months, and graphed with the actual progression as below.
The model (upper curve) gives rise to projections that agree with published studies. The actual progression (lower curve) deflected away from the model after 60 months. The observed Kaplan-Meier progression at 88 months was only 28% (whereas 42% was predicted by the model).



AIDS progression in a seropositive gay cohort appears to have deflected from a Weibull distribution. We speculate this may be an early effect of the wider use of zidovudine. Drug effects will have to be accounted for in natural history studies and in epidemiologic projections.

W.A.P.58 PROGRESSION TO AIDS IN COHORTS OF SEROPREVALENT AND SEROINCIDENT GAY MEN: RESULTS AT 6 YEARS

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Objective. To determine the rate of progression to AIDS in a cohort of seropositive gay men stratified by those who were seropositive at entry and those who seroconverted under study.
Methods. We identified all seropositive subjects in our prospective study who completed at least 2 visits during the period 11/82 to 12/88. This group was divided into seropositives at entry (seroprevalent: SP) and those who seroconverted under observation (seroincident: SI). AIDS was diagnosed in this cohort according to CDC criteria. Methods of survival analysis were used to calculate progression rates to AIDS. Kaplan-Meier estimates of cumulative progression were calculated as were actuarial annual attacks rates, namely the conditional probability of AIDS among those AIDS-free at the beginning of the year. Cox regression was used to model predictors.
Results. A total of 351 seropositive subjects were included in the analysis (233 SP, 118 SI). The median lengths of observation while seropositive were 62.0 mos (range=1-72) for SP and 49.5 mos (range=10-69) for SI. A total of 69 cases of AIDS were observed (59 SP; 10 SI). Product limit estimates of cumulative progression were 28.7% (±3.5) for SP at 72 months and 11.1% (±3.4) for SI at 60 months. The annual AIDS attack rates for the first 6 years in SP were 2.1%, 3.9%, 7.8%, 5.3%, 9.0% and 5.2% respectively; and 0.0%, 1.0%, 3.0%, 6.0% and 2.1% for the first 5 years in SI respectively. CD4 counts, C1q binding, and IgA levels independently predicted AIDS.
Conclusion. Progression by 5 years in SI, a true inception cohort, is estimated to be about 11%. SP appears to have a mean lead time infection period of about 18 months. The drop in annual attack rate seen in the final year in both SP and SI could be due to reporting delay but we speculate it is more likely due to recent wider use of zidovudine.

W.A.P.59 PROGRESSION OF HIV DISEASE AMONG INTRAVENOUS DRUG ABUSERS (IVDA): A THREE-YEAR PROSPECTIVE STUDY.

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Objective. To determine the progression rate of HIV disease among IVDA. **Methods** Between 1984 and 1987, a prospective evaluation of 319 IVDA was made. 103/319 (32%) were HIV seropositive (Elisa with Western Blot confirmation) and 68/319 (21%) were affected by PGL, 31 (10%) of whom without systemic symptoms (group III of CDC classification), 27 (8%) and 10 (3%) with systemic symptoms classified IV A and IV E respectively. Only 159/319 (50%) were followed regularly for a median duration of 14 months (range 1-38), and are the object of this evaluation. **Results.** At first clinical examination 87 were HIV negative and 72 HIV positive, and of the latter group none had full-blown AIDS, 40 were symptomatic and 32 asymptomatic. Progression of HIV disease is documented in the Table

	HIV- (N°87)	HIV+ (N°72)
Seroconversion	5/87 (6%)	-
Disease progression: asymptomatic → symptomatic	0	11/32 (34%)
symptoms worsening:	0	15/40 (38%)
AIDS	0	4/40 (10%)
O.I. (C2)	0	8/40 (20%)
symptoms	0	3/40 (8%)

Conclusion. After a median follow-up of 14 months, 5/87 (6%) of previously HIV negative IVDA seroconverted, and 4/72 (6%) of HIV-seropositive developed full-blown AIDS. In addition, despite educational efforts, a large number (60%) of HIV positive IVDA still exchange syringes and needles and only a few (17%) use condoms.

W.A.P.60 DEVENIR DE SUJETS INFECTES PAR LE V.I.H. : PREMIERS RESULTATS D'UNE SURVEILLANCE HOSPITALIERE.

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** Centre Hospitalier Régional Universitaire (CHRU), Bordeaux, France.

Objectif. Un système de surveillance épidémiologique a été mis en place au CHRU de Bordeaux. Il permet d'étudier l'évolution clinique des sujets infectés par le V.I.H.
Méthodes. Les services hospitaliers participants incluent les patients séropositifs depuis 1985. A chaque consultation, les données sont recueillies sur un questionnaire standardisé, puis sont rendues anonymes et informatisées. La classification utilisée est celle des Centers for Disease Control. Les probabilités cumulées d'atteindre le stade IV ou le stade SIDA sont calculées par la méthode de Kaplan-Meier.
Résultats. Au 10 octobre 1988, 648 adultes séropositifs ont été inclus. Parmi ceux-ci, 253 patients classés stade II ou III à l'inclusion ont été revus au moins une fois et leurs données sont analysées. 75% sont des hommes. Le groupe à risque élevé le plus représenté est celui des homo/bisexuels (42,5%) chez les 190 hommes et celui des toxicomanes IV (53,3%) chez les 63 femmes. La proportion de transfusés est de 17,2% dans les deux sexes (incluant 8% d'hémophiles). Les sujets de ce groupe ne diffèrent pas des autres patients inclus dans la cohorte en termes d'âge, de sexe et de groupe à risque. Leur probabilité cumulée d'atteindre le stade IV est de 11,1% après 12 mois (IC à 95% : 6,2%-16%) et de 18,7% après deux ans de suivi (IC à 95% : 10,5%-29,2%). Leur probabilité cumulée d'atteindre le stade SIDA est de 7,5% après 12 mois (IC à 95% : 2,7%-10,1%) et de 12% après deux ans de suivi (IC à 95% : 3,4%-20,6%). Les sujets ayant atteint le stade IV (n=30) sont des toxicomanes IV dans 56% des cas et des transfusés dans 24% des cas.
Conclusion. Les données actuellement recueillies sur le devenir des sujets infectés par le VIH sont comparables avec celles de la littérature. La mise en place de ce système de surveillance épidémiologique de l'infection par le V.I.H semble importante pour évaluer le temps de passage des sujets asymptomatiques vers le stade IV et le stade SIDA. De plus, ce système permet de déterminer les sujets éligibles pour définir et étudier de nouvelles stratégies thérapeutiques.

W.A.P.61 RISK ESTIMATES OF AIDS IN HEMOPHILIACS

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Objective. To estimate the proportion of HIV-infected adult and juvenile hemophiliacs who will eventually develop AIDS and to evaluate the uncertainties in these estimates.
Methods. A mixed Weibull survival model was fit to AIDS incidence data from 328 hemophiliacs whose dates of HIV seroconversion were known, including 33 AIDS cases among 174 adults (age at seroconversion >21) and 11 AIDS cases among 154 children. No intermediate markers such as T4 counts were analyzed. The AIDS-free survival distribution was given by F(t)= p * exp(-λ*t**γ) + 1-p. The proportion p who will ever develop AIDS was estimated from its profile likelihood together with confidence intervals.
Results. For adults, the profile likelihood was very flat, and indeed one could not strongly reject the possibility that p=1. However, our best estimate of p was .34 with 95% confidence interval (.22,1.0). Results for children were similarly uncertain, with an estimate of p=.13 with 95% confidence interval (.07,1.0). For all 328 hemophiliacs combined, our best estimate of was p=.24, with a 95% confidence interval (.16,.66).
Conclusion. Our data yield very imprecise estimates of the proportions who will ever develop AIDS and certainly do not demonstrate that all HIV-infected hemophiliacs will develop clinical disease. Indeed, our estimates of p are much lower than those reported for studies of homosexual men.

W.A.P.63 FOLLOW-UP OF A COHORT OF EX IVDAs RESIDENT IN THERAPEUTICAL COMMUNITIES IN ITALY.

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Objectives. To describe the natural history of HIV infection in ex IVDAs not longer exposed to intravenous drugs and to assess cofactors in the progression of the infection.

Methods. During 1988 all 2,428 residents in the 75 therapeutical communities (TC) cohordinated by Comunità Incontro were clinically evaluated and tested for HIV. Risk factors for HIV infection were assessed by face to face interviews using a structured questionnaire. For those who were HIV seropositives a prospective follow-up was initiated while clinical and serological retrospective data were actively searched.

Results. All 2428 residents were tested for HIV and 1392 (57%) were found repeatedly positives. Complete retrospective data are available for 710 (52.3) HIV +ve subjects, median follow-up 12.5 months (range 3-41 months). No AIDS cases were admitted at the TC and no AIDS cases occurred in the cohort during 1988. 508 (71.5%) subjects were asymptomatic at first visit and still such at last recall. The remaining 202 (28.5%) subjects were symptomatic either with persistent generalized lymphadenopathy or with constitutional disease or both. During the follow-up period 98 subjects (48.5% of the symptomatic) showed no signs of progression or regression, 58 subjects (28.7%) showed clear signs of improvement, while the remaining 46 subjects (22.8%) showed clinical regression. A complete analysis will be presented at the conference.

Conclusion. Former intra venous drug users infected with HIV infection, living in a semi-closed conditions do not seem to show a faster progression to AIDS than other groups. However it is still to early to say whether HIV +ve residents in TCs have a better prognosis than others.

W.A.P.65 NATURAL HISTORY OF HIV-1 INFECTION FOLLOWING PREGNANCY

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Objective: To study the influence of pregnancy on HIV-1 disease progression.
Method: Women attending a maternity hospital in Nairobi, Kenya were screened for HIV-1 Ab at delivery. HIV+women were enrolled in a prospective cohort study and followed for HIV related illness.
Result: One hundred and twenty eight HIV+ women were enrolled and followed for a mean of 10(range 1-28)months. At enrollment, 115(90%) women were asymptomatic (AS)and 13(10%)had systemic disease(SD):6 chronic pruritic rash (R),1 hairy leucoplakia & R, 5 Herpes zoster(Z),1 Kaposi sarcoma(KS). Using survival analysis, the cummulative proportion(CP)of AS women developing SD or dying was 21%:3 died of HIV related illness at a mean of 4.7(range 0.5-9) months, 5 had Z at 19.6(range 12-28)months,3 developed chronic oral and/or vaginal candidiasis at 16.5(range 12-24)months, and 1 developed R at 6 months. Four initally AS mothers delivered second infants and remained asymptomatic at 25.5(range 24-27)months. Of the 13 women with SD at delivery a CP of 51% had progression of HIV disease or died:2 died of AIDS (1 KS, 1 wasting illness at 7 months each), and 2 developed additional manifestations of HIV (R with oral & vaginal candidiasis at 7 months, oral candidiasis at 1 month).
Conclusion: In this cohort of women, by survival analysis one fifth of initially asymptomatic women progressed to HIV related illness/death within 2 years after delivery, and one half of the women with systemic disease at delivery had further progression of HIV disease or died within 9 months.

W.A.P.62 Enhanced prediction of AIDS in HIV sero-positive asymptomatic men: Relative Value of 8 Cellular and Serologic Markers Singly and in Combination.

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Objective: To evaluate 8 cellular and serologic markers singly and in combination for their ability to predict the occurrence of AIDS within 4 years.
Methods: CD4 T cell number, percent, and CD4/CD8 ratio were determined by flow cytometry. Serum neopterin, beta-2-microglobulin (B2M) soluble IL-2 receptor (sIL-2R), IgA, and p24 HIV antigen were determined by serologic tests. The relative hazard from abnormal levels of these were calculated using the proportional hazards model. A random sample of 395 individuals were chosen from 813 seropositive individuals, participating in the Los Angeles Center of the Multicenter AIDS Cohort Study and were followed for 4 years or until the diagnosis of AIDS.
Results: CD4/CD8 ratio and CD4 T cell percent were reduced and/or serum neopterin levels were elevated in more than half of the subjects (outside the normal 10th-90th percentile range). Reduced CD4 T cells (number, percent or ratio) was the best single predictor of AIDS. Neopterin and B2M are similar in their predictor ability and slightly less good than CD4. Neopterin appeared to be slightly better than B2M. IgA and sIL-2R both have predictive ability but not as strong as neopterin or B2M. Neopterin, B2M, sIL-2R, IgA, and p24 antigen all have statistical significance independent of CD4, i.e., they add to CD4 predictive ability. Neopterin appears to add the most. In a stepwise procedure the following variables were chosen in order: CD4/CD8 ratio; neopterin, IgA, sIL-2R, antigen.
Conclusion: These studies indicate that measurements of multiple parameters reflecting different facets of HIV infection add to predictive value regarding the occurrence of AIDS. The most important measurements were CD4 T cell levels (ratio, percent, or number) and serum neopterin or B2M. Soluble IL-2R, IgA and p24 antigen, can be useful but do not add appreciably if the other measurements are made.

W.A.P.64 AIDS YEARLY INCIDENCE IN 1984 HIV SEROPREVALENT COHORT: NO DEFINITE TREND 1985-1988

Visscher, Barbara R.; Jacobson, L.; Detels, R.; Dudley, J.; English, P.; Chmiel, J.; Ho, M.; and Polonicek, J.G. Multicenter AIDS Cohort Study, Los Angeles, California, U.S.A.

Objective: To observe temporal trends in the incidence of AIDS in a cohort of seropositive men.
Methods: Approximately 1870 homosexual men seropositive on 1984 enrollment in the Multicenter AIDS Cohort Study (MACS) have been followed for progression to AIDS. Excluding the first semester which was incomplete, and the last semester for which reporting is not yet finished, the semi-annual incidence rates per 100 person semesters of follow-up were calculated for each center and for the MACS as a whole.
Results: Incidence of AIDS in Seropositives by Semester:

Semester	AIDS cases	Person semesters (PS) at risk	AIDS inc. per 100 ps	AIDS Incidence by Center Balt	Chi	LA	Pitts
1/85-6/85	28	1651	1.7	0.9	1.5	2.3	1.1
7/85-12/85	60	1607	3.7	3.8	3.9	3.8	3.2
1/86-6/86	64	1500	4.3	4.3	5.1	4.3	2.3
7/86-12/86	45	1391	3.2	2.1	3.8	3.9	1.9
1/87-6/87	73	1273	5.7	4.8	7.4	5.5	5.2
7/87-12/87	37	1201	3.1	5.2	1.9	2.8	2.8

Conclusion: The AIDS incidence in seropositive men differs by center, but there is no clear increasing trend over this period of time.

W.A.P.66 THE PROGNOSIS OF ASYMPTOMATIC HIV INFECTION: THE UNITED STATES ARMY THREE YEAR EXPERIENCE.

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Department of Retroviral Research, Walter Reed Army Institute of Research, Rockville, MD, U.S.A.

Objective. To describe the natural history of early HIV infection and delineate prognostic parameters. Methods. Early diagnosis of HIV infection is the standard of medical practice in the US Army. All HIV seropositive individuals are clinically evaluated and staged per the Walter Reed Staging Classification. Revaluation occurs at 3-12 month intervals. Results. To date 1950 individuals have been enrolled including over 1200 with follow up visits greater than 1 year.

Initial Stage	N	FOLLOW UP STAGE WR1	WR2	WR3	WR4	WR5	WR6	DEATH
WR1	447	48%	28%	12%	5%	5%	1%	0.2%
WR2	479		66%	19%	6%	8%	1%	0.6%
WR3	186			65%	15%	16%	3%	3%
WR4	53				57%	28%	11%	4%
WR5	49					49%	29%	22%

Progression of asymptomatic HIV infection to clinical immunodeficiency correlated with CD4 count, DTH skin reactivity, and initial WR stage of infection and duration of follow up. Life table analysis for each variable independently and in combination will be presented.
Conclusion. All asymptomatic HIV seropositive adults can be clinically classified by the Walter Reed Staging Classification providing important prognostic information. Wide scale clinical application is feasible as demonstrated in the US Army Health Care System.

W.A.P.67

ESTIMATION OF MATURITY OF HIV-1 INFECTION IN SUBGROUPS OF SEROPREVALENT COHORT OF HOMOSEXUAL MEN. Muñoz, Alvaro; Carey V; Saah A; Chmiel J; Detels R; Kingsley L; Van Raden,M. for the Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Objective. To compare infection times of a prevalent seropositive cohort of homosexual men according to geographic location, ethnicity and age. Methods. By matching values of hematological variables of seroprevalent individuals at entry into the MACS with those observed in follow-up of seroconverters, we estimated the length of time each seroprevalent had been infected prior to entry. Bootstrap methods incorporating uncertainty of the imputation procedure were used to compare maturities of infection in MACS subcohorts. Results. The subcohort of 1744 seroprevalent homosexual men in MACS was enrolled between 4/84 and 4/85. Hematological variables were provided by 1717 (98.5%). Percentages of the seroprevalent cohort whom we estimate seroconverted by the beginning of 1979,'80,'81,'82,'83,'84, and '85 were 0.3%, 1.1%, 4.0%, 15.6%, 40.9%, 79.3% and 99.9% respectively. The median times from seroconversion to entry for those enrolled in Pittsburgh (N=186), Baltimore (N=331), Chicago (N=443) and Los Angeles (N=757) were 14.4, 15.1, 15.4 and 15.8 months respectively. Non-hispanic black (N=77) seroprevalent participants had a median time since seroconversion of 16.4 months compared to 15.3 months for non-hispanic whites (N=1484). Mean age of the cohort was 32.9 years (SD=6.6). Older age was associated with longer infection times prior to entry. None of the comparisons was statistically significant. Conclusion. We estimate that half of the seroprevalent cohort of the MACS enrolled in mid-1984 was infected before the beginning of 1983. The data suggest that infection with HIV-1 occurred at approximately the same calendar time in demographic subgroups of this sample of seroprevalent homosexual men.

W.A.P.68

AIDS-FREE TIME AFTER HIV-1 SEROCONVERSION IN HOMOSEXUAL MEN ACCORDING TO DEMOGRAPHIC SUBGROUPS. Muñoz, Alvaro; Bass S; Saah A; Chmiel J; Taylor J; Kingsley L; for the Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Objective. To compare the AIDS-free time after seroconversion in homosexual men according to geographic location, ethnicity and age. Methods. We combined statistical information provided by 1637 (330 AIDS) seroprevalent (SP) homosexual men and 267 (17 AIDS) seroconverters (SC). Unknown times since seroconversion of the SP cohort were estimated using hematological variables provided at baseline (Muñoz, et al.,IV IAC). An extension of Cox regression to incorporate truncation was used to estimate relative hazards. Precision was assessed by bootstrap methods. Results. The 1637 SP individuals were enrolled in mid-1984 and we estimated a median infection time of 15 months prior to entry. The 267 SC had a median follow-up time of 32 months. Relative hazards (RH) and 95% confidence intervals (CI) were:

	N	AIDS	RH	95% CI
Pittsburgh	232	34 (14.7%)	1.00	
Baltimore	378	72 (19.0%)	1.04	(0.69-1.59)
Chicago	489	91 (18.6%)	1.16	(0.73-1.71)
Los Angeles	805	150 (18.6%)	1.04	(0.75-1.51)
Non-hispanic black	89	12 (13.5%)	1.00	
Non-hispanic white	1651	308 (18.7%)	1.16	(0.65-2.49)

Older age was significantly ($p<0.05$) associated with shorter AIDS-free time (RH for 10 years increment=1.22,95%CI=1.02-1.42). Conclusion. In this sample of homosexual men, AIDS developed at the same time for different geographic locations and different ethnic groups. Older individuals have shorter AIDS-free time after seroconversion. Due to the small sample of blacks, ethnic differences cannot be ruled out.

W.A.P.69

STATISTICAL MODELS FOR ASSESSING FEEDBACK: AN ANALYSIS OF BEHAVIOR AND IMMUNE FUNCTION IN THE MULTICENTER AIDS COHORT STUDY.

Zeger, Scott L.; Liang KY; Park L; Fox R; Kingsley L; Taylor J; Chmiel J; Kaslow R, for the Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Objective. In a feedback (FB) system, an outcome variable affects a second which subsequently affects the first. Statistical methods are developed for FB systems and for assessment of whether immune function (%CD4 deficit), and behavioral variables, in particular unprotected anal receptive intercourse (UARI), are part of such mechanisms.
Methods. Linear regression models developed for longitudinal data describe the deficit in %CD4 for HIV-1 seropositive men relative to seronegatives from the same MACS-site and time period as a function of sexual practices, and covariates such as drug use and other infections. The probability of UARI in a 6-month interval is then modelled using a logistic regression for longitudinal data as a function of %CD4 deficit at the beginning of the interval, previous sexual practices and other covariates. Constraints on the coefficients in these 2 simultaneous regression models are derived.
Results. Men who had more UARI, more sexual partners and used recreational drugs in the previous year had relatively fewer CD4 cells. The rate of UARI decreased dramatically during the follow-up. Controlling for time dependence and for other covariates, UARI during an interval was more likely among men with relatively higher CD4 cells at the beginning of the interval.
Conclusion. These data are consistent with the existence of a FB mechanism in which unprotected anal receptive intercourse during an interval is associated with an increased loss of %CD4 cells at the end of the interval which in turn is associated with a lower frequency of unprotected anal receptive intercourse in the next interval.

W.A.P.70

SURVIVAL AND TIME OF PROGRESSION TO AIDS AMONG PATIENTS AT GAFFRÉE & GUINLE UNIVERSITY HOSPITAL, RIO DE JANEIRO, BRAZIL.

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Objective: To estimate the time required for progression to AIDS among adult patients with Persistent Generalized Lymphadenopathy (PGL) and survival following the diagnosis of AIDS.
Methods: We evaluated 97 PGL patients seen at Gaffrée & Guinle University Hospital, Rio de Janeiro, Brazil, from Dec 1, 1983 to Dec 31, 1988 for survival following AIDS diagnosis and time of progression to AIDS following PGL. Survival parameters were estimated using product-limit function.
Results: 97 PGL patients with mean age 32,28 (± 7,99), comprising 87 (89,7%) males and 10 (10,3%) females, 80 (82,5%) whites and 17 (17,5%) blacks, 81 (83,5%) homo/bisexual men, 8 (8,2%) female partners of bisexual men and 8 (8,3%) others/undetermined. 30,0% of the patients progressed to AIDS mean time of 43.9 ± 2.02 months while the median time was 57 months. Among the 27 patients with AIDS 40,7% had died by Dec 1988 with mean survival time of 13.5 ± 1.5 months and median survival of 19 months, 40% of the patients survived for more than 35 months. In addition, 88 asymptomatic HIV infected patients, with unknown time of infection, were regularly followed and time of progression to AIDS was assessed. Nine (10,2%) patients progressed to AIDS with mean time of 22.1 ± 0.7 months, as diagnosed at the first visit.
Conclusion: Our data support the high proportion of progression to AIDS after initial symptoms and the high letality as observed in other studies.

W.A.P.71

NATURAL HISTORY OF HIV INFECTION IN A COHORT OF INTRAVENOUS DRUG USERS (IVDUs): A FIVE YEARS PROSPECTIVE STUDY.

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Objective: To determine seroconversion rates, clinical progression and AIDS incidence in a longitudinal study of HIV infection among intravenous drug users (IVDUs).
Methods:From June 83 to June 88, 442 non-AIDS IVDUs were enrolled in a prospective study that included: HIV antibodies (Ab) tests (EIA) and phisycal exams at baseline evaluation, and followed-up every 6 months.
Results: 133/442 (30%)of IVDUs enrolled were seronegatives (SN) and 309/442 (70%)were seropositives (SP); 178/442 (40.2%) patiens were followed for a mean of 18 months and rest were controlled just one.
Among SN, 38 out of 133 (28.5%) were followed-up ; 10 out of 38 (26.3%) had seroconverted after keeping seronegatives for a mean of 15.8 months. 28 out of 38 cases still SN after a mean of 18 months (p=NS).
Clinical status: At entry, 87/309 (28.1%) patiens were asymptomatic (Group II); 151/309 (48.8%) had PGL (Group III) and 71/309 (22.9%) had ARC (Group IV).
145 out of 309 HIV infected (non-AIDS) had been followed-up for a mean of 17 months; 37/136 (27.2%) showed clinical progression of the disease.
Conclusion: Data suggest a high prevalence of HIV infection, substantial rates of seroconversion and clinical progression. The small number of cases who developed full-blown AIDS could be due, among others, to the fact that this infection is of later appearance in our area.

W.A.P.72

PROBLEM-ORIENTED DATA COLLECTION FOR NATURAL HISTORY STUDIES OF HIV-INFECTED PATIENTS

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Objective. To develop a method for data abstracting, indexing, & classification of clinical and laboratory manifestations from HIV+ patients. Methods: An integrated, dictionary-driven database has been used to register patients, record admission episodes, 'problems' (which include diagnoses), and problem management on patients referred to the Special Immunology Service, VAMC. Problems are indexed using a comprehensive preferred terminology of 5,400 problems, 7200 procedures and 2,500 symptoms and signs. The problem dictionary is cross-referenced with ICD-9-CM for statistical aggregation, and with SNOMed for indexed retrieval on lower level medical concepts. The database is being used to measure the incidence of clinical manifestations over time and to compare them among risk groups. Statistical clustering methods and graphical display methods for viewing coded data are used to analyse and review the clinical manifestations. Patients are classified and staged using algorithms written in statistical programming languages.
Results: To date, 781 patients have been registered. There have been 1,505 admissions with 3345 problem mentions entered. Tabular and graphical displays demonstrate the methods used.
Conclusion: Problem-oriented medical record databases provide a useful alternative to pre-coded form-based checklists for thorough data acquisition and study of HIV-related clinical manifestations.

W.A.P.73

PROGRESSION OF HIV1 DISEASE IN A POPULATION OF SEROPOSITIVE NAVY AND MARINE CORPS PERSONNEL.

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Objective. To determine the rate of HIV1 disease progression (prog) in screened seropositive active duty military personnel.
Methods. We have evaluated 517 HIV1 seropositive personnel with serial evaluations. 159 patients were evaluated at 9 to 15 months (1 year) and 67 patients were seen at 21 to 27 months (2 years). Each evaluation was point staged using the Walter Reed classification based on the clinical data for that visit alone.
Results.

	1 YEAR			2 YEARS		
Initial Stage	N	%Prog	% AIDS	N	%Prog	% AIDS
1 - 2	115	22	0	45	42	2
3 - 4	32	18	0	18	39	11
5	5	60	60	4	75	75
All Stages	159	20	2	67	43	9

Conclusions. There was 43% progression in Walter Reed stage and 9% progression to AIDS at 2 years in this population sample. There was an average T4 cell decline of 50±176 cells per year with a normal distribution about the mean. For patients with T4 cell counts between 600 and 200 cells the rate of decline was essentialy linear ranging from 60 to 82 T4 cells lost per year in each T4 interval examined.

W.A.P.74

PROSPECTIVE MULTICENTER COHORTSTUDY IN HOMOSEXUAL MEN IN FRG. A 4-YEAR FOLLOW UP: EPIDEMIOLOGICAL RESULTS.

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Federal Republic of Germany

Objective: To evaluate the natural course of HIV-infection.

Methods: In 1984 a prospective multicenter cohortstudy was started in FRG. A total of 771 homosexual men were recruited in 7 centers in metropolitan areas. At time of enrollment 432 (56 %) men were positive to HIV-antibodies, 25 of these had full blown AIDS. Cohortmembers are examined twice a year.

Results (Selection): 75 of the HIV-infected homosexual men developed AIDS during time of observation. The incidence of AIDS was a constant 5% per year. For only 2 cases with AIDS the time of infection is known. To gain a better figure of the course of HIV-infection and the time of latency, we calculated the probability, that CD4-cell counts fall below certain limits. On the basis of these calculations a model was developed which allows the prognosis of the development of HIV-disease in the cohort: 12 - 13 years after HIV-infection 80% of the infected individuals will have less than 300 CD4+ cells/ul.

Discussion: The beginning (time of infection) and the end (AIDS/death) of the course of HIV-infection is not known for the vast majority of HIV-infected individuals. A stochastic model on the basis of data from our cohort may help to gain a better understanding of the time course of HIV-infecton.

W.A.P.75

NATURAL HISTORY OF HIV INFECTION AMONG IV DRUG ABUSERS IN BASQUE COUNTRY

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Objective: To describe the natural history of HIV infection among IVDAs.

Methods: Of 350 IVDAs screened in 1985 for VIH, 227 (65%) were seropositive. Of these, 100 entered a follow-up cohort. After an initial evaluation, they were screened every 8 months. We present the preliminary data obtained at 32 months follow-up.

Results: In the initial study 85% were asymptomatic, 8% only presented some analytic alteration (anemia and/or lymphopenia and/or thrombocytopenia) and 7% had lymphadenopathic syndrome (LAS). After 32 months we evaluated 76 of them: 22 (28.9%) are asymptomatic; 27 (35.5%) are in group II with some analytic alteration; 11 (14.5%) are in group III, 9 (11.8%) of them with analytic alteration; and 16 are in group IV: 10 (13.2%) of them meeting AIDS criteria (group IV-C-1), 5 (6.6%) in group IV-C-2 and 1 (1.3%) in group IV-A. In 71% of patients the disease have progressed.
Considering the group of IVDAs who initially presented clinical or analytic alterations, 50% (6/12) developed AIDS and in 91.66% (11/12) the disease progressed. Of the patients originally asymptomatic, 6.25% (4/64) have developed AIDS and in 67.2% (43/64) the disease have progressed. We discuss the behavior of the clinical and analytic findings of these patients over the course of four screens.

Conclusion: We conclude by indicating that 13.2% of the group have developed AIDS and that the course of the disease is greatly influenced by the patient's initial clinic and analytic status.

Survie des personnes atteintes du SIDA
Survival of the AIDS Patient

W.A.P.76

DEGREE OF HIV-RELATED CNS INVOLVEMENT AND LONG-TERM SURVIVAL: PRELIMINARY RESULTS

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Twenty-three homosexual men at various stages of HIV-related illness and 6 seronegative men have been entered into a longitudinal study of HIV-induced CNS dysfunction. All subjects were given an initial (baseline) set of clinical, immunologic, CT and neuropsychological assessments and then re-assessed at 6 month intervals. Results indicate that ARC patients (IVa&b) are most cognitively impaired at the time of admission while AIDS patients (IV:C-1) show a wide diversity of impairment; however, there appears to be an inverse relationship between the extent of impairment at baseline and survival among AIDS patients (high impairment/short survival). Furthermore results indicate that CNS involvement precedes the development of AIDS (presentation with PCP) in many cases and that ARC patients have considerable CNS involvement despite the absence of opportunistic infection. In the majority of AIDS patients there is a progression of CNS involvement across assessments but 20% of patients may survive for over 2.5 years without significant CNS impairment; long-term survival may depend heavily on this relationship.

W.A.P.77

IMMUNOLOGIC AND VIROLOGIC DETERMINANTS OF SURVIVAL IN AIDS: ROLE OF CYTOMEGALOVIRUS, CD4+ AND CD8+ LYMPHOCYTES.

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Objective. To study virologic and immunologic characteristics of patients surviving over 1 year first AIDS-defining event.
Methods. Sixty patients admitted with AIDS to Eisenhower Medical Center have been followed and the survivors evaluated by serum p24 antigen,polymerase chain reaction and culture for CMV viremia, lymphocyte flow cytometry and ophthalmological examinations. Since 1987 the survivors have been treated with zidovudine and, since 1988, two also with human erythropoietin.
Results. All 24 patients with CMV retinitis have died (median survival of 166 days) and 28 of 36 patients without retinitis died (median survival of 302 days: Cox probability of survival in the 2 groups = 0.034). The survivors have been free of CMV retinitis (except for one patient with inactive retinitis), and have had undetectable HIV p24 antigenemia, median count of 60 CD4+ cells/mm^3, median count of 537 CD8+ cells/mm^3, and CD8+/HLA DR+ double-bearing cells ranging 126(13%) - 556(37.5%)/mm^3. The patients dying with disseminated CMV infection had 31-202pg/ml of HIV p24 antigen, 0-9 CD4+ cells/mm^3, and 2-174 CD8+ cells/mm^3. The survivors receiving zidovudine have been stable except for severe anemia in the two patients which was corrected by recombinant erythropoietin in one case.
Conclusions. Survival in AIDS is associated with absence of CMV dissemination and of HIV p24 antigenemia and with residual presence of CD4+ and CD8+ cells. Disseminated CMV infection is a major adverse prognostic factor in AIDS.

W.A.P.78

PREDICTORS OF SURVIVAL FOR AIDS IN BARCELONA(SPAIN)

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Objective. To analyze the predictors of survival of 289 AIDS patients from Barcelona (Spain) where the relative percentage of drugs addicts is high and tuberculosis the most common initial manifestation of AIDS.
Methods. All adults (older than 14 years) but five with AIDS reported to the local health authorities were available for a longitudinal follow-up. Age, sex, group of risk for HIV infection, AIDS manifestation at diagnosis and the date of diagnosis were the variables included in the univariate analysis (Kaplan and Meyer survival curves) and in the multivariate analysis (Cox regression model for censored survival data).
Results. 246 (85.1 %) were males and 25 (8.6 %) were older than 45 years. 154 (53.3 %) were parenteral drug addicts, 100 (34.6 %) male homosexuals and the remaining 35 (12.1 %)were categorized as other. 16 of these 35 were hemophiliacs. 96 AIDS-cases (33.2 %)presented with a form of extrapulmonary tuberculosis, 148 (51.2 %) with another opportunistic infection, 34 (11.8 %) with a Kaposi Sarcoma and the remaining 11 cases with a lymphoma. 31 (10.7 %) were diagnosed before 1986. The survival probability dropped to 50% 385 days after diagnosis of AIDS. In the univariate analysis the survival probability was significantly greater in those presenting with a tuberculosis ($p < 0.0001$), among the drug addicts versus the remaining groups ($p = 0.0003$), in those diagnosed in 1986 or later ($p < 0.001$) and in those younger than 45 years ($p = 0.0001$). The multivariate analysis selected the year of diagnosis, group of risk, age and the initial clinical manifestation as predictors of outcome. The best prognosis was for drug addicts younger than 45 years presenting with a tuberculosis. Conversely the worse prognosis was for male homosexuals, hemophiliacs or recipients of a contaminated blood transfusion, older than 45 years and presenting with a Kaposi Sarcoma or with an opportunistic infection other than a tuberculosis.
Conclusion. The estimated survival probability of AIDS patients is not uniform from one geographical area to another and the best prognosis was for drug addicts younger than 45 years whose initial manifestation of AIDS was an extrapulmonary tuberculosis.

W.A.P.79

PREDICTING IN-HOSPITAL MORTALITY FOR AIDS PATIENTS: A VALIDATED MODEL.

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Estimating prognosis for a hospitalized AIDS patient is essential for optimal clinical management. We developed a prediction model for in-hospital mortality using admission data abstracted from 128 patient admissions to the Royal Victoria Hospital (RVH). This model was subsequently validated on 62 patient admissions to the Montreal General Hospital (MGH).

Using univariate analyses, stepwise logistic regression analyses, and clinical judgment, we identified independent predictors of in-hospital death including serum albumin (ALB) (β = -1.32), serum lactate dehydrogenase (LDH) (β = +0.0047), and leukocyte count (WBC) (β = +0.27) (all p's<0.05). High, medium, and low-risk groups for in-hospital mortality were defined where the probability of dying was set at 100%, <100% to >5%, and ≤5% respectively. Using the resulting RVH regression scores and 2x2 contingency table analysis, we determined the cutoff scores that corresponded to the above risk groups. The validity of the RVH model was then tested by classifying admissions at MGH. In-hospital mortality for the high, medium and low-risk groups was 100% (2/2), 42% (10/24) and 14% (5/36) respectively.

We conclude that routine admission laboratory tests associated with inanition (ALB), pneumocystis pneumonia (LDH), and other infections (WBC) help predict the outcome of hospitalizing patients with AIDS.

W.A.P.81

IMPROVED SURVIVAL OF AIDS PATIENTS IN DALLAS, TEXAS AFTER 1986.

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Objective: To determine survival among AIDS patients in Dallas.
Methods: Diagnosed AIDS patients have been reported to the Dallas County Health Department since 1983. The registry has been maintained using standard methods; validation surveys verify the completeness of reporting. Survival analysis was performed using Kaplan-Meier product limit estimates.
Results: 1440 persons have been diagnosed with AIDS in Dallas between 1981 and 1988. Variables associated with survival include age at diagnosis, race, sex, and risk category. Among the 1044 homosexual males, aged 20-45, without a history of IV drug use, the median survivals for those diagnosed pre-1986, 1986, and 1987 are 305, 386, and 401 days, respectively; trends for 1988 indicate a longer median survival. The survival times for those diagnosed pre-86 were different from those for each of the other years (p<.01); the differences between the other years may have occurred by chance (p>.05).
Conclusions: There has been an improvement in AIDS patient survival. Potential reasons include "lead time bias" due to earlier diagnosis with the widespread use of HIV testing; antiviral therapy with AZT; or improved management of opportunistic infections. All three reasons may play a role in improved survival, but the effect for those diagnosed as early as 1986, before the widespread use of AZT, argues for lead time bias as an important factor.

W.A.P.83

SURVEILLANCE-BASED SURVIVAL ANALYSIS OF QUEBEC AIDS PATIENTS

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Objectives: To assess survival of AIDS cases following diagnosis and to evaluate survival determinants and trends over time.

Methods: The vital status of the AIDS cases reported to January 15, 1989 was assessed through on-going follow-up of cases. Life-table analysis (product limit method) and the Cox proportional-hazards analysis were performed.

Results: Of the 743 cases diagnosed, 359 were known to have died. The median survival time following diagnosis was 9.6 months; the cumulative probability of survival at one, two and three years was 41%, 16% and 9.8%, respectively. Univariate analysis showed that survival was significantly shorter for children than for adult cases (7.0 vs. 9.8 months, p = 0.02). Among adult cases, there were no significant differences in survival by sex or age at diagnosis. Median survival time was significantly shorter for those born in a Pattern II country (8.1 vs. 10.0 months, p = 0.04). AIDS-related diseases were the strongest predictors of survival. The diagnosis of Kaposi's sarcoma (KS) was associated with longer survival (median 12.4 months, p < 0.001). By multivariate analysis, independent significant decreases in survival were found for age at diagnosis ≥ 30 years (relative risk (RR) of death at any time of 1.34) and for AIDS-related diseases when compared with the diagnosis of KS (RR = 1.52, 1.37 and 2.29 for Pneumocystis carinii pneumonia, other opportunistic infections and other AIDS-related neoplasms and syndromes, respectively). There were no significant temporal trends in survival.

Conclusion: Active surveillance of AIDS cases permitted the evaluation of survival after diagnosis. Our study did not find shorter survival among females or temporal improvements in survival but confirmed the positive association of KS and a younger age at diagnosis with improved survival.

W.A.P.80

EFFECT OF MULTIPLE DISEASE MANIFESTATIONS ON LENGTH OF SURVIVAL FOR AIDS PATIENTS IN SAN FRANCISCO

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Objective. To evaluate the effect of multiple manifestations of AIDS-indicative diseases on length of survival.
Methods. We evaluated survival following AIDS diagnosis for 4524 patients reported in San Francisco between July 1981 and Dec. 31, 1987. Cases were followed at 6-month intervals from diagnosis to death. 10% of cases were lost to follow-up. The number of AIDS-indicative disease manifestations occurring within 3 months of initial diagnosis was calculated, and median survival was calculated separately for patients with 1, 2, and 3 or more disease manifestations using the Kaplan-Meier product-limit method.
Results. The median survival for all patients was 12.5 months, with a 3-year survival rate of 8.8%. Survival decreased significantly as the number of separate manifestations of AIDS-indicative diseases increased. This trend was consistent for all patients regardless of initial diagnosis.

Median Survival by Number of Disease Manifestations

Initial Diagnosis	1 Disease N	1 Disease Survival	2 Diseases N	2 Diseases Survival	3+ Diseases N	3+ Diseases Survival	p-value
KS	1030	17.0 mos	150	9.5 mos	30	5.3 mos	<.001
PCP	2144	13.2	326	9.1	57	7.6	<.001
OOI	591	8.8	165	6.8	--	---	<.05
Total	3765	13.5	616	8.8	112	6.8	<.001

Conclusion. The occurrence of multiple disease manifestations within 3 months of initial AIDS diagnosis significantly decreases survival.

W.A.P.82

INCREASED SURVIVAL FOR PWA

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Objective: To monitor median survival time for people with AIDS (PWA) by diagnosis and diagnosis date.
Methods:: Recent death dates were searched by death certificate review of county vital records for surviving PWA. Kaplan-Meyer product limit survival analysis was applied to the statewide AIDS Surveillance database for cases diagnosed prior to 1988.
Results: Overall median survival for all 777 cases was 445 days. Median survival significantly increased for people with pcp and ks when cases diagnosed prior to 1986 were compared to those diagnosed in 1986, while no increases were seen during this time interval for people with other diagnoses. While significant increases were seen in all categories for cases diagnosed in 1987 compared to those diagnosed in 1986, the inclusion of dementia and wasting syndrome significantly prolonged survival in 1987. Cases with outpatient diagnoses survived significantly longer than other cases (1233 vs 445 days). Cases with definitive inpatient diagnosis of PCP also had increased survival over each of the time intervals (data not shown).

Dx Yr	n/# Survival	All	PCP	KS	Other Dx
≤1985	209 / 21	340	369	407	300
1986	239 / 25	407	447	717	251
1987	329 / 25	624	599	*	625/417**

Median Survival in Days

*1/2 of cohort still alive **Excludes dementia and wasting syndrome.

Conclusions: The increase in survival time of PWA is multifactorial and reflects improved medical care (i.e., AZT, PCP therapy), earlier diagnosis, and expansion of the CDC case definition. Updated information and the relative contribution of each of these factors will be estimated.

Prévention par l'annonce au(x) partenaire(s)
Prevention Through Partner Notification

W.A.P.84

SYPHILIS CONTACT TRACING IN A NEW YORK CITY STD CLINIC:IMPLICATIONS FOR HIV PARTNER NOTIFICATION

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Objective. To examine contact tracing among STD clinic patients with syphilis, a group at increased risk for HIV infection; and to describe implications for HIV partner notification by comparing the results of traditional contact tracing interviews (CTI) which require naming of partners with results of a confidential structured questionnaire (CSQ) where only the number of partners is requested.
Methods. Volunteers with diagnosed syphilis participated in a CTI performed by clinic personnel and also were enrolled in an HIV seroprevalence study where information on sexual behavior and risk factors for HIV infection were collected by an interviewer using a CSQ.
Results. Data from 64 participants were analyzed: 11 (17%) were prostitutes; 19 (30%) reported prostitute contact; 6 (9%) reported iv drug use and 6 (9%) were HIV antibody positive. On CTI, 22 (34%) gave no information identifying contacts. There was a significant difference (p<.001) between number of contacts given in CSQ and CTI: 41 (64%) gave a larger number, 20 (31%) gave identical results and 3 (5%) gave a smaller number. Mean number of contacts for CSQ was 3.1 compared with 1.0 for CTI. From the CSQ, mean number of contacts for 3 months, 1 year, 3 years and since 1978 were 3, 7, 21, and 55, respectively.
Conclusion. These data suggest that HIV partner notification in New York City may be seriously hampered by partner anonymity, lack of locating information, and concerns for confidentiality.

Session d'affichage
Poster Session

Épidémiologie et santé publique
Epidemiology and Public Health

W.A.P.85 SEXUALLY TRANSMITTED DISEASE (STD) CLINIC CLIENT OPINIONS ON HIV PARTNER NOTIFICATION

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Objective. Determine opinions on acceptance of HIV partner notification services by STD clinic clients.
Methods. Consecutive clients attending the University of Colorado Health Sciences Center STD clinic during October and November 1988 were asked to complete an anonymous 6 question survey.
Results. 212 clients responded to the survey (male 120, 56.6%; mean age 28.6; white 128, 60.4%). Almost all (206, 97.2%) felt a need for those exposed to HIV to be informed. Consistent results were obtained when questions were personalized; important to inform respondents partners (207, 97.6%), and respondent would want a trained professional to inform them (199, 93.9%). Over half (109, 51.4%) indicated difficulty in informing partners themselves yet most (171, 80.7%) would assist a person trained to do so. Respondents selected multiple factors of concern. Of 452 selections: 86 (40.6%) feared disclosure of their positive test result, 85 (40.2%) were concerned that partner be notified privately, 61 (28.8%) feared rejection by partner, and 43 (20.3%) feared harm by an angry partner.
Conclusion: STD Clinic clients recognize the need for and will participate in HIV partner notification programs. Greater participation can be expected if confidentiality concerns are addressed with the client.

W.A.P.86 CUBA: Study of sexual contacts of the HIV seropositive persons

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The Cuban Program of struggle against AIDS has as a most important goal the study of the sex contacts of each case infected by HIV detected through our screening system. Each of these contacts is subjected to a serological examination for the HIV determination and the same time they are given educational advice regarding their future sexual behavior while waiting for the result or results of the examinations. In general, all contacts are kept under surveillance for a year starting from the date of the last sex intercourse with the index case, serological examinations being done quarterly, except for the espouses who are followed-up every threee months indefinitely we have been able to control 80% of the 1317 sexual contacts of the HIV seropositive persons. Male homosexual relations were infecting is 5.1%, while heterosexual ones were so in 10.4% and 3.4% of women who had sex intercourse with bisexual males were infected.

W.A.P.87 EPIDEMIOLOGIC BENEFITS OF HEALTH DEPARTMENT NOTIFICATION OF HIV EXPOSURE.

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Objective: To determine if Health Department notification of HIV exposure (contact tracing) not only produces beneficial behavior changes, but also adds to the understanding of the epidemiology of AIDS in a given community.
Methods: Standard STD notification procedures were used, with an emphasis on targeting preventive education to the sex and needle-sharing contacts of HIV-infected individuals.
Results: 316 unique sex and needle-sharing partners of HIV-positive persons have been named in one Health District in the past 2 years. 207 (66%) were contacted, educated and offered testing. 202 (98%) agreed to be tested and 36 (18%) were HIV-positive. Only 6 (3%) of the 202 had been previously tested. 49% of the known HIV infections in our District have been identified by Health Department notification, 33% by private physicians and 18% by other sources. Of those exposed to HIV, 35 (27%) had only heterosexual exposure and 8 were infants. The age range of contacts was 14 to 74. We have been able to reclassify 3 HIV-positive men who denied major risk factors. Two dimensional mapping has lead to a clearer understanding of the transmission of HIV in our area.
Conclusions: Health Department notification of HIV exposure significantly expands understanding of the extent of HIV infection and identifies HIV exposure among untested high-risk individuals and among people outside the risk groups and age ranges usually associated with AIDS in the USA.

Prévention de la transmission par contact sexuel et par consommation de drogue
Preventing Transmission by Sexual Contact and Drug Use

W.A.P.88 INEFFECTIVENESS OF EDUCATION IN INTRAVENOUS DRUG USERS TO PREVENT HIV SEXUAL TRANSMISSION.

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Objective : To study the change in behaviour regarding the intravenous (IV) use of drugs, and the attitudes toward sexual preventive measure, in a group of HIV+ intravenous drug addicts (IVDA) in Paris Aera.
Methods : Between January 1986 and June 1986, 264 HIV seropositive drug users were enrolled follow up in a 3 years prospective study. Patients initially agreed to attend counseling sessions twice a year. Clinical and immunological HIV status were performed, twice a year. In parallel the subject attitudes toward preventive measures concerning the IV use of drugs and sexual behaviour were recorded every six months.
Results : On 264 patients only 206 were followed regularly during the 3 years study. They were 142 male and 64 female with a mean age of 24,3 ± 2,1 years. No significant date could be obtained on the proportion of patient which increased or decreased the frequency of injections neither the use of drugs at home or alone. A the second visit (6 months), 72 % regularly used unique needle or syringue, and 69 % used condoms during sexual intercourse. At the 6th visit (2 years 1/2), 61 % persisted to use unique injection material, but only 22 % always used condoms. These attitudes toward preventive measures were equally observed in male and female sub groups.
Conclusion : in contrast with changes in sexual behaviour observed in homosexual population, there is a relative ineffectiveness of education and counseling in preventing the sexual transmission of HIV infection in IVDA on a 3 year period.

W.A.P.89 RISK BEHAVIORS OF IV COCAINE USERS: IMPLICATIONS FOR INTERVENTION

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Objective. Identify traits of intravenous cocaine use (IVCU) which are relevant for planning risk behavior reduction programs.
Method. Data from two tri-ethnic, male and female IVCU cohorts are presented. 1) To describe high risk traits of IVCU existing before AIDS was discovered, interview data collected in 1980-81 from 75 IVCUs are presented. 2) To describe current risk behaviors and attempted behavioral change to reduce HIV-1 exposure, data collected in 1987-88 from 255 IVCUs are presented.
Results. Prior to knowledge that AIDS existed (1980-81), IVCUs reported several high risk traits-cocaine obsession (68%), use escalation (61%), no spending limits (72%), cocaine-related money problems (82%), always craved cocaine (72%), never refused cocaine (44%), prostitution (47%) or traded sex (45%) for cocaine.
Current IVCUs were twice as likely (21%) as other IVDUs (10%) to test HIV-1 AB+. 70% reported risk reduction efforts, but a majority still injected daily, shared needles, had IV and non-IV sex partners (SPs), never used condoms. Attempts to stop sharing (20%) or share less often (22%) were reported by more IVCUs than shooting cessation (5%) or needle cleaning (13%). Reduction in number of SPs was reported more often (23%) than increased condom use (11%).
Conclusion. Many IVCUs engage in high risk behavior. Self-initiated attempts to change both needle use and sexual behavior often are unsuccessful. Implications for intervention programs are discussed.

W.A.P.90

TRENDS OF RISK REDUCTION AMONG INITIATES INTO INTRAVENOUS DRUG USE 1982-1987.

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Objective. The purpose of this study is to identify and compare initial injection practices of IVDUs by year first used to determine if initiation practices have changed during the course of the epidemic.
Methods. As part of the baseline questionnaire for a natural history of HIV infection (ALIVE): active IVDUs recruited from the community were asked to report year first injected, drug first used, and the frequencies of injection, using sterile needles, sharing needles and cookers during their first three months of use. The distribution of responses were dichotomized and grouped by year first used. The chi square test for trends was performed.
Results. Of the first 1840 participants, 421 reported initiation between 1982 and 1987. Over these years, heroin as the first drug decreased ($p < .01$), while cocaine increased ($p < .05$). The proportion who never used sterile needles decreased ($p < .05$) as did the proportion who always used needles after another person ($p < .05$). The proportion who had > 1 needle sharing partner decreased ($p < .01$).
Conclusion. Although these data are from a cross-sectional report, they suggest a shift from heroin to cocaine and a shift toward lower risk practices among new IVDUs between 1982 and 1987.

W.A.P.92

SEXUAL BEHAVIOURS AND CHARACTERISTICS OF 627 GAY AND BISEXUAL MALE PARTICIPANTS OF THE TALKING SEX PROJECT - SMALL GROUP EDUCATIONAL INTERVENTIONS FOR THE PREVENTION OF AIDS.

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Objective. To describe demographics, knowledge, attitudes and sexual behaviours of the 627 participants at time of recruitment into the study.
Method. A non-clinical study population was recruited from the community by a variety of methods. Subjects completed questionnaires prior to random assignment to control or 1 of 2 educational intervention groups.
Results. The mean age was 32.4 years (range 14 - 72); 56% had completed college or university; 40.6% had been HIV antibody tested; 10.8% were seropositive and 6.3% reported AIDS or AIDS related illness. Sexual practices reported for the prior 5 years and 3 months are:

Sexual practices	Condom		No condom	
	5 Years	3 Months	5 Years	3 Months
Anal Intercourse - Receptive	63.8%	36.2%	69.1%	16.5%
Anal Intercourse - Insertive	68.4	41.6	73.5	18.9
			5 Years	3 Months
Oral-Genital - Insertive			98.4%	84.1%
Oral-Genital - Receptive (with cum in mouth)			78.2	26.6
Mutual Masturbation			98.9	91.3

Conclusion. Although there may be problems with recall bias and the methods used, there appears to be a decrease in unsafe sex practices in the study population over the course of the past 5 years.

W.A.P.94

ONGOING IMPACT EVALUATION OF THE CONDOM USE PROMOTION/DESENSITIZATION PROGRAM FOR PREVENTING AIDS IN THE DOMINICAN REPUBLIC.

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Objective. To evaluate the Dominican Republic Condom Use Promotion/Desensitization Program (1987-1989) and to analyse its main impact on population groups.

Methods. Condom use adoption before and after program implementation has been assessed through: 1. A series of CAP studies with female sex workers and their clients, trasvestite, gay and bisexual men, jail inmates, haitian migrant workers and the general population; and 2. Periodic unobtrusive surveillance of hotel and motel rooms where condoms are made universally available.

Results. Positive attitudes toward condom use have increased from 55% in 1985 to 75% in 1988. Condom use in 1986 was less than 2% in the sexually active male population and less than 1% in female sex workers (FSW). By 1988, condom use in motels and hotels was 18%; FSW carrying condoms in their purses, has grown to 75%.

Conclusion. Creating and maintaining a permanent state of awareness of AIDS and aggressively enhancing the perceived value of condom use has significantly increased condom use in the Dominican Republic.

W.A.P.91

SELF EFFICACY AND COMMUNITY NORMS PREDICT AIDS RISK REDUCTION AMONG GAY AND BISEXUAL MEN IN SAN FRANCISCO: THE AIDS BEHAVIORAL RESEARCH PROJECT

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Objectives. To describe correlates and predictors of reductions in high risk sexual behavior among gay men in San Francisco.
Methods. Subjects were 440 men in the AIDS Behavioral research Project responding to annual surveys since 1984. Subjects responded to mailed surveys regarding sexual behaviors, relationship status, antibody testing experience, and variables from our AIDS Risk Reduction Model (AARM). Variables measured in 1984 to predict risk behavior in 1987 included serostatus, AIDS prodromal symptoms, AIDS loss, relationship status, perceived social norms, and health belief (self-efficacy, threat, knowledge). Multiple logistic regression was used to derive adjusted odds ratios for each variable.
Results. 60% of the men practiced high risk sexual behavior in 1984 (50% practiced unprotected anal intercourse). Only 30% practiced high risk behavior in 1987 (12% practiced unprotected anal intercourse). Individuals in primary gay relationships and low in self-efficacy (perceived ability to reduce AIDS risk) practiced high risk behavior in 1984. Individuals who continued to practice sexual risk for AIDS between 1984 and 1987 were more likely to perceive that peers continued to practice high risk behavior (Adjusted odds ratio =1.12, $p=.05$). Those high in personal efficacy (adjusted odds ratio= .95, $p< .05$)and who tested positive for antibodies to HIV (adjusted odds ratio=.42, $p=.05$) were less likely to continue the practice of high risk behaviors in 1987. Conclusions. AIDS risk reduction campaigns may benefit from methods for increasing personal efficacy through skill training.

W.A.P.93

PRELIMINARY ANALYSIS OF FACTORS ASSOCIATED WITH COMPLIANCE WITH GUIDELINES FOR PREVENTION OF SEXUAL TRANSMISSION OF HIV IN HETEROSEXUAL COUPLES

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Objective. To present a preliminary analysis of factors associated with compliance with guidelines for prevention of sexual transmission of HIV in a cohort of monogamous couples.
Methods. The Northern Brooklyn Partner Study, begun in September 1988 with funding from the CDC, is a three year longitudinal study of monogamous heterosexual couples in which one partner has as his/her only risk factor sexual contact with the other partner. The sample is drawn from a community based primary health care facility which services a population that is 93% black or Hispanic and 86% IVDU's and their sexual partners. Data gathered are retrospective as well as prospective, and include sexual and drug use behaviors, psychological measures, and medical parameters (stage of disease of index partner, p-24 antigen, HIV cultures, concurrent VD, etc). All subjects are reinterviewed and examined at 3 month intervals.
Results. Preliminary data presented here will be a comparison between couples who are following "safer sex" guidelines versus couples who are not. The dimensions used for comparison include knowledge of HIV transmission, perceived threat of infection, perceived self-efficacy (the feeling that one has control over ones health), self-esteem, depression, perceived distance from AIDS, partner/peer support, and quality of the relationship.
Conclusion. These results indicate that some of the variables that are relevant in AIDS prevention for gay men are not relevant in the setting of heterosexual transmission in an impoverished minority community.

W.A.P.95

AN EVALUATION OF THE EFFECTS OF VARIOUS LUBRICANTS ON LATEX CONDOMS

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Objective. To determine if short-term exposure to lubricants adjunctly applied to latex condoms can cause sufficient deterioration to warrant concern about condom failure during use.
Methods. Latex condoms were exposed to various adjunct lubricants mentioned as being used by the public as extra lubrication for condoms. Samples were exposed to lubricants in one experiment for ten minutes at body temperature and in another experiment for one hour at room temperature and then tested for tensile strength according to ASTM Standard test methods. A control group, without exposure to any lubrication, was subjected to the same testing.
Results.

Lubricant	Tensile (MPa) (Body Temp.)	Tensile (MPa) (Room Temp.)	
No lubricant (control)	33.6	33.6	ASTM Std.
Vegetable oil	16.1	6.4	Tensile
Petroleum jelly	15.9	11.6	min. = 17 MPa
Personal lubricant	14.2	11.0	

Conclusion. Some personal lubricants sold in sex shops and other household items (petroleum jelly, vegetable shortening) have a significant deleterious effect on the strength of condoms. This deterioration is severe enough and occurs rapidly enough that their addition to latex condoms as adjunct lubricants is likely to cause the product to fail during use. Only water-based or silicone-based lubricants or others that have been tested and recommended by the condom manufacturer should be used.

W.A.P.96

EVALUATION OF CONDOM UTILIZATION AND ACCEPTABILITY OF SPERMICIDES AMONG PROSTITUTES IN KINSHASA, ZAIRE

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Objectives. To evaluate the effectiveness of a condom intervention program and to evaluate acceptability of spermicides in Kinshasa prostitutes.

Methods. From June-December 1988, 801 prostitutes were interviewed about knowledge, attitudes and practices of condoms at entry of an STD/HIV survey, and again 3 months after announcement of the results, counselling and free condom distribution. 210 HIV(-) women were interviewed, counselled and examined monthly for a total follow-up of 1054 months of observation. In a pilot demonstration project, 25 women were offered spermicides.

Results. At entry, 3% of women reported "always" condom use 27% "sometimes" and 70% "rarely" or "never". HIV seroprevalence was 27%, 37% and 39% respectively (p=0.6). After 3 months, 93% of women reported some condom use (50% always, and 50% inconsistently) independently of HIV serostatus. Seventy % of non-use of condoms was attributable to clients refusal. The reported condom use of 140 women followed up prospectively was validated with incidence of STD, presence of sperm on vaginal smear and incident pregnancies. Out of 8 women who seroconverted, 1 was a consistent condom user(C.C.U) and 7 were inconsistent condom users (ICU) (p)0.5).

	CCU (n=39)	ICU (n=101)	
Incidence of:			
N. gonorroeae*	0.7	1.6	0.02
T. vaginalis*	1.4	1.7	NS
Spermatozoides*	0.5	0.5	NS
No. of new pregnancies	3 (7.7%)	8 (7.9%)	NS

(* expressed as episode per woman year of observation)

Spermicides (Benzalkonium ovules) were used in 92% of client encounters, were well accepted and were associated with not side effects.

Conclusions. Condom use increased considerably after intervention but STD and HIV transmission persisted despite high reported condom use. Spermicides are highly acceptable among prostitutes.

W.A.P.97

AIDS AND CONDOM-USE IN THE NETHERLANDS

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Objective. Since May ´87 a number of campaigns directed at the general public were undertaken. The levels of knowledge, attitude and behavior among heterosexuals before and after the campaigns are examined.

Methods. Data were collected by semi-annually interviewing approximately 1000 respondents (age 15-45). Interviews were done by telephone, respondents were randomly sollicited in each of the four surveys.

Results. From May ´87 to Oct. ´88 (figures from the fifth survey (April ´89) will be presented as well), people associating "Safe Sex" with condoms (as intented by the campaigns) rose from 43% to 82% ($p<.0001$). It was confirmed that condoms protect against AIDS by 98% in Oct. ´88 compared to 74% in April ´87 ($p<.0001$). The overall attitude regarding condoms became more positive: the number of people saying the advantages of condoms prevail, increased from 62% to 78% ($p<.0001$). Among people having non-steady sexual relationships, condom-use increased from 30% to 77% ($p<.0001$), although not all these users used condoms consistently.

Conclusion. A number of changes have occurred, presumably supported by the conducted campaigns. Condom-use has become relatively more acceptable and more people associate the prevention of HIV-infection with the use of condoms. People with non-steady sexual relationships now use condoms more often, although part of this risk-group still doesn´t use condoms or doesn´t use them consistently.

W.A.P.98

THE SUPPLY OF, AND DEMAND FOR, CONDOMS TO PREVENT HIV TRANSMISSION IN DEVELOPING COUNTRIES

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Objective.To assess the supply of, and demand for, condoms in preventing HIV transmission in developing countries.

Methods.U.S. Agency for International Development (A.I.D.) funding and shipping data were reviewed for Fiscal Years 1987-1989.Worldwide condom prevalence data were analyzed.

Results.Since 1987, A.I.D. has been the leading provider of condoms for developing country AIDS control programs.A.I.D. funds have bought 172 mil. condoms and over 120 mil. have been shipped to 56 countries. 48% of all condoms have gone to Africa, 27% to Asia, and 24% to Latin America and the Caribbean.Demand is increasing and half of all shipments were in the past six months.

Conclusion.Condoms can play a vital role in preventing HIV transmission.Current supply and demand are too low to significantly impact on the pandemic.If all 120 mil. condoms shipped had gone to Nigeria, less than 6% of Nigeria's 22 mil. males ages 15 to 49 years would have condoms for one year.To make enough condoms available, other donor resources are needed. Increasing the demand for condoms requires urgent attention.In developing countries, only 3% of reproductive age couples use condoms;in Africa, 0.5% do.Social marketing and private sector distribution must complement government efforts.Given the absence of vaccines and curative treatments, condoms are the world's most promising technology to prevent transmission of HIV.

W.A.P.99

PERSISTENT CONDOM BREAKAGE

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Objective. To assess why males well informed in condom usage repeatedly broke condoms during post-penetration coitus.

Methods. Several hundred males who had condoms break during coital use were screened. 25 (a) correctly answered all questions about proper use of condoms, but (b) reported breaking condoms more than 10% of the occasions used. Further interviews attempted to ascertain a cause for such high breakage.

Results. About one third of the men practiced vaginal intercourse; the remainder anal intercourse. All 25 men claimed only to use "water-based" lubricants, never using "oil-based" ones. Yet, 23 identified their usual coital lubricant as Vaseline Intensive Care hand lotion, Johnson's Baby Oil, or Nivea Hand Creme. Each of the 25 men believed these lubricants were "water-based" because they were readily washed away in tap water, in contrast to lubricants such as Vaseline Petroleum Jelly, Crisco or butter. All 25 men were U.S. college graduates.

Conclusion. These data suggest that differences in frictional stress between anal and vaginal intercourse may not suffice to account for breakage. Coupled with the reported rapid deterioration of condoms caused by mineral-oil sex lubricants, the data suggest that some portion of coital breakage of condoms may be based in the conscientious users' misconception that baby oil and emulsified oil lubricants are "water-based." Better choice in language may be important for condom use brochures.

W.A.P.100

INCREASING CONDOM ACCESSIBILITY: WHAT ARE THE BARRIERS?

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In both research and promotional campaigns, condom promotion is usually characterised as a problem of attitude and behaviour change at the level of the individual i.e. as a question of acceptability. Far less attention has been paid to the question of accessibility. Yet, applying the experience of previous campaigns and simple marketing principles, this is a key issue. In France condoms may be obtained in pharmacies and large supermarkets. The range of other outlets is negligible, nonetheless, companies attempting to install vending machines report having met with great difficulties. Given the high rate of HIV positivity in France and the traditionally low rate of condom use, this situation appears paradoxical. Our research programme therefore aims to identify the barriers to achieving a wider availability of condoms - at the level of the general public, institutions and business. We report here on acceptability to the public of new retail outlets and of vending machine installation in a range of possible sitings. The survey was conducted through two sources: a questionnaire in a high distribution TV magazine, and a national representative sample with a polling organisation. Results show overall acceptance of wider distribution to be high among all ages and all socio-economic groups. There was no preference for sitings in toilets. The two proposed sitings with an acceptability markedly lower than the rest (around 50%) were the workplace and public buildings. Other sites, including universities, highschools, bars, stations, leisure centres, health centres and the street, had acceptance levels between 70-90%. We infer that the major barriers lie elsewhere than with the general public.

W.A.P.101

A SIMULATED PHYSIOLOGIC TEST OF LATEX CONDOMS

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Objective. To test latex condoms for the passage of HIV-size microspheres under simulated physiologic conditions.

Method. HIV is simulated by uniform, polystyrene, fluorescent microspheres with mean diameter of 0.11 μm. These microspheres are suspended in physiologic phosphate buffered saline with surfactant. The condom is unrolled onto a form and inserted into a fabric mesh which limits the expansion of the condom to physiologic dimensions. The form with the condom and fabric mesh is secured in a test chamber and the condom filled with the suspension of microspheres under a static pressure of 60 mm Hg, which was found to be the maximum pressure difference across a condom in modelling experiments performed in our laboratory. The chamber is filled with the same solution, less the fluorescent microspheres. The test system is maintained at a temperature of 37°C and a pH of 7.0, while the chamber's fluid is continuously monitored for the presence of the fluorescent marker.

Results. The test system has quantitatively identified laser-induced holes as small as 8 μm in diameter and is capable of detecting holes as small as 3 μm. Tests of 69 condoms from 2 manufacturers found 6 condoms which passed microspheres. The leak rates corresponded to hole diameters in the range 4 μm to 7 μm.

Conclusion. This test is sufficiently sensitive to determine whether condoms provide an effective barrier to HIV-size microspheres under (static) physiologic conditions.

W.A.P.102 INACTIVATION OF HIV-1 IN VAGINAL AND SEMINAL SECRETIONS BY THE SPERMICIDE BENZALKONIUM CHLORIDE.

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Objective: To determine whether benzalkonium chloride could destroy infectiousness of HIV-1 in body fluids.
Methods: Vaginal and seminal secretions were obtained from each of 4 male and female patients with advanced HIV disease. The cells in these fluids were harvested and co-cultured with cord blood lymphocytes to yield progeny HIV after 10 days. At the same time, aliquots of body fluids were exposed to concentrations of the drug that had previously been shown to inactivate HIV in tissue culture (0.01%). After varying times, the cells in these treated body fluids were harvested and co-cultured as described above.
Results: Exposure of seminal and vaginal fluids to 0.01% drug for 10 minutes eliminated the presence of detectable, infectious HIV-1. Exposure to drug for lesser periods was without significant effect
Conclusion: Benzalkonium chloride may have usefulness as a disinfectant against HIV-1.

W.A.P.103 The relationship between condom use and sexual behaviour.

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Condom use is propagated as an effective measure against infection of HIV and other STD's. The aim of this presentation is to relate data on the frequency and pattern of condom use in the Norwegian population.
Methods. The results are based on the responses to an anonymous postal questionnaire sent to a simple random sample of 10.000 Norwegians between 18 and 60 years of age in november 87. The response rate was 63%. Except for educational level, the respondent group is fairly representative.
Results. Married subjects without extramarital affairs during the past three years report more often use of condoms in their last intercourse with their spouse (12.4%) than those with extramarital affairs (7.3%). 8.7% reported use of condoms in their last intercourse with extramarital partner. Among singles, 15.8% used condoms in their last intercourse. When their last partner was a prostitute, about 50% of both married and singles reported use of condoms. Condom use is more common among young people, whereas there are no appreciable gender differences. Subjects who report use of condoms in the last intercourse tend to have lower partner turnover and higher sexual debut age than those who do not.

W.A.P.104 NEEDLE-SHARING AND BLEACH USE AMONG INTRAVENOUS DRUG USERS (IVDUs) SEEKING TO ENTER AN ACUTE DETOXIFICATION PROGRAM

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Objective. As a baseline measure for AIDS control strategies, we sought to characterize needle-sharing and use of bleach for needle disinfection by IVDUs seeking to enter a county acute drug detoxification facility.
Methods. The intake counselor administered a questionnaire at the initial meeting with an IVDU, prior to AIDS risk reduction counseling.
Results. From 9/88 through 12/88, 226 consecutive IVDUs were interviewed. Two-thirds were male. Ninety percent described themselves as heterosexual, 7.5% homosexual (12 male, 5 female), 3% declined to answer. Heroin was the most common primary drug injected (60%), followed by cocaine (26%) and amphetamines (10%). Of the primary heroin users, 81% also used cocaine.

Sixty-five (29%) were currently sharing needles--with spouse or lover (28%), friends (48%), and other than spouse or friends (23%). Of the 65 needle-sharers, 63 had heard of using bleach to disinfect needles but only 42 (65%) currently used it. Of the 23 IVDUs sharing needles but not using bleach, the most common reason given was lack of access to bleach. Additional 1989 data will be presented.
Conclusions. We found that recent needle-sharing was relatively common in this population of IVDUs. Almost all persons sharing needles had heard of using bleach. This knowledge, however, was not consistently translated into behavior change in that over one-third of needle-sharers were not currently using bleach, primarily due to lack of access. These data support the need for expansion of programs providing bleach and motivation for its use.

W.A.P.105 OUTCOMES OF AN AIDS PREVENTION PROGRAM FOR METHADONE MAINTENANCE PATIENTS

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Objective: To implement and evaluate the outcomes of a comprehensive AIDS prevention program for methadone patients. The hypotheses were that the program would: increase knowledge of AIDS risks, heighten awareness of susceptibility to AIDS, increase sense of self-efficacy in avoiding risk, improve attitudes towards condom use, and prevent or decrease intravenous drug-using and sexual risk behaviors.
Methods: The program was conducted in 3 methadone clinics in New York City during 1987. Patients in clinic #1 were offered (in sequence) an AIDS education seminar, HIV antibody testing and facilitated peer support groups. Patients in clinic #2 were offered education and peer groups, but not testing. A random sample of patients in clinic #3 were non-intervention controls. Numbers were: AIDS education (N=197), HIV-ab testing (N=38), peer groups (N=51), controls (N=92). The outcome variables were measured at 3 times: baseline, 2 months after AIDS education, and 2 months after testing and/or peer groups.
Results: Multiple regression analyses were conducted. AIDS education was associated with increased knowledge of AIDS risks (p=.02) and with improved attitudes toward condoms (p=.09). Peer groups were associated with improved attitudes toward condoms (p=.05) and increased condom use (p=.01). Learning of HIV-ab seronegativity was related to increased self-efficacy (p=.03) and decreased IV drug-using risk behaviors (p=.05). Minority subjects increased condom use more than whites (p=.01).
Conclusion: Methadone treatment programs should adopt and develop further these AIDS preventive interventions.

W.A.P.106 ANTHROPOLOGICAL AND EPIDEMIOLOGICAL OBSERVATIONS OF CHANGES IN NEEDLE USE AND NEEDLE SHARING PRACTICES FOLLOWING TWELVE MONTHS OF BLEACH DISTRIBUTION

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Objective. To access the impact of an AIDS outreach program on IVDU risk-related behavior change through the collaboration of epidemiological and ethnographic methods.
Methods. In 12 months, 2000 self-sealed reuseable viles of bleach solution and 3000 condoms were distributed to IVDUs with bilingual instructions for use in Worcester, MA. Distribution of change in risk behavior was followed through demographic data on 514 needle users requesting HIV testing. The context of change was monitored through observational conversation in the city's high drug use areas.
Results. Sixteen months of demographic data show a reduction in reported number of needle sharing partners, concurrant with AIDS outreach efforts. A change in risk perception of needle sharing has been documented through ethnography, while, at first use of the needle, only 12% of a sample of 65 active users considered needle sharing is major risk to health, at present this has increased to 77%. Based on epidemiological data, 34% more females than males have sex with other needle users, and 16% more females frequent shooting galleries. Ethnographic data further clarifies the context of female risk practices in its observation of needle sharing and use of galleries as networking techniques for securing protection and accessing drugs.
Conclusions. The collaboration of surveillance and ethnographic techniques is both an innovative response to the difficult task of accessing active users and an effective means of evaluating the impact of AIDS prevention strategies targeting this population.

W.A.P.107 EVIDENCE FOR RISK REDUCTION AMONG IVDU IN AMSTERDAM.

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Objective. To evaluate the impact of the general prevention campaign - inclu ding the syringe exchange program - on risk reduction among intravenous (IV) drug users (DU).
Methods. From December 1985 to April 1988 263 DU participated in a follow-up study (FS) and were asked about their injecting and sharing behavior and the use of the exchange program. A trend in behavior reported at 3 different visits was evaluated. As learning one's infection status may influence risk behavior, sharing behavior was also studied among IVDU distinguished by knowledge of test result (HIV-Ab - ; HIV-Ab + ; HIV-Ab ?). We also evaluated a trend in behavior reported by participants at intake (Dec85-Apr88) and this trend was seen as a prevention campaign (PC) effect. FS behavioral change was compared with PC behavioral change.
Results. No increase was seen in the proportion DU injecting nor in the frequency of IVD use. A strong decrease in risk behavior among current IVDU was found during follow-up: 55,9% reported borrowing ≥ 1x at the 1st visit and 16,3% at 3rd visit, lending ≥ 1x was reported by 44,0% and 8,4% resp. A similar strong decrease was found in the 3 HIV-Ab test result groups. Only a limited risk reduction was found at intake despite a general increase in the use of the exchange program.
Conclusion. The ample provision of clean syringes did not increase the IV use of drugs. As the reduction in sharing was mainly a FS effect and only a limited PC effect and independent of the HIV-Ab test result, we conclude that ample provision of needles and syringes alone is not enough to change the risk behavior of IVDU but intensive counselling is also needed.

W.A.P.108 CHANGES IN HIV RISK BEHAVIOUR IN DRUG INJECTORS ATTENDING SYRINGE-EXCHANGE PROJECTS IN ENGLAND AND SCOTLAND

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Objective. To assess the impact of syringe-exchange projects on the injecting and sexual behaviour of injecting drug users. The study was part of the evaluation of government sponsored syringe-exchange projects.
Methods. Injectors attending 14 syringe-exchange projects were provided with information about HIV risks, given needles and syringes on an exchange basis, and condoms. Self-reported risk-behaviour was assessed with a prospective interview administered at two points in time with 142 clients who attended up to March 1988.
Results. Syringe-sharing in the previous 4 weeks dropped from 34% to 27%; using others' syringes (risk of infection) dropped from 25% to 19%; passing on syringes (risk of transmission) dropped from 30% to 25%. 79% sustained or adopted low or lower levels of syringe-sharing. Those with sexual partners in three months dropped from 77% to 69%; those with two or more partners dropped from 26% to 21%. Surveys of two comparison groups of injectors not attending syringe-exchanges showed higher levels of syringe-sharing; in the first survey (n = 220) 62% shared, in the second survey 3/4 months later (n = 114) 59% shared.
Conclusion. The evidence indicates that many syringe-exchange clients maintain low risk behaviours and others adopt them. There are some who resist change. The changes over three months are small, but support the argument that injectors can be helped to change their HIV risk behaviour. Comparison groups of non-attenders showed higher levels of risk behaviour.

W.A.P.109 DRUG TREATMENT CENTERS AS THE NUCLEUS FOR A PREVENTION-BASED CASE MANAGEMENT SYSTEM FOR INTRAVENOUS DRUG USERS

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Objective: To describe a model plan for prevention of HIV infection, sexually transmitted diseases (STD), and tuberculosis (TB) in drug treatment centers for use by States who are recipients of Centers for Disease Control (CDC) AIDS Prevention and Surveillance Cooperative Agreement funds.
Methods: Drug Treatment Centers (DTC) are under-utilized settings for providing preventive health care for people who are at high risk for HIV, STD, and TB, though CDC funds State health departments to prevent these diseases. A comprehensive approach for providing a full range of prevention activities in these settings was lacking. Consequently, CDC staff developed a model plan to facilitate joint planning and implementation of HIV, TB and STD prevention activities in DTCs.
Results: The essential components of this model include outreach, individual HIV/STD risk reduction counseling, onsite voluntary HIV and TB testing, directly observed TB preventive therapy, referral and expedited admission of intravenous drug users (IVDU) from other agencies, on-site or referral for contraceptive services, and partner notification of seropositives. Funding mechanisms and a detailed plan for implementation and evaluation of impact will be described. Evalation of impact of this model includes analysis of reports, number of clients enrolled, number of clients tested, and other significant variables.
Conclusions: Full adoption/implementation of this model provides the first steps for a prevention-based case management system for IVDUs who are at risk for TB and who may be infected with HIV.

Prévention : politiques et évaluation des programmes
Prevention: Policy Issues, Program Evaluation

W.A.P.110 CARA – A TOOL FOR AIDS PREVENTION

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Objective. CARA is the abbrevition for computer assisted risk management with regard to Aids. CARA is a tool for the prevention of the HIV-infection in a dialogue with the computer. Target groups are students and young adults. It consists of 2 parts:
Part 1: With this program the participants acquire the knowledge one should have about Aids.
Part 2: The participants get the oppurtunity to assess the risks of their particular lifestyles in the fields job, leisure/sports, traffic and sexuality.
The participants receive a feedback on the riskiness of their lifestyles, especially on the risky behaviors with regard to a HIV-infection.
Results. The program has widely proved its usefulness and efficiency in German schools. It is highly attractive to students. Teachers and Aids counsellors use it for the introduction of lectures on Aids and the preparation of personal communication.

W.A.P.111 SHORT AND LONG TERM RESULTS OF AN AIDS PREVENTION PROGRAM

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Objective. While there have been a growing number of AIDS prevention projects reported in the literature, few have contained outcome results and none have reported follow-up data.
Method. Employing a 21 item AIDS Prevention Test (APT) designed by the authors, which has previously demonstrated both reliability and Form A, B equivalence, 102 Ss in 10 successive Stop AIDS Workshops were invited to participate in a 3 month follow-up program. All Ss took Form A of the test prior to the workshop and Form B after. 52 agreed to retake Form B in 3 months, 27 actually returned the follow-up test. 15 of the follow-up Ss also returned a Form B evaluating them, filled out by their significant partner.
Results. The 27 Ss demonstrated increased knowledge (70.0 to 81.1% correct t(26)=3.12, p.<.002), a positive change in AIDS related attitudes (27.34 to 29.89, t(26)=2.84, p.<.004 [35 possible]), and a positive change in intended sexual behavior (16.00 to 20.56, t(26)=10.25, p.<.001 [21 possible]) from pre to post workshop. At 3 months, the Ss showed increased positive change in attitudes (31.56, t(26)=6.91, p. < .001) a slight reduction in actual behavior from post workshop intended behavior (19.68); however the behavior change from pre-workshop to follow-up was still significantly positive (16.00 to 19.68, 7(26)=6.91, p.<.001). The 15 tests filled out by partners verified the Ss self reported attitudes (33.00) and behavior (19.50). There were no significant correlations between knowledge, attitudes and behavior per se, but correlations between changes in these three were significant.

W.A.P.112 TRAINING THE HEALTH CARE PROFESSIONAL: THE AIDS REGIONAL EDUCATION AND TRAINING CENTERS PROGRAM OF THE HEALTH RESOURCES AND SERVICES ADMINISTRATION (HRSA).

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Objective. To establish regional education centers that will provide multidisciplinary training for health care professionals.
Methods. With a projected cumulative total of more than 300,000 AIDS cases by 1992, it is essential that health care providers be trained in the diagnosis, management and treatment of HIV-infected patients. The insufficient number of providers active in the care of AIDS patients presents a major gap in the health care delivery system. In recognition of this problem, the United States Congress appropriated funds to establish the AIDS Regional Education and Training Centers Program.
Results and Conclusions. To date, thirteen centers have been created. These regional education and training centers provide multidisciplinary HIV/AIDS training for health care personnel within the framework of the following three goals: 1) training community primary care providers to incorporate strategies for HIV prevention into clinical priorities as well as to diagnose, manage, and counsel patients and their families; 2) training individuals to serve as instructors in their local area; and 3) educating health care professionals in providing sensitive and integrated care of AIDS patients through the improvement of their understanding of the complexities of the disease.

W.A.P.113 OUTCOME OF HIV PREVENTION AND COUNSELING AT COOK COUNTY HOSPITAL, CHICAGO: A TWO YEAR FOLLOW-UP.

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Objective: To evaluate the 1988 experience of a public hospital-based AIDS education and risk reduction program, and determine two year trends in client demographic data and counseling outcomes.
Method: Between November, 1986, and December 31, 1988, 3,100 persons at risk of HIV infection received HIV prevention counseling. In 1988, 2,084 people were counseled. Of these, 1,212 (58%) were men and 872 (41.8%) were women. 1,439 (69.1%) were Afro-American, 313 (15%) white, 308 (14.8%) Hispanic, 8 (0.4%) Asian, 6 (0.3%) American Indian, and 10 (0.5%) other; overall, 88.4% were minority. By risk behavior, 256 (12.3%) were gay/bisexual men, 22 (1.1%) were gay/bisexual IVDUs, 831 (39.9%) were hetero IVDUs, 37 (1.8%) were transfusion recipients, 175 (8.4%) was hetero partners of above, 175 (34.9%) were hetero with multiple partners, and 21 (0.9%) other.
Results: Trends in 1988 are shown by table I, and trends from 1987-1988 in Table II:

TABLE I: QUARTER OF 1988 / TABLE II: 1987 - 1988

GROUP	1st	4th	1988 % INCRS	'88 TOT	'87 TOT	2 YR INCRS
GAY/BISEX MEN	74	72	0%	256	180	+ 42%
WOMEN	191	252	32%	872	172	+ 407%
IVDU	129	311	141%	831	200	+ 415%
HETERO PRTNR AT RISK	17	71	317%	175	50	+ 250%

In 1988, 1,166 (55%) of those counseled received HIV antibody testing. 6 month questionnaires revealed significant behavior change in 75.6% of respondents in 1987; 1988 results will be shown.
Conclusions: Confidential culturally-sensitive HIV-preventive counseling reached 2,084 clients at risk at Cook County Hospital, of whom 88.4% were minority members. Large increases in women and IVDUs were observed. A majority of clients reported significant behavior change resulting from the intervention at 6-month follow-up.

W.A.P.114 APPLICATION OF METHODS/RESULTS FROM FAMILY PLANNING OPERATIONS RESEARCH TO AIDS PREVENTION IN AFRICA

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OBJECTIVES: To apply operations research (OR) methods derived from family planning, in developing effective programs for prevention of sexual transmission of HIV in Africa. METHODS: Family planning OR has developed and tested culturally appropriate, cost-effective strategies to increase access to and acceptability of contraception, including condoms, in Africa. To collect data for program development and monitoring, OR uses methods from epidemiology, demography, anthropology, and market research. RESULTS: OR projects identified unexpectedly high levels of contraceptive knowledge among males and females in African countries (knowledge levels above 80% in urban Niger and Burkina Faso, over 40% in rural Cote d'Ivoire and Senegal) and increasing use of methods, including condoms. Data have been used to develop innovative education and contraceptive delivery, such as distribution in Lagos markets and by traditional midwives in Sudan, where contraceptive prevalence rose from 9% to 26% in a rural area. OR is currently being applied to an AIDS education program in Rakai, Uganda, and elsewhere. CONCLUSIONS: OR is effective in the introduction and promotion of family planning in Africa. Like AIDS prevention, family planning touches on controversial and sensitive issues, including changes in sexual practices and condom use. OR will be useful in promoting behavior change and condom use for AIDS prevention.

W.A.P.115 DETERMINANTS OF AIDS POLICY PREFERENCE OF THE GENRAL PUBLIC

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Objectives: To analyze factors associated with preferences for alternative public policy options related to the behavioral control of AIDS.
Methods: Respondents were the 1540 adults interviewed by telephone in the 1987 Chicago area General Population Survey for AIDS (IV International Conference on AIDS, abstract No. 9100). Determinants of responses to the 16 questions relating to endorsement of specific policy alternatives included demographic variables, self-assessment of AIDS risk/harm, and attitudes toward homosexuals.
Results: Factor analysis revealed three clusters of policy option preferences: employment-based testing programs, government-sponsored education and service programs, aud compulsory public health measures. A unique combination of sociodemographic and attitudinal characteristics predicted each set of preferences. In all three cases, the level of homophobia of respondents was the strongest predictor of policy preferences.
Conclusion: Public information programs should consider the role of attitudes toward homosexuals as they may strongly influence the assimilation and use of new information about AIDS. Furthermore, public policy makers need to be aware of the attitudinal determinants of public support for various AIDS policy options.

W.A.P.116 SEXUAL BEHAVIOUR OF YOUNG ADULTS AND THE EFFECTS OF AIDS-PREVENTION CAMPAIGNS IN SWITZERLAND

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This study is part of the overall evaluation of the Swiss prevention campaigns.
Objectives. To measure changes in risky sexual behaviours and use of condoms within the 17 to 30 years old resident population in Switzerland. To identify indicators measuring efficacy of prevention campaigns.
Methods. Interviews by phone on the basis of a standardised questionnaire. Interviews are designed to obtain valid responses regarding questionning within the intimate sphere despite others standing by. The quotas sampling design is stratified by place of residence (N = 3 times 1'200). Data have been collected at three points in time: February 1987 (t0) before the launching of the first STOP-AIDS campaign, October 1987 (t1) nine months thereafter and October 1988 (t2) eighteen months thereafter.
Results. The proportion of people having had occasional sexual contacts out of a monogamous relationship within the previous six months remains stable (18% at t0, 14% at t1, 15% at t2). However, the use of condoms during occasional sexual relationship has increased significantly: the proportion of people saying that they never use condoms diminishes (67% at t0, 38% at t1, 13% at t2). At the same time occasional usage increases (25% at t0, 45% at t1 and 58% at t2), so does consistent usage (8% at t0, 17% at t1 and 29% at t2). Beyond this observations other aspects of sexual behaviour confirm the tendency towards safer sex.
Conclusions. Young adults in Switzerland are the more and more numerous to protect themselves against AIDS in situations carrying a potential risk for HIV contamination.

W.A.P.117 EFFECTIVENESS OF THE SWISS AIDS PREVENTION CAMPAIGNS IN 1988

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Under the slogan STOP-AIDS, a national multimedia campeign is continously conducted by the Federal Office for Public Health since 1986. Equivalent efforts are made stimulating multipliers to developp specific or local preventive actions. This program also includes a continuous and independant evaluation which have - to measure behaviour changes, - to identify factors which have positive or negative influences on changes, - to propose corrections or adaptations which could improve campaigns. Conclusions are based on 20 intercomplementary studies conducted in 1988 interviewing nearly 4000 persons of various groups of the population :
- Knowledges on AIDS (HIV transmission and protection) are good. There is still doubts on what is not dangerous (risk with saliva or blood transfusion in Switzerland).
- Health professionals generaly overestimate their professional risk. This create fear and further suspicious attitudes to some patients.
- There is no stigmatisation. Despite an apparent social consensus of non discrimination, casting out of persons are unfortunately observed occasionally.
- Adoption of protective behaviour is in progress but stay difficult. It's often related with emotional dimension of relationship. Condoms sale slowly increase (less than in 1987).
- Messages are clear, reach general population and target groups. Number of peripherical preventive actions have been developped, but still few efforts have been done for IVDUs. Social and health professionals have played very little preventive role.

W.A.P.118 MORE THAN ONE TYPE OF HIV EDUCATION AND TESTING PROGRAM IS NECESSARY TO REACH SELECTED TARGET POPULATIONS IN LARGE NUMBERS.

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OBJECTIVE To compare the populations being tested for HIV-1 ab in hospital setting, an Alternative Test Site (ATS) and Drug Treatment Programs (DTP). METHODS Demographic information was recorded from medical records of patients tested in clinics or in hospital, exclusive of AIDS clinic, from 1/86 - 8/87. Records of IV drug users were reviewed in detail. Information regarding ATS and DTP clients was obtained from the County Health Department (ATS) and our education/prevention program for IVDU (DTP).

RESULTS

	Hospital		ATS		DTP	
	N	S	N	S	N	S
Total	1169	9.5%	8891	7.1%	674	1.5%
Gay/Bisexual	88	44.0%	2927	19.4%	--	--
IVDU	541	5.7%	753	2.9%	577	1.7%
MSP*/Prostitution+	16+	12.5%	2756+	0.3%	--	--
Transfusion Recipients	67	7.4%	327	1.5%	--	--
Sex Partner of the above	--	--	1648	1.2%	80	0.0%
Unidentified	377	2.0%	480	0.02%	--	--
Others	120	24.0%	2	50.0%	--	--

S-seroprevalence, MSP- multiple sexual partners.

CONCLUSIONS: Different populations are found at different test sites. Access to all test sites is essential to reach different risk groups in large numbers with education and testing programs. They are complementary.

W.A.P.119 HOW CAN SEROPREVALENCE SURVEY DATA BE USED TO MANAGE HIV PREVENTION PROGRAMS?

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Objective. To guide health departments in utilization and limitations of CDC Family of Surveys (FOS) data in managing HIV prevention programs.
Methods. We analyzed survey methodology and procedures to assess potential biases in each type of survey data. Considering these limitations, we suggested appropriate uses of data in public health programs. A communication system for dissemination of data is proposed.
Results. No single seroprevalence survey is representative of the entire population. Biases were identified in each type of survey. Characterization of the population surveyed and adherence to standard CDC protocols will minimize biases. In prevention programs, CDC FOS data may be used in allocating resources and in determining the types of education, counseling and testing services offered. Over time, data will be useful in following trends in HIV infection and in evaluating the impact of program activities. Success in reaching infected persons may be measured by comparing seroprevalence rates in unlinked surveys with voluntary testing in the same population. Consultants in health departments and at CDC form a network for disseminating data to health care providers and program managers.
Conclusion. FOS seroprevalence data will be a valuable tool in surveillance and prevention of HIV infection. Awareness of the survey biases aids in interpreting results. A defined communication process is needed so prevention programs can access and utilize data effectively.

W.A.P.120 A PROGRAM TO ENCOURAGE AIDS PREVENTION COUNSELLING BY PRIMARY CARE PHYSICIANS

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**College of Family Physicians of Canada, British Columbia Chapter, Vancouver, British Columbia, Canada, *Division of STD Control, Province of British Columbia, Vancouver, British Columbia, Canada.

Objective To alert primary care physicians to the importance of AIDS prevention counselling at the time of HIV-antibody testing.

Methods A travelling multi-media seminar was developed to alert physicians to their role in the prevention of AIDS. Epidemiological and risk information was included with advice on how to assess patients for risk of infection and need for testing. Models for pre-test and post-test counselling both HIV-antibody negative and HIV-antibody positive patients were presented. A questionnaire was administered to assess the impact of the presentation.

Results Approximately one in ten physicians in the province returned a questionnaire (n=601). The program cost was approximately $80 per physician reached.

- 90% had ordered one or more HIV-antibody tests
- 20% had dealt with one or more HIV-antibody positive patients
- 7% had tested without patient knowledge and/or consent
- 79% indicated the highest level of approval of the presentation
- 24% indicated they would test more often
- 96% indicated they will incorporate suggestions from the seminar into their approach to testing.

Conclusions A travelling seminar format is an effective method for alerting primary care physicians to their role in preventing AIDS through counselling

Session d'affichage
Poster Session

Épidémiologie et santé publique
Epidemiology and Public Health

Autres rétrovirus : HTLV-I et HTLV-II
Other Retroviruses: HTLV-I and HTLV-II

Th.A.P.1

PREVALENCE OF HTLV-1/HIV-1 INFECTION AMONG MALE INTRAVENOUS ABUSERS AND THEIR SEXUAL PARTNERS IN CHICAGO

Lentino, Joseph R.*; Pachucki, C.T.*; Schaaff,D*,Schaefer, M.*; Schroer, D**; Dorus, W.*; Hines Veterans Administration Hospital, Hines, IL.* Ortho Diagnostic Systems,Inc., Raritan, N.J.** U.S.A.

Objective:To determine the prevalence of HIV-1 and HTLV-1 infection in 150 IVDAs and 19 of their sexual partners.
Methods: Antibody to HIV-1 and HTLV-1 measured by repetitively reactive ELISA was confirmed by Western Blot, demonstrating antibody to >2 antigens.
Results:The prevalence of antibody to HTLV-1 was 8.66%(13/150) for the patients and 5.26%(1/19) among the sexual partners. Only 10 patients(6.66%) had antibody to HIV-1. Only 1 couple of 19 was noted to be antibody positive for HTLV-1 by repetitively reactive ELISA.However, on Western Blot assay, the patient's sera reacted with only 1 antigen,while his non-drug abusing spouse was confirmed positive. There were no statistical differences in the incidence of sexually transmitted diseases(STD's)among the HTLV-1 positive patients as compared to either the HIV positive patients or to a serologically negative control group drawn from the same population. Only one patient was positive for both HTLV-1 and HIV-1 as confirmed by Western Blot. CD4/CD8 lymphocyte ratios in HIV-1 infected patients,0.46±0.12,were significantly lower than ratios for HTLV-1 infected patients,1.17±0.17(p=0.006)or for non-infected control patients,1.35±0.13(p=0.001).Absolute CD4 lymphocyte counts were significanly lower among HIV-1 infected patients,802±225,as compared to HTLV-1 1680±293(p=0.032) and control patients 1859±278(p=0.007).
Conclusion:Prevalence of HTLV-1 in our non-endemic,geographic area was greater than that of HIV-1 in our cohort of patients. Infection with HTLV-1 was independent of HIV-1 infection or STD's.

Th.A.P.3

HTLV-1 EN FRANCE METROPOLITAINE

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Objectif. Estimer la diffusion de HTLV-1 en France métropolitaine.
Méthodes. 4797 échantillons sériques (2319 donneurs de sang et 2478 sujets à risque ont été collectés en France métropolitaine. Les dépistages ont été réalisés par un test d'agglutination ou des tests immunoenzymatiques.
Les sérums positifs étaient confirmés par Immunofluorescence Indirecte et Western Blot.
Résultats.

Sujets	Nombre	Anti HTLV-1 positifs
I Donneurs de sang		
. Caucasiens	1274	0
. Originaires de zones endémiques	1045	7
II Sujets à risque		
. Polytransfusés	387	0
. Consultants pour MST	401	0
. Toxicomanes	1690	7

Conclusion. Les sujets contaminés par HTLV-I ont été retrouvés chez les toxicomanes (4p1000) et les donneurs originaires de zones endémiques (7p1000). La diffusion en France est donc rare, mais une surveillance régulière s'impose.

Th.A.P.5

HTLV-1 SEROPREVALENCE IN PATIENTS WITH HIV AND NEUROLOGIC DISEASE, OTHER RISK GROUPS, AND BLOOD DONORS, IN ZIMBABWE.

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Rationale: HTLV-1 is associated with T-cell tumours and Tropical Spastic Paraparesis (TSP). Relatively high prevalence are reported from several African countries, but it has not been studied in Zimbabwe.
Methods: Commercial ELISA kits were used for HTLV-1 and HIV testing. Only strongly reactive specimens are reported here.

RESULTS	No.	#Pos.	%
Normal blood donors, several regions of Zimbabwe	931	1	0.1
Leukemia patients	6	0	0
Hemophiliacs (multi-transfused)	23	0	0
HIV-negative patients with symptoms from the WHO clinical AIDS criteria.	88	0	0
HIV-seropositive patients with neurologic disease	11	2	18.2) p
HIV-seronegative patients with neurologic disease	21	1	4.8).10
(of which 2 were typical TSP, both HTLV-1 neg)	1080	4	0.4

Of three patients with HTLV-1 and neurologic diseases:
1) 53 y.o. HIV-positive man with myelopathy progressing over 3 months.
2) 21 y.o. HIV-positive woman with probable zoster transverse myelitis and subsequent progression of neurologic deficit.
3) 38 y.o. HIV-negative woman with a 3 year history of spastic paraparesis. Other causes were not fully excluded in this patient.
CONCLUSIONS: HTLV-1 appears less common in Zimbabwe than other African countries. It is strongly associated with neurologic disease. Possible association with leukemia or HIV infection requires further study.

Th.A.P.2

SCREENING FOR HTLV-I ANTIBODIES AMONG FINNISH BLOOD DONORS, HEMOPHILIACS AND HIV-SUSPECTED

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Objective. To evaluate HTLV-I screening among blood donors.

Methods. Serum samples from blood donors (N=1803), hemophiliacs (N=196), patients of health care centers (N=2761), AIDS information and support centers (N=446), i.v. drug abusers and inmates were tested using HTLV-I ELISA test (Du Pont, USA). Confirmatory tests were done by WB (Du Pont, USA), indirect immunofluorescene and passive agglutination of gelatine particles coated with viral antigen (K. Okochi, Kyuhsu University Hospital, Fukuoka, Japan).

Results. No true positive cases were found. Nine sera were repeatedly reactive in the ELISA test. None of them gave a characteristically positive reaction pattern in WB but showed reactivity against individual components of the virion. The reactive sera came from hemophiliacs (1), healthy blood donors (4), health care center patients (4) and AIDS information and support centers (1). The final result was confirmed by immunofluorescence and passive agglutination.

Conclusion. HTLV-I screening is not warranted among blood donors in Finland at the moment. The atypical reactivity, sometimes interpreted as an indication of a HTLV-I related retrovirus and earlier reported from patients with lymphomas or leukemias was also found among healthy blood donors.

Th.A.P.4

PREVALENCE OF HTLV-I ANTIBODIES IN HIV-1 INFECTED PATIENTS IN A MINORITY COMMUNITY IN THE BRONX, NY

Bauer, Stanley; Amaral, L.; and Ernst, J.
The Bronx-Lebanon Hospital Center, Bronx, NY, USA.

Objective. To determine the prevalence of HTLV-I infection in an HIV-1 infected inner-city population.
Methods. Anonymous sera (classified by age, sex, and race) and positive by HIV-1 ELISA and WB were tested by HTLV-I ELISA and WB. HIV-1 ELISA negative control sera were tested by HTLV-I ELISA. HIV-1 positive sera were from clinic outpatients, emergency room patients, and inpatients with no factors which met exclusion criteria of the CDC Sentinel Hosp. Program. HIV-1 negative sera from the hospital population served as controls.
Results

SOURCE PATIENTS	NUM HIV-1 POS	% HTLV-I POS
Sentinel Hosp.	394	28%
Clinic	58	21%
Emergency Room	24	50%
Control (HIV-1 NEG)	172	8%

Conclusion. HTLV-I infection has spread more widely in inner-city minority groups than has been previously documented.
Study partially supported by the CDC Sentinel Hospital Program.

Th.A.P.6

Th.A.P.7 HTLV-I ANTIBODIES IN THE SOLOMON ISLANDS.

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*University of California, Davis Medical Center, Sacramento, CA, USA and **Yale University School of Medicine, New Haven, CT, USA.

Objective. To determine the extent of HTLV-I infection in the Solomon Islands.
Methods. We tested 1,317 random individuals over the age of 5 using ELISA (Cellular Products, Buffalo, NY and Dupont, Wilmington, DE) as a screening test. We used antigen from Hillcrest Biologicals (Cypress, CA) to prepare Western Blots (WB) as a confirmatory test.
Results. The prevalence of antibody interactive with HTLV-I by ELISA was 12.6% (90/716) in the North Solomons Province (Papua New Guinea) and 14.6% (88/601) in Malaita Province (Solomon Islands). However, in the North Solomons Province sample, only 5 of 90 samples positive by ELISA were positive by WB. Thirty four were negative and 51 were indeterminate, usually showing faint p19 or p24 core bands.
Conclusion. Although there is a high prevalence of antibody interactive with HTLV-I by ELISA in the Solomon Islands, few ELISA-positive samples were also positive by WB. These puzzling results may reflect problems with HTLV-I WB testing, cross-reactivity with immune complexes, or the existence of an antigenic variant of HTLV-I or a novel retrovirus in this area of the South Pacific.

Th.A.P.9 HIV-1 AND HTLV-I SEROPREVALENCE IN CRITICALLY ILL RESUSCITATED EMERGENCY DEPARTMENT PATIENTS.

Lewandowski, C; Ognjan, A; Rivers, E; Pohlod, D; Belian, B; and Saravolatz, Louis D. Henry Ford Hospital, Detroit, Michigan, USA,

Objective. To determine the HIV-1 and HTLV-I seroprevalence and demographic features among critically ill emergency department (ED) resuscitated patients in a low HIV-1 seroprevalence area.
Methods. Patients who required resuscitation had an anonymous questionnaire completed by their physician. Sera was obtained and tested by ELISA. Repeatedly reactive samples were confirmed by IFA for HIV-1 and both Western Blot and RIPA for HTLV-I.
Results: Between 9/24/88 and 1/15/89 there were 25,378 ED visits. Patients studied reflected the demographics of a Detroit inner city hospital ED. Seventy-nine percent (257/325) of eligible candidates were enrolled with a mortality of 25.3% (65/257).

	N	HIV-I	HTLV-I
Trauma (blunt or penetrating)	144	4.9% (7/144)	1.4% (2/144)
Medical Resuscitation	113	4.4% (5/113)	2.7% (3/113)
Total	257	4.7% (12/257)	1.9% (5/257)

Intravenous drug use was determined by history in 7/17 and by physical examination in 8/17 retroviral infected patients.
Conclusion. Health Care workers in a low HIV-1 seroprevalence area are at risk for HIV-1 and HTLV-I exposure during the resuscitation of the critically ill ED patient. Identification of known high risk groups occurs in approximately one-half of patients, emphasizing the need for strict adherence to universal precautions.

Th.A.P.11 PREVALENCE OF HTLV-1 ANTIBODY IN SELECTED WOMEN IN THE LOS ANGELES AREA

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Laboratory of Viral Oncology and AIDS Research, USC School of Medicine, Los Angeles, CA U.S.A.

Objectives: To determine the seroprevalence of HTLV-1 in women with high risk behavior.
Methods: Sera were collected from women with the history of multiple male sexual partners and analyzed for HTLV-1 and HIV antibodies. Medical history and other data were obtained from the questionnaire forms completed at the time blood was drawn for testing.
Results: We have previously reported that 6% of women with multiple sexual partners were positive for antibodies to HIV (Gill, Rasheed et al, AIDS, 1986). Testing of 143 sera that were negative for HIV antibodies for the presence or absence of HTLV-1 antibodies indicated that 11 of 143 sera (7.7%), contained HTLV-1 reactive antibodies. All sera that reacted in the HTLV-1-ELISA recognized specific HTLV-1 proteins of gp46, p25, p24, p19 and p15 in the immunoblots. The ages of seropositive women ranged from 18 to 43 years and all had multiple sexual partners for several years. Physical examination did not reveal lymphadenopathy or other symptoms. Two of the HTLV-1-positive women were black, one hispanic and 8 caucasian. None of the women had a history of blood transfusion or received any blood product. Only 3 of 11 seropositive women admitted occasional use of intravenous (IV) drugs.
Conclusions: We report a high incidence of HTLV-1 infection in women with multiple sexual partners. Since only 3 of 11 women had used IV drugs, it is evident that HTLV-1 was transmitted sexuallly. Although none of the women showed any symptomatic illness at the time their blood was tested, a prospective study would be important to relate HTLV-1-infection with any disease that may develop in the future.

Th.A.P.8 LACK OF HTLV-I INFECTION IN NON-I.V. DRUG USING HIV SEROPOSITIVE MEN IN LOS ANGELES

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Division of Hematology-Oncology. UCLA Department of Medicine, Los Angeles, California.

Objective. To determine the seroprevalence of HTLV-I infection among HIV seropositive males.
Method: 634 sera obtained from Western blot confirmed HIV seropositive men seen at the UCLA AIDS Center between 1984 and 1988, were subjected to radioimmunoprecipitation (RIP) using an HTLV-I infected human T-cell line (SLB-I). Sera obtained from known Japanese adult T-cell leukemia patients and noninfected healthy individuals served as positive and negative controls. Groups studied: 1) Asymptomatics (N=131), 2) AIDS Related Complex (N=115), 3) Kaposi's Sarcoma (N=300), 4) AIDS defining opportunistic infections (N=76), and 5) high grade lymphomas (N=12). Only 2 patients were known I.V. drug users.
Results. None of the tested sera were positive for antibodies to HTLV-I gene products. In contrast, using identical methods, we previously reported that 3.1% of sera collected from a prostitute cohort (N=197) in Los Angeles harbor antibodies to HTLV-I (1). Seropositive females used I.V. drugs or were found to have frequent sexual contact with I.V. drug using men.
Conclusion. By using a sensitive and specific assays that we have employed extensively in HTLV-I endemic areas, we find, in opposition to previous studies, that HTLV-I infection is uncommon among select groups of HIV seropositive homosexuals who do not engage in I.V. drug usage (2). Furthermore, no cross reactivity between HTLV-I and HIV p24 *gag* gene products was seen during RIP analysis. Additional studies looking at the seroprevalence and consequence of HTLV-I infection in broader based populations at risk for retroviral infection are in progress.
References. (1) *Blood* Vol. 72, No. 5, Suppl. 1, 1988. (2) *Virology* Vol. 150, 1986.

Th.A.P.10 HIV-1 AND HTLV-I INFECTIONS IN INTRAVENOUS DRUG USERS (IVDUS) IN DETROIT 1985-1989.

Ognjan, A.*; Markowitz, M.*; Pohlod, D.*; Lee, H.**; Belian, B.*; and Saravolatz, Louis D.*, et al. *Henry Ford Hospital, Detroit, Michigan, USA, and **Abbott Laboratories, N. Chicago, Illinois, USA.

Objective. To monitor the seroprevalence of HIV-1 and HTLV-I and examine the risk factors for infection, three surveys were conducted among Detroit IVDUs from 1985-89.
Methods. Consecutive serologically unknown IVDUs seeking medical care for conditions unrelated to HIV were eligible to participate. After informed consent an anonymous questionnaire was completed and sera obtained. Serum specimens were tested by ELISA and repeatedly reactive samples were confirmed by IFA for HIV-1 and Western Blot and RIPA for HTLV-I.
Results.

Year	N	HIV-1	HTLV-I	HIV-1 and HTLV-I	HIV-1 or HTLV-I
1985-1986	96	12.5% (12/96)	9.5% (7/74)	-	-
1987-1988	70	15.7% (11/70)	10.0% (7/70)	3.2% (2/70)	22.9% (16/70)
1988-1989	71	15.5% (11/71)	7.0% (5/71)	4.2% (3/71)	18.3% (13/71)

Seropositivity was not associated with risk reduction practices, prostitute contact, or duration of drug use. IVDUs who traveled to metropolitan New York were more likely to be HIV-1(+) than those who did not ($p<0.02$). The HTLV-I attack rate was higher in HIV-1(+) vs HIV-1(-) drug users ($p<0.05$).
Conclusion. During 1985-89, the prevalence of antibody to HIV-1 and HTLV-I has remained stable among Detroit IVDUs. Travel to an epidemic area increased the risk of acquisition of HIV-1. Since coinfection exceeded the expected frequency, HIV-1 and HTLV-I transmission may not be exclusively independent events.

Th.A.P.12 HTLV-1 INFECTION IN AN INNER-CITY EMERGENCY DEPARTMENT POPULATION

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Objective: To study the epidemiology of HTLV-1 in a population known to have a high rate of HIV-1 infection.
Methods: Excess serum samples drawn from 2544 consecutive adult patients presenting to an inner-city emergency department in Baltimore were tested for HTLV-1 and HIV seropositivity by ELISA and confirmed by Western Blot (WB).
Results: We found 30 (1.2%) of the samples to be WB seropositive to HTLV-1. While 152 of the patients (6.0%) were WB seropositive to HIV-1, only 3 patients (all IV drug users) had concurrent infections. The age range among HTLV-1 seropositive patients was 20 to 86 years old, with half the patients greater than 50 years old. The age distribution of HTLV-1 infected individuals matched that of the patient population. In contrast, HIV was concentrated among those 25-44 years of age ($p<.05$). Of the HTLV-1 seropositive patients, 93% (28) were black, whereas blacks made up only 77% of the patient population ($p<.05$). Only 15 patients had an identified risk factor; 10 were IV drug users and 5 were transfusion recipients. One other patient's only potential known source of infection was sexual exposure to an HIV infected partner. All but one of the HTLV-1 infected patients lived in the surrounding neighborhood implying that migration from endemic areas was not likely a principal factor for infection.
Conclusion: Although the prevalence of HTLV-1 in the United States has been estimated to be .03%, HTLV-1 may be more prevalent in certain areas of the U.S. than previously thought. Sexual transmission did not seem to play a major role in HTLV-1 infection. The data support the hypothesis that HTLV-1 and HIV are relatively independently transmitted diseases.

Th.A.P.13 ANTI-HTLV-1 IN NEW YORK BLOOD DONORS (1985-1986)

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**Abbott Laboratories, Chicago, Illinois, U.S.A.

Objective. To determine the prevalence of antibody to HTLV-1 in 1985-1986 donors to the Greater New York Blood Program.
Methods. Sera were screened by EIA (Abbott Laboratories, Ill.) and confirmed by Western blot and RIPA.
Results. Fourteen (0.08%) of 18,257 donors tested were confirmed anti-HTLV-1 positive. The following table shows anti-HTLV-1 prevalence by sex, ethnicity and place of birth.

Donor Characteristic		% Positive
Sex:	Male	0.06%
	Female	0.10%
Ethnicity:	White	0.03%
	Black	0.53%
	Hispanic	0.26%
Birthplace:	U.S.A./Canada	0.04%
	Caribbean	1.54%
	Other	0.00%

One anti-HTLV-1 positive donor was anti-HBc positive.
Conclusions. Only one unit of blood from the 14 anti-HTLV-1 positive donors would have been excluded from the donor pool by other routine screening methods (anti-HBc testing). Ethnicity and birthplace appear to be associated with the risk of HTLV-1 infection.

Th.A.P.14 DETERMINANTS OF HTLV-I SEROPREVALENCE IN MIYAZAKI PREFECTURE, JAPAN.

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Objective: To evaluate the determinants of prevalence of antibody positivity to HTLV-I in Miyazaki Prefecture, Japan.
Methods: Data from 7055 persons who came to Miyazaki City Health Promotion Center from 9/83 to 12/84 for a free government-sponsored health exam was collected. A cross-sectional analysis was conducted to examine the relationship between seropositivity for HTLV-I (by indirect immunofluorescence assay) and such demographic factors as age, sex, area of residence, socioeconomic status (SES), and occupation. Prevalence rates were calculated, standardized for age and sex as appropriate.
Results: Seroprevalence rates for Miyazaki were 9.1% for women and 7.3% for men. Rates varied dramatically according to municipality of residence, ranging from 4.5% to 17.6% in those areas with at least 100 people participating. The prefecture could be divided into two regions based upon prevalence of infection: 1)high prevalence: the southern-most area known to be highly endemic for HTLV-I, and the adjacent inland section, bordering upon Kagoshima (12.1%); 2)medium prevalence: the remaining areas of Miyazaki Prefecture (6.6%). An inverse relationship appears to exist between prevalence of positivity and SES (as indicated by occupation) in the medium prevalence area (high SES-1.7%; middle-7.5%; low-12.6%); such a gradient is not evident for the high prevalence area (high SES-14.1%; middle-12.1%; low-18.4%). No significant association with a specific occupation is apparent.
Conclusion: Prevalence of antibody positivity to HTLV-I in Miyazaki Prefecture, Japan, seems to be primarily a function of age, sex, area of residence, and, in lower endemic areas, SES.

Th.A.P.15 SEROPREVALENCE OF HTLV-1 IN A PARTURIENT POPULATION AT RISK FOR HIV-1 INFECTION.

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Objective. To determine the seroprevalence of HTLV-1 in a parturient population at risk for HIV-1 infection.
Methods. Cord bloods from consecutive deliveries at Bellevue Hospital Center were tested for antibodies to HIV-1. Positives and a sample of negatives were tested for HTLV-1. Each antibody was assayed with commercially available ELISA.
Results. Of 3883 cord bloods, 142 (3.65%) had anti-HIV-1. Of the 142, 16 (11.3%) had anti-HTLV-1. No anti-HTLV-1 was detected among the first 163 HIV-1 seronegative cord bloods. Of those with antibodies to both viruses, strong HTLV-1 and HIV-1 ELISA signals were present in 12/16. Weak HIV signals and strong HTLV-1 signals were present in 4, including: 2 with weak HIV p24 bands only on Western Blot analysis, and 2 with indeterminate HIV-1 Western blots.
Conclusion. HTLV-1 is more common among HIV-1 infected parturient women than HIV-1 seronegative women. This may reflect the similar mechanisms of transmission or may be the result of patient demographics and the geographic origin of parturient women at risk for HIV-1. HTLV-1's contribution to disease in HIV-1 infected mothers, and its transmission and contribution to disease in their children remains to be determined. The presence of antibody to HTLV-1 cross reacting with HIV-1 may explain some low positive or equivocal HIV-1 serologic results.

Th.A.P.16 SEROPREVALENCE OF HTLV-I IN PATIENTS ATTENDING SEXUALLY TRANSMITTED DISEASES (STD) CLINICS IN THE UNITED STATES.

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Objective. To assess the seroprevalence of HTLV-I in patients attending STD clinics. Methods. Sera from 1860 STD clinic patients were tested for HTLV-I antibodies by EIA; reactive sera were confirmed by WB and RIPA. 1275 on whom no information on intravenous drug use (IVDU) was available were from clinics in the southeast (SE): Atlanta, GA; Nashville, TN; Birmingham and Mobile, AL; Greenville and Columbia, SC; Raleigh and Whiteville, NC. 585 patients were from Denver, CO, and comprised 384 with and 201 without histories of IVDU. Results. Of 1275 STD clinics patients in the SE, only 2 (0.15%, 95% CI 0.04-0.63%) were positive (antibodies to p24 and env gene product); 13 (1%) had indeterminate HTLV-I reactivities (bands on WB but not meeting criteria for positivity). The 2 seropositive patients were black women from Atlanta; the seroprevalence of HTLV-I in the SE was therefore 2/826 (0.24%) for blacks compared with 0/328 (0%) for whites (p=NS). Among Denver IVDU patients the seroprevalence of HTLV-I was 8/384 (2%) compared with 0/201 (0%) in non-IVDU (p=.03, 1-tailed Fisher); in IVDU patients, the HTLV-I rate was higher in blacks ,2/47 (4.3%), than in hispanics, 1/56 (1.9%), or whites, 3/170 (1.8%, p=NS). Conclusion. Our results show that the seroprevalence of HTLV-I is low in STD clinic patients and confirm that IVDU is the major risk factor for HTLV-I in the U.S.. The prevalence of HTLV-I in STD clinic patients in the SE seems lower than suspected from earlier reports.

Th.A.P.17 RISK OF DEVELOPMENT OF HTLV-I-ASSOCIATED MYELOPATHY (HAM/TSP) AMONG PERSONS INFECTED WITH HTLV-I

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Objective. To determine the yearly and cumulative risk of development of HAM among persons infected with HTLV-I. Methods. National surveys of HAM were conducted in Japan in 1987 and 1988. A "definite" case of HAM was defined as a patient with slowly progressive myelopathy and antibodies to HTLV-I in both serum and CSF. Estimates of seroprevalence of HTLV-I in 8 HTLV-I-endemic prefectures (seroprevalence >3%), by age group, were obtained from studies of blood donors; the 1986 population, by prefecture and age group, was obtained from the census. Results. Of 589 definite cases of HAM reported nationally, 393 occurred in residents of the 8 endemic prefectures included in this analysis; of these, 170 reported onset of illness during the years 1982-1988, for an average incidence of 24.3 cases/year. Using the seroprevalence estimates and 1986 census figures, we estimated the number of HTLV-I-seropositive persons in the 8 prefectures in 1986 at 611,700. We therefore estimated the incidence of HAM among HTLV-I-infected persons at 4.0×10^{-5} cases/year; given a lifetime of 70 years, the lifetime incidence is approximately 1/4 of 1%. Adding 38 "probable" cases of HAM reported from the 8 prefectures with onset in 1982-1988 increased this estimate to only 1/3 of 1%. Conclusion. The risk of development of HAM in the lifetime of an HTLV-I-infected person is estimated at <1%. This estimate is important in counseling persons, such as blood donors, found to be infected with HTLV-I.

Th.A.P.18 HTLV-I/II SEROPREVALENCE AND HIV/HTLV COINFECTION AMONG IV DRUG ABUSERS (DA) IN THE U.S.

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Objective. To determine seroprevalence of HTLV-I/II and HIV/HTLV coinfection among IV DA in 6 US locations and to assess the influence of age, sex, and race on seroprevalence and coinfection.
Methods. Data were collected from 1,766 IV DA in a continuing cross-sectional survey of drug treatment admissions. HIV was confirmed by Western blot (WB). HTLV-I/II Ab presence was defined by a + response in at least 2 of 3 assays: Dupont EIA, P-24 RIA, and WB.

Results.	(n/%)	HIV+	HIV(?)	HTLV+	HTLV(?)	BOTH+
Blacks	(n=576)	190/33.0%	2	110/19.1%	31	41/7.1%
Hisp.	(n=586)	118/20.1%	2	50/ 8.5%	26	3/0.5%
Whites	(n=604)	62/10.3%	1	29/ 4.8%	12	1/0.2%
TOTAL	(n=1766)	370/21.0%	5	189/10.7%	69	45/2.5%

HTLV-I/II prevalence increased significantly with age among blacks (from 0% in <30 yrs to 35% in 40+) and non-blacks (from 2.8% in <30 yrs to 13.8% in 40+). HTLV prevalence was similar by sex and varied geographically from 0% to 18%. HIV/HTLV coinfection in blacks was 7.1% (6.3% expected,NS) but 0.4% in non-blacks (1.2%expected,NS).
Conclusion. High prevalence of HTLV-I/II infection was found among blacks and older DA. HTLV prevalence among blacks was generally above that in whites and Hispanic DA. Coinfection rates, when examined by age, ethnicity, and geography, failed to confirm a significant interaction between HIV and HTLV-I/II seropositivity.

Th.A.P.19

HTLV-1 AND HIV-1 INFECTION IN INTRAVENOUS DRUG ABUSERS OF BARCELONA.

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Objective. To evaluate the prevalence of HTLV-1 infection among intravenous drug abusers (IDAs) in an area were a high incidence of HIV-1 infection has been described previously in this risk group.

Methods. IDAs seeking medical care for the first time between January 1985 and December 1988 in our hospital, were tested by Elisa for the presence of anti-HIV-1 and anti-HTLV-1 antibodies. Western blot was used as confirmatory test in repeatedly reactive samples.

Results. During the study period, 473 IDAs serum samples were screened and the overall HIV-1 and HTLV-1 antibody prevalence was 70.0% and 0.6 %, respectively. The seroprevalence rates were stable during the study period. Coinfection was detected in all cases with HTLV-1 antibodies.

Conclusion. IDAs in our area represents an important reservoir for HIV-1 infection , but our data pointed to a low prevalence of HTLV-1 antibodies. For both retroviruses the total figures did not change throughout the four-year period.

Th.A.P.21

HIGH RATE OF CONFIRMED HTLV II INFECTION AMONG INTRAVENOUS DRUG ABUSERS (IVDA) FROM NEW ORLEANS

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OBJECTIVE. Determination of HTLV I/II infection in New Orleans IVDA.
METHODS. (1) Serum from 121 IVDA were tested by EIA, Western blot and RIPA for antibodies to HTLV I/II. (2) Lymphocytes from 27 of 121 IVDA were analyzed by PCR. HTLV I/II sequences were differentiated via restriction and sequence analysis. (3) Viral cocultures were done using lymphocytes from 9 EIA positive IVDA and 20 negative EIA low risk individuals. Reverse transcriptase (RT) and immunofluorescence (IF) with monoclonal anti-p24 and anti-p40X were used to monitor viral expression.
RESULTS. (1) Serum samples from 54 of 121 IVDA were EIA positive, 33 of which were confirmed by Western blot and/or RIPA.

(2) EIA	WESTERN BLOT/RIPA	PCR: HTLV I +	HTLV II +	NEGATIVE
23 Positive IVDA	18 Confirmed	2	16	0
	4 Indeterminate	0	3	1
	1 Negative	0	1	0
4 Negative IVDA	4 Negative	0	1	3
20 Negative Donors	20 Negative	0	0	20

(3)All 9 cocultures of EIA and IVDA lymphocytes were positive by IF. At 6 weeks of culture, 8 of the 9 cocultures were also positive by RT.
CONCLUSION.A cohort of 21 HTLV II positive individuals has been identified in New Orleans. This represents the largest HTLV II cluster confirmed by a combination of virological and molecular genetic methods.

Th.A.P.23

COINFECTION WITH HIV, HTLV-1 AND HBV IN TRINIDAD AND TOBAGO

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425 consecutive HIV antibody positive sera assayed in 1986-88 were tested for antibodies to HTLV-1 by ELISA and confirmed by Western Blot. 43 (10.1%) were HTLV-1 antibody positive. IVDA is not practised in Trinidad and Tobago and when adjusted for age this cohort had a 5 times higher seroprevalence than the general population. 17/160(10.6%) of HIV antibody positive homosexual men were coinfected with HTLV-1, 9/90 (10%) of heterosexual women, while 14/58 heterosexual men (24.1%) were HTLV-1 antibody positive. Of 382 patients singly infected with HIV, 205 (53.7%) had AIDS or developed AIDS in the period 1986-88 compared with 28/43 (65%) of coinfected patients.

The hepatitis virus (HBV) closely resembles retroviruses in its molecular structure including a reverse transcriptase mechanism in its replication. HBV DNA has been found in T-lymphocytes of HBV infected people who are core and surface antibody positive and surface antigen negative. Significantly, out of 425 HIV positive patients, 7/8 (87.5%) who had triple antibodies to HIV, HTLV-1 and HBV had AIDS in the period under study. In a prospective study of 34 homosexual men who were singly infected with HIV and followed for a period of 5 years up to 1989, 7 (22.6%) have progressed to AIDS, while of 6 men who were doubly infected with HIV/HTLV-1, 3 (50%) have progressed to AIDS in the same time interval. Notably, of these 3 cases, 2 were HBsAg positive. Further studies are in progress to assess the role of HTLV-1 and HBV as co-factors in AIDS.

Th.A.P.20

HTLV I ANTIBODIES AMONG PRISON INMATES IN MARYLAND

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OBJECTIVE. To identify prevalence and risk groups for HTLV I infection among inmates entering prison.
METHODS. Specimens routinely obtained during intake evaluation of 1,000 consecutive male inmates, excluding repeat offenders, entering Maryland prisons during the same time period in 1987 and 1988 were assayed for antibodies to HTLV I by EIA. Repeat reactive samples were confirmed by Western blot and RIPA. Demographics were compared by serostatus using non-parametric statistics.
RESULTS. Among 1933 inmates, 19 (1%) were repeatably reactive by EIA.

GROUPS		NUMBER	N/(%) REPEATABLY REACTIVE	p VALUE
RACE:	Black	1356	19/(1.4%)	< 0.001
	Non Black	577	0/(0.0%)	
AGE:	> 25	1070	18/(1.7%)	< 0.001
	≤ 25	863	1/(0.1%)	
YEAR:	1987	900	5/(0.6%)	
	1988	1033	14/(1.4%)	0.08

Reactivity to HTLV I did not vary significantly by HIV-1 serostatus, jurisdiction, offense category.
CONCLUSION. Unlike HIV infection in this population (7.0%), approximately 1% was infected with HTLV I, occuring mostly in blacks over 25 years of age. The seroprevalence rate of HTLV I in prison inmates is 5-10 times hicher than in normal U.S. populations.

Th.A.P.22

HTLV-1 INFECTION IN SPAIN

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Objective. To evaluate the prevalence of antibodies against HTLV-1 among people at risk for this viral infection.

Patients and methods. We studied serum samples of 682 intravenous drug abusers (IDAs), 53 leukaemic polytransfussed patients, 3 subjects diagnosed of Tropical Spastic Paraparesis (TSPP) and 102 West Africans living in Barcelona since 1983.
Antibodies to HTLV-1 were investigated by ELISA and repeatedly reactive samples were studied by Western blot.

Results. See table.

	IDAs	Polytransfussed	TSPP	West Africans
*ELISA + (35/840)	27/682	3/53	0	5/102
**WESTERN BLOT+	2/27	0	0	1/ 5

*ELISA Clonatec, France; **WESTERN BLOT Du Pont, USA

Conclusion. Our results suggest that HTLV-1 infection is present in Spain among IDAs and West African inmigrants. A low prevalence is recognised.

Th.A.P.24

HTLV-I IN INTRAVENOUS DRUG ADDICTS (IVDA) AND GAY MEN IN SAN FRANCISCO.

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Objective:To describe the seroprevalence of HTLV-I in IVDAs and gay men in San Francisco comparing a commercially available ELISA with Western Blot (WB) with C91 PL purified virus.
Methods:Serum samples from 909 IVDAs in methadone programs and from 353 gay men were independently blindly tested for HTLV-I in 2 independent laboratories. Most specimens were from cross-sectional participant samples between 1985 and 1987. Additionally, longitudinal paired specimens were available in 153 IVDA participants.
Results:WB and ELISA showed similar temporal trends although the WB consistently detected more positives: 1985 12% ELISA +, 16% WB +; 1987 17.5% ELISA +, 19% WB +. By ELISA and WB: seroprevalence correlated with age: 0% age <20 , 8.2% age 21-30, 13.7% age 31-40, 25.9% age 41-50, 37.3% age 50 and over. Whites had fewer positive results, 10.2%, vs. 23.7% blacks, and 19.6% hispanics. Men (17.5%) were more often positive than women (14.7%). The longitudinal paired samples demonstrate reproducibility of results over time. By ELISA 21 initial positives and 116 initial negatives remained so, however 8 other initial positives were later negative and 8 other initial negatives became positive. By WB 25 initial positives and 92 initial negatives remained so. 4 positives became negative and 2 negatives became positive on follow-up sera. Many of the discrepant results observed between WB and ELISA were categorized as borderline by WB and at the borderline qualitative value of the ELISA.
Conclusions: For the study populations the two methods provided comparable results: the prevalence of HTLV-I in IVDAs in San Francisco is more common than HIV, particularly in older blacks and hispanics. Further evaluation of discrepant results is in progress with WB with HUT102 and radioimmunoprecipitation.

Th.A.P.25 COUNSELING AND FOLLOW-UP FOR INDIVIDUALS POSITIVE FOR HTLV-I ANTIBODY

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Objective: Black adults from Central Brooklyn were screened for HTLV-I antibody because of the large number of patients with Adult T-Cell Leukemia Lymphoma found in this community. Therefore a protocol had to be developed for follow-up and counseling for antibody positive persons.
Methods: This study was performed as a community project by Primary Care Internal Medicine residents and volunteers. Of 484 individuals screened thus thus far, 15(3.17%) were found to be positive for HTLV-I antibody. Each antibody positive person receives a telephone contact from a resident, a complete history and physical exam, a request for blood samples for HTLV-I antibody retesting, cellular testing and HIV testing and counseling.
Results: A patient information sheet was developed which consists of 3 simply worded paragraphs on health implications of HTLV-I infection and transmission of the HTLV-I virus. Additional materials were prepared for resident-counselors. The protocol takes one hour to conduct with 15 minutes alloted for HTLV-I counseling.
Conclusion: Thus far, all patients have responded favorably to the protocol. State mandated protocols for counseling are not available for HTLV-I as they are for HIV, however, CDC has recently issued guidelines. Since testing programs may lead to the detection of significant numbers of HTLV-I antibody positive individuals, counseling programs such as this one will prove to be necessary.

Th.A.P.27 PREVALENCE OF HTLV-I IN GREEK BLOOD DONORS

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Objectives: To determine the prevalence of HTLV-I in a highly touristic region of Greece
Methods: Sera from 820 blood donors, and 129 heterosexuals comming to the AIDS Reference Center for HIV-1 infection study were tested by an HTLV-I EIA and repeatedly positive sera were confirmed by Western blot analysis
Results: Seven blood donors and 3 heterosexuals were revealed positive by the ELISA test. The values ranged berween 1.5-3 times the cut off. Repeately positive were 4 blood donors and the 3 heterosuxuals
Western blot revealed antibodies against the p19, p24, p36 and gp46 in 2 blood donors and 1 heterosexual whereas in 2 other heterosexuals only antibodies against the p36 and gp46 were detected. All subjects were clinically normal. The overall prevelence of HTLV-I infection in the district of Iraklion seems to be 0.24% and 0.77% in the blood donors and heterosexuals, respectively
Conclusion: The above findings indicate the presence of HTLV-I infection in the population of Crete suggesting that additional attention should be necessary for blood tranfusions

Th.A.P.29 INVESTIGATIONS ON THE PRESENCE OF HTLV-1 INFECTION IN INTRAVENOUS DRUG ABUSERS AND HOMOSEXUALS IN THE FEDERAL REPUBLIC OF GERMANY

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The human T-cell lymphotropic virus type 1 (HTLV-1), which causes a specific form of adult T-cell leukemia and the tropical spastic paraparesis, is endemic in some areas of Africa, the Caribbean and southwestern Japan.

Antibodies against HTLV-1 were also detected in intravenous drug abusers (IVDA) in the United States, Great Britain, Italy and the Netherlands.

Because transmission of HTLV-1 occurs probably by the same route as HIV, HTLV-1 antibodies might be first detectable in the HIV high risk groups (IVDA, homosexuals).

No HTLV-1 infection could be detected in sera from West German IVDA in the years 1986 and 1987.

We investigated now sera of 354 IVDA (104 HIV-1 positive) and 526 homosexuals (97 HIV-1 positive) collected in the year 1988 on HTLV-1 antibodies by ELISA, Western blot and immunofluorescence. HTLV-1 antigen was harvested from culture fluid of MT-2 cells.

14 out of 880 sera tested, reacted positive in the ELISA. None of the ELISA-positive results could be corroborated neither in the Western Blot nor in the immunofluorescence. To clarify wether hemophiliacs might be infected by HTLV-1 we are testing sera from these patients for the presence of antibodies against HTLV-1.

Th.A.P.26 SEROPREVALENCE OF HTLV-I ANTIBODY IN A BLACK BROOKLYN COMMUNITY

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Objective: Because 16 of 86 cases of Adult T-Cell Leukemia/Lymphoma reported to the American ATL Registry were diagnosed in Blacks from Central Brooklyn, N.Y., a study was conducted to determine the prevalence of HTLV-I antibody in this population.
Methods: Sera were obtained from study subjects attending outpatient Clinics or community health fairs. Two assays were performed to determine antibody positivity. Together they have a high specificity but a low sensitivity.
Results: 15/484 (3.17%) of sera were positive on both assays. This represents a minimum HTLV-I prevalence in the study subjects. The male to female ratio among positive subjects was 3:12; it was 138:298 among negatives. The mean age for positive subjects was 51.8±17.8; it was 54.5±16.3 for negatives. The overall antibody positivity rate was significantly different (p .0001) from that found in all U.S. blood donors (10/39,898) Science 240:643-6,1988)
Conclusion: Additional HTLV-I antibody prevalence studies should be done on non-blood donor populations to determine groups at higher risk for HTLV-I infection.

Th.A.P.28 SEROPREVALENCE OF HTLV-I AMONG U.S. MARINES STATIONED IN A HYPERENDEMIC AREA

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Objective. To determine the seroprevalence of HTLV-I in American military personnel stationed in a hyperendemic area-Okinawa, Japan.
Methods. U.S. Marines assigned on Okinawa, Japan in a 'permanent' tour (1-3 years) were accessioned by unit-primarily by company. Each participant completed a consent form, an intake questionnaire, and 15 cc of blood was obtained. HTLV-I serologies were performed at the NCI Retrovirology Lab, Fort Detrick, and Biotech Laboratories, Rockville, MD.
Results. Between April and July 1988, 5,267 personnel were tested. 30 personnel (5.7 per thousand) were repeatedly reactive by ELISA. Confirmatory assays are in progress and include Western Blot, Radioimmune Precipitation Assay (RIPA), Recombinant ELISA to envelope protein, and Polymerase Chain Reaction (PCR) Assay. 18 of these 30 specimens have been tested by Western Blot-2 are positive with both p19 and p24 bands present and 7 have an indeterminate band pattern (6 with p19 and 1 with p24 only). Follow-up serologies will be done on those with an indeterminate pattern. The two individuals who are positive are male, caucasion, not from the Southeastern U.S., and were stationed in Okinawa for at least 6 months prior to the testing.
Conclusion. There is a markedly lower seroprevalence rate among U.S. military personnel on-island as opposed to the ~18% seropositivity rate found in the general population of Okinawans. Further epidemiologic analysis will be presented. Supported by U.S. Army R&D Command.

Th.A.P.30 COINFECTIONS HIV1/HTLV1 EN MARTINIQUE

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Objectifs : La Martinique, zone d'endémie pour le HTVL1 (2,2 % des donneurs de sang pos.) a été atteinte par l'épidémie HIV1 (0,28 % des donneurs de sang, 4,5 % des consultants du Dispensaire MST et 8,7 % des patients hospitalisés, HIV 1 pos.). Il nous a donc paru intéressant de rechercher les sujets doublement infectés et d'étudier l'éventuelle influence du HTLV1 sur l'infection HIV1.
Méthodes : 256 HIV1 positifs ont été testés en anticorps anti HTLV1 (Elisa et Western Blot).
Résultats : 33 sujets ont été retrouvés doublement positifs, soit 12,9 %.
Provenance : Dispensaire MST : 18 % des patients HIV1+ sont doublement infectés (7 prostituées positives sur 14). Donneurs de sang : 2,6 %, patients hospitaliers : 8,4 % des sujets testés.
Age : Les co-infectés sont en moyenne plus agés que les monoinfectés.
Sexe : 18 % des femmes, 8,5 % des hommes sont doublement infectés. Il y a prédominance féminine comme dans les autres groupes de HTLV1 positifs (donneurs de sang, HAP, anguilluloses ...).
Facteurs de risque : Aucun des 18 héroinomanes HIV+ n'est HTLV1 positif. Chez les hommes homo ou hétérosexuels, la prévalence est la même (10 %). Par contre, dans la population féminine, la prévalence est nettement supérieure chez les prostituées (30 % / 15 %).
Caractéristiques cliniques et biologiques : Aucun des doubles infectés n'a développé de HAP ou d'ATL. Au point de vue clinique et biologique, il ne semble pas y avoir d'interférence notable du HTLV1 sur le HIV1. L'isolement des souches virales et la PCR ont été pratiqués chez certains.
Conclusion : Dans cette étude préliminaire, le virus HTLV1 ne parait pas influer sur les caractéristiques de l'infection HIV. Une étude du suivi évolutif des patients sur une longue période est en cours, ainsi qu'une étude plus particulière de la population des prostituées.

Th.A.P.31 SEROLOGICAL CONFIRMATION OF HTLV-I INFECTION IN BLOOD DONORS

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Objective. Develop criteria for serological confirmation of HTLV-I infection.
Methods. 4 Western blots (WB) and 4 radioimmunoprecipitation (RIP) assays were used to study sera from 38 Japanese, 69 American and 35 Caribbean blood or plasma donors. All sera were reactive on HTLV-I ELISA or gel-agglutination assays with at least one viral-specific band on WB. Specific antibodies were called positive if detected by a majority of tests as follows: p19: ≥2/4 WB, p24: ≥4/8 WB or RIP, $p40^x$: 1/1 RIP, gp46 or gp61 (gp46/61): ≥3/6 WB+RIP.
Results. WB was more sensitive for p24 antibodies while RIP was more sensitive for gp46/61 antibodies (Ab). 135 sera had both p24 and gp46/61 Ab and of these, 128 sera had p19 Ab. 108 sera had $p40^x$ Ab; all 108 sera also had gp46/61 Ab.

Numbers of Donor Sera:	Reactive to gp46/61	Nonreactive to gp46/61
Reactive to p19 + p24	128 (100 had $p40^x$ Ab)	2 (0 had $p40^x$ Ab)
Reactive to p24 only	7 (7 had $p40^x$ Ab)	1 (0 had $p40^x$ Ab)
Reactive to p19 only	1 (1 had $p40^x$ Ab)	3 (0 had $p40^x$ Ab)

Virologic evidence of infection was found in 7 American donors by lymphocyte co-culture (1 HTLV-I, 1 HTLV-II) or by polymerase chain reaction (3 HTLV-I, 2 HTLV-II). Sera from all 7 donors showed p24 and gp46/61 Ab. 6 sera had $p40^x$ Ab (3 HTLV-I, 3 HTLV-II) and 3 sera had p19 Ab (2 HTLV-I, 1 HTLV-II). Thus, seroreactivity patterns to p19, p24, $p40^x$ and gp46/61 did not consistently distinguish donors with HTLV-I from those with HTLV-II infection.
Conclusions. Seroreactivity to both p24 and gp46/61 by WB and/or RIP are suitable criteria to confirm but not distinguish HTLV-I and HTLV-II infections.

Th.A.P.32 ANTIBODY TO HTLV I/II AMONG BLOOD DONORS IN FOUR CITIES OF THE UNITED STATES

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Objective. To identify anti-HTLV-I/II (+) donations in the TSS/NHLBI Donor Repository, in order to characterize donors with HTLV-I/II infection and observe the consequences of transfusion among their recipients.
Methods. The TSS/NHLBI Donor Repository has 200,000 donor sera collected in late 1984 and early 1985, just before routine anti-HIV-1 testing. Screening for anti-HTLV-I/II is complete for South Florida, and is in progress under a uniform protocol in New York, San Francisco, and Los Angeles.
Results. South Florida had 23 donors with confirmed positivity among 29,931 donations tested (0.8/1,000); thus far, 11 donors and 6 recipients have been enrolled. Interim data for the other 3 areas are as follows:

Area	Total donations	Tested (10/21/88)	Repeatably reactive Number	Repeatably reactive /1,000	Fully confirmed Number	Fully confirmed /1,000	RR/ conf.
New York	74,128	19,500	38	2.0	18	0.9	.47
San Francisco	25,832	20,600	26	1.3	8	0.4	.31
Los Angeles	66,884	18,200	32	1.8	20	1.1	.62

Conclusion. Anti-HTLV-I/II results to date suggest that 150 to 200 donors will be identified for tracing, and that 75 to 100 of these donors and 40 to 60 of their recipients will be enrolled.

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Quéstions de méthodologie
Methodological Issues

Th.A.P.33 RECALL BIAS AND MEMORY FAILURE: AN EMPIRIC DEMONSTRATION IN PERSONS WITH ACQUIRED IMMUNE DEFICIENCY SYNDROME

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Objective. To determine the presence of systematic error in the recall of risk factors by persons with AIDS.
Methods. Questionnaire responses regarding sexual practices, drug use, and STD's during 1978-82 were compared in 2 groups of gay men. Group 1 consisted of members of an ongoing prospective study (The Vancouver Lymphadenopathy-AIDS Study) who subsequently developed AIDS. Group 1 was interviewed in 1983 when none had AIDS nor even knew their serologic status. Group 2 consisted of persons diagnosed with AIDS between 09/86 and 01/88 at St. Paul's Hospital. All Group 2 subjects had already been diagnosed when interviewed. Both groups were diagnosed in the same hospital by the same specialists. This hospital sees over 75% of all cases in the province.
Results. Group 1 consisted of 58 men who were interviewed a median of 3.3 years prior to diagnosis. Group 2 consisted of 74 men interviewed a median of 4 months following diagnosis. There were no differences between the groups with regard to age, ethnicity, annual income, or AIDS manifestation. For responses concerning the period 1978-82, Group 2 was significantly less likely to report gonorrhea, non-specific urethritis, and venereal warts. Group 2 also reported fewer sexual contacts in bathhouses and clubs. Conversely, Group 2 reported greater frequencies of oral-genital contact, oral-anal contact, and anal intercourse but lower frequencies of fisting. Group 2 were more likely to report initiation of regular sexual contact prior to age 20.
Conclusion. These data invite 3 explanations. The differences could be due to (i) true differences due to selection biases; (ii) memory failure in Group 2 due to the elapsed time and/or to the CNS effects of the disease; or (iii) recall bias influencing attribution of risk by Group 2. We feel that the curious pattern of the inconsistencies is most compatible with recall bias, although any of the 3 explanations has clear implications for those conducting retrospective research in AIDS.

Th.A.P.34 HIV-TESTS OR -TESTEES?

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Objective. To demonstrate the difficulty in estimating the number of testees from the total number of HIV-antibody tests performed.
Methods. We collected the patient charts of all persons who had seen a private dermato-venereologist who is specialized in HIV infection, for imagined or real HIV-related problems in 1984-1988. We calculated both the annual number of HIV-tests requested by the practitioner herself, and the number of HIV-tests performed elsewhere (health care centers, hospitals, AIDS Support Centers etc). The age and sexual preference of the patient were recorded and in case of heterosexual men, a possible mention of having visited a prostitute was noted.
Results. A total of 988 HIV-tests had been performed on 468 individuals during Sept.1984 through Dec.1988 (2.1 tests per person on average). 187 homosexual men, 152 heterosexual men and 129 heterosexual women were seen. 34.8% of the heterosexual men had visited a prostitute. 175 persons (37.4%) had taken one or more tests elsewhere before seeing the practitioner and a total of 453 tests had been made. 535 tests were requested by the practitioner. There was a clear change both in the number and sexual preference category of the persons tested during the 4-year-period.
Conclusion. This study demonstrates that an error of 53% (1-468/988) was caused by multiple testing. Although this material might be biased towards multiple testing, caution is recommended when prevalence figures are calculated by using the number of tests instead of testees as denominator.

Th.A.P.35 CALCULATING HIV INCIDENCE RATES FROM SEROPREVALENCE DATA

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Objective. Develop a method to estimate annual incidence rates of HIV infection based on seroprevalence data in order to evaluate the success of control programs.
Method. If one assumes that (a) once seropositive, people remain seropositive; (b) deaths between ages 15 to 25 are negligible compared to the number of people infected in this age group; and (c) the incidence rate of new infections is stable over time and over age, then one can estimate the incidence rate based on age specific prevalence data for the 15 to 25 year age group. Additional methods may be presented in order to overcome some of the limitations of the assumptions.
Results. A multiple of the slope of the regression line of prevalence by year of age gives an estimate of the incidence rate of new HIV infections among young individuals.
Conclusion. Improved analysis of age-specific seroprevalence data can provide a means of estimating the HIV incidence rate, and thus changes in this rate. This method provides an alternative to cohort studies in looking at the incidence rate of new HIV infections.

Th.A.P.36 SIGNIFICANCE OF MEAN AGE OF ANTI-HIV-POSITIVE PERSONS IDENTIFIED IN TEST PROGRAMS

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Objective. Estimation of mean incubation time of AIDS and incidence of HIV-infection.
Results. Mean age of reported anti-HIV-positve persons 15-59 years of age was 33.6 years for 13872 males and 28.8 for 2888 females (Habermehl and Maxeiner: 15th report for 12/31/88), and 38.4 for 2494 male and 32.9 for 161 female registered AIDS-patients of the same age group. The age difference between test-positives and AIDS-patients (4.8 and 4.0, respectively) defines a minimum for mean incubationn time of AIDS. However, mean incubation time seems to be considerably longer because 62.87 % of test-positives already had HIV-related diseases.
Mean age of individuals between 15-59 years was 32.54 for 10404 persons found positive up to 9/30/87 and 33.16 for 7183 persons found positive later (difference in mean testing time 22 months). Without new HIV-infections since the first testing period, mean age of anti-HIV-positive individual should have increased by 22 months. The only 7.44 months increase in mean age suggests that about two third of anti-HIV-positive persons of the second test period only recently had been infected.
Conclusion: Mean incubation time of AIDS is well above 4 years. Monitoring mean age of anti-HIV-positives may give information on incidence of HIV-infection and on efficacy of prevention.

Th.A.P.37 SAMPLE SIZES FOR NEEDLES IN A HAYSTACK: THE CASE OF HIV SEROPREVALENCE SURVEYS IN CANADA

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The authors present an approach to sample size calculations for anonymous HIV seroprevalence studies base upon a novel nomogram. The nomogram summarizes formal power calculations for the Poisson distribution over a range of expected seroprevalence rates and various "deltas". Deltas are expressed as a minimum percentage increase in the expected seroprevalence which is felt to be worthy of detection or, conversely, imperative to "rule out", at specified alpha and beta error levels. In the case of a proposed neonatal heelprick seroprevalence study, use of the nomogram leads to some interesting results. At the expected seroprevalence for women bearing children (10/100000), testing the entire year's birth cohort of 135,000, could be expected to identify <15 seropositive infants with resultant Poisson 95% confidence interval ranging from 5.5 to 16.8/100000. On the other hand, a sample of only 30000 neonatal heelprick specimens/year would greatly reduce survey costs (by $300,000) but would identify only 3 seropositives with 95% confidence intervals of 2 to 29/100000. As a compromise, we have used the nomogram to establish a sample size of 80000, sufficiently large to provide a power of 0.8 (alpha=0.05, 1-sided) to detect a doubling or more of the expected seroprevalence rate. This strategy results in a projected survey cost, and 95% confidence interval width which are both mid-way between those of the other two sample sizes options. The implications for HIV seroprevalence surveys in jurisdictions with even lower expected HIV seroprevalence rates or smaller populations will be discussed.

Th.A.P.38 VOLUNTARY HIV STUDIES CAN UNDERESTIMATE SEROPREVALENCE

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Objective To compare the HIV risk and seroprevalence in females voluntarily participating in an anonymous HIV study with a comparable group not participating.

Methods Over a 13 month period, every third woman attending the Vancouver VD Clinic was asked to participate in a multicentre Canadian study of HIV risk and seroprevalence. A total of 468 women agreed to participate and 283 refused. An additional 19 women volunteered for the study. In the nationwide study 2,184 women agreed to participate. During the same 13 month period in the Vancouver VD Clinic, 691 women were tested outside the study. This latter group was made up of women refusing to participate and women not recruited. These groups are compared.

Results All three groups were comparable in age and risk behaviours. The seroprevalence in participating Vancouver women was 0/487; for the nationwide study there was only 1 positive in 2,184 participants; in the 691 women tested in Vancouver outside the study there were 5 positive tests (0.7%). The difference between the two Vancouver groups is significant to p = .069; the difference between the nationwide study participants and the Vancouver non-participants is significant to p = .004.

Conclusion HIV studies which rely on voluntary participation can underestimate the actual seroprevalence in the target population. Such a selection bias can result in a falsely optimistic view of the epidemic and negatively influence resource allocation and control.

Th.A.P.39 RESEARCH OR SURVEILLANCE? ANONYMOUS SEROPREVALENCE STUDIES: THE QUEBEC EXPERIENCE

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Objective: To examine the feasibility of conducting an anonymous unlinked seroprevalence survey using newborn heelprick filter paper specimens as peer-reviewed research as opposed to mandated surveillance.

Methods: Constraints to implementation included epidemiological issues such as stratification, completeness of demographic variables, and potential for bias. Organisational concerns were storage, transport, duplicate specimens, and use of Hepatitis B immune globulin containing anti-HIV. Technical issues were micro-ELISA and micro-BLOT test performance and transfer of technology. Ethical issues included consent, right to know, safeguards for anonymity, and potential harm. Expert ethical and legal consultation was integral to the exploration of feasibility.

Results: The Canadian context necessitated a research orientation to the important ethical issues posed by this epidemiological methodology. A public relations plan was designed to inform the populations concerned: pregnant women, parents of newborns, physicians and the general population.

Conclusion: Depending on the cultural context, the planning of anonymous seroprevalence studies should consider whether a research or a surveillance orientation is appropriate.

Th.A.P.40 EVALUATION OF DRIED BLOOD FILTER PAPER SAMPLES, COLLECTED BY FINGER STICK AS AN ALTERNATIVE TO VENIPUNCTURE FOR HIV SEROPREVALENCE SURVEYS IN HIGH RISK ADULTS

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Objective. To evaluate the use of finger stick collection methods and compare the results of serologic testing of dried blood filter paper samples with serum samples collected by venipuncture.

Methods. Blood specimens were collected by venipuncture and on filter paper by finger stick from 120 men, of known serostatus, in the San Francisco Men's Health Study. HIV ELISA tests were performed with matched filter paper and serum samples and the ratio of optical density of specimen to negative control was determined.

Results. Estimated as distance from the cutoff (t test), HIV serologic tests using filter paper had slightly lower sensitivity (97.5 vs 99.9) and slightly better specificity (99.9 vs 99.5). In addition there was good correlation between the O.D. ratios of filter paper and serum samples from seropositives (R = 0.799). In most cases three or four 1/2 inch blood spots could be collected from a single finger stick. This provides sufficient specimen to perform a minimum of 16 ELISA and 8 Western blot determinations.

Conclusion. Finger stick collection, storage, and shipping of dried blood on filter paper is simple, cost effective, and provides adequate specimen for storage and repeated testing. For the purpose of seroprevalence, the accuracy of HIV serologic tests are not significantly compromised by this collection method. This methodology may be useful as a substitute for venipuncture in seroprevalence surveys.

Th.A.P.41 DESIGNING OBSERVATIONAL STUDIES AND FIELD TRIALS OF TREATMENTS AND PREVENTIONS AGAINST HIV INFECTION AND AIDS

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Objective: To delineate designs of observational studies and field trials of treatments and preventions against HIV infection and AIDS taking into account the direct and indirect effects of interventions in infectious diseases, that is, the dependent happening structure of events.

Methods: Three study designs are defined based on the groups of comparison. Study Design I compares the group with the intervention with the group not receiving intervention where the two are subjected to the same transmission intensity. Study Design II compares the group with intervention to another separate group not receiving intervention. Study design III compares the overall population in which some receive intervention with a separate population, either geographically or temporally separate, without intervention.

Results: Study Design I is adequate for studying effects at an individual level, however gives no overall measure of public health benefits. Study Design II yields a measure of effect on the individual plus the effect of changing transmission. Study Design III yields a measure of overall public health benefit of an entire intervention. Study Design I using usual incidence based estimators breaks down when non-incidence based interventions are employed.

Conclusions: Study Designs II and III need to be developed further for interventions against AIDS to be adequately assessed. Non-incidence based estimators of intervention effects will help avoid some of the methodological difficulties in infectious disease epidemiology.

Th.A.P.42 VALIDATION OF SEXUAL HISTORIES OF HOMOSEXUAL MALE COUPLES

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Objective. To determine the validity of self-reported mutual sexual practices within male homosexual relationships by comparing independent reports from each member of a couple.

Methods. To date, 248 couples consisting of 468 individuals have been enrolled in the study. Thus far, 136 (55%) pairs were separately interviewed about their sexual practices with each other. Spearman correlation coefficients were used to assess levels of agreement. To assess whether this varied with other independent factors, a multiple regression model was developed with the index's response as the dependent variable, and partner's response, HIV diagnosis and status, number of sexual partners, and sequence of study visit as independent variables.

Results. Significant agreement between indexes and partners were observed for the total number of exposures (r=.93,p<.0001), number of anal exposures (r=.75,p<.0001), number of oral exposures (r=.71,p<.0001), and condom use (r=.85,p<.0001). Regression analysis of responses revealed the tendency for indexes, who tended to be sicker, to report greater numbers of encounters than partners. Significant levels of agreement between index and partner was observed for all sexual activities. No other independent variable was significant in the models.

Conclusion. These results indicate that histories of sexual behaviors within a relationship can be confirmed and therefore may be reasonably valid.

Th.A.P.43

STATISTICAL CONSIDERATIONS OF MISCLASSIFICATION OF PATIENTS AT BASELINE IN TWO AIDS CLINICAL TRIALS

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Objective. To estimate the impact of initial patient classification in 2 studies of oral ribavirin.
Methods. Data from LAS (N=164) and ARC (N=215) patient groups were combined after a statistical reclassification of patients. The reclassification was based on covariates measured at the time of enrollment in such a way as to define 2 new groups of patients maximizing the within strata homogeneity at baseline. This analysis examined the effects of possible misclassification of patients among the LAS and ARC trials. Statistical adjustment for prognostic variables was done on a Cox proportional hazards model. Sensitivity analysis to evaluate model assumptions and protocol restriction were performed to supplement the primary analysis.
Results. The data when stratified by original study designation, statistically restratified by baseline characteristics or treated as 1 large group all yield statistically significant ribavirin effect in delaying the progression to AIDS. The hazard rate of progressing to AIDS is cut in half.
Conclusion. Initial patient classification is not an important contributor to the conclusion that ribavirin was effective in delaying progression to AIDS among these patients.

Infection par le VIH chez les travailleurs de la santé
HIV Infection among Health Care Workers

Th.A.P.44

GUIDELINES FOR PREVENTION OF TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS AND HEPATITIS B VIRUS TO HEALTH-CARE AND PUBLIC SAFETY WORKERS

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In response to recently enacted United States legislation (Public Law 100-607, The Health Omnibus Programs Extension Act of 1988, "AIDS Amendments of 1988"), guidelines have been developed for all health-care and public safety workers (including emergency medical workers, fire fighters, police, and correctional facility workers) in the United States.

The document provides an overview of the modes of occupational transmission of HIV and hepatitis B virus (HBV), an assessment of the risk of transmission under various assumptions, principles underlying the control of risk, and specific risk control recommendations for employers and workers. Also included in this document is information relating to medical management of persons who have sustained an occupational exposure to these viruses. A separate model curriculum based on the principles and practices discussed in this document has been developed concurrently for use in training workers.

An overview of the guidelines and curriculum will be presented, with specific recommendations for preventing transmission of these bloodborne viruses to emergency medical service workers, fire fighters, police, and correctional facility officers.

Th.A.P.45

ZIDOVUDINE PROPHYLAXIS FOR PERSONS WITH ACCIDENTAL PERCUTANEOUS BLOOD EXPOSURE: A DECISION ANALYSIS

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Objective. We performed a decision analysis to determine the thresholds of safety and effectiveness which would justify short-term zidovudine (AZT) administration for persons with accidental percutaneous exposure to either HIV-positive blood or blood of unknown HIV-serologic status.
Methods. We used a Markov model to accommodate the short-term risks of HIV infection and AZT effectiveness and toxicity and the long-term risks of AIDS development and mortality. The outcomes studied were life expectancy and lives saved per cohort. Published data were used to estimate seroconversion rate (0.42%), rate of HIV-infected developing AIDS (5%/year), and AIDS survival (50%/year). No information is available on AZT effectiveness and little is known about AZT irreversible toxicity. Wide variations in all assumptions were made in the sensitivity analysis.
Results. For those with exposure to blood known to be HIV seropositive, the benefits of AZT outweigh the risks under all but a combination of the most skeptical assumptions of AZT safety and effectiveness. Using moderate assumptions (AZT effectiveness 50%, safety 2 deaths per 30,000 AZT recipients), AZT use extends life expectancy by 3 weeks and averts 174 deaths per 100,000 persons exposed. Under more optimistic assumptions (90% effectiveness and 1 AZT death per 30,000), life expectancy is extended by 6 weeks and 322 deaths are averted per 100,000. However, under pessimistic assumptions (5% effectiveness and 8 AZT deaths per 30,000), the risks of AZT minimally outweigh the benefits. Wide variations in the assumptions have little effect on the thresholds, with the exception of the likelihood of seroconversion after exposure: If the blood serologic status is unknown, the likelihood of seroconversion is a function of the local prevalence of HIV infection; the AZT benefits do not clearly outweigh the risks when the prevalence is below 10-20%.
Conclusions. Until the results of clinical trials are known, the decision must be based on strength of belief regarding AZT effectiveness and toxicity. Unless studies show AZT to be both highly ineffective and toxic, the benefits of short-term AZT outweigh risks after exposure to HIV-positive blood. AZT benefits do not clearly outweigh risks after exposure to blood of unknown serologic status.

Th.A.P.46

NATIONAL SURVEILLANCE PROGRAM: OCCUPATIONAL EXPOSURE TO HUMAN IMMUNODEFICIENCY VIRUS (HIV-1) INFECTION IN CANADA

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Objective: To assess the risk of HIV infection among health-care workers (HCWs) exposed to blood or body fluids from an HIV-infected person.
Methods: Eligibility criteria require a documented parenteral, mucous membrane, or skin contact exposure to blood or body fluids from an HIV-infected person. HCWs are followed for one year post-exposure. Blood specimens are taken at 6 week intervals for six months post-exposure and at 9 and 12 months. Standard information collected include demographics, risk factors and exposure circumstances.
Results: As of January 6, 1989, 234 HCWs had enrolled in the study. 85% of these were health-care providers, 11% laboratory technicians and 4% other workers. 47% of exposures were needlestick, 4% scalpel wounds, 12% eyespash, 16% open-wound contaminations, and 21% skin contact. 90 (39%) of the 234 exposures were likely preventable, had standard infection control procedures been used. Excluding HCWs for whom a baseline serology (within 30 days of exposure) was not available, there have been no seroconversions among the remaining 175 study participants.
Conclusions: These data are consistent with other studies and support a very low risk of transmission of HIV infection resulting from parenteral, mucous membrane, or non-intact skin exposures in the occupational setting.

Th.A.P.47

BLOOD EXPOSURES DURING SURGICAL PROCEDURES.

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Objective. To describe the nature and frequency of occupational exposure to blood among operating room (OR) personnel during surgical procedures in a large public hospital.
Methods. Trained observers sampled operations and recorded the type and duration of procedure, emergency nature, estimated blood loss by the patient, occupations of personnel, infection control precautions used, and number and type of exposures.
Results. One or more persons had skin, mucous membrane, or parenteral exposures to blood during 49 (33%) of 151 operations, including 9/19 (47%) in trauma, 12/32 (38%) in orthopedic, 12/39 (31%) in gynecology, 8/35 (23%) in general surgery, 3/19 (16%) in plastic surgery, and 5/7 (71%) in burn procedures. Of 1350 personnel observed, 84 (6.2%) experienced 116 blood exposures, including 49 contacts with exposed skin (42%), 40 episodes of clothing soakage (35%), 13 exposures due to possibly defective gloves (11%), 10 needlesticks or cuts with sharp objects (9%), and 4 eyesplashes (3%). Risk factors for exposure (relative risk; 95% confidence interval) included being a surgeon (3.8; 2.5-5.8), participating in an emergency procedure (3.4; 2.2-5.1), patient blood loss > 250 ml (3.6; 2.5-5.4), and duration of time in OR > 1 hour (5.3; 2.9-9.8).
Conclusion. The risk of blood exposure for operating room personnel is substantial. Studies are needed to quantitate this risk, identify risk factors for exposures, determine the risk of HIV infection due to these exposures, and to design and evaluate preventive measures.

Th.A.P.48

REPORT OF A POSSIBLE LABORATORY ACQUIRED HIV INFECTION.

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Objective: Case report of possible occupationally acquired AIDS.
Case Report: In 1987, a 28 year old woman was referred to evaluate for a possible HIV infection. She had donated blood in 6/85 and was HIV negative, but a donation in 5/86 was HIV positive. She was ELISA and western blot positive, but asymptomatic until 6/88 when she developed pneumocystis pneumonia. On interview, she claimed two lifetime sexual contacts: one, before 1981, who was not tested, but thought to be healthy in 1987; and a current partner, who had no serologic evidence for HIV infection in 6/87. The woman was a technologist who worked in a clinical laboratory that was known to handle HIV positive specimens. She denied other risks including transfusions, drug abuse, and other sexual contacts. She experienced a scratch from a blood contaminated needle in 9/84 and admits to occasionally contaminating her hands with blood. She washed her hands frequently and was being treated for severe atopic dermatitis of her hands. An examination found no abnormalities except keratosis and weeping fissures on her palms.
Conclusion: No discrete exposure was found in the interval between the blood donations. This woman possibly became infected by direct inoculation of the weeping lesions on her hands with HIV contaminated blood in the laboratory.

Th.A.P.49 THE RISK OF EXPOSURE TO HUMAN IMMUNODEFICIENCY VIRUS AMONG HEALTH CARE WORKERS (HCW) AT A SOUTHERN U.S. URBAN HOSPITAL.

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Objective. To assess the risk of exposure to HIV among HCW's at an Urban Hospital in the Southern United States (Charity Hospital of New Orleans).
Methods. Plasma remaining from CBC analysis of a cohort of patients presenting to the acute medical (n=246), the acute surgical (n=67) and obstetrical unit (n=221) were subjected to ELISA screening for HIV, with confirmation by Western Blot. Demographic information obtained on all patients included age, race, sex, zip code, risk factors for HIV, and type of problem. All HCW interventions with the possibility of exposure to blood or body fluids were recorded. All patient identifiers were removed.
Results. Of 534 specimens, 11 (2.1%) were positive overall (9 men and 2 women). Rates were similar among black and white patients. Seven patients could be placed into a known risk group after interview, but only one was known to be at risk prior to some HCW intervention. None of the obstetrical patients was seropositive. Five point nine percent of trauma patients and 2.9% of medical patients were seropositive. Among men, there were similar rates of seropositivity among several age groups. At least two procedures with the potential to transmit HIV were performed per patient.
Conclusion. A substantial risk of exposure to HIV exists in the trauma and medical emergency areas. Thus, all HCW's in this region need to practice universal barrier precautions.

Modélisation mathématique et prévisions
Mathematical Modelling and Prediction

Th.A.P.50 CENSUS DATA AND FORECASTING U. S. AIDS CASES

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AIDS cases are unevenly distributed geographically. Nearly half of U. S. cases have been reported by New York and California that have less than 1/5th of the total U. S. population. Within California, over 2/3rds of cases have been reported by Los Angeles and San Francisco counties that have only 1/3rd of California's total population.

Long-term epidemic forecasts should consider local differences in population size, life-style and onset of transmission. The Public-Use Microdata Samples of the U. S. census provide data on demographic and life-style variables. The A-Sample is a 5% sample of the U. S. population. It has information on age, sex, marital status and relationship of individuals within households in 1154 areas that together make up the United States. Based on these data, we have estimated the relative size of populations at-risk to AIDS through homosexual transmission.

Using the population estimates, local AIDS incidence data, and an epidemic model, we forecast AIDS incidence from the local through national level. Although sensitive to parameter values and our assumptions, these forecasts give insight into the geographic distribution of AIDS. For example, while the incidence data of AIDS in San Francisco and Los Angeles have been similar to date, we project that there will be ultimately 2-4 times more cases in Los Angeles than San Francisco.

Th.A.P.51 BEHAVIORALLY BASED MODELING OF THE SPREAD OF HIV

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Objective. Describe a new approach to computer modeling of HIV and other sexually transmitted disease spread in heterogenous populations.
Methods. A sample of individuals closely matching the demographic and risk behavioral characteristics of a population is generated by computer and all HIV transmitting activities are simulated using distributed discrete event simulation techniques. Due to the computational intensity of this approach, these simulations are executed on parallel computers, machines with more than one processor. The result is a computerized laboratory for the evaluation of geographic, demographic, and behavioral factors.
Results. Early implementations have been completed on a Symult Systems 2010 multicomputer, with more sophisticated versions in preparation. A description of the program components and input requirements is given; preliminary experiments with the models and their use in modeling HIV spread in Hawaii and Thailand are described.
Conclusions. Behavioral simulation provides a means of incorporating both geographical and demographic factors and the effects of behavioral intervention efforts into the modeling of HIV propagation.

Th.A.P.52 A DYNAMIC MODEL OF HIV TRANSMISSION AND AIDS IN SAN FRANCISCO

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Objective. To forecast HIV prevalence and AIDS incidence in the homosexual population in San Francisco using a transmission dynamics model.
Methods. The compartments in the model are susceptibles and stages in the phases: HIV incubation, asymptomatic, pre–AIDS, AIDS and death. The homosexual population is also subdivided into the active and very active sexual categories with immigration, emigration and transfer between categories. The computer simulation model is a system of nonlinear difference equations with a time step of one month. The fit criteria require that the model be consistent with the a priori parameter estimates, with the reporting delay–adjusted AIDS incidence from 1980 to 1987 and with the estimated HIV prevalence from 1978 to 1987. Projections are made assuming that decreases in sexual activity continue and also assuming no changes in sexual behavior after 1987.
Results. The pattern in the simulation model is that the HIV prevalence peaked at about 20,000 in 1985 (out of 56,000 homosexuals in San Francisco) and that the yearly AIDS incidence peaks at about 1500 in 1989 and decreases to less than 1000 by 1995. Although there is some saturation in the very active group, adequate fits are not obtained without changes in behavior. In the simulation the average number of new partners per month decreases by a factor of about 0.6 each year from 1982 to 1987.
Conclusion. The distribution of the AIDS incubation period with 7 stages gives the best fit in the simulation model. The simulations predict that the AIDS incidence peaked in 1989 and will decrease in the future. This pattern is primarily due to changes in behavior.

Th.A.P.53 HIV Carriers: Increasing Infectivity with Progression to AIDS has Important Implications for the AIDS Epidemic among Heterosexuals.

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Recent evidence suggests that the degree of infectiousness increases with the duration and progress of the HIV infection. We have developed mathematical models taking into account increasing infectivity along with progression to AIDS, heterogeneous sexual behavior, import and export of persons and infections, and variable patterns of infectiousness.

The duration of both the seroconversion latency state and the interval of slight infectivity associated with it probably depends on the method of transmission and the infective dose. If this is so, then heterosexual HIV transmission is likely to be followed by a relatively long latency period, which in turn suggests that the rate currently observed for heterosexual transmission of the HIV will probably change accordingly. With the passage of time, new HIV carriers will necessarily enter the stages of increased infectiousness and thus accelerate the further spread of the HIV in a predictable way.

Th.A.P.54 A MULTIPLE RISK GROUP MODEL TO ESTIMATE AND PROJECT THE SPREAD OF HIV

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Objective. To describe an HIV transmission model and results of the model.
Methods. The model exhibits the following characteristics:

- all major (sexual and nonsexual) transmission routes are included.
- different transmission routes are accommodated simultaneously.
- parameters that are difficult to estimate (e.g., number and types of sexual or needle sharing contacts) are endogenous to the model, and
- results from the model can be used to evaluate intervention strategies.

The essential model features are described in four sections: estimation of initial population sizes, the algebraic representation of the dynamics of HIV, estimation of within and between risk group infection rates, and projection of the spread of HIV.
Results. National U.S. data is used to estimate model parameters and to provide 10-year projections of the course of the HIV and AIDS epidemics.

Th.A.P.55 HIV DYNAM..CS IN LINKED RISK GROUPS, A MULTIGROUP TRANSMISSION MODEL

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The HIV/AIDS epidemic is a composite of many overlapping and linked epidemics in several risk groups, each with its own dynamics and time course. The simultaneous spread of the infection is described by a multigroup transmission model. Six risk groups are distinguished: the homo/bisexual community (two levels of promiscuity), the intravenous drug users (men and women), and the promiscuous heterosexual men and women. Three modes of transmission are considered: anal and vaginal intercourse and needle sharing. Two matrices - a transmission and dynamic size matrix - are defined to connect the high dimensional parameter space with the HIV incidence in the 6 risk groups. The model helps to clarify which data are needed to disentangle the relative contribution of the within and between group transmission routes. Given a specification of a baseline, the potential use of the model is illustrated by simulations describing effects of: a) blocking the transmission between the main risk groups and b) blocking the transmission due to needle sharing. The results suggest that the homo/bisexual epidemic runs its own course and that blocking the transmission between the main risk groups may substantially reduce the spread into the heterosexual population.

Th.A.P.57 IMPACT OF SEXUAL BEHAVIOUR CHANGE ON THE AIDS EPIDEMIC

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Objective. To investigate the effects of changes in sexual behaviour on HIV transmission and the AIDS epidemic.
Methods. A new modelling technique is developed that permits the fast numerical solution of a HIV transmission model with multiple sexual activity levels, where the mean and variance of the number of partners per year is imposed as an arbitrary function of time. Using this, the timing and magnitude of an epidemic can be investigated under different patterns of sexual activity change.
Results. The details of the timing and magnitude of behaviour change (reducing the number of sexual partners each individual will on average take) dictate its value as a control measure. Although an early change is better than a later one of the same magnitude, eradication requires prolonged reduction and long-term low levels, if the disease is not to re-appear in a second epidemic.
Conclusion. Observed behaviour changes in certain sections of the community may be sufficient to cause HIV to die out locally, but unless change is made on a large scale, and on a lasting basis, further epidemics could occur.

Th.A.P.59 THE POTENTIAL FOR SPREAD OF HIV IN THE HETEROSEXUAL POPULATION IN NORWAY,A SIMULATION MODEL STUDY

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Objective
To assess the potential for spread of HIV in the heterosexual population in Norway, based on sexual behavioral data, with and without input of infection from other groups.
Method
A simulation model is used. The model population is the heterosexual population (excluding IV-drug users) in Norway aged 18 to 60 years. The population is divided by age, sex and marital status. In each group the number of HIV infected subjects is calculated based on group specific values for: the frequency of intercourse, the partner turnover, the pattern of partner choice, the proportion of married/cohabiting subjects eligible as extra marital partners, prevalence of infection and transmission probability. The transmission probability and the AIDS hazard rate varies with time since infection. Behavioral data is taken from the Norwegian study on sexual habits. (random sample = 10.000, response rate 63% (J M Sundet, this conference)).
Results
The epidemic is not selfsustained in the heterosexual population when the average transmission probability is below 1% per intercourse, and there is no input of infection from other groups.
This result is insensitive towards changes in the initial conditions. It is sensitive towards changes in sexual behavior and in particular towards changes in the form of the transmission probability distribution. The simulated number of discordant couples is compared with empirical studies indicating that 1% transmission is too high. When input of infection from other groups is considered, the prevalence level is found to depend both on the influx of infection, and on the distribution of the contacts with the heterosexual population. Different source groups with different flux and contact distributions are discussed.
Conclusion
With current behavior the Norwegian heterosexual population is not likely to sustain the HIV-epidemic in isolation. Import of infection will be important in determining the prevalence level.

Th.A.P.56 ENHANCED COMPUTER MODEL OF HIV TRANSMISSION VIA NEEDLE SHARING

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Objectives: To: 1) develop quantitative descriptions of intervention measures for needle users; 2) incorporate these descriptions in a model simulating HIV transmission on the street and in jail; 3) evaluate effects of increased short- and long-term treatment center capacity and rehabilitation success rate; 4) evaluate effects of entry/exit testing to/from jail; 5) evaluate needle cleaning in jail. Parameters are to be estimated from survey data describing needle use in Worcester, MA.
Methods: Descriptions of the intervention measures are added to a preliminary model presented at the IV International Conference on AIDS. Parameters are estimated based on 1) survey data collected in treatment centers by the Worcester AIDS Consortium (2672 subjects); and 2) entry testing data for 450 inmates. We create scenarios describing 1) improved drug treatment; and 2) increased testing and needle-cleaning, especially in jails.
Results: We establish a base run simulation which matches observed seroprevalence during 1982-89. For 1989 and beyond the base run assumes moderately high rates (30%/year) of both testing for HIV antibodies and adoption of clean needles by persons found seropositive. Relative to this base run, interventions begun in 1989 provide the following reductions in the cumulative number of AIDS cases through the year 2004: 1) doubled short- and long-term treatment center capacity and rehabilitation success rate--10%; 2) 100% testing and 100% needle cleaning by persons found seropositive--5%; 3) 100% needle cleaning in jails--22%; 4) combination of 2) and 3) above--26%.
Conclusion: Combined intervention approaches can significantly reduce the number of projected AIDS cases in a population currently 18% seropositive. Simulation confirms that jails are reservoirs of HIV. To supplement aggressive testing and needle cleaning programs, provision of bleach in jails may be the most effective single intervention.

Th.A.P.58 MODELLING OF IMMUNE SYSTEM DYNAMICS IN HIV PATHOGENESIS: ISSUES IN IMMUNOMODULATION.

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Objective: To describe a modelling approach to the pathogenesis of HIV infection and the effects of immuno-modulatory factors (e.g., stress, drug abuse, pharmacotherapy) on the dynamics of infection and the development of disease.
Methods: STELLA for the Apple Macintosh - system dynamics modelling software.
Results: System dynamics (SD) modelling exemplifies a flexible approach to understanding the pathogenesis of HIV infection, using a complex, non-linear, multi-loop, feedback simulation of the immune response to retroviral infection. The approach shows itself to be of value in generating and testing causal hypotheses of pathogenesis and the effects of policy intervention based on the model's premisses, even in the absence of precise data. It focuses on immune response dynamics as a consequence of the structure of the immune system rather than of the one-way effects of extraneous variables (such as HIV infection) and allows a more sophisticated approach to understanding the role of immunomodulation and 'co-factors' in the development and prevention of disease.
Conclusions: System dynamics modelling of HIV pathogenesis affords a more thorough approach to understanding the essential deficits in disease development and may be useful for developing policy in the implementation of therapeutic immunomodulators and antivirals. The use of non-linear approaches to understanding pathogenesis are necessary for effective intervention development.

Th.A.P.60 EVIDENCE FOR A 16-18 YEAR MEAN TIME BETWEEN HIV VIRAL INFECTION AND AIDS ONSET.

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Past estimates of incubation time of AIDS have relied on estimates of time-of-infection that may have been questionable. We present 1075 cases of transfusion-related AIDS, as reported to The Communicable Disease Centers, Atlanta GA, USA, (CDC) which we have examined for the pattern between HIV viral infection and AIDS onset. This is probably the only class of AIDS patients for whom the precise time of infection is reasonably ascertainable. It is concluded that a Weibull distribution with a mean time of 18 years and a shape factor of B=2.3 represents a reasonable fit, and that an 8 year mean does not. It appears that the fitted curve represents only a lower limit, and that the true mean is somewhere between 16 and 20 years. However the most recent data update (July 1988) suggests that the data will converge at a mean incubation time approximating 18 years, with a Weibull shape factor of B=2.3. We recognize that this suggests a much longer incubation time than previous estimates but may be explainable, in part, from the work of Wolinsky et al reported at the last conference in Stockholm which suggested a dormant period between infection and expression of antibodies of as much as four years. From our curves we estimate that a minimum of 20,000 and perhaps a maximum of 50,000 transfusion-related cases of HIV remain undetected.

Th.A.P.61 INCUBATION TIME FOR AIDS IN TRANSFUSION-ASSOCIATED CASES : AN ESTIMATION FROM THE FRENCH DATASET

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Objective : To calculate estimates for mean and median incubation times for AIDS, and to give confidence intervals for these two parameters using the French dataset.
Methods : The method described by Lui *et al.* was selected and as in several previous works, a Weibull or a gamma distribution for incubation time were postulated. The Likelihood Ratio Statistic (LRS) was used to derive 90% confidence intervals. The French dataset where each case was individually reviewed, was used. Ninety two (92) cases with multiple transfusion, single transfusion without knowledge of the time of transfusion, association of another possible major risk factor of transmission were eliminated, leading to a final dataset of 167 subjects. Due to the age dependance of incubation time, the analysis was restricted to the 148 subjects 13 years of age or older.

Results :	Weibull	Gamma
Mean (Years)	5.3	6.9
90% CI	4.4 - 8.9	4.9 - 19.0
Median (Years)	5.3	6.4
90% CI	4.4 - 8.8	4.6 - 17.1
Log likelihood	-509.2	-508.6

Conclusion : Similar fits were observed with both distributions. Confidence intervals, under the Weibull assumption in particular, are narrower than those previously published. This indicates that an accurate estimate for mean incubation time in transfusion-associated cases will probably be obtainable in the near future.

Th.A.P.63 MODELLING PROGRESSION OF HIV INFECTION

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Statistical modeling of progression of HIV infection is made complicated by two problems: 1) follow-up of infected patients is generally much shorter than the average time from infection to AIDS, and 2) the times of infection are generally unknown. As a consequence, it is difficult to distringuish between different models for progression of markers of HIV infection, such as T-helper cell count. Some investigators have proposed that decline is gradual until shortly before onset of AIDS, but available data do not permit rejection of models with fairly constant decline over the entire latency period. The ability to discriminate among models can be enhanced by incorporating information about the distribution of infection-time among HIV seropositive people and of markers among the seronegative. This can be achieved through use of growth curve methods that treat the time of infection as a random effect whose distribution is estimable, either from the data on progression itself, or from external cohorts. This methodology was applied to data on progression of T-helper cell count in 426 HIV-infected men from the Men's Health Study in San Francisco, using a estimate of the infection-time distribution for the whole city. Based on our preliminary analysis, it is difficult to reject the hypothesis of a slow, steady decline in this marker. Assuming a constant rate of decline, roughly two-thirds of infected men would be expected to have annual drops in T-helper count between 88 and 140. When the model was expanded to include a quadratic term, there was slight evidence of a slowing of the rate of decline; but after 5 years, the slope was reduced by less than 10%.

Th.A.P.65 SIMULATING THE EPIDEMIC DYNAMICS OF HIV-INFECTION USING STOCHASTIC PROCESSES OVER RANDOM GRAPHS

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Objective: To develop and apply to the epidemic dynamics of HIV-infection a mathematical model and simulation procedure which incorporates the structure of sexual contacts inside a society and reflects the inherent stochasticity of the transmission dynamics. To gain insight into the microdynamics of the transmission process and use it to draw conclusions for possible prevention strategies.
Methods: The model consists in a random graph, encoding the sexual contact structure of a society, specified by social parameters, on which a discrete time stochastic process evolves, representing the spread of infection, specified by medical and social parameters. Thus, in computer simulations, a very detailed description of the configuration as well as of the dynamics is possible, including e.g. parameters defined via distribution functions, social preferences in partner selection, regional structure, time dependent infectivity. The set of observables allows for a close look at the fine structure of the transmission process. Hence, not only will the overall estimates on the course of the epidemics be improved, but typical infection paths can be followed and investigated, and effects of prevention strategies can be modelled at the scale of the individual.
Results: In comparison with differential equation models, the most remarkable features of the model are: transport from the highly promiscuous part of the homosexual population into the heterosexual population with low partner numbers is slowed down by the finite width of the interfaces, i.e. the groups acting as mediators; inside the majority of the heterosexual population, the epidemics growths with finite speed rather than exponentially due to low partner number and low rate of partner change. A scenario, where direct counselling to infected individuals and their present and past partners affects specifically their behaviour, is simulated and its efficacy discussed.
Conclusion: Incorporating the sexual contact structure into an AIDS-model is essential. The spread of infection is strongly determined by the graph structure. The model indicates that, if the actual growth inside the heterosexual population is slower than expected from the early growth pattern amongst homosexuals, this might be due to slow transport into this group while it may not necessarily be taken as a sign of significantly lower transmission rate or of low penetration depth of HIV-infection into the heterosexual population.

Th.A.P.62 HETEROGENEITY IN THE INCUBATION TIME OF AIDS: A STOCHASTIC SERIAL COMPARTMENT MODEL.

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OBJECTIVE: To determine if stochastic processes could account for the observed heterogeneity in the development of AIDS.
METHODS: We hypothesize that prior to developing AIDS (S_v) individuals must pass through a series of intermediate stages ($S_1,S_2,S_3....S_{v-1}$).The transition to AIDS is irreversible.If the transition probability between S_k and S_{k+1} is stochastic with an exponential distribution the probability of developing AIDS after time t is $F(t)=b_1e^{-\mu_1 t} + b_2e^{-\mu_2 t} +....+ b_v e^{-\mu_v t} + F(\infty)$ where F(t) is the fraction of HIV infected individuals ultimately developing AIDS at time t.
RESULTS: Taking $\mu=3$ and $S(\infty)=1$ gives a family of curves which mimic the Gamma and Weibull distributions in the early part of the curve and fit the empirical data well but are much more variable in the tail.
CONCLUSION: Stochastic processes can account for the observed heterogeneity in the incubation of AIDS.

Th.A.P.64 "STRUCTURED" AND "SELECTIVE MIXING FORMULATIONS OF HETEROGENOUS CONTACT TO STUDY HIV TRANSMISSION

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Objective: Provide a mathematical and theoretical context as well as questionnaire suggestions for the study of sexual and needle contact patterns affecting the course of the AIDS epidemic.
Methods: We have developed a mathematical theory and model of contact structure which proceeds from the assumption that there are two forces creating heterogenous sexual and needle contact patterns in a population. The first is the choice of social contexts for meeting potential sexual partners. We model this with a formulation called "Structured mixing". The second is the degree of selectivity exercised in choosing partners among those who are encountered in these social contexts. We model this with a formulation called "Selective mixing".
Results: The two formulations combine into one overall theory in different ways depending upon how information is collected on the social contexts of sexual or needle sharing partnerships. Information may be collected on the social contexts where actual partnerships were made, on where sexual attraction was felt or the opportunity to share needles presented itself, or on more general social contacts. For each of these approaches, there are different approaches required to collect information on the selection of partners. We demonstrate how predictions of the future course of the epidemic and estimates of the relative risk of oral and anal sex are very sensitive to contact structure information. We also illustrate how to collect such information.
Conclusion: Epidemiologists have tended to disregard questions about who has sex or shares needles with whom in their investigations because they lack an overall theory to guide the collection and analysis of such information. This deficiency could be causing us to misjudge the risks associated with different behaviors (especially to underestimate the risk associated with oral sex). It is also retarding the analyses of where we might expect the epidemic to spread next. Our structured and selective mixing model provides a basis to overcome this deficiency.

Th.A.P.66 A RISK BASED HETEROSEXUAL MODEL OF THE SPREAD OF HIV

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Objective. To understand how social behavior influences the spread of HIV and the difference between spread in heterosexual and homosexual populations.
Method. We extend a model for the homosexual spread of HIV to include heterosexual spread. The population is distributed by partner change rate, which is assumed to be the primary social variable determining mixing patterns. Variation in infectivity and progression to AIDS are accounted for. Mixing between groups with different risk behaviors is determined by an acceptance function, which can bias partnerships to form between individuals with similar risk behaviors, or can allow mixing to be determined by availability. We can use our model to study the effect of a different female to male than male to female transmissibility. We also can examine the spread of the infection from the homosexual to the heterosexual community via bisexual contacts.
Results. Models can help us understand better how the AIDS epidemic is spreading and which intervention strategies might be most effective. The mixing function largely determines the growth of the model epidemic. If individuals select partners with similar behavior, the epidemic progresses as a wave from high risk to low, with an increasing doubling time determined by the risk groups at the front of the wave. If individuals are less discriminate in partner choice, the epidemic has a more constant doubling time, determined by the "most likely" partner group. Initially growth is slower, but it quickly surpasses the biased mixing case. If transmissibility is significantly different from women to men than from men to women, then strategies for stopping the epidemic may be different than if they are the same.

Th.A.P.67 CHALLENGES IN MODELING HIV INFECTION IN LOW SEROPREVALENCE POPULATIONS

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Objective. To explore the difficulties in developing predictive models of HIV infection in populations with low prevalence of markers of infection.
Methods. Data from a cross-sectional study of intravenous drug users (IVDUs) collected in six waves since 1986 are examined (N=3,700). Results of various regression equations that examine the predictive power of known risk factors are contrasted. These models are also compared to models developed in high prevalence populations.
Results. In San Francisco, HIV-1 seroprevalence in heterosexual IVDUs has remained relatively stable at less than 15% between 1987 and 1989. However, distribution of virus is heterogeneous with significant variations both between ethnic groups and neighborhoods of residence. Black, heterosexual IVDUs (n=871), for example, were more likely to be HIV-1 seropositive than their white counterparts (n=748) over the period 1987-1 to 1989-1 (O.R. 1.6, 95% C.I.=1.2, 2.1). In one San Francisco neighborhood (the Tenderloin District) risk of HIV-1 infection among heterosexual IVDUs (n=165) was twice that of IVDUs residing elsewhere in the city (n=476) in 1989-1 (O.R.=2.2; 95% C.I.= 1.3, 3.7). Nevertheless, risk factors predictive of HIV infection in other studies of IVDUs (eg. frequency of injection, use of shooting galleries, and numbers of sharing partners), failed to consistently predict HIV infection.
Conclusion. Predictive models that identify independent risk factors contributing to HIV infection among high seroprevalence populations where distribution of virus is relatively homogeneous may not apply to the large number of cities with relatively low HIV infection rates among heterosexual IVDUs. This is likely due to heterogeneity in distribution of infection markers in low prevalence populations. This tends to erode the predictive power of independent variables that appear to reliably predict infection in populations with more homogeneous distribution of markers. Model construction in low prevalence, heterogeneous populations must examine the separate risk ecologies that may differ widely among cultural groups and from neighborhood to neighborhood.

Th.A.P.68 ESTIMATING INTRAVENOUS DRUG USER (IVDU) POPULATION FROM AIDS STATISTICS IN SAN FRANCISCO.

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Objective. To present a method by which to estimate the size and demographic makeup of populations at high risk for AIDS, with San Francisco IVDUs as an example.
Methods. Back-calculating the number of HIV-infected IVDUs from infection to AIDS; applying seropositivity levels to determine IVDU population size.
Results. A single-page computer spreadsheet illustrates how the number of IVDUs at risk for AIDS can be back-calculated from reported variables. In San Francisco this further split by ethnicity, age, sex and neighborhood.
Conclusions. Population size can be estimated using reported AIDS and HIV seropositivity measures. AIDS surveillance accuracy and HIV-related non-AIDS diseases must be considered in making such estimates.

Th.A.P.69 AIDS IN THE NORDIC COUNTRIES - FORECASTS

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The numbers of new AIDS-cases per year in the Nordic countries are given below.

Year	Before 1983	1983	1984	1985	1986	1987	1988
Cases	7	20	34	83	145	204	267

A demographic model where birth corresponds to becoming HIV-infected and death to developing AIDS was used to summarize the series and to produce forecasts. Through trials and using a least squares criterion, a model with 270 HIV-infected in 1982 and a yearly incidence of 0.05 among the infected was adopted. The rate of virus transmission used to fit the model was 1, i.e. every infected person infects one other person during each year. Data fit well to this model up to an including 1986. The model gives 271 cases in 1987 and 522 in 1988. Thus, a certain reduction of transmission seems to have occurred from about 1986. A 60% yearly reduction was estimated. Under these assumptions, the epidemic is now close to its peak (275 cases). The number of new cases per year will start slowly to decrease to about 170 by the year 2000. A substantial number of new cases per year will appear, however, for a long time in spite HIV-transmission will be very small from about 1995, which is an optimistic prospect.

Similar calculations have been made for the two Nordic countries with the highest numbers of cases, Denmark and Sweden, the results pointing in the same direction.

Th.A.P.70 EFFECTS OF MODELING HETEROGENEITY OF DRUG USE BEHAVIOR

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Objective. Intravenous Drug User (IVDU) risk behaviors vary widely. Heterogeneity of behavior may affect predictions of the spread of HIV obtained in epidemic models. This research examines effects of heterogeneity in a model to assess the effectiveness of intervention programs targeted to IVDUs.
Methods. Data are from a survey of 603 IVDUs in San Francisco (Urban Health Study 1988). Measures of injection frequency, needle sharing, and needle-sharing partners were obtained. We use a model of HIV transmission incorporating estimates of these risk behaviors, as well as data on HIV incubation and motality from published sources, to predict life expectancy (LE), intervention effectiveness, and medical care costs. Heterogeneity is modeled in ways consistent with the original San Francisco data.
Results. Results obtained from all models considering heterogeneity of risk behaviors show higher life expectancy than baseline results obtained using the overall parameter means.

Model	LE (Years)	Δ LE
Homogeneous Risk Groups	13.0	1.4
Heterogeneity of Injection Freq (Modeled in 3 Groups)	14.4	1.7
Heterogeneity of Injection Freq (Modeled in 27 Grps)	14.6	1.5
Modeling of Extremes of Inj Freq (Upper, Lower 10%)	14.0	1.5
Heterogeneity of 3 Parameters Simultaneously (Indep)	16.4	1.4

Conclusion. Simulations suggest that in modeling the spread of HIV among IVDUs, an assumption of homogeneity of risk behaviors is likely to result in an overestimate of epidemic spread. It will be important to attend to both qualitative and quantitative evidence of heterogeneity in addressing AIDS among IVDUs.

Th.A.P.71 A HETEROSEXUAL MODEL FOR THE SPREAD OF HIV AND THE DEMOGRAPHIC IMPACT OF THE AIDS EPIDEMIC

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Objective. To model the spread and demographic impact of HIV and AIDS.
Method. We have developed an age-structured model of the spread of HIV to study the impact of the epidemic on nations where the primary model of transmission is heterosexual. This model builds on the work of J. Bongaarts. It divides the population into promiscuous--characterized by one-time sexual contacts--and nonpromiscuous groups. We model the flow of infection between urban and rural areas through migration. Modules for transmission of HIV perinatally and by blood transfusion, for marriage formation and dissolution, fertility, and non-AIDS mortality are included.
Results. The results are available through a window-based interface. The age-specific results include: uninfected and infected populations, by time since infection; the number of new HIV infections and AIDS cases; deaths from AIDS and from all other causes; the impact of AIDS on the population age structure; and the spread of HIV from urban areas to rural areas.
Conclusions. A comprehensive model of the heterosexual spread of HIV infection and AIDS has been developed to analyze the possible future course of the epidemic. Continuing changes and enhancements to this model in the future will include the provision for the homosexual spread of the virus.

Th.A.P.72

ESTIMATION OF THE EFFECT OF AZT ON TIME TO AIDS IN HIV-INFECTED SUBJECTS FROM OBSERVATIONAL DATA

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The NIH has recently put out an RSP for community-based non-randomized studies of the effect of treatments such as AZT on time to AIDS among HIV-infected subjects. In such observational studies, T4 count history may be simultaneously a confounder and an intermediate variable. T4 history is a confounder since subjects with low T4 counts are both at an increased risk of developing AIDS and more likely to receive treatment with AZT. T4 count history will be an intermediate variable if AZT delays time to AIDS by inhibiting viral destruction of T4 cells. When a time-dependent risk factor like T4-count is both a confounder and intermediate variable, all standard statistical methods (such as Cox's proportional hazard model) may result in a biased estimate of the AZT effect on time to AIDS whether or not one adjusts for the covariate T4 count history in the analysis.

In this paper new statistical methods will be described that allow for proper control of confounding by intermediate variables such as T4 count history. These methods estimate the parameters of a new class of models, the nested structural failure-time models, using a class of instrumental variable estimators, the G-estimators. Relationships between G-estimators and (a) non-linear 3-stage-least-squares estimators and (b) Robins' (1986) G-computation algorithm and G-null test are discussed. User-friendly software available for analysis is described.

Th.A.P.73 SIMULATION OF HIV TRANSMISSION IN A STRUCTURED COMMMUNITY OF INTRAVENOUS DRUG USERS

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An Intravenous (IV) Drug Community/HIV Transmission model has been developed to help evaluate public health intervention programs. The model uses Monte Carlo simulation to determine when an IV drug user contacts HIV and how the HIV infection progresses. The HIV progression model reproduces the stages of HIV infection: virus contact, asymptomatic stage, beginning symptoms, ARC, AIDS, and death. The population model of an intravenous drug community simulates its dynamics: 3 types of addicts, differentiated by amount of drug use; a process of recruitment to addiction and to heavy addiction; withdrawal during incarceration and treatment programs; recovery from addiction; and death from non-HIV-associated causes. The IV drug community is structured into a social network based on literature reports. Users are exposed to HIV through sharing needles with acquaintances in their social network, strangers in the general population and in "shooting galleries." The probability of HIV transmission given contact with contaminated needles is estimated from reports of zero-positive rates in health care workers exposed to HIV needle sticks. The model is flexibly structured and has been adapted to populations representing different geographic areas having unique social structures, exposure characteristics, and underlying HIV prevalence . Simulations of a needle exchange program and increased treatment indicate the importance of prevalence in determining the long-term success of intervention.

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Th.A.P.74 REVERSE EXTRAPOLATION AS A METHOD FOR ESTIMATING HIV SEROPREVALENCE

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Objective. To provide a method for estimating HIV prevalence.
Methods. Reverse extrapolation is applied to 8 and 10 year AIDS projection estimates. Current infection prevalence then is calculated based first on one assumption which states that approximately three times as many people presently are infected as will actually develop AIDS 8 years hence; a second assumption used is that twice the number of those who will develop AIDS 10 years hence already are infected.
Results. Seroprevalence can be estimated for regionally defined groups for whom AIDS projections can be determined. For example, from AIDS projections for the province of Alberta through July 1988, determined by the Poisson, polynomial, logistic, and doubling time models, a lower estimate of 3,464 and an upper estimate of 4,978 were obtained. The then current provincial AIDS total was 117 case reports. Equivalent estimates for Canada, at a time when the cumulative total number of AIDS cases was 1,941, were in the range 30,742-186,882, with a most likely value around 100,000.
Conclusion. The method appears reliable since it produces findings consistent with those of others. It is both robust and cost-effective. However, it is no substitute for valid data gleaned directly through seroprevalence surveys of defined groups. Actual reliability will be established when results from seroprevalence surveys are available for comparison.

Th.A.P.75 THE PREDICTION OF THE NUMBERS OF AIDS CASES IN THE UK, AND THE ESTIMATION OF THE INCUBATION PERIOD OF AIDS.

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Objectives: To use available data to forecast the future numbers of diagnosed AIDS cases in the UK.
Methods: Mathematical models are described that use a) the numbers of reported cases in the UK to predict future cases, and b) data available for estimating the incubation period of AIDS.
Results: Previous estimates of future UK AIDS cases (*Short-term Prediction of HIV Infection and AIDS in England and Wales*. HMSO, London, December 1988) and the incubation period of AIDS (Medley *et al*, Nature 1987, 328, 719-721; Anderson & Medley, Epidemiology of HIV Infection and AIDS: Incubation and Infectious Periods, Survival and Vertical Transmission. AIDS 1988, in press) are updated.
Conclusions: The results are discussed in terms of their implications for the AIDS epidemic in the UK and other industrialised countries.

Th.A.P.76 PROJECTING LOCAL AIDS INCIDENCE USING BOTH SURVEILLANCE AND SEROPREVALENCE MEASURES

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Objective. To project AIDS incidence through 1992 for the State of New Mexico by two different methods: one which extrapolated from past AIDS surveillance data, and one which projected future cases based on current HIV seroprevalence estimates.
Methods. The surveillance-based projections were derived directly from recent US national projections. The future proportions of all US cases expected to occur in New Mexico over the next four years were projected as a linear extrapolation from those proportions observed in the last four years in local AIDS surveillance data. The HIV seroprevalence-based projection method used various recent local seroprevalence surveys to estimate the number of New Mexicans currently infected with HIV. Future AIDS incidence was then projected for those currently infected, as well as for those expected to be infected by future transmission, by specifying assumptions for each risk group about their duration of HIV infection and expected future AIDS incidence.
Results. Both projection methods produced similar estimates through 1992. 944 cumulative cases were predicted by the surveillance method and 1033 were predicted by the seroprevalence method. Back-calculation of the number of "expected" cases for 1988 based on the assumptions used in the seroprevalence-based method produced a number of cases which was very similar to that actually observed, thus the seroprevalence-based estimates seem reasonable.
Conclusions. This analysis demonstrates that both surveillance and seroprevalence measures can be useful in developing local AIDS projections.

Th.A.P.77 RELIABILITY OF ESTIMATES BASED ON BACKCALCULATION.

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OBJECTIVE: To assess random and systematic uncertainties in estimates from backcalculation of the cumulative numbers of HIV-infected persons up to 1985 and through the present, the differences between average infection rates over previous time intervals, and projections of future AIDS incidence. METHODS: Using flexible models of the previous HIV infection rate, we evaluated the effects on the estimates above to uncertainties in the AIDS incubation distribution, the form of the infection rate curve, delay corrections, and changes in the surveillance definition. Our method yielded variances for random errors as well as an assessment of the systematic errors, such as from misspecification of the incubation distribution. RESULTS: We studied persons with hemophilia and non-IV drug using homosexual men using a Weibull AIDS incubation distribution F(t)=exp(-0.002t^2.516) derived from persons with hemophilia. We find evidence for an earlier peak in infection rates in these two test cases, in line with independent epidemiologic evidence. These results suggest that valid inferences may be made for other risk groups. Sensitivity analyses indicated that near term projections of AIDS incidence were relatively stable with respect to perturbations of the underlying model. However, estimates of the cumulative number of infections occurring after 1985 and estimates of changes in the infection rate have large random and systematic components of error. CONCLUSIONS: Our results help us to assess the strength of substantive inferences made using the method of backcalculation.

Th.A.P.78 A REVIEW OF SOME TECHNIQUES FOR BACKWARD ESTIMATING THE PREVALENCE OF HIV FROM AIDS CASE INCIDENCE

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Objective. Some methods for estimating HIV prevalence from AIDS case data are examined. Featured in this examination is the Brookmeyer-Gail method.
Methods. Validity of the methods are examined by performing sensitivity analysis of the HIV prevalence estimate by year for different incubation distributions.
Results. An estimate of U.S. HIV prevalence is produced.
Conclusion. The Brookmeyer-Gail method is an objective procedure for estimating past HIV prevalence but a proper representation of the incubation distribution is critical in providing reliable estimates.

Th.A.P.79

PROJECTING PROPORTIONS OF AIDS CASES OVER TIME

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Objective. To model time trends in the proportions of AIDS cases in groups, in order to make short-term projections of future proportions.
Methods. Let $p_i(t)$ be the proportion of cases in group i, i=1,2,...,G, at time t. Model the generalized logits: $\log(p_i(t)/p_G(t)) = f_i(t)$ + error, where $f_i(t)$ is a polynomial in time (estimated using weighted regression) and group G is the reference group ($f_G(t) = 0$). Predicted proportions are:

$$p_i(t) = \exp(f_i(t)) / \Sigma \exp(f_i(t)).$$

Results. Predictions are nearly independent of the choice of the reference group. We modeled quarterly incidence of U.S. cases for Jan 1984 through June 1988 grouped geographically into metropolitan statistical areas: New York City, San Francisco, Houston, and others (reference group). Linear polynomials give good fits to observed proportions and predict decreases in each area, with the following observed and predicted percent of U.S. cases:

	New York City		San Francisco		Houston	
Quarter	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.
1987/1	18.6	18.3	6.4	6.6	3.1	3.3
1988/1	17.4	17.5	5.9	5.4	2.9	2.8
1989/4		12.1		3.9		2.6

Conclusion. Modeling proportions can give useful short-term projections even with relatively few cases in some groups. Proportions in risk groups can be modeled after the effects of the new case definition on trends are understood. Estimates of uncertainty and prediction intervals can be obtained from a multinomial likelihood incorporating similar models.

Th.A.P.80

THE AIDS EPIDEMIC IN MEXICO

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Objective: To predict the short term course of the acquired immunodeficiency syndrome (AIDS) epidemic in Mexico.
Methods: By the method of back calculation using cumulative number of AIDS cases reported until October 1988 and adjusting for report delay for right-truncated data in chronologic time, we estimate the future number of AIDS cases in Mexico. The analysis comprises the results of the National Serum Survey (NSS) which is intended to provide a reliable estimate of the current HIV seroprevalence in the entire country of Mexico.
Results: Initial analysis adjusted for the report delay demonstrates that there are significant differences in AIDS reports by risk factor (homosexuality vs. others) and by region (Mexico city vs. others). The results of the "working backwards" modelling, with consolidated results of the NSS, will be presented.
Conclusion: The authors considered that the method of back calculation with adjustment for report delay in conjunction with a reliable estimate of seroprevalence will substantially improve the accuracy of their projections. This analysis will give better insight into the future course of the AIDS epidemic.

Th.A.P.81

MODELLING OF THE AIDS EPIDEMIC IN MEXICO

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Objective: To forecast new AIDS cases among different risk groups in Mexico, and determine the impact of preventive measures on the spread of the epidemic.
Methods: We used a closed compartmental model to forecast new AIDS cases among homosexual and bisexual males, and heterosexual males and females. For each group three compartments were defined: uninfected persons, infected but asymptomatic persons, and diagnosed AIDS cases. It is assumed that the AIDS epidemic will follow the propagation of infectious disease model, where spread of infection is proportional to the product of the number of healthy persons and the number of infected persons. The only movement inside the system is from healthy to infected, and from infected to asymptomatic, and symptomatic people do not spread the disease. A discrete non-linear regression was used to estimate the parameters of the model so that the prediction would fit the number of reported AIDS cases in Mexico. The impact of preventive measures was determined by modification of the probability of transmission of HIV.
Results: By August 1988, 1811 cases had been diagnosed in Mexico, 768 were homosexual males, 375 bisexual males, and 118 heterosexual males and females. Our model predicts that the AIDS incidence will continue to rise in Mexico for at least the next 8 years and will spread among the heterosexual population. By means of education programs, decreasing the transmission probability by 10% in all groups will result in a decrease of 24% in the number of cases accumulated over an 8 year period. A 20% decrease would prevent more than 40% of the cases.
Conclusion: Simple models can be valuable to predict the evolution of the AIDS epidemic and the impact of behavioral change.

Th.A.P.82

LIMITATIONS OF OFFICIAL FORECASTS USED IN PLANNING FUTURE AIDS SERVICE NEEDS

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Objective. To compare official and semi-official projections of AIDS prevalence and associated medical/social service needs among city, state, and federal agencies for New York, San Francisco, Los Angeles, and other U.S. cities. To explain how assumptions and choice of methodology affect these projections.
Methods. Critical review of published forecasts.
Results and Conclusions. Responsibility for projecting prevalence and service need has shifted from the federal to state and local levels in the past few years. The earliest projections of AIDS prevalence were made by the Centers for Disease Control (CDC) in 1986 for San Francisco, New York City, and the U.S. as a whole. The Institute of Medicine's estimates of hospital need through 1991 were based on these CDC projections. Major official strategic plans have recently been completed by interagency task forces in San Francisco, New York City, and New York State which include case projections broken down by risk group and forecasts of need for hospital beds, long term care beds, housing, and other service needs.

Unofficial forecasts using competing methods often differ sharply from official projections. The key differences among the forecasts result from the choice of assumptions (e.g., history of HIV infection among specific risk groups, future infection rates, disease progression rates, and reporting lags) and projection method (linear or polynomial extrapolation from incidence time series data vs. simple or complex biological models based on estimation of infection and disease progression). We describe how choice of assumptions and methods affect official forecasts for various cities and examine alternatives.

Histoire clinique de l'infection à VIH
Natural History of HIV Infection

Th.A.P.83

GENETIC EPIDEMIOLOGY OF AIDS. L Louie, S Desmond, K Gilles, B Newman, and M-C King. University of California, Berkeley, CA 94720, USA. We are currently addressing two crucial questions about the epidemiology of AIDS: 1) Does host genotype influence susceptibility to HIV infection? 2) Does host genotype influence the rate of disease progression once a person is infected with HIV? Our first study sample, from the San Francisco Men's Health Study (SFMHS), consists of 88 Caucasian men in 4 clinical groups: 1) HIV- despite high risk behaviors; 2) HIV+ with no symptoms for at least 2 years; 3) HIV+ with at least 2 clinical findings but without AIDS; and 4) AIDS. Our second study sample consists of 46 Caucasian AIDS patients from the AIDS Clinical Research Center (ACRC) in San Francisco and 76 healthy Caucasian controls. In both samples, we are comparing sequences of genes involved in immune response by analysis of DNA polymorphisms.

Our first results are for T cell receptor-beta chain (TCRB), which is detected by the cDNA probe PT10 after digestion of genomic DNA with Bgl II. Alleles have fragment lengths 10.0 and 9.2 kb. In the SFMHS sample, allele frequencies did not differ between the HIV- group vs the three HIV+ groups (χ_1^2=1.65, p=.20). Among HIV+ men, asymptomatic subjects did not differ from symptomatic and AIDS patients (χ_1^2=.04, p=.84). In the ACRC sample, allele frequencies did not differ between AIDS patients and healthy controls (χ_1^2=.02, p=.89). We are continuing to screen other candidate sequences involved in immune response and will present these results at the meeting.

Group	Clinical Status	TCRB Allele		N
		10.0 (%)	9.2 (%)	
SFMHS 1	HIV-	28 (48)	30 (52)	29
2	HIV+, asymptomatic	18 (36)	32 (64)	25
3	HIV+, symptomatic	21 (40)	31 (60)	26
4	AIDS	4 (29)	10 (71)	7
ACRC	AIDS	51 (55)	41 (45)	46
Controls	Healthy	89 (56)	69 (44)	79

Th.A.P.84

EVALUATION OF THE IMMUNOLOGICAL STAGING SYSTEM IN A POPULATION BASED COHORT

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Objective. To apply the immunological staging system, ISS, (Zolla-Pazner, 1987) to a sample of HIV infected men. To determine risk of AIDS by ISS stage after 42 months of observation, and pattern of change in stage.
Methods. ISS Stages 1-3 are composed of an additive combination of immunological abnormalities: CD4/CD8 T cell ratio of <1.0, CD4 T cell count of <500 cells/ul, and lymphopenia of <1500 cells/ul. Lack of abnormalities defines Stage 0. The 368 HIV infected men, initially AIDS-free, of the San Francisco Men's Health Study probability sample were staged at visit 1 by the ISS and re-classified every 6 months at follow-up visits 2-8. Risk of AIDS by initial stage was determined after 42 months follow-up.
Results. At visit 1, 2 men were unclassifiable by the ISS. The remaining 366 men were distributed among Stages 0-3 as follows: 16%, 58%, 21%, and 5%. The risks of AIDS and 95% confidence limits after 42 months were .02 (.003,.09), .14 (.10,.19), .43 (.32,.54) and .18 (.06,.41) for Stages 0-3.

All but 11 men were classifiable on visits 2-8. By visit 8, 62% had changed to a higher stage relative to visit 1. Of classifiable men with at least 1 follow-up visit, 141 (42%) regressed in stage at 1 or more visits.

The relatively low risk of AIDS in Stage 3 on visit 1 may be artifactual because men in Stage 3 on visit 2 and visit 3 had higher risks of AIDS at 30 months follow-up, .55 (.35,.73) and .35 (.21,.53) respectively.
Conclusion. ISS is easily applied and predicts progression to AIDS. Men do not appear to move uniformly through the stages. Stage 3 which is based on lymphopenia, may not describe a risk of AIDS distinct from the other stages.

Th.A.P.85

TIME FROM FIRST HIV INFECTION TO PERSISTENT ANTIGENEMIA

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Objective. HIV antigenemia is an important predictor, independent of CD4 cell number, for progression to AIDS in the Chicago MACS prevalent seropositive cohort. The objective of this study was to assess the usefulness of HIV antigenemia as an indicator of time since first HIV infection.
Methods. For each of 439 HIV antibody positive (Ab+) men in the Chicago MACS with baseline antigen (Ag) capture results, an estimate of time since first infection was established using %CD4 and platelet count (Munoz et al. IV International AIDS Conference). Means and ranges of the mean times since first infection for men with and without antigenemia at entry were compared. Development of antigenemia in 47 HIV antibody seroconverters(SC) was examined to assess the validity of our estimates.
Results. 366 Chicago MACS participants who were HIV Ab+, Ag- at entry had an estimated mean time from first HIV infection to study entry of 19.0 mos. (range 17.1-21.1), compared to 28.1 mos. (range 19.8-72.2) for the 73 Ab+ men with Ag detected at entry (p<0.001). Approximately 75% of this latter group had Ag that persisted for at least 2 consecutive 6 mo. visits. The observed times from SC to detection of persistent Ag ranged from 3 to 30 mos.(7 men); 8 SC developed Ag that did not persist.
Conclusion. Persistent antigenemia in a seropositive cohort is informative about the time since initial HIV infection. Estimation of this time may be useful for describing progression of HIV disease when CD4, platelet count, and antigen status are known.

Th.A.P.86

LONG-TERM HIV INFECTION WITHOUT CLINICAL ILLNESS OR IMMUNODEFICIENCY: HOMOSEXUAL MEN WHO HAVE NOT "PROGRESSED"

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Objectives: To evaluate the immunologic and virologic profile of persons with long-term HIV infection who have not developed HIV-disease.
Methods: From a cohort of homosexual/bisexual men, 184 HIV-antibody (Ab) positive men evaluated in 1988 had well defined seroconversion (SC) dates. We compared 37 men who were Ab positive for ≥ 5 y (mean=8.0 y) without clinical evidence of immunodeficiency and who had ≥ 400 T4 lymphocytes (non-progressors [NP]) to 81 men with AIDS or ARC (progressors [P]) (mean=8.2 y); we are conducting additional immunologic tests on NP and P with AIDS (PWA).
Results: T4 count for all 184 men was not statistically associated with year of SC. Compared to P, NP had a higher T4 count, T8 count, and hemoglobin and a lower beta-2 microglobulin. Of those NP tested, 32/32 were negative for HIV antigen, 5/5 were negative for HIV RNA by polymerase chain reaction, and 15/15 were positive either for HIV culture or for HIV DNA by PCR. Compared to 6 PWA, 11 NP did not significantly differ on assays for natural killer activity or Ab-dependent cellular cytotoxicity. When tested by ELISA for Ab to 6 gag, polymerase and envelope recombinant antigens, 11 NP had a higher optical density reading than PWA to p24 and p120N terminal proteins (p<.05).
Conclusions: T4 count is not a marker for duration of infection. NP do not have evidence of replicating virus, but do have evidence of latent HIV infection. Although similar to PWA for some immunologic parameters, NP differed in strength of Ab response to certain core and envelope antigens.

Th.A.P.87

DEFINING THE INTERVAL BETWEEN HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION AND THE APPEARANCE OF HIV ANTIBODY.

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Objective. Persons infected with HIV who have not developed antibody detectable by currently used tests may transmit the virus through blood donation or sexual contact. This study was done to estimate the duration of this virus-positive, antibody-negative period.
Methods. We investigated 27 homosexual and 12 hemophilic men for whom stored peripheral blood mononuclear cells (PBM) were available before and after seroconversion. PBM were assayed for HIV DNA by the polymerase chain reaction technique using gag and env region primers; serum was tested for p24 antigen by antigen-capture EIA.
Results. Four persons had HIV DNA detected before seroconversion; all had HIV DNA detected only on the seronegative date closest to the time of seroconversion. Three persons had antigen detected before seroconversion; in each case HIV DNA was also detected. Using a Markov model, we estimated the median time from infection with HIV (as assessed by detection of HIV DNA) to first detection of HIV antibody to be 2.4±2.1 (S.E.M.) months. Modeling of reported cases of HIV infection with known exposure gave an estimate of a median of 2.1±0.1 months from exposure to antibody detection, and 95% of cases would be expected in 5.8±0.6 months.
Conclusion. Prolonged periods of unrecognized HIV infection in persons who do not have detectable antibody appear unlikely.

Th.A.P.88

OCCURRENCE OF INDETERMINANT WESTERN BLOT (IWB) TESTS AND LACK OF TRANSMISSION OF IWB IN PERSONS AT LOW RISK FOR HIV INFECTION, HUNTINGTON, WV, USA, 1986-1988

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Background. During screening of prospective volunteers for an AIDS vaccine study (rGP160 MicroGeneSys) we noted the frequent occurrence of IWB in our low risk population. IWB was the most common reason for eliminating volunteers from participating in the study.
Objective. The present study was undertaken to examine the epidemiology of IWB in low risk persons.
Methods. Sera were obtained from three groups: paired sera obtained 1 month apart on 25 families (84 individuals), 34 cord sera paired with sera collected from children 6 to 53 months later and 166 HIV vaccine volunteers. Sera were tested for antibodies by ELISA (Abbott) and WB (Dupont); p-24 antigen (Abbott) was also tested.
Results. No HIV infections were found in our population. Repeat IWB occurred in 11 members of 10 different families. Nine IWB were among male children in the families (p<.01). IWB was caused by weakly reactive p-24 bands in 9/11 family members. 2/34 cord sera exhibited IWB; neither child had IWB >6 months later; one child acquired IWB that was not present in cord serum. IWB occurred in 23% of low-risk adults in Huntington, WV.
Conclusion. IWB is common among persons at low risk for HIV in our city. There was no evidence of horizontal transmission of IWB in families or vertical transmission for mothers to children.

Th.A.P.89

INTERNATIONAL REGISTRY OF SEROCONVERTERS:

Biggar, Robert*; Goedert, J.*; Blattner, W*. (*National Cancer Institute, Bethesda, MD), and the Seroconverters Working Group.

Objective. To expand an ongoing registry of persons with documented HIV seroconversion in order to determine the natural history of HIV infection and compare the course of HIV in persons infected by different routes, in different geographic areas and at different times.
Background. The natural history of HIV will be best understood when the time of infection can be reliably established. Most investigators doing prospective studies have relatively few seroconverting subjects and enroll subjects of only one risk group. Thus, the ability of single cohorts to address critical natural history issues is limited.
Methods. We have established a registry of seroconverters by providing simple data forms to investigators engaged in prospective studies of groups at risk of AIDS. Essential data are identifying number (names not accepted in order to assure confidentiality), age, sex, risk group, dates HIV antibody tests were last negative and first positive, dates and types of anti-viral treatments (if any), last follow-up date, AIDS outcome by type. Summary reports will be prepared at NCI and shared with all participants.
Results. Results are presented elsewhere (See Time-to-AIDS among 816 Seroconverters, by the Seroconverters Working Group [Biggar]). So far 1115 seroconverters (between 1978 and 1988) have been registered by 38 investigators from the United States, Canada, Europe and Australia. Risk groups include homosexual men, hemophiliacs, i.v. drug users, blood recipients, and heterosexual partners.
NEW CONTRIBUTIONS WILL BE WELCOME. We would be pleased to answer questions and provide forms and guidance for investigators willing to participate.

Th.A.P.90

LACK OF CORRELATION BETWEEN NEUTRALIZING ANTIBODY TITERS AND CD4$^+$ DECLINE IN THE SAN FRANCISCO MEN'S HEALTH STUDY.

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Objective. To determine the relationship between neutralizing antibody titer and the decline in CD4$^+$ cells in HIV disease.
Methods. A novel fluorescent micro-plaque reduction assay was used to measure the neutralizing antibody titer for 154 gay and bisexual men 30 months after entry into the San Francisco Men's Health Study. This assay employs a monolayer of the MT2 cell line formed by centrifugation through molten agarose in 96 well trays. The study population was composed of 120 seropositive asymptomatic individuals with >650 CD4$^+$ cells at entry (1984) and 34 seronegative controls. Of the seropositives, 56 continued to have >650 CD4$^+$ cells after 30 months while 64 showed a decline in CD4$^+$ cells. The relative neutralizing capacity is expressed as the reciprocal of the serum dilution at which 50% of the input plaque forming units are inhibited.
Results. All sera which were antibody negative by ELISA showed no neutralizing capacity at the lowest serum dilution (1:3). All positive sera had some capacity to neutralize prototype HTLV-III with a range of titers from 12-3378. The geometric mean titer for the group without CD4$^+$ decline was 432. The geometric mean titer for the group with declining CD4$^+$ cell numbers was 486. There was no statistical difference in the distribution of titers within the two groups.
Conclusion. This work suggests that there is little or no correlation between CD4$^+$ cell decline and the capacity to neutralize the prototype strain of HIV-1.

Th.A.P.91 THE EFFECT OF HEPATITIS B VIRUS VACCINATION ON T-CELL SUBSETS IN HIV-1 SEROPOSITIVE MEN IN THE BALTIMORE MACS

Odaka Nancy. Margolick J. Fox R. Muñoz A. The Johns Hopkins School of Hygiene and Public Health. Baltimore, MD. USA.

Objective To compare the effect of hepatitis B virus vaccination (HBVV) on T-cell subsets in HIV-1 seropositive(+) and seronegative(-) homosexual men. Methods Previously HBV seronegative HIV-1 + and - homosexual men in the Baltimore MACS either did or did not receive HBVV. Blood was drawn immediately prior to enrollment in the study (baseline) and every six months thereafter for analysis of T-cell subsets (CD4%, CD8%). Change(Δ) was defined as the difference between the baseline value and the most recent evaluation, with followup(F/up) ranging from 6 to 36 months.
Results

					CD4%		CD8%	
Group	HIV-1	HBVV	N	Mean F/up	Baseline Mean ± SD	Mean Δ per 6 mos	Baseline Mean ± SD	Mean Δ per 6 mos
1	-	-	112	32.6	48 ± 8.4	-0.4	27 ± 7.6	0.1
2	-	+	102	32.7	47 ± 8.6	-0.2	29 ± 8.1	-0.6
3	+	-	23	33.8	32 ± 8.7	-1.8^{a}	44 ±11.0	1.8^{a}
4	+	+	21	31.3	30 ±11.2	$-3.3^{a,b}$	37 ±10.4	$4.3^{a,c}$

a: $p < 0.05$ compared to group 1; b: $p=0.003$ compared to group 3; c: $p=0.007$ compared to group 3. The differences between groups 3 and 4 persisted after adjusting for baseline %CD4 and %CD8.
Conclusion These data suggest that HBVV may influence T-cell subset proportions in HIV-1 + individuals over time. Further followup of this and other populations is need to confirm this conclusion.

Th.A.P.92 INCREASED RATE OF HIV-1 ISOLATION AMONG INFECTED HOMOSEXUALS WITH LOW CD_4 COUNT

Homayoon Farzadegan, K. Qatsha, W. Hardy, D. Imagawa, M. Lee, C. Grovit, P. Gupta: A Report from the Multicenter AIDS Cohort Study (MACS), NIH, Bethesda, MD, U.S.A.

OBJECTIVE: To correlate variation in HIV-1 isolation with changes in immune status as determined by CD_4 count among HIV-1 seroconverters.
METHOD: One hundred and ninety-four seroconverted homo/bisexual men participating in a prospective study of the natural history of HIV-1 infection were studied for HIV-1 isolation and cellular immune status in three (MACS) Centers. Cocultivation with normal PHA-P stimulated PBMC's were monitored four weeks for HIV-1 replication utilizing P24 antigen capture.
RESULTS:

CD_4+/mm²	+/Total	%	CD_4+/mm²	+/Total	%
0 - 199	24/25	96	600 - 799	29/38	76
200 - 399	24/36	67	800 - 999	12/18	67
400 - 599	38/50	76	> 1000	13/27	48

The HIV isolation rate for participants with low CD_4 (< 200) was greater than those with high CD_4 (> 1000) count. The test for trend was statistically significant (Mantel-Haenszel chi square 9.4, $P=0.002$).
CONCLUSION: Declining CD_4 is associated with immune impairment. The association between lower CD_4 count and increased HIV-1 recovery may suggest that progression of HIV-1 infection is associated with a higher percentage of infected T-cells and more effective viral replication. Low CD_4 cell count is a significant predictor of HIV-1 isolation.

Th.A.P.93 INCREASED "VIRAL BURDEN" IN LATE STAGES OF HIV INFECTION.

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Objective. To compare results of HIV isolation attempts from peripheral blood mononuclear cells (PBMC's) of early versus late stage patients.
Methods. PBMC's from 91 staged HIV seropositive patients were obtained from heparinized blood specimens by density gradient fractionation. $3x10^6$ and $3x10^5$ cells from each patient were inoculated into cultures of PHA and IL-2 stimulated normal donor target PBMC's. Culture fluids were monitored weekly for HIV p24 antigen.
Results.

		Positive		
Stage	# Total	≤ 7 days	> 7 days	Negative
Controls	19	0	0	19 (100%)
WR 1 - 2	41	11 (27%)	16 (39%)	14 (34%)
WR 3 - 5	40	27 (68%)	8 (20%)	5 (12%)
WR 6	10	10 (100%)	0	0

90% of HIV seropositive patients with decreased CD4 cell counts (less than 400 per mm3, stages 3 - 6) were culture positive, compared to 66% of early stage patients with normal CD4 counts. Cultures became positive more rapidly in patients with late stage disease.
Conclusion. HIV can be more frequently and more rapidly recovered from blood in the later stages of illness.

Th.A.P.94 GRAPHICAL DESCRIPTION OF HEMATOLOGICAL CHANGES AFTER HIV-1 SEROCONVERSION IN HOMOSEXUAL MEN.

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Objective. Describe the multivariate distribution of hematological variables at different times from HIV-1 seroconversion. Methods. The 271 seroconverters observed in the MACS within 4 years of follow-up provided 1816 assessments of hematological values at different times from seroconversion from -1 to 3 yrs. Baricentric coordinates and contours of multivariate normal distributions estimated from the data were used to display the interactions between different variables. Results. The means and standard deviations of selected hematological variables according to the number of years from seroconversion were

	Years from HIV-1 Seroconversion				
	-1	0	1	2	3
Assessments (N)	192	445	517	443	220
ln(CD4/CD8)	0.49±0.46	0.24±0.57	-0.13±0.58	-0.37±0.69	-0.64±0.78
CD3-(CD4+CD8)(/µl)	10±120	17±129	39±100	66±103	52±105
Hemoglobin(g/dl)	15.44±1.10	15.38±1.09	15.23±1.20	15.06±1.15	15.07±1.17
Platelets (in K)	270±58	259±60	246±57	227±55	215±53

The CD4:CD8 ratio was negatively correlated with double negative cells (CD3-(CD4+CD8)), positively correlated with hemoglobin and had a consistently small correlation with platelets. Conclusion. Strong downward trends after seroconversion are apparent in CD4/CD8 and in platelets. CD4/CD8 and platelets are weakly correlated and have different prognostic information for AIDS. Changes in double negative cells and hemoglobin are systematic, but of small magnitude relative to their variability.

Th.A.P.95 SEROLOGIC EVIDENCE OF EPSTEIN-BARR VIRUS (EBV) REACTIVATION BEFORE AND AFTER HIV-1 SEROCONVERSION.

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Objective. To evaluate the relationship between early HIV-1 infection and active/reactivated EBV infection based on serologic markers of EBV infection.
Methods. This nested case-control study included a group of homosexual/bisexual men who seroconverted to HIV-1 (n=49) referenced to matched controls (n=49) who remained seronegative to HIV-1 for 2 1/2 years. HIV-1 infection was documented by ELISA and confirmed by Western-blot assay. Immunofluorescence assays were used to determine IgG antibody titers to EBV-VCA, EBV-EA and EBNA.
Results. All 49 HIV seroconverters were seropositive to EBV (titer ≥ 1:5) while 47/49 (96%) of controls were seropositive to EBV. Antibody titers to EBV-VCA and EBNA did not differ significantly between cases and controls 6 months prior to the time of HIV-1 seroconversion for cases. Antibody titers to EBV-EA were significantly elevated ($p < .001$) among cases (Geometric mean titer GMT = 35) prior to HIV-1 seroconversion compared to controls (GMT = 7) and remained significantly elevated for 1 1/2 years post HIV-1 seroconversion. Four-fold or greater rises in VCA-IgG titers were strongly associated with HIV-1 seroconversion (odds ratio = 3.4; $p = .004$), indicating probable reactivation of EBV. Negative correlations were observed between the antibody titers to EBV-VCA and EBV-EA to CD4+ lymphocytes, while mean number of CD8+ lymphocytes were elevated in cases pre and post HIV seroconversion.
Conclusion. These results suggest that EBV reactivation is correlated with HIV-1 seroconversion and that evidence of a ≥ 4 fold rise in VCA-IgG is detected in a majority of HIV-1 seroconverters within 18 months. This may have implications regarding the role of EBV in the future pathogenesis of HIV-1 infection.

Th.A.P.96 CLINICAL PATTERN AND COURSE OF HIV INFECTION IN 29 PATIENTS WITH SEROCONVERSION

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Objective: To describe changes in immunological parameters and occurrence /course of clinical symptoms in patients (pts) with seroconversion (SC) of HIV antibodies.
Methods: During routine check-ups of ca. 3000 pts with risk for HIV infection between 1/1985 and 12/1988 at Frankfurt University Clinic, SC could be proved in 29 pts. All serum samples, positive and negative ones, were re-tested by means of ELISA, IFT, or WB. All 29 pts were followed up (physical examination, routine lab, lymphocyte subtyping).
Results: Mean intervall from last negative to first positive test was 180 ds (min. 10, max. 535 ds). Under the assumption of average time to SC being up to 40 ds, mean infection date was 40-220 ds before 1st positive test. In the course of SC, of 29 pts, 1 had meningo-encephalitis, 1 had generalized convulsions, 4 pts had exanthema, 10 symptoms of parainfluenzal bouts. Physical & immunological follow-ups (6-39mo after SC; mean: 19mo) showed that only 19 pts (31%) had non-pathological results; after 6-12mo, already 16 pts (55%) had an increase in CD8+ cell count, 4 pts (14%) a decrease in CD4+ cell count.
Conclusion: 2/3 of our patients presented with subclinical or manifest symptoms due to acute HIV infection. Further examinations will have to show whether different patterns of acute infection correlate with different long term courses.

Th.A.P.97 IMMUNOLOGIC ABNORMALITIES IN ANTI-HIV-1 NEGATIVE (-) AND ANTI-HTLV-I/II NEGATIVE AND POSITIVE (+) IV DRUG ABUSERS (IVDA) ON METHADONE.

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Objectives To determine the effects of HTLV-I/II infection and drug use on immune function in an AIDS risk group.
Methods Immunologic status was determined on 9 men who were anti-HTLV-I/II (+) and 20 men who were anti-HTLV-I/II (-), all of whom were anti-HIV-1 (-) and all of whom were IVDA on methadone maintenance enrolled in an outpatient treatment unit, and on 38 age and sex matched non-drug abusing controls. The immunologic tests were clustered into 6 groups and overall, non-parametric multivariate analyses (Kruskal-Wallis one-way analysis based on ranks) were done. Within groups, individual Kruskak-Wallis tests were done on each measure.
Results No significant differences were seen either in groups of immunologic measures, or in individual measures between the anti-HTLV-I/II (+) and (-) drug abusers. Significant differences between the drug users and controls were observed for natural killer (NK) cell cytotoxicity, T cell subsets, lymphoproliferative assays and immunoglobulins. NK cell subsets and B cell subsets were not significantly different. For T cell subsets, significant elevations were observed in the number of CD4 cells expressing CDw29, the helper subset, in CD8 cells and CD8+I2+ cells and in CD2+Tal+ cells. IgG and IgM were elevated. Lymphocyte proliferation in response to pokeweed mitogen stimulation was 4-fold lower in the methadone group. NK cell activity was less than half the control value.
Conclusion The immunologic abnormalities, perhaps due to IV drug use and/or methadone, observed in this AIDS risk group, may increase susceptibility to HIV and contribute to HIV related disease progression after infection. There were no immunologic differences observed between the anti-HTLV-I/II (+) and (-) drug users. (supported by NIMH P50-MH/DA-42455).

Th.A.P.99 AJUSTEMENT DE MODELES CHRONOLOGIQUES AVEC RUPTURES SUR UNE FONCTION DISCRIMINANTE.

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Objectifs. Ajuster une fonction discriminante des états cliniques sur les données biologiques qui ait valeur prédictive.
Méthodes. Nous avons traité un dossier de 200 malades suivis pendant 2 à 5 ans et examinés au moins 5 fois. Chaque examen fournit un état clinique codé de 1 à 9 et un certain nombre de données biologiques parmi lesquelles nous avons retenu les nombres de globules blancs, de lymphocytes, de T4 et de T8 et les taux d'IgA, d'IgG, et de la Bêta 2 microglobuline (B2M). Une analyse discriminante des états cliniques fondée sur les données biologiques est faite, puis plusieurs modèles chronologiques sont ajustés sur la première fonction discriminante mesurée à plusieurs instants sur un même individu.
Résultats. Nous indiquons dans le tableau les coefficients canoniques normalisés (CCN) de la première fonction discriminante pour chaque facteur, ainsi que l'écart type de ce facteur (SD).

	CCN	SD
B2M	0,409	195
Globules blancs	- 0,434	2077
Lymphocytes	- 0,105	946
T4	- 0,013	377
T8	0,019	553
IgG	- 0,303	72
IgA	0,780	20

Les rôles principaux sont donc joués par IgA, GB et B2M. Cette fonction présente en outre l'intérêt d'être fonction croissante du diagnostic. Une forte non stationnarité temporelle exclut les modèles ARMA simples, ce qui conduit à ajuster des modèles permettant une possibilité de rupture estimant pour chaque patient la date de rupture.

Th.A.P.101 LACK OF ASSOCIATION OF T-CELL SUBSETS WITH CONTINUING INTRAVENOUS DRUG USE AND HIGH RISK HETEROSEXUAL SEX, INDEPENDENT OF HIV INFECTION AND DISEASE.

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Objective. To examine the relation of T-cell subsets to continuing drug use and high risk heterosexual sex in intravenous drug users with known HIV serostatus.
Methods. From 1985-88 701 methadone maintained intravenous drug users (IVDUs) enrolled in a natural history study of HIV infection had semi-annual physical exams, interviews for demography, medical, drug use and sexual history and tests for HIV antibody (Ab) and T-cell subsets. Number of injections (INJ), injections in shooting galleries (SG-INJ), IVDU heterosexual sex partners (SEX) and duration and severity of HIV related illness (AIDS, oral thrush, constitutional symptoms) from enrollment to last visit were examined in relation to CD4 count and CD4/CD8 at last visit.
Results. Table of mean CD4 counts and CD4/CD8 by continuing INJ and SEX is shown.

	HIV Ab + (n=171)				HIV Ab - (n=243)			
	INJ	No INJ	SEX	No SEX	INJ	No INJ	SEX	No SEX
CD4	564	467	525	512	1180	1253	1201	1248
CD4/CD8	.59	.57	.62	.53	1.52	1.70	1.58	1.69

Regression analysis in HIV Ab + revealed no association of CD4 count and CD4/CD8 with INJ (p=.60), INJ-SG (p=.35), SEX (p=.13) but strong association with duration of HIV related illness (p=.04). In HIV Ab - regression analysis revealed no association with INJ, INJ-SG or SEX.
CONCLUSION. This study suggests that high risk drug and sex behavior do not influence T-cell subsets independent of the presence of HIV infection and severity and duration of HIV-related disease.

Th.A.P.98 MYCOBACTERIAL INFECTIONS IN MASSACHUSETTS AIDS PATIENTS

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Objective: To compare the demographic characteristics of AIDS patients who have M. tuberculosis (MTB), M. avium intracellulare (MAI) or NEITHER.
Methods: In 1/99, reported resident AIDS cases (CDC defined) in the statewide case registry that had been diagnosed through 6/30/88 were analyzed. State TB Registry cases (since 1982) and culture reports from the State Mycobacterium Reference Laboratory (since 1985) were matched with the AIDS registry.
Results: Of 1545 resident cases, 1330 (86%) had NEITHER, 74 (5%) were classified as MTB (including 2 with both MTB and MAI), and 141 (9%) had disseminated MAI. Case fatality rates for MTB, MAI and NEITHER were 51%, 77% and 50%, respectively. Overrepresentation of non-whites and heterosexually transmitted cases (including 96% foreign born) was seen for MTB ($p < 0.001$).

	Race		Transmission Group		
	White	Non-white	Homo/bisexual	Heterosex.	Not Sexual
MTB	35%	65%	30%	35%	35%
MAI	68%	32%	63%	1%	36%
NEITHER	72%	28%	64%	4%	32%

Conclusion: In Massachusetts, MTB in AIDS occurs predominantly among non-white, foreign born adults acquiring HIV through heterosexual contact. However, MAI patients are demographically similar to those with NEITHER, except for a higher case fatality rate. These findings suggest that MAI is a random event indicative of current immunocompromised status whereas MTB reflects immunosuppression in the context of prior MTB exposure.

Th.A.P.100 DO CLINICAL HERPES SIMPLEX VIRUS (HSV) AND VARICELLA-ZOSTER (VZV) INFECTIONS ACCELERATE HIV-1-INDUCED IMMUNODEFICIENCY?

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Objective: In view of reports that herpesvirus products promote HIV-1 replication (JID, 1988, 157:508), we sought to determine whether attacks of HSV and VZV infection accelerate immunodeficiency in HIV-1-seropositive men.
Methods: HIV-1-seropositive AIDS-free homosexual participants reporting clinical HSV or VZV histories during 6-month follow-up periods were compared to HIV-1-seropositives reporting neither HSV nor VZV. Rates of loss of $CD4^+$ cells were compared for the intervals before, around and after the recognition of HSV or VZV symptoms. Overall declines in $CD4^+$ cell count were compared in clinically affected and unaffected men.
Results: During the study period, of 173 men reporting the first attack of HSV in at least a year, 75 had the first attack ever; none ever had zoster. Another 78 men reported the first attack of zoster. For HSV the mean $CD4^+$ cell count declines were 36 in the 6 months before, 32 in the 6 months around, and 26 in the 6 months after the selected attack. For VZV the mean declines were 41, 27 and 39 before, around and after the attack, respectively. Declines before and after attacks did not significantly differ. Overall loss of $CD4^+$ cells during the period was slightly greater in affected (HSV=94, $p=0.03$; VZV=107, $p=0.17$) than in unaffected men (None=59).
Conclusion: We found weak evidence that HIV-1-induced immunodeficiency progressed faster in men with clinically expressed HSV and VZV infection.

Th.A.P.102 PROGRESSION OF HIV DISEASE IN INTRAVENOUS DRUG USERS

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OBJECTIVE: To evaluate progression of HIV+ IVDUs in San Francisco.
METHODS: 120 HIV+ IVDUs recruited from drug treatment programs were evaluated clinically and for laboratory markers and followed at SFGH. Data were compared with HIV+ gay men followed in the SFGH cohort.
RESULTS:

	IVDU		SFGH Cohort		
	baseline	12 month	baseline	12 month	36 month
Median CD4	421	353	626	551	428
CD4 < 200	12%	28%	3%	4%	18%
Median B2M	3.2	3.6	2.7	2.6	2.8
B2M > 3.0	60%	69%	40%	33%	37%
P24-Ag+	9%	5%	16%	18%	20%

45% of IVDUs were symptomatic at baseline, comparable to 41% of gay men at 3 years of follow-up or 6 years of infection. 4/120 IVDUs have developed AIDS over a median 1 year. IVDUs had a greater yearly increase in Beta-2 microglobulin (B2M) than gay men (p=.003) and comparable decline in CD4 count.
CONCLUSIONS: Differences at baseline and in B2M may be due to a longer duration of infection, a higher rate of progression or a more immunocompromised state in IVDUs. 12% of drug users at baseline were eligible for zidovudine, but only one was receiving it. HIV infected IVDUs recruited in San Francisco are sick, appear to be progressing rapidly and are underserved.

Th.A.P.103 A RETROSPECTIVE FOLLOW-UP STUDY OF MORBIDITY AMONG HIV INFECTED YOUNG ADULTS PRIOR TO A DIAGNOSIS OF HIV INFECTION: A "TRUE" NATURAL HISTORY STUDY

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Objective. To investigate trends in morbidity in 1329 HIV infected US Army personnel, prior to being diagnosed with HIV infection. .
Methods. A case-control study was conducted with four HIV-Ab negative controls matched to each HIV-Ab positive case. Hospitalization histories were obtained for all individuals from an automated database of discharge diagnoses reported from all Army hospitals. Diagnoses associated with AIDS were excluded from the analysis.
Results. Hospital admission Rate Ratios (RR) and 95% Confidence Intervals (CI) are presented for 8 years prior to HIV infection diagnosis in cases.

YEARS PRIOR TO HIV INFECTION DIAGNOSIS

	8	7	6	5	4	3	2	1
RR	1.63	1.25	1.26	1.46	1.56	1.80	2.01	1.54
CI	1.23,2.15	0.94,1.66	0.96,1.63	1.14,1.88	1.25,1.94	1.48,2.19	1.68,2.39	1.30,1.81

Six to 8 years prior to HIV infection diagnosis, significant excess morbidity was accounted for by unspecified drug abuse, hepatitis B, and intracranial injuries. One to 5 years prior to HIV infection diagnosis, significant excess morbidity was seen in 9 diagnoses that were infectious in nature (e.g. enlarged lymph nodes, latent syphilis, genital warts), anal/rectal abscesses, and drug abuse.
Conclusion. Significant excess, non-AIDS related morbidity exists as far back as 8 years prior to HIV infection diagnosis in individuals currently infected with HIV. Studies of this nature, which are uninfluenced by subjects' knowledge of HIV infection, accurately describe and quantify morbidity from acute and early-stage HIV infection, as well as from high risk behavior.

Th.A.P.104 HIV INFECTION INCREASES THE FREQUENCY AND SEVERITY OF PAPILLOMAVIRUS INDUCED CERVICAL CYTOLOGIC ABNORMALITIES

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Objective. To compare frequency and severity of cervical dysplasia in women with and without HIV, human papillomavirus (HPV) infection and other STD's.
Methods. Female intravenous drug users (IVDU) and heterosexual partners of IVDU's underwent a standardized questionnaire and gynecologic exam including cervical cytology. Cervicovaginal cells were collected by lavage and evaluated for HPV by Southern blot. HIV status and syphilis were assessed by serology; gonorrhea, chlamydia and HSV by endocervical culture.
Results. Abnormal cytology (Pap grade II - IV) was found in 85% (11/13) of HIV+/HPV+ women, 6% (1/16) of HIV+/HPV- women, 29% (2/7) of HIV-/HPV+ women, and 14% (3/22) of HIV-/HPV- women.

HIV	HPV	Pap: II, III, IV	Pap: I
+	+	11	2
+	-	1	15
		OR=82.5	

HIV	HPV	Pap: II, III, IV	Pap: I
-	+	2	5
-	-	3	19
			OR=2.5

[Mantel-Haenszel Summary Odds Ratio = 11.9, 95% c.i.: 2.1, 49.2]

Of the 5 grade III and IV Pap smears, 4 were in HIV+/HPV+ and 1 was in a HIV+/HPV- woman. Smoking, sociodemographic characteristics and other STD's were not associated with abnormal cervical cytology in this population.
Conclusion. Cervical cytologic abnormalities were associated with HPV infection and occurred with an increased frequency and severity in the presence of HIV infection. These data suggest that HIV infection exacerbates HPV mediated cervical cytologic abnormalities.

Th.A.P.105 EARLY HIV-1 INFLUENCE ON MALIGNANCIES

Transfusion Safety Study Group* represented by Operskalski, Eva A.**.
*Participating institutions, New York City, Miami, Detroit, Seattle, San Francisco, Los Angeles, USA, **University of Southern California, Los Angeles, California, USA.

Objective. To evaluate whether persons with HIV-1 infection are at increased risk for developing malignancies other than those included in the definition of AIDS (Kaposi's sarcoma and non-Hodgkin's lymphoma (NHL)).
Methods. In a longitudinal study of transfusion-associated HIV-1 infection, data are collected on malignancies among anti-HIV-1(+) blood donors, recipients of blood components, persons with congenital hematologic disorders (CHD), and anti-HIV-1(-) controls for each group. Excluded in the present analyses were non-melanomatous skin cancers.
Results. The number and percent of enrolled subjects with malignancies diagnosed since 1979 or, for recipients, since the index transfusion are:

	anti-HIV(+)				anti-HIV(-)	
Subject group	Subjects	KS	NHL	Other CA	Subjects	Other CA
Donors	148	4 (3%)	0 (0%)	1 (1%)	153	0 (0%)
Recipients	121	0 (0%)	4 (3%)	4 (3%)	73	3 (4%)
CHD	679	1 (0%)	8 (1%)	1 (1%)	871	7 (1%)
Household/sexual	26	0 (0%)	0 (0%)	0 (0%)	927	15 (2%)

Conclusion. Within the period of present observations, HIV-1 infection does not appear to have increased the risk of malignancy other than KS and non-Hodgkin's lymphoma.
(Sponsored by Contract No. NO1-HB-4-7003 of the National Heart, Lung, and Blood Institute.)

Th.A.P.106 AIDS AMONG HIV-1 INFECTED RECIPIENTS IN RELATION TO ITS OCCURRENCE IN THEIR SPECIFIC DONORS

Transfusion Safety Study Group* represented by Stuart, Marla**.
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Objective. To determine if AIDS was more likely to develop in recipients of anti-HIV (+) components from donors whose infection was known to have progressed to AIDS.
Methods. The Transfusion Safety Study retrospectively tested donor sera collected in late 1984 and early 1985 in 4 areas with a high AIDS prevalence. Recipients of blood components from anti-HIV (+) donors and the donors of these components were enrolled in a longitudinal study. There were 37 donors under observation whose components were given to 50 recipients who survived and have been followed at 6-month intervals.
Results. Two of the donors have developed AIDS since their donation. Among their 7 recipients, 1 (14%) has developed AIDS. Among the 43 recipients whose 35 donors have not developed AIDS, 5 developed AIDS (12%). (Fisher's exact test, 1-tailed, p = 0.6.)
Conclusion. The progression of HIV-1 infection to AIDS in a recipient is independent of progression in the donor. Thus, clinical expression appears to be more characteristic of the host rather than the strain of virus.
(Sponsored by Contract No. NO1-HB-4-7003 of the National Heart, Lung, and Blood Institute.)

Additionnels
Additional

Th.A.P.107 PSORIASIS AS A CAUSE OF "FALSE-POSITIVE" HIV WESTERN BLOTS: DETECTION OF GAG-SPECIFIC ANTIBODIES IN VIRTUALLY ALL CASES

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**Department of Dermatology, University Hospital, Zurich

Objective. To look for causes of indeterminate HIV Western blots (WB)
Methods. Sera from 54 psoriasis patients and 52 blood donors were tested for antibodies (AB) to HIV-1 and HTLV-1 by recombinant EIA, ENVACOR confirmatory assay (both ABBOTT), SERODIA ATLA, and WB, with serum diluted 1:25 and WB kits (DuPont) pre-screened for maximal sensitivity to gag AB. Competition WB was done to assess specificity and avidity of reactive AB.
Results. All sera were negative by HIV-1 EIA, ENVACOR, and SERODIA ATLA. On HIV-1 WB, 98% of psoriasis (44% of controls) had reaction with at least one HIV protein, with the following distribution: p24 96% (33), p17 44% (19), p55 13% (2), p66/51 in 4% (0). Six % (11) reacted faintly with HTLV-1 gag. Specificity assays showed that the AB reacted with viral, and not cellular, antigens, but were of lower avidity than those of HIV-positive controls.
Conclusion. The results indicate that some indeterminate WB in individuals not exposed to HIV are associated with psoriasis and suggest that such patients have been exposed to antigens related to HIV-1, but not HTLV-1. The results support a retroviral association of psoriasis, as suggested by the demonstration of retrovirus-like particles in psoriatic lesions (Dalen et al., Acta Path Microbiol Immunol Scand B91:221,1983) and the demonstration of psoriasis-like lesions in HIV infection of humans and transgenic mice.

Th.A.P.108 DOUBLE POSITIFS WESTERN BLOT VIH1 ET VIH2 DISCRIMINES A L'AIDE DE PEPTIDES SYNTHETIQUES

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Objectif:Déterminer l'intérêt de peptides synthétiques dans le diagnostic différentiel des infections à VIH.
Méthodes : Une étude d'échantillons présélectionnés a été menée dans les laboratoires suivants : Hôpital C.Bernard (F.Simon); Hôpital St Louis (F.Ferchal); Institut Pasteur (S.Chamaret); INTS (AM.Couroucé); CRTS Lille (M.Maniez-Montreuil, F.Decamp-Chevalier); CTS Versailles (L.Noël); CTSA (A.Blanchart de Vaucouleurs).
34 échantillons double séropositifs (présence d'anticorps dirigés contre les protéines du VIH1 et du VIH2, dont les protéines d'enveloppe) en Western Blot (New LAV BLOT I(®), New LAV BLOT II(®), ont été testés à l'aide de deux peptides synthétiques (Genetic Systems, USA) mimant un épitope immunodominant de la glycoprotéine transmembranaire : du VIH1 pour le peptide 39 (RILAVERYLKDQQLLGIWGCSGKLIC), du VIH2 pour le peptide 41.2.1 (NVTAIEKYLQDQARLNSWGCAFRQVC) (PEPTI-LAV 1.2)(®). - (®) Diagnostics Pasteur
Résultats :

Échantillons n = 34	Peptide 39	Peptide 41.2.1	
6	++	-	Discriminés 30/34 = 88,2 %
10	-	++	
3	+	-	
11	-	+	
4	+	+	Non discriminés 4/34 = 11,8 %

Conclusion : Si le New LAV BLOT I et le New LAV BLOT II permettent de détecter les anticorps anti VIH1 et anti VIH2 avec une grande sensibilité, des réactions croisées sont enregistrées. Le PEPTI-LAV 1.2 permet de différencier les sérologies VIH1/VIH2 pour 88,2% des cas testés. Les 4 cas non discriminés sont d'origine africaine ou antillaise. Les données de la littérature concernant les cas de double infection en Côte d'Ivoire et la spécificité des 2 peptides utilisés tendent à renforcer l'hypothèse d'une double infection.

Th.A.P.109 PCR SUBTYPING OF HIV INFECTIONS EXHIBITING REACTIVE SEROLOGIC RESPONSES TO HIV-1 AND -2

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OBJECTIVE: Use of the polymerase chain reaction (PCR) to subtype HIV infections in patients expressing broad serologic responses to HIV-1 and -2.
METHODS: Seroreactive patients from North America and West Africa were subgrouped by a comparative analysis of their Western blot (WB) banding patterns and reaction in type-specific peptide EIAs (PEIA). Peripheral mononuclear cells from 16 persons were evaluated in PHA-stimulated cocultures and screened for proviral sequences with type-specific primers and probes for HIV-1 and -2 by selective DNA amplification using PCR.
RESULTS: Immunologic findings indicated that 3 sera were HIV-1 specific, 2 were HIV-2, and 11 reactive to HIV-1 and -2. PCR analysis confirmed the HIV-1 and -2 subgroupings and further segregated the dual reactive patients into 11 HIV-1 only, 4 HIV-2 only and 1 mixed HIV-1 and -2 infection. This mixed infection was confirmed by hybridization of type-specific probes to proviral DNA amplified with a primer set common to HIV-1 and-2. While PCR often indicated a single virus type, 3 patients remained equally reactive by all serologic parameters (arguably some mixed infections may fall below limit of sensitivity for PCR).
CONCLUSIONS: PCR is a definitive adjunct in subtyping whenever comparative analysis of EIA, PEIA and WB findings alone are insufficient. Further, genetic subtyping via PCR reveals that, while broad serologic responses may be elicited by either HIV-1 or -2 singularly, mixed HIV infections do occur.

Th.A.P.111 DETECTION OF HIV-1 FROM NEEDLES DISCARDED BY I.V. DRUG USERS IN ZURICH AND BASEL USING POLYMERASE CHAIN REACTION. ASSESSMENT OF IN VITRO INFECTIVITY.

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Objective. In Zurich and Basel HIV-1 seroprevalence rates among regular iv drug users are approx. 60 percent. To avoid needle sharing, injection equipment is provided free or at low cost. Accidental needle stick exposures have occurred frequently via neglectfully discarded needles and the risk for HIV infection has never been determined in this specific setting.
Methods. Discarded syringes and needles were collected in Zurich (n=11) and Basel (n=12) and dried contents from needles only were processed. HIV-DNA was detected by PCR using cloned Taq-Polymerase (Ampli-Taq) and an oligonucleotide primer pair located in the pol gene. Amplified DNA was dotblotted and hybridized to a ^{32}P-labeled oligonucleotide probe. Additionally, HIV-1 cultures were performed from collected needles (n=3) and from 25 needles artificially filled with blood from HIV-1 seropositive patients. These needles first remained at room temperature for 0, 1, 4, 24, 48 hr and were cultured thereafter.
Results. HIV-DNA was detected in 2 of 11 collected needles from Zurich and in 2 of 12 needles from Basel, respectively. We were not able to culture HIV-1 from collected needles. Time exposure studies revealed that target lymphocytes could only be infected with needles exposed to room temperature for 4 hr or less.

Conclusion. HIV-1 DNA can be detected in discarded needles of intravenous drug users. In vitro infectivity of contaminated needles diminishes in a time dependent manner.

Th.A.P.113 Antibodies to HIV-1 gp120 Env epitopes correlate with uninfected status of the children born to seropositive mothers

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Objective. To analyse the protective and/or predictive value of anti HIV epitope maternal and transferred antibodies in children born to HIV infected mothers.
Methods. A retrospective analysis included newborn sera of 33 infants whose infected or uninfected clinical outcome was known. A prospective study included sera collected at delivery from 11 mother-child pairs whose infant clinical status has been then monitored for about 15 months. Peptide ELISA assay was performed using as antigen small linear peptides containing 15 aa and overlapping 10 aa representing the major immunodominant regions of env and gag encoded regions. Recombinant protein were also used and included, PB1,p2av9,p121 and p24/15.
Results. 31 % of newborn sera from uninfected at-risk children were found to contain antibodies to gp120/C57 (a.a. 324-338) peptide mapping the c-terminal part of the so called hypervariable loop of PB1 region. No such reactivity was present in sera from infected newborn. When mother-child pairs were analysed the same skewed reactivity pattern was observed with a highly significant seroprevalence(86 %) in sera of mothers giving birth to uninfected children. Analysis of contiguous aa sequences of the loop (gp120/C58, gp120/C51) also showed clustered reactivity to this group of individuals.
Conclusions. Presence of antibodies against the cysteine residue-containing sequences of the putative hypervariable loop of pB1 region in the sera of HIV infected mothers seems to be associated to uninfected outcome of the pregnancy.

Th.A.P.110 CONFIRMATION AND VIRUS TYPING USING PCR ANALYSIS OF HTLV-I ELISA REACTIVE SAMPLES

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Objective. ELISAs are currently used to screen blood and blood products for the presence of HTLV-I. Confirmatory assays employing the Western blot procedure appear to have compromised sensitivity. In addition, because of cross reactivities of antibodies to the cognate HTLV-I and -II antigens, distinction between the two viruses is difficult. Method. Peripheral blood mononuclear cells were isolated from platelet fractions of 16 HTLV-I ELISA positive and 3 ELISA negative individuals. DNAs were initially analyzed with two different primer pairs and probes that amplify and detect either or both HTLV-I and -II. One primer pair/probe system amplifies and detects a region of tat of both viruses. The second primer pair amplifies a conserved region of pol of both viruses. Both group - specific as well as type-specific probes are available for this region. To confirm the presence of either proviral DNA, type-specific primers and probes were used.
Results. Of the 19 coded samples analyzed by PCR, two were positive with each of the two primer pairs that amplify and detect HTLV-I and -II. When type-specific probes were used, both samples were found to harbor HTLV-II. The presence of HTLV-II was confirmed with type-specific primers and probe. One of the two samples found positive for HTLV-II was confirmed positive by HTLV-I Western blot analysis since numerous viral antigens were recognized. The second sample had only a p24 band. Fourteen samples with indeterminate Western-blot patterns (either p19 or p28 only) were negative by PCR. The three HTLV-I ELISA negatives were negative by PCR.
Conclusion. PCR be used to differentiate between HTLV-I and -II infections and serve as a confirmatory test.

Th.A.P.112 A COMPARISON OF IFA AND EIA IN DETERMINING HTLV I SEROPREVALENCE IN THE IVORY COAST

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OBJECTIVE. To compare the sensitivity and specificity of two different indirect immunoassays, EIA and IFA in detecting HTLV I seropositive subjects.

METHODS. Serum was collected from 2241 individuals belonging to 4 regions of the Ivory Coast; the coast, the center and the Eastern and Western borders. Samples were tested for antibody to HTLV I by both EIA and IFA. Samples repeatably reactive by either technique were confirmed for the presence of antibodies to HTLV I by Western blot and SDS-PAGE RIPA.

RESULTS. 71 (3.7%) and 170 (7.6%) samples were repeat reactive by EIA and IFA respectively. 36 of these samples were confirmed to contain anti-HTLV I antibodies. The EIA detected all of the confirmed samples while the IFA missed two. The highest rates of HTLV I infection were found in the coastal and central areas (1.96% and 3.23%, respectively) compared to the Eastern and Western borders (0.63% and 0.79%) of the Ivory Coast.

CONCLUSION. In this study, the EIA proved more sensitive and specific than the IFA. Clusters of HTLV I infection were present in the central and coastal regions of the Ivory Coast.

Th.A.P.114 STRAIN-SPECIFIC DNA PROBES TO STUDY THE EPIDEMIOLOGY OF HIV INFECTION

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Objective. To study the transmission and evolution of HIV using strain-specific DNA probes.
Methods. A DNA primer pair was used to amplify a 320 bp envelope segment of HIV directly from lymphocyte DNA of infected persons by polymerase chain reaction (PCR). The amplified DNA includes two highly variable regions, V4 and V5 and a constant region, C3. Amplified DNAs were molecularly cloned and their nucleotide sequences determined. Based on the sequence information, strain-specific DNA probes were developed to study the presence of individual HIV strains in infected populations.
Results. Comparison of HIV sequences from a homosexual man from Boston (person A) and a hemophilic man from Philadelphia (person B) revealed the presence of a major genetic diversity in the V4 region. Strain-specific DNA oligomers were used to differentiate HIV strains by DNA hybridization. Among 20 homosexual men tested from the Boston area, a DNA probe derived from person A specifically identified a lymphocyte specimen from the same person collected 5 months later and two specimens from his sexual partner. Among 19 homosexual men tested from the San Francisco area, the same probe identified specimens from 4 homosexual men. A DNA probe derived from person B detected the presence of homologous HIV strains in 3 of the 5 hemophilic men who received the same lot of HIV contaminated antihemophilic factor.
Conclusion. We have developed a novel approach to study the transmission and evolution of individual HIV strains. This technology will play an important role in our understanding of the spread of HIV through the population.

Th.A.P.115 THE ESTABLISHMENT OF A ROUTINE SURVEILLANCE SYSTEM FOR DETECTING PREVALENCE OF HIV INFECTION IN SCOTLAND

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INTRODUCTION & OBJECTIVE: Excluding blood donors, between 20,000 and 30,000 persons are tested for HIV each year in Scotland. Till very recently however, only infomration on those testing positive was recorded by the CD(S)U. To enable greater interpretation of seropositive data, it was decided to establish a national HIV surveillance system which would provide information not only on persons testing seropositive, but also on those testingseronegative.
METHODS: During 1988, a computerised network connecting the CD(S)U to all major HIV virology testing centres in Scotland was set up. In addition, a standard HIV laboratory request form, appropriately designed to encourage the documentation of details concerning: 1. Patient reference, 2. Referral source, 3. Reason for testing, 4. Transmission category, 5. Clinical information and 6. Additional information, was distributed to all clinicians working in hospitals and general practices throughout the country. Epidemiological information on all HIV specimens tested at these centres is entered onto laboratory computer terminals and from there, details uncoupled from patient identification are transmitted by telephone modem to a central database at the CD(S)U for collation and analysis.
RESULTS & CONCLUSION: The system started to function from 4th January, 1989. Summarised data on approximately 10,000 records will be presented to illustrate the system. We also describe how such a system was developed and discuss the difficulties we encountered in trying to establish it.

Th.A.P.117 COMPARISON OF THE SENSITIVITY OF VARIOUS ENZYME AND SUBSTRATE SYSTEMS FOR WESTERN BLOT ASSAY

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The conventional Western Blot (WB) assay is widely used for the confirmation of HTLV-I infection. However, as the WB assay is relatively insensitive in detecting antibodies to envelope proteins (gp46, gp61) other methods such as radioimmunoprecipitation (RIP) analysis and virus isolation have been used for more accurate confirmation. As such techniques are generally not available in most laboratories, there is a need to increase the sensitivity of the conventional WB system.
Objective: To evaluate the use of various enzyme and substrate systems to maximize the sensitivity of the conventional WB for HTLV-I infection.
Methods: Substrates for the horseradish peroxidase enzyme, diaminobenzidine (DAB) and Indophane (IND) were compared to 4-chloro-1-naphthol (4CN), the substrate widely used in commercial HIV-1 and HTLV-I Western Blot kits. An alternative enzyme and substrate system, alkaline phosphatase and 5-bromo-4-chloro-3-indolyl-phosphate / nitroblue tetrazolium (BCIP/NBT) was also evaluated. The sensitivity of the various systems were compared using: 1) Serial dilutions of anti-HTLV-I sera, and 2) Sera classified as indeterminate for HTLV-I infection by commercial HTLV-I WB kits.
Results: The DAB, IND and BCIP/NBT systems were consistently and repeatedly more sensitive than 4CN by a four to eight-fold serial dilution of positive sera. Sera (7) confirmed positive for HTLV-I infection by RIP assays but indeterminate by conventional HTLV-I WB were confirmed positive when the other systems were used. The sensitivity of detection of these systems correlated with results from RIP assays. Data from more HTLV-I indeterminate sera will be presented. It is thus possible to increase WB detection sensitivity by employing different enzyme and/or substrate systems.

Th.A.P.119 SEROCONVERSION: ANTIBODY PROFILES TO HTLV I

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OBJECTIVE. To determine the antibody profile to the various HTLV I proteins during seroconversion.
METHODS. Serial samples from humans and chimps infected with HTLV I were screened by EIA using purified HTLV I lysate and one using recombinant p40X protein. To study the sequence of the Ig class response, affinity purified anti-human IgG or IgM conjugates were used. The samples were also tested by Western blot (WB) and RIPA.
RESULTS. The anti-HTLV I IgM peak appeared first, 2-3 months after inoculation followed by IgG 1-2 months later. Antibodies to p40X appeared later at a lower level than the anti-HTLV I. Antibody profiles to core proteins (p19 and p24) or to envelope proteins (gp46 in WB and gp61 in RIPA) were varied. In 3 cases, anti-core (anti-p24 in 2 cases, anti-p19 and p24 in one case) was detected prior to anti-gp61. Preferential detection of IgG over IgM by the RIPA procedure may explain the apparent delay of anti-gp61 response. One patient developed antibodies only to p19 and gp61 with no anti-p24. This raises the question of the current guideline of confirmation which only uses anti-p24 as the anti-core marker.
CONCLUSION. The profile of anti-HTLV I reactivity follows a classical course: IgM response followed by IgG. In some cases, IgM antibodies persist, suggesting viral replication. Antibody to p40X is not an early marker in seroconversion. Anti-p19 should be considered as a supplemental marker to anti-p24.

Th.A.P.116 ARE SERONEGATIVE HIGH RISK SUBJECTS HIV-INFECTED ?

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Objective. To investigate the possible latent infection of subjects exposed to HIV.
Methods. 42 subjects were studied: 17 HIV1 seronegative high risk subjects (11 homosexual men, 6 women) having had numerous unprotected sexual contacts during at least one year with seropositive subjects; 25 seronegative haemophiliac subjects polytransfused before the systematic screening of seropositive blood donations were studied at 2 controls at 6 month interval. Each control included: physical examination (lymph nodes); full blood count; total HIV1 antibodies by two Elisa assays (with confirmation by western-blot if at least one positive Elisa); p24 antigen by enzyme immunoassay; biological markers often abnormal in HIV infection (CD4 and CD8 lymphocytes, serum IgG and IgA levels, serum beta-2-microglobulin and neopterin levels); anti-nef antibodies by western-blot; Polymerase Chain Reaction (PCR): localisation on genome and nucleotide sequence of the primers and probes used were:
- GAG : primer I 1088-1115, primer II 1175-1202, probe 1132-1172
- POL 1 : primer I 2391-2416, primer II 2672-2698, probe 2539-2575
- POL 2 : primer I 4118-4135, primer II 4242-4259, probe 4167-4205

(200 symptomless seropositive HIV1 subjects and 100 healthy seronegative blood donors were respectively positive and negative controls for PCR assay using these primers).
Results. No clinical and biological anomaly was observed in the 42 subjects of the study; PCR (validated by the results of the controls) was negative in these 42 subjects.
Conclusion. This study indicates that latent HIV1 infection in seronegative high risk subjects is not a frequent event.

Th.A.P.118 A RAPID AND SENSITIVE HTLV-I ANTIBODY SCREENING METHOD WITH HIGH SPECIFICITY.

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Objective. To develop a rapid and efficient method of screening serum or plasma that is both sensitive and specific.
Method. We assayed 1698 serum samples from various populations including Haitians, mother and infant pairs, IV drug abusers, tropical spastic paraparesis, other diseases, and normal controls for antibody to HTLV-I using the DuPont (DUP) whole virus ELISA and the Cambridge BioScience (CB) recombinant HTLV-I envelope ELISA, which contains a polypeptide with the amino acids 307-313 and 331-420, using the numbering system described by Seiki et al. (PNAS 80:3618(1983)). Samples positive by either assay were tested on the DUP HTLV-I western blot (WB).
Results. There were 65 WB+ samples (p19, p24, and one other viral band), 87 WB- (no bands) and 20 indeterminate WB band patterns. We calculate a specificity and sensitivity of 99.2% and 98.5% for the CB ELISA and 95.1% and 77% for the DUP ELISA. When the results were combined from the two ELISAs, the sensitivity and specificity was 100% and 94%.
Conclusion. The results indicate that the two ELISAs detect different subpopulations of HTLV-I WB+ sera. Their combined sensitivity and specificity allow one to detect all HTLV-I WB+ sera in a rapid ELISA format while minimizing the WB confirmatory testing currently necessary in blood screening studies.

Th.A.P.120 EPIDEMIOLOGY OF AIDS IN THE BAHAMAS

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Objective. To describe the Epidemiology of Aids in the Commonwealth of the Bahamas.
Method. Data was obtained from the records of the Aids Outpatient Clinic, Infectious Disease Ward and the Blood Bank of the Princess Margaret Hospital over the period August, 1985 (when Aids testing, Abbot Elisa) was introduced, through December, 1988.
Results.

Year	Cases	M-F:Ratio	Nationality Beh:	Haitians	Cocaine Use	Deaths	Sero Positive
85	36	1.7:1	11	25	6-16%	16	20
86	50	2.1:1	19	31	13-26%	23	85
87	90	1.4:1	46	44	37-41%	44	255
88	93	1.6:1	53	40	36-38%	45	419
Cumulative	269	1.8:1	129	140	92-34%	138	779

Conclusion. Aids is mainly a heterosexual disease in the Bahamas. Contributing factors are Non-IV Use of Free Base Cocaine (crack), Haitian Immigration, and Promiscuity. The role of Free Base Cocaine in the Natural History of HIV Disease needs to be further studied.

Divers
Miscellaneous

A.501 HIV-SEROPREVALENCE AMONG PATIENTS OF A WEST-GERMAN INNER-CITY GENERAL PRACTICE

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Objectives: 1.) To screen selected subpopulations among patients of a general practice as an economical alternative to untargeted mass-screening. 2.) Early detection of HIV-infection among high- and low-risK groups. 3.)To counsel and treat these otherwise unrecognized HIV-carriers as a contribution to the containment of the epidemic. Methods: 175 patients (p) were studied by HIV-AG, -AB and WB-Assay during 2/87 and 10/88. 130 p presented with symptoms comparable to those of the acute retroviral syndrome.27 p were risk group members and 13 were without known risk.
Results:9/175(5.1%)of all tested subjects were AB+. 0 AG+. 4/9 (44.5%) were IVDA. 3/9(33.3%) were heterosexuals without contact to classical high risk groups. 2/9 (22.2%) were homo- or bisex. men. 5/9 (55.6%)were newly diagnosed including all heterosexuals of whom 1 man was infected by a female prostitute.IVDA were diagnosed in later stages of the disease than the others. The male/female ratio among infected p was 2.2:1.In 1988.there was a 2.2-fold number of infected p compared to 1987. All social contact cases of infected p were AB-.
Conclusions:Primary care physicians can detect.counsel and treat a lot of unrecognized AB+ p by screening selected groups of p. There is evidence for heterosex. HIV-spread among the general population.Prostitution is expected to be an important factor in this process.

A.502 HIV INFECTION RELATED TO THE USE OF CONTAMINATED MATERIAL IN COMMERCIAL PLASMA DONORS

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Objective:To identify the risk factors for AIDS reported by 33 HIV seropositive paid blood/plasma donors.
Material:Patients who donated blood in private centers in a retributed manner and were found HIV seropositive.In all cases HIV antibodies were evaluated by ELISA and Western Blot methods.
Results:In 11 out of 33 (33%) there was a history of parenteral drug abuse and in 8 out of 33 (24%) of homosexuality.In the rest,14 patients (43%),six reported sporadic prostitute contacts and the others 8 patients (24%) denied any known risk factors for AIDS.
Discussion:All these 8 patients have donated blood or derivates in private centers,including blood banks in Valencia,Spain, prior to the obligatory law of performing HIV antibodies test in any kind of blood/plasma donation in our country.The accidental recovery of HIV infected blood cells from other donor through the use of the same device system could explain the infection by HIV and the absence of other known risk factors.At least 3 patients have observed that they shared with others the same device for intravenous manipulation. When there is no explanation for the presence of HIV antibodies, people caring for patients at risk for AIDS should be aware of this possibility when questioning risk factors.Our findings agree with those reported recently by Navarro et al (Lancet 1988;ii:42).

A.503 RISK OF HIV TRANSMISSION TO HEALTH CARE WORKERS AND COMPARISON WITH VIRAL HEPATITIDES

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Objective. To assess the risk of nosocomial transmission of HIV in comparison with viral hepatitides and record the effects of adopting further protective and educational means.
Methods. During the period June 1986-December 1988, all health care workers accidentally exposed to HIV in hospital had entered the study and been evaluated clinically and serologically for evidence of infection at time 0,45,90,180,360 days after exposure. All subjects exposed to viral hepatitides who were not vaccinated against HB and refused serum treatment were submitted to follow up.
Results. 102 subjects had an accidental exposure (needlestick injuries 80; cuts with sharp instruments 12; splashes on mucous membranes 7; splashes on cutaneous wound 3). They represented all occupational categories (nurses 72, physicians 21, midwives 4, others 5). None of them was HIV-positive at basal assay. No seroconversion at ELISA was observed at the follow up (80 patients yet controlled at 6 months). An important decrease of the rate of new accidents occurred after adoption of more protective means since June 1988 (e.g. "hands off" needles, new masks and glasses) and up to date revision of nursing guidelines: 13 cases versus 24,26,30, in the preceding half - year periods. 21 not vaccinated subjects suffered accidents with viral hepatitides contaminated materials and refused to be treated with specific Ig: 6 developed the disease (4 type B, 2 NANB hepatitides).
Conclusions. An important group of health care workers exposed to HIV has not shown evidence of infection whereas the risk of accidental transmission of viral hepatitides is far higher. Even if usual infection control guidelines in assisting HIV infected patients are sufficient to avoid viral transmission, the largest part of exposures (needlestick injuries and splashes) can be prevented using adequate nursing precautions and protective means.

A.504 MONITORIZING PREVALENCE OF HIV INFECTION AND EPIDEMIOLOGICAL PATTERNS THROUGH LABORATORY DATA

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Objectives: 1.- To estimate the prevalence of HIV infection among people who request, the test in Catalonia. 2.- To describe the demographic and behavioral characteristics of this population.
Methods: All laboratories performing HIV test within the Public Health System are used. The total number of test and their results are collected in a monthly bases. To monitorize trends four periods of 15 days have been defined within a year. A standarized questionnaire on sociodemographic and behavioral data is used by the phisicians to collect information from all patients in which a HIV test has been performed in one the defined period.
Results: 652 (20.1%) out of 3245 performed tests from 17 hospitals during one month period were ELISA positive. Preliminary data from one of the participant centers show the following transmission category distribution of infected patients: 64.5% were intravenous drug users, 21% homosexual/bisexual men, 11.3% reported heterosexual contact as the only possible risk factor and 3.2% were children from parents at risk.
Conclusions: Although demands for HIV test are influenced by multiple varibles and they do not allow for extrapolation of prevalence figures, systematic and homogeneous collection of these data can be an important tool in evaluating the use of laboratory facilities and in the planification of health resources. In conjunction with surveillance of other sentinel populations, it can also result in a better understanding of the distribution and trends of HIV infection in a given population.

A.505 PREVALENCE OF INFECTION WITH HUMAN IMMUNODEFICIENCY VIRUS AMONG DRUG USERS IN PUERTO RICO

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Objective. To study the prevalence of HIV infection among drug users (DU) in a drug treatment program in Puerto Rico (PR).
Methods. DU voluntarily agreed to participate in the study. Information concerning drug use, sexual and medical history was obtained. A screening test (EIA) and supplemental test (Western blot or IFA) were used to determine HIV antibody status.
Results. In 1987 and 1988 a total of 125 ambulatory and asymptomatic DU were tested. Mean age was 36 year-old (range: 24-64) and the mean duration of drug use was 11 years. There were 108 intravenous drug users (IVDU) and 17 non-intravenous drug users (NIVDU). Results are as follows:

Subjects	Number	Seronegative	Seropositive
DU	125	79 (63%)	46 (37%)
IVDU	108	64 (59%)	44 (41%)
NIVDU	17	15 (88%)	2 (12%)

Of the 105 heterosexual IVDU 42 (40%) were seropositive. Drug used by IVDU was reported as follows: heroin and cocaine (76%), heroin (22%), and cocaine (12%).
Conclusion. IVDU in PR are among those at greatest risk for HIV infection.Effective programs to reduce risk are urgently needed.

A.506 INTERNATIONAL NETWORKING OF HIV PUBLIC HEALTH SERVICES

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Objective. To expand public health capabilities against the HIV epidemic, a networking of existing U.S. Navy preventive medicine programs and approaches was initiated during 1988, utilizing an STD model.
Methods. International networking involves utilization of services provided at a medical center caring for HIV-infected persons, which include specialized counseling and education for HIV-infected persons and their families; evaluation of sexual contacts including spouses and public health partner notification; tracing of involved blood products; screening of high risk populations; and determination of reportable diseases. The Environmental and Preventive Medicine Unit provides guidance on comprehensive public health policy and appropriate procedures; education and training; and consultations related to international sexual partners or blood product cases, throughout Europe, Africa and the Middle East.
Results. This network has collaborated with public health professionals in 40 of the 50 United States and 3 territories, 10 countries and the American Red Cross; in support of the World Health Organization's global strategy. Analysis of HIV and AIDS awareness in the evaluated populations has determined both a very high level of knowledge of potential transmission factors, and a need for additional education related to other aspects of the disease. Analysis of trends of potential transmission factors in over 350 HIV-positive individuals has documented a statistically significant increase in the reporting of blood donations and the history of a spouse, in 1988 as compared to 1987.
Conclusion. The use of an STD model and modification of existing public health procedures and approaches have allowed this network to implement a comprehensive international program in less than 12 months. Initial data indicate that education programs are of assistance in obtaining information leading to evaluations of individuals determined to have been at possible risk for transmission.

A.507 MEN MEET WOMEN: DIFFERENTIAL RISK-REDUCING NEEDS AND TACTICS IN ENCOUNTERS BETWEEN PEOPLE DRAWN FROM THE GENERAL POPULATION POOL.

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Utilizing equations which were developed for probabilities of HIV infection through sexual intercourse, we demonstrate the asymmetry of the probabilistic risks for a man and and a woman engaging in sexual intercourse in a Western society.
Two factors determine this asymmetry: 1.The prevalence of AIDS and HIV seropositivity varies widely between men and women of specific age groups; and, 2. the infectivity of insertive vaginal intercourse is also asymmetric between the sexes, women being at higher risk. The equations for the two extreme possibilities of a monogamous relationship with many events of intercourse and for multiple partners with one contact with every partner are respectively:

$$P_{monogamous} = pr\,(1-(1-i)^{N})$$
$$P_{multipartner} = 1-(1-pr \times i)^{N}$$

P - probability of being infected in the situation described; pr - probability that the partner is infected (the prevalence of HIV in the group from which the partner is selected); i - the probability that one contact with an infected partner will result in infection; N - the number of sexual encounters.

Solving these nonlinear functions for the ratios of P woman/P man give the relative risks of men and women to be infected in both types of encounters. In a situation where both the prevalence for men is higher and their i is lower for vaginal intercours the Pwomen is much higher.
The implications of these findings are profound when formulating the objectives and concepts of educational interventions among sexually active heterosexuals. While condoms are used by men, it is mainly in the interest of women that men should use condoms. Thus it may be essential to introduce altruistic "cooperative" motives into educational interventions to supplement the "egoistic" one of "safe sex." The introduction of "responsible sex" and its implications are considered.

A.508 "GROUPS AT RISK" AND "RISK BEHAVIORS": THE NEED TO UTILIZE BOTH CONCEPTS IN DESCRIBING TARGET POPULATIONS FOR EDUCATIONAL INTERVENTIONS AND DEFINING THEIR OBJECTIVES

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The central claim of the paper is that the two concepts, "groups at risk" and "risk behaviror" are neither synonymous nor interchangeable, and that in order to describe target groups for educational or other interventions, both terms are needed. "Risk behavior" or its prevalence is only one component of the definition of a "group at risk;" its other component being the prevalence of HIV within that group. A comparison of two hypothetical groups, since the data on the sexual behavior of actual sub-groups are only approximate, will clarify the distinction betweenn the two concepts.

"RISK GROUP"	PREVALENCE OF HIV IN THE GROUP	PREVALENCE OF RISK BEHAV. IN THE GROUP*	CHARACTERIZATION OF THE GROUP
A	high	high	a group at immodiate risk
B	low	high	a group at future risk (vulnarable)
C	high	low**	low risk unless conditions change ***

* "Risk behaviors" in sexual practices are: multiple partners, low use of contraceptives in general and condoms in particular and high experimentation and variation in sexual practices (including insertive intercourse and/or anal intercourse)

** The prevalence may not be of a behavior but of a condition, i.e., a hemophiliac receiving an infected component.

*** A situation may arise in which the group itself is no longer a "group at risk" because of changing conditions, but its characterization will help to discern another group at risk.

Groups A and B approximate homosexuals/bisexuals and adolescents in Israel, respectively, while group C may represent the sub-population of hemophiliacs after the introduction on sterilized factor.
It is argued that from the point of view of public health, health planning, and the design of educational intervantions, both concepts are essential, since educational interventions for a group at future risk should differ from those for a group at immidiate risk not only because of the characteristics of the group but also because of the characteristics of the risk. "Groups at risk" is therefore a useful and necessary term.

A.509 SURVEILLANCE OF HIV-2 INFECTIONS BY ELISA USING HIV-1 AND HIV-2 SPECIFIC SYNTHETIC PEPTIDES

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Objective. To screen for HIV-2 cases in Finland and to evaluate a new test employing HIV-1 and HIV-2 specific synthetic peptides as antigens.

Methods. Serum samples sent for routine HIV-testing from healthy individuals and HIV risk groups were tested by an ELISA with either a combination of, or individual HIV-1 or HIV-2 specific synthetic peptides representing the N-terminal regions of GP-41 (COMBI-test, Pharmacia Inc. Uppsala, Sweden).

Results. Of the 5221 sera negative with other tests, 9 were repeately reactive in the COMBI-test indicating a specificity of 99.84. Among the 25 true positive sera 23 gave no or very little activity with HIV-2 compatible with true HIV-1 infections. Two samples, originating from the same individual reacted with the HIV-2 specific peptide. They also showed GP-reactivity in HIV-2 western blots. The patient had worked in endemic areas of Africa before returning to Finland. One falsely reactive sera also showed high activity against HIV-2.

Conclusion. The result indicates that the test has good specificity and is able to reveal HIV-2 positive cases among samples thought to be HIV-1 positives by conventional techniques.

A.510 HTLV$_I$ SEROPREVALENCE IN A GROUP OF HIV$_1$ POSITIVE ITALIAN SUBJECTS (IN MAJORITY INTRAVENOUS DRUG ABUSERS) - PROEMIAL DATA

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Aims we detected the presence of specific HTLV$_I$ antibodies in HIV$_1$ positive subjects to evaluate (1) the percentage of double infection (2) if the subjects with double infection presented an evolutive pattern.

Metods the presence of specific HTLV$_I$ antibodies was tested by Elisa method in 240 HIV$_1$ positive subjects (215 were intravenous drug abusers). The HTLV$_I$ seropositive samples were investigated by Western blot assay.

Results The presence of HTLV$_I$ Elisa reactivity was found in 17 of the 240 HIV$_1$ positive sera (7.08%); this reactivity was not confirmed by Western blot in 2 subjects. 6/17 subjects were AIDS.

Conclusions The data confirmed the presence in Italy of HTLV$_I$ specific antibodies in HIV$_1$ positive subjects like suggested in other epidemiological studies. We need a follow up of HTLV$_I$ and HIV$_1$ positive subjects to evaluate a possible higher evolutive pattern towards AIDS.

A.511 INCIDENCE OF HBV MARKERS AND HIV ANTIBODIES IN BLOOD DONNORS IN LUANDA AND DUNDO, PEOPLE'S REPUBLIC OF ANGOLA

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Objective: To determine the prevalence of HIV 1 and HIV 2 infection and hepatitis B markers among a cohort of blood donners in two regions of Angola.
Methods: The incidence of HBV markers and HIV antibodies was evaluated in 124 blood donners living in Luanda (74) and Dundo (50). Serological tests for detection of HIV antibody, include the specific HIV 1 and HIV 2 ELISA kits, IFA, W.B.. Cross-reactivity between HIV 1 and HIV 2 large glycoprotein were further tested against a synthetic peptide corresponding to the dominant epitope of transmembrane protein. Serological tests for detection of HBV markers were preformed with ELISA kits.
Results: As shown on table.

Distribution of HIV antibody and HBs Ag, HBs Ab, HBe Ag and HBe Ab according to Laboratory

Service	N°	Seropositivity N° (%)					
	Samp.	HIV-1	HIV-2	HBs Ag	HBs Ab	HBe Ag	HBe Ab
Luanda	74	-	1/74(1.4)	14/74(18.9)	28/74(37.8)	7/74(9.5)	9/74(12)
Dundo	50	3/50(6.0)	8/50(16.0)	21/50(42.0)	21/50(42.0)	10/50(20)	13/50(26)
TOTAL	124	3(2.4)	9(7.3)	35(28.2)	49(39.7)	17(13.7)	20(16.1)

Discussion: The incidence of HBs Ag in sera from Luanda and Dundo is high. HIV 1 and HIV 2 infection exists among blood donners. The highest percentage of positive cases was in Dundo, Northeastern region, border of Zaire. The social and economic consequences of these problems have to be considered.

A.512 ANALYSIS OF A SCREENING PROGRAM FOR HIV1 AND HIV2 INFECTION IN WOMEN OF REPRODUCTIVE AGE.

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OBJECTIVES: 1 - To study the prevalence of antibodies to HIV1 and HIV2 in a population of women attending a Family Planning Clinic (FPC) and a antenatal clinic (AC) serving a urban population of 30.000 people where about 10% are of African origin. 2 - Devise a protocol of a study which would maintain characteristics of the "anonymous"studies without the usual limitations of a lack of detailed clinical and epidemiological information about the individuals identified as positive for HIV. 3 - Analyse the problem of the false positive rate in a population of HIV low prevalence.

MATERIAL AND METHODS: All women attending the FCP and the AC from January 1987 to December 1988 were interviewed by a nurse and examined by a doctor, who completed a questionaire covering relevant epidemiological and clinical information related to HIV infection. Blood was collected for routine tests in 700 women (around 80% of those attending the clinics during the period)and a sample saved for testing HIV antibodies anonymously (Elisa from I.Pasteur and Western blot in the Elisa positive cases).A second sample was obtained "anonymously" from cases who were positive in the first sample using the fact that women attend the Center regularly and blood is colected at intervals for routine tests and for this study,under code.

RESULTS: Three out the 650 Portuguese women were positive for HIV1(0.46%)and one out of 50 African women were positive for HIV2(2.0%) in the two samples colected at different times.If the criteria for defining women as seropositive did not include tests on a second sample, the number of "seropositives" in this study would be more than the double of the recorded one.

CONCLUSIONS: A representation of both HIV1 and HIV2 in this urban population was found and the importance of testing a second sample as a means of reducing false positive is documented in this study, where a protocol to repeat anonymously the blood tests was implemented, taking advantage of the special conditions in this health Center.

A.513

Stochastic Models Illustrate Vividly the Connection between Behavior and Risks for HIV Infection.

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Objective. To use use the power of modern Personal Computers to display graphically the connection between behavior and risk for HIV infection.

Methods. A stochastical simulation model takes into account behavior parameters in a hypothetical risk environment. The correlation between behavior patterns and risk for HIV infection is displayed by means of powerful graphics.

Results. We describe the application of our stochastic simulation model to train medical personnel and school teachers in Norway and West Germany.

A.515

:IS SEXUAL PROMISCUITY A RISK FACTOR FOR HHV6 IN EAST AFRICA?

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Objective. To investigate if the B-cell lymphotropic virus HHV6 shares the sexual transmission route of HIV in East Africa.
Methods. 200 sera belonging to 4 groups of individuals from the East African city of Djibouti were tested for antibodies against HHV6. Study groups comprised sexually promiscuous individuals at high risk for HIV, but HIV-western blot negative: 50 female prostitutes in Group 1 and 50 males with a sexually transmitted disease in Group 3; Group 2 comprised 50 female controls and Group 4, 50 male controls. All sera were screened at a 1:20 dilution using IFA (Pan Data Systems) incorporating HHV6 infected and uninfected cells as substrate. Sera with positive reactions were titrated further.
Results. Despite the slightly higher percentage of positive sera (%PS) at the screening dilution in the two study groups, these differences were not statistically significant. Moreover, median titers and geometric mean titers of positive sera were very similar in all 4 groups.

	Group 1	Group 2	Group 3	Group 4
%PS:	82	66	74	70
Median titer:	40	40	40	40
Geometric mean titer:	39	37	38	39

Conclusion. Sero-epidemiological data indicate that HHV6 infection was not more prevalent among sexually promiscuous subjects. Thus, HHV6 does not seem to share the sexual transmission route of HIV in East Africa.
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A.517

ACCIDENTAL EXPOSURES TO HIV-POSITIVE BLOOD AMONG HEALTH-CARE WORKERS IN 2 SWEDISH HOSPITALS.

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Objectives: To document circumstances, frequency and outcome of accidental exposures to HIV-positive blood and bloody body fluids among health-care workers.
Methods: This prospective study was started in January 1, 1985. It includes health-care workers in 2 Swedish hospitals giving medical care for HIV-infected persons. All reported notifications of damage with exposure to HIV-positive blood or bloody body fluids among more than 2 500 health-care workers have been studied. Blood samples (including an early blood sample) of the exposed workers have been regularly taken and examined (ELISA).
Results: Around 70 accidents have been reported, so far. Different kinds of parenteral exposures were dominating. So far, all anti-HIV antibody tests have been negative.
Discussion and conclusions: Seroconversion after percutaneous HIV-accidents with blood has been estimated to 5 per 1 000 exposures. In our study no seroconversion in around 40 percutaneous and 30 other HIV-accidents have yet been confirmed, which is to be expected. The majority of the percutaneous HIV-accidents were caused by needle-sticks in combination with phlebotomy, blood-culturing and injections. To our judgment, around 1/3 of the accidents might have been prevented.
This study clearly shows that hazardous circumstances, among others, were manipulation with needles (recapping, disposal, "cleaning up" a o), laboratory work (tubes) and surgery (suture needles). To minimize the hazards in the future we have to identify hazardous circumstances, work etc and do something about it (guarded needles, puncture proof boxes, safe work practice)! Further, we have to educate and inform health care workers, as well as others, about the hazards and change their behavior if needed!

A.514

HIV Screening Efforts in a Low-Risk Population

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Objective. To determine the prevalence of HIV antibody seropositivity in a low-risk population.
Methods. The U.S. Army requires HIV testing at least biennially for individuals on active duty. Blood donors are also routinely screened for HIV infection. During the past year, inpatients and some outpatients have received an HIV antibody test. These patient categories are listed below.
Results. High-risk patients, which include people with clinical evidence of HIV infection, individuals treated for substance abuse and contact referrals, have the highest HIV antibody prevalence rate. Patients treated at a sexually transmitted disease (STD) clinic had the next highest prevalence. Routine hospital admission and blood donor screening showed rates similar to or lower than that seen in active duty screening.

HIV SCREENING RESULTS

	# Pos/#tested	Prevalence/1000	95% C.I.
High-risk group	34/2370	14.3	(9.8,19.3)
STD Clinic	11/3107	3.5	(1.0,13.5)
Med/Surg Admissions	2/1812	1.1	(0.0,11.1)
OB/GYN Admissions	1/2246	0.4	(0.0,10.4)
Blood Donors	12/15412	0.8	(0.2,10.0)
Active Duty Screening	61/59004	1.0	(0.8,1.3)

Conclusion. Adjunct HIV screening of routine hospital admissions does not appear to be warranted.

A.516

A PROSPECTIVE STUDY OF HIV INFECTION IN FORMER DRUG USERS: A 4-YEAR STUDY OF 114 PATIENTS

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Objective: to assess whether or not stopping drugs has any beneficial effect on the course of HIV infection, inactive drug users living in the community of San Patrignano (Italy) were prospectively followed. Methods: these patients voluntarily enrolled into a rehabilitation program based on agricultural, handicraft and industrial activities and were forcibly taken off drugs during residence. Except for married couples, they had no sexual contacts. Results: since 1985, 293 seropositive, western-blot confirmed, asymptomatic patients have been followed at 6-month intervals for 6-48 months (median 12). 179 patients (59%) were lost because they either reached the end-point of rehabilitation (27%) or left the community (32%).114 patients (81 M, 33 F, 16-42 yrs of age, median drug abuse: 6 yrs) are currently being followed. 65 patients (21.9%, 6.4% annual incidence by life-table analysis) deteriorated to stage IV (CDC), 6 developed full-blown AIDS (5.2%, 1.3% annual incidence). The annual deterioration rate for a control group of 41 active drug users who were followed as out patients between 1985 and 1988 was 28.4% (6.4% vs 28.4% P< 0.01). Conclusions: stopping illicit drugs may be beneficial to the outcome of HIV infection.

A.518

RISK FACTORS FOR HIV INFECTION AMONG INDIVIDUALS SEEKING TESTING IN THE DANISH POPULATION

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Objective. To characterize individuals seeking HIV antibody test and to estimate the prevalence of anti-HIV among tested. Methods. Selfadministered anonymous questionnaires distributed together with test results to individuals requesting HIV test in all parts of the health care system in two weeks in Nov. 1987 and April 1988. 2169 (55%) completed the questionnaire. Results. Sexratio F:M=1:0.95; 38%; 34%; and 27% was in the agegroups 15-25, 26-35 and 36+ years of age. 20% of women and 30% of men reported more than one risk factor. Distribution based on hirachical classification of risk factors was:

	Men			Women		
	Anti-HIV neg.		pos.	Anti-HIV neg.		pos.
Reported risk factor	N	(%)	N	N	(%)	N
IV drug abuse	78	(7)	4	40	(4)	
Male homosexual behaviour	163	(16)	13	-		
Sex with IV drug abuser	38	(4)		52	(5)	3
Sex with person from Africa,women:sex with bisexual male	88	(9)	1	198	(18)	
≥1 heterosexual partner within the last 12 months prostitution/sex with prostitute	455	(44)	2	445	(41)	2
None of above	208	(20)		352	(32)	1
Total	1030	(100)	20	1087	(100)	6

The overall prevalence of anti-HIV was 1.2%, highest among men with homosexual behaviour: 8%.
Conclusion: Many individuals seeking HIV-testing are heterosexuals and have a very low prevalence of anti-HIV. Being unable to make valid estimations of the prevalence of HIV infection in the general population sequential prevalence studies may give valuable information about trends in infection rates.

A.519

NATIONAL STUDY OF HIV SEROPREVALENCE IN NATIVE AMERICANS

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Objective. To assess existing levels and future trends of HIV infection among American Indians and Alaska Natives in the United States.
Methods. Following approval from tribal authorities, blinded seroprevalence testing will be conducted on sera obtained for syphilis screening from prenatal patients, patients undergoing initial evaluation for a sexually transmitted disease, and patients entering drug or alcohol treatment programs. The study will be conducted throughout the Indian Health Service (IHS) (user population of approximately 1,144,000 individuals). Approximately 75,000 sera will be tested for HIV antibodies during a one-year study interval starting in 1989. Results will be stratified by reason for sera being obtained and by rural or urban clinical setting. Data will be aggregated by clusters of ≥ 20,000 service population to further protect confidentiality and ensure statistical reliability of results.
Results. The pilot phase will begin in January, 1989. By March, 1989, surveys are expected to be implemented in many of the IHS service areas.
Conclusion. These surveys will provide relatively unbiased estimates of seroprevalence for the clinic subpopulations of IHS service users. It should also serve as a baseline that may be followed through time for the assessment of the progress of the epidemic and preventive activities in this population.

A.521

SEROPREVALENCE OF HIV ANTIBODY IN A CITYWIDE SAMPLE OF EMERGENCY ROOM PATIENTS

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Objectives. To determine prevalence of HIV antibody in a citywide population of patients seeking emergency room (ER) care.
Methods: Seven hospital-based emergency rooms providing 90% of Portland's emergency services collaborated to simultaneously measure HIV seroprevalence in their combined patient population. During two 48-hour periods in the summer of 1988, all bloods drawn from patients for other purposes were tested for HIV antibody after personal identifiers had been removed. Specimens were also screened for hepatitis B surface antigen (HBsAg) and core antibody (HBc). Demographic and risk factor information as obtained by routine ER practice was linked with test results.
Results. Blood from 444 patients was tested. Patients' residences were evenly distributed throughout the metropolitan area. The largest proportion of patients were in the 20 to 30 year age group (24%)year age group (38%) and in the 60 and over group (38%). Twenty-one patients (0.5%) were identified as intravenous drug users. No males were identified as being homosexual. Seven percent of patients had experienced trauma. Invasive procedures were performed on 34% of patients. Only 2 patients (0.45%, 95% CI ±.62%) tested HIV positive. One of these patients was already known to be HIV positive. Three of 444 (0.68%, 95% CI ±.76%) patients were HBsAg positive and 55 of 444 (12%) were HBc positive.
Conclusion. The rate (0.45%) of HIV seropositivity in this city-wide cohort was low and approximated the rate of HBsAg seropositivity (0.68%). In contrast, the prevalence of HBc (12%) indicates a substantial proportion of this population may be at risk for future HIV infection. This method of population sampling may provide a simple way to estimate HIV infection rates in a general population.

A.523

ACCEPTANCE OF HIV-ANTIBODY SCREENING AND PREVALENCE OF ANTIBODIES AGAINST HIV AT A STD CLINIC

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During periods of three weeks repeated every third month from October 1987 to November 1988, all persons attending a STD clinic in Copenhagen for examination were offered a blood test for HIV-antibodies. The test could be performed anonymously or not. Data concerning sexual orientation, prostitution, drug abuse and sexual contact with high risk groups were collected. During all four periods 1753 persons attended the clinic. HIV-antibody testing was not accepted by 12.6% of heterosexual men, 9.6% of homo-/bisexual men and 9.9% of the women. No major difference in acceptance of HIV-antibody testing during the four periods was seen. Four heterosexual men, 11 homo-/bisexual men and one woman were found HIV-antibody positive.
The data support that a constant number of clients attending a STD clinic refuse even anonymously HIV-antibody testing and underline the necessity for blinded HIV-antibody testing in order to disclose the true prevalence in this group.

A.520

DETECTION OF HIV ANTIBODIES IN DENTAL SCHOOL AT THE UNIVERSIDAD DE BUENOS AIRES

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Objective. To determine HIV-infection seroprevalence in dental professionals, as they represent an important group to study HIV-infection occupational risk.
Methods. A total of 617 subjects was included in this study: 400 first-course students at the School of Dentistry, 112 predoctoral students and 105 dental professionals. Serum samples were tested for HIV antibodies by means of ELISA (Abbott recombinant HTLV III ELISA). Samples reacting positive by ELISA were confirmed by Immunofluorescence or Western Blot.
Results. Only 3(0.75%) males out of the 400 first-course students had HIV antibodies. Risk-factors analysis in the seropositive cases showed that 1 subject was homosexual and intravenous drug abuser and 2 were intravenous drug abusers.
Conclusion. Though dental professionals are likely to be repeatedly exposed to HIV-infected persons, we did not find infection in any of the 112 predoctoral students, nor in the 105 dental professionals, assuming a low risk for the studied group.

A.522

SEXUAL MIXING MODELS WITH LIKE-WITH-LIKE PREFERENCE

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Objective. To develop an alternative to proportionate mixing in sexually transmitted disease models.
Methods. Starting from the three fundamental constraints on a mixing function (it must be positive, normalized, and conserve the number of partnerships), a new mixing model can be constructed by finding an appropriate transformation of a suitable function (describing mixing between individuals of similar activity).
Results. A new mixing model is derived, based on a transformation of a local mixing function ("like-with-like") which has the property $f(x-y) = f(y-x)$. Different choices of f provide different degrees of localized mixing in the population, and affect the dynamics of an STD epidemic. We look at three alternatives: Gaussian, rectangular, and "sharp" f superimposed on the general mixing.
Conclusion. Predictions of epidemics of STDs are very sensitive to the extent of like-with-like mixing in the population.

A.524

THE INFLUENCE OF CHANGES IN SEXUAL BEHAVIOUR ON THE TRANSMISSION DYNAMICS OF HIV-1 IN THE UK

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Objective: To assess the consequences of changes in sexual behaviour on the transmission dynamics of HIV-1 with reference to the male homosexual community in the United Kingdom.
Methods: The distribution of sexual activity (rate of acquiring new partners) and transmission probabilities (mirroring the adoption of "safer sex") are altered in a simple model of the transmission dynamics of HIV-1. The model incorporates distributed infectious and incubation periods.
Results: The future course of the HIV-1 epidemic is highly sensitive to the timing and the magnitude of changes in sexual behaviour. The effects of changes in sexual behaviour are not linearly proportional to either the magnitude of the change or the time of its initiation.
Conclusions: The timing of a change in sexual behaviour is crucial in reducing the numbers of future AIDS cases. Great benefit is obtained by changing sexual behaviour as soon as possible, and any delays drastically reduce the impact of a change.

A.525

HIV SEROPOSITIVITY IN IVDU VIETNAM COMBAT VETERANS

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OBJECTIVE: To determine the rate of HIV infection in heterosexual military veterans who use intravenous drugs and are seen in methadone treatment facilities.
METHODS: Heterosexual IVDUs attending methadone treatment facilities in San Francisco between February and December 1988 were recruited, screened for military service, and tested for HIV seropositivity. 129 veterans were studied including 34 who were Vietnam combat veterans. 27 subjects were recruited from a Veterans Administration (VA) hospital treatment facility and the remaining 102 from non-VA drug treatment programs.
RESULTS: 0/27 (0%) of veterans screened at a VA drug treatment facility were HIV+ compared with 7/102 (7%) of veterans treated at non-VA programs. 4/34 (12%) Vietnam combat veterans were HIV seropositive, compared with 3/96 (3%) for all other veterans (p=.078). Of the seropositive veterans, four were black, two were Native American, and one was white. Vietnam combat veterans recruited from non-VA facilities had an HIV seropositivity rate of 15% (4/27). For comparison, non-veteran heterosexual IVDUs screened over the same time period had a seropositivity rate of 9%.
CONCLUSIONS: There is a discrepancy in HIV seroprevalence between veterans screened at VA and non-VA drug treatment facilities. The highest prevalence of HIV seropositivity was seen in IVDU Vietnam combat veterans who were not being treated at VA facilities. Larger studies are indicated to assess the significance of HIV infection in this unique population.

A.526

COMPLETENESS AND ACCURACY OF RISK FACTOR INFORMATION IN A GENERAL POPULATION SURVEILLANCE OF HIV INFECTION

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Objective. To detect and quantify the biases due to missing information about risk factor in data from a general population surveillance of HIV.
Methods. Anonymous notification of every confirmed anti-HIV positivity, including available information on risk factor, has been collected by the Latium R.E.U. from local laboratories since October 1985. Multiple notifications referring to the same subject are linked using the available individual data as keys. Further steps are the linkages with clinical follow-up records and notifications of AIDS cases. Every step makes the information about risk factor more complete.
Results.

CUMULATIVE IMPROVEMENTS IN COMPLETENESS OF INFORMATION BY YEAR OF DIAGNOSIS

STEPS YEAR	INFORMATION AVAILABLE %				
	1985	1986	1987	1988	TOTAL
A = FIRST NOTIFICATION	44.5	47.4	64.5	68.5	57.4
B = A + FOLLOWING NOTIFICATION	57.1	56.2	69.8	70.4	64.6
C = B + FOLLOW UP & AIDS CASES	58.8	58.9	72.3	73.6	67.1

RISK FACTOR DISTRIBUTION (%) BY SOURCE OF INFORMATION

SOURCE		MALES				FEMALES		
		IVDA	HOMO	HETERO	BLOOD	IVDA	HETERO	BLOOD
FIRST NOTIFICATION	n=1842	84.7	12.3	1.7	1.3	84.5	14.0	1.4
FOLLOWING NOTIFICATIONS	n= 357	87.8	9.4	2.8	0.0	85.4	13.6	1.0
FOLLOW-UP & AIDS CASES	n= 122	50.0	40.6	6.3	3.1	65.4	34.6	0.0

Conclusions. Willingness of reporting risk factors and validity of surveillance system in assessing them are likely to vary among risk categories. This may result in biased risk factor distributions when based on available information. Use of different sources improves completeness of surveillance data and suggests a way for reducing biases. Data presented must be analyzed by time of testing to take into account changes over time in size and direction of the considered biases.

A.527

TEMPORAL TRENDS OF HIV PREVALENCE IN BLOOD DONORS AND USE OF BLOOD BANKS AS TESTING SITES IN LATIUM (ITALY).

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Objective. To evaluate changes over time in number and characteristics of blood donors and their effect on observed prevalence trends of HIV infection and to evaluate the effectiveness of screening programmes.
Methods. In the Latium region (about 5,000,000 inhab.) screening of every donated blood unit has been mandatory since October 1985. Diagnostic activity for non-donors is still offered by a number of blood banks. Data on number of screened units and positive test results, in occasional and periodic donors, are monthly reported by blood banks to R.E.U. together with anonymous notifications of every positive test results.
Results.

SCREENED DONATIONS AND PREVALENCE OF HIV INFECTION BY YEAR AND DONOR CLASS

YEAR	PERIODIC		OCCASIONAL		TOTAL	
	SCREENED UNITS	P (x10,000)	SCREENED UNITS	P (x10,000)	S.U.	P
1985 (inc.)	4,832	-	10,036	-	14,868	-
1986	30,986	2.9	55,776	2.7	86,762	2.8
1987	43,124	2.6	99,274	4.3	142,398	3.8
1988	56,531	1.4	77,133	5.3	133,664	3.7

NOTIFICATIONS OF HIV POSITIVITY BY YEAR AND TYPE OF REPORTING STRUCTURE

YEAR	LABORATORIES		BLOOD BANKS-DONORS		BLOOD BANKS-NON DONORS	
1985 (inc.)	547	74.7%	126	17.2%	59	8.1%
1986	1578	77.4%	275	13.5%	185	9.1%
1987	2364	85.8%	54	2.0%	337	12.2%
1988 (inc.)	1865	87.8%	31	1.5%	227	10.7%

Conclusions. Number of donated blood units has not significantly decreased; donations from periodic donors increased, while those from occasional ones decreased in 1988. A strong opposite trend is evident for prevalence in the compared donor classes. Even though the proportion of HIV+ reported by blood banks among donors has dramatically decreased, data suggest a still high use of blood donation as a way of obtaining an HIV test. More information on self deferral, and an increased availability of alternative testing sites are needed to ensure safety of blood transfusions.

A.528

HIV SEROPREVALENCE IN HISPANIC AMNESTY APPLICANTS AT A SEXUALLY TRANSMITTED DISEASES (STD) CLINIC, LOS ANGELES, CALIFORNIA, 1988

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Objective. To estimate and compare HIV antibody (Ab) seroprevalence in undocumented Hispanics seeking legal amnesty with that of other Hispanics attending the same STD clinic.
Methods. Amnesty applicants must prove residence in the USA since Jan. 1, 1982, and undergo HIVAb testing. Repeat ELISA positives are confirmed by immunofluorescent antibody (IFA). Medical charts of all 324 Hispanic amnesty applicants seen at one county STD clinic between Feb. 1-Aug. 31 were reviewed for HIVAb status, demographic characteristics, risk factors, and history of other STDs. HIVAb prevalence in a consecutive sample of 555 non-amnesty Hispanics undergoing confidential or blinded testing in the same clinic was also determined.
Results. *Amnesty:* Males were more likely than females to refuse testing; 87 (51%) of 171 males and 37 (67%) of 55 females accepted. Fifteen percent (18/124) of all tests were HIVAb positive. No females were seropositive. The seropositivity rate for males was 21% (18/87): 61% (11/18) were homosexual and 39% (7/18) were bisexual; none had a history of intravenous drug use or blood transfusion. *Non-amnesty:* 7% (13/186) of Hispanics who accepted confidential testing were HIVAb positive; 5% (20/369) of sera submitted for blinded testing were HIVAb positive. Amnesty applicants were more likely to be HIVAb positive than other Hispanics in this population (p=0.001; Relative Risk 2.44, 95% CI 1.42, 4.19).
Conclusion. Prevalence of HIVAb and risk factors for infection in undocumented Hispanic immigrants to the USA is poorly understood. The seropositivity rate for both groups of Hispanics attending this STD clinic is unexpectedly high. Although no seropositive females were identified in the amnesty group, the high proportion of bisexual seropositive males indicates the potential for heterosexual transmission. Legalization of amnesty applicants provides an opportunity to target more effective education and intervention strategies to this high-risk group.

A.529

SEROPREVALENCE OF HIV ANTIBODY IN IV DRUG USERS AND OTHER PATIENTS IN A CONNECTICUT HOSPITAL

Lyons, Robert W.; Krisiunas, E; Madden, G; Rubinstien, E; Smith, C. and Dauphinais, R. St.Francis Hospital and Medical Center, Hartford, Connecticut, USA.

Objective. To examine the demographics of HIV antibody seroprevalance at a 592 bed community teaching hospital in the northeastern United States in 1988.
Methods. Sex, race, age, and risk-group information was obtained by the laboratory from the ordering physician on all HIV antibody tests done. Patient identifiers were removed before analysis by the epidemiology section. A positive result was positive by both ELISA and Western Blot (RIBA).
Results. 632 adults and 58 infants were tested with their permission. 131 were positive. An analysis of intravenous drug users (IVDU) by race and sex is shown here; similar analysis of the other groups will be given in the presentation:

Group	Total	Pos	%	Group	Total	Pos	%
IVDU	299	85	28.4	Gay	36	13	36.1
Blk Male	102	32	31.4	Gay/IVDU	6	4	66.7
Blk Female	49	13	26.5	Heterosexual	120	9	7.5
Hisp Male	72	26	36.1	Blood Recipient	19	2	10.5
Hisp Female	27	9	33.3	Adult - No Risk	152	10	6.6
Wht Male	27	1	3.7	Child of IVDU	41	8	19.5
Wht Female	22	4	18.2	Child - No Risk	17	0	0.0

Conclusion. The majority of the HIV+ patients tested are Black and Hispanic IVDU. Prevalence rate among white IVDU is significantly less than among IVDU from minority groups.

A.530

THE EPIDEMIOLOGY OF AIDS IN MARYLAND, 1981 - 1987

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Objective: Describe the epidemiology of AIDS in Maryland for the years 1981 through 1987.
Methods: Case reports completed as part of the Maryland AIDS Reporting System were analysed.
Results: A total of 1,017 nonincarcerated adult AIDS cases was reported during this 7 year period. The greatest proportion of cases occurred in Baltimore City and Prince George's and Montgomery counties (79% of total), Maryland's largest metropolitan areas. These same jurisdictions had the highest cumulative incidence rates for both blacks and whites. Overall, 50.5% of the cases were black. Statewide, the cumulative incidence rate for blacks is 3.6 times that for whites. Many rural counties had relatively high cumulative incidence rate among black residents (up to 1,266 cases per million). Homosexual/bisexual male was the transmission category most responsible for AIDS. Blood transfusion cases represented 6.3% of the total (compared to 2% nationally). IVDA was a greater factor in the black population than in the white (28% vs. 4%). Temporal trends indicate that IVDA, heterosexual contact (particularly for females) and blood transfusion assumed more importance as a risk factor in Maryland during the years 1985-1987 as compared to 1981-1984. During this period, 23 cases of pediatric AIDS were reported. Eight were female and 15 male. Seventeen were black, 5 white, and 1 hispanic.
Conclusion: The demographic breakdown of Maryland cases was similar to national data for the years 1981-1987. Two major exceptions were a disproportionate number of black cases and cases due to blood transfusions.

A.531

SUIVI PENDANT 3 ANS DES LYMPHOCYTES T4 ET DE LA ß2 MICROGLOBULINE SUR UNE COHORTE DE 166 SUJETS INFECTES PAR LE VIH

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166 séropositifs groupes II, III, IV ont été suivis pendant 3 ans au plan clinique et biologique avec fréquence trimestrielle.
Objetif : apprécier les modifications de 2 paramètres : la lymphocytose T4 et la ß2 microglobuline sérique, en fonction du temps écoulé et de la survie, afin de voir quel est leur potentiel pronostique indépendamment d'une éventuelle thérapeutique.
Lymphocytes T4, groupe II : 107 cas, taux initial moyen 694 ± 300, à 1 an sur 47 cas : 604 ± 283, à 2 ans sur 33 cas : 523 ± 294, à 3 ans sur 12 cas : 465 ± 249. Groupe III : 47 cas, taux initial moyen 498 ± 291, à 1 an sur 17 cas : 428 ± 267, à 2 ans sur 16 cas : 400 ± 197, à 3 ans sur 10 cas : 302 ± 173. Groupe IV : 12 cas, taux initial moyen 218 ± 233.
ß2 microglobuline : groupe II : 97 cas, taux initial moyen 2,83 ± 1, à 1 an sur 21 cas : 3,14 ± 1,3, à 2 ans sur 7 cas : 4,3 ± 2,4, à 3 ans sur 2 cas : 4,2 ± 1,27. Groupe III : 42 cas, taux initial moyen 3,4 ± 1,4, à 1 an sur 9 cas : 4,1 ± 5,8, à 2 ans sur 9 cas : 3,3 ± 0,72, à 3 ans sur 5 cas : 3,6 ± 0,82. Groupe IV : 12 cas, taux initial moyen 3,9 ± 1,14.
Conclusion : A stade identique, le taux moyen de T4 diminue modérément en fonction du temps alors que le chiffre de ß2 microglobuline augmente discrètement. Il apparaît que ces paramètres ne sont pas suffisamment discriminants pour déterminer l'ancienneté de l'infection ou dégager un pronostic.

A.533

FEDERAL SUPPORT OF STATE AND LOCAL HIV PREVENTION PROGRAMS IN THE UNITED STATES

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Objective: To provide financial and technical assistance to State and local health departments for the prevention of HIV transmission in the U.S.
Methods: CDC is the lead federal agency in the U.S. Government for development, implementation, and evaluation of national efforts to prevent transmission of HIV and to control sexually transmitted diseases (STD). These programs are administered by State and local health departments. CDC has established multi-year cooperative agreements for HIV prevention with all 50 states, Puerto Rico, five large cities, and more than 75 community-based organizations (CBO) in 27 large metropolitan statistical areas. A wide range of mutually reinforcing prevention activities are supported including local/State public information campaigns; studies of knowledge, attitudes, beliefs, and behaviors; counseling, testing, and partner notification; STD treatment; funding of minority and other CBOs to educate and change target community behavior norms; and, outreach and referral of drug users for treatment.
Results: Funds and technical assistance from CDC to health departments and CBOs have greatly increased - from approximately $26 million in 1986 to $143 million in 1989. In 1989, it is estimated that more than 5 million persons will receive risk reduction counseling, 860,000 will elect to be tested, and approximately 43,000 will be seropositive. Since 1987, more than 400 CBOs have been funded.
Conclusion: The foundation for a comprehensive national HIV prevention program in the U.S. has been established. A model for a core HIV prevention program has been defined and partially funded by the federal government.

A.535

AN ANALYSIS OF AIDS IN BRITISH COLUMBIA

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Objective To describe reported cases of AIDS in B.C. through 1988 and to analyze trends.
Methods The 464 AIDS cases reported in B.C. to the end of 1988 are divided into two halves: the initial 232 cases (Group I) and the latest 232 cases (Group II). The characteristics of these two groups are described and compared.
Conclusions Recently reported cases of AIDS in British Columbia are occurring more frequently as a result of heterosexual transmission. All other characteristics have remained stable over time. The incidence of AIDS has slowed considerably.

Results	Group I	Group II	%Total
Male	228	224	97%
Female	4	8	3%
20 y/o	1	1	1%
20-29	45	47	20%
30-39	98	93	41%
40-49	67	68	29%
50+	21	23	10%
Urban	208	202	88%
Rural	24	30	12%
Homosexual - Bisexual	217	208	94%
IVDU	0	2	1%
Homosexual-IVDU	4	5	2%
Hemophilia	1	3	1%
Heterosexual	1(p=.06)	6	1.5%
Blood Tx	6	3	2%
NIR	3	5	2%

Year	New Cases	Cumulative Cases	Rate of Increase
1983	7	7	-
1984	25	32	3.57
1985	56	88	2.24
1986	105	193	1.88
1987	124	317	1.18
1988	154	471	1.24

A.532

SCREENING FOR HIV INFECTION AMONG IV DRUG USERS IN THE PRISONS OF BRUSSELS.

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** Université de l'état, Mons, Belgium.

Objective. To monitor the epidemic of HIV infection among IV drug users (IVDU) in the Brussels area through screening of the inmates of Brussels prisons and, at the same time, monitor the effect of information on the behavior of the IVDU population.
Methods. Since May 1985, an information campaign on AIDS was launched in Belgian prisons. In 42 months, we have tested, having obtained their consent, 3126 newly identified inmates having used IV drugs at least once.
Results. The seropositivity rates were, per semester, 7.1%, 7.1%, 7.7%, 3.2%, 5%, 3.4%, 3.1% respectively.
Conclusions. These results indicate a decrease of the HIV prevalence among the delinquent IVDU of the Brussels area, an urban district of 1,500,000 inhabitants having free access to sterile injection material. We explain the observed decrease by behavioral changes due to the information and screening and we produce a simple mathematical epidemic model consistent with that explanation.

A.534

HTLV-I/II INFECTION IN HIGH-RISK GROUPS IN SPAIN

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Objective. To determine the prevalence of HTLV-I/II infection in Spanish populations at high-risk for HIV infection.
Methods. Serum samples were obtained from 150 subjects (1987-88) distributed in 110 drug users, 15 heterosexual contacts, 22 homosexuals and 3 post-transfusional HIV infections; 93% of them were anti-HIV+ and 10% were symptomatic (ARC/AIDS). Anti-HTLV-I were tested by 3 licensed EIAs (Abbott, Dupont, Cellular Prod.). Repeatedly reactive (RR) samples were confirmed with WB, RIPA and a recombinant p21E (env) WB (Biotech). A + result was defined as the presence of p24 and an env product in any of the 3 tests.
Results. Nine samples (drug users) were RR in at least one of the EIAs:

	PATIENT								
TEST	1	2	3	4	5	6	7	8	9
EIA 1	RR	RR	-	RR	-	RR	-	-	-
EIA 2	+/-	RR	RR	RR	RR	-	RR	RR	RR
EIA 3	-	RR	RR	RR	-	-	RR	-	RR
WB	p24	p19,24	-	p24	p19	-	p19,24	p24	-
RIPA	gp68	gp68	-	gp68	-	-	-	-	-
p21E	+	+	-	+	-	-	+	-	-

Only 4 samples (2.6% drug us.) were interpreted as + (No.1,2,4,7). None of the EIAs was + in all 4 samples. All + samples were detected by the recombinant WB assay.
Conclusion. 1) The prevalence of HTLV-I/II infection in HIV infected groups in Spain is very low; 2) Additional confirmatory testing for HTLV-I/II infection is absolutely necessary; 3) The recombinant p21E WB assay might be an useful confirmatory technique for HTLV-I/II infection.

A.536

EVOLUTION TOWARDS AIDS IN A GROUP OF ITALIAN INTRAVENOUS DRUG ABUSERS(IDA) WITH PGL

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Objective.To evaluate the 3-year progression rate to AIDS in a group of IDA with PGL in Verona (Italy).
Methods.One hundred and thirtytwo IDA (mean age 27 ± 6 years) with PGL were enrolled in a prospective study between July 1984 and June 1986.Except for PGL,all patients were symptomless and had CD4+ lymphocytes above 400/ml.The patients were followed up at intervals of 3-6 months for a median period of 36 months (range 30-40 months).None received anti-HIV or immunorestaurative drugs during the period of observation.Progression to full-blown AIDS was established according to CDC revised surveillance definition (1987).Kaplan-Meier analysis was used to estimate the 3-year incidence rates of AIDS.
Results.AIDS was diagnosed in 5 patients.The 1-year incidence rate for AIDS was 1.23% ; the 2-year rate was 1.33% and 3-year rate was 4.64%.Therefore,the rate of progression to AIDS increased over the period of follow-up.The current actuarial progression rate of PGL to AIDS at 3 years results 7.2%.
Conclusion.The beginning of HIV epidemic in large italian cities dates back at least to 1981.Our finding suggests that IDA could present lower progression rates to AIDS than other groups at risk of HIV observed in recent prospective studies.

A.537

IMPACT OF REVISED CASE DEFINITION ON AIDS SURVEILLANCE IN EUROPE

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Objective: To determine the modalities of application and impact of the revised CDC/WHO AIDS case definition on surveillance in Europe.

Methods: A survey was carried out among the 32 countries of the WHO European region investigating modalities of surveillance of AIDS and application of revised cases definition.

Results: Of 20 countries having answered by end of january 1989, 15 have set up a surveillance system for HIV+ individuals. 20 countries have an AIDS surveillance system of which 13 are mandatory and 6 voluntary. Under reporting has been assessed by few countries 9/20 mostly by matching AIDS cases with death certificates. Revised case definition was applied in all 20 countries by 01/01/88. Six countries have actively carried out a retrospective investigation on cases previously reported with AIDS and 3 have also investigated HIV patients not previously diagnosed with AIDS. 636 AIDS patients fitting the revised case definition have been reported representing an increase of 4%. This is much lower than figures reported in literature.

Conclusion: Most of the 20 countries having answered by end of january 1989 had applied the case definition by first of january 1988. Impact of new cases is extremely low and will be assessed when complete set of answers are received.

A.538

THE INCIDENCE OF GLOVE PUNCTURE DURING CAESARIAN SECTION AND VARIOUS POTENTIAL SOLUTIONS.

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A study was performed to ascertain the incidence of glove puncture at lower uterine segment Caesarian section. The increasing incidence of Hepatitis B and HIV infection in women makes this of increasing importance to surgeons. The following results were obtained:

Total Caesarian sections	200	
Total where glove(s) punctured	107 (54%)	
Puncture Occurred - During emergency Caesarian section*	64/116 (55%)	
- During elective Caesarian section	39/74 (53%)	χ^2 = 0.0111; 0.10 < p < 0.05
-Uterus eventrated#	51/85 (60%)	
-Uterus not eventrated	50/110 (45%)	χ^2 = 4.063; p < 0.05
-During closure of uterine muscle	34/60 (57%)	

*Not stated whether emergency or elective section in 10 cases. #Not stated whether eventrated or not in 5 cases. This trial shows the highest rate of glove puncture yet reported during a surgical procedure. We are currently undertaking a controlled trial of a new forceps designed to grip both uterine muscle and needle more effectively. The use of double gloving, blunt tipped needles, new gloves thickened at the fingers and the increasing use of staples for skin closure should also reduce this unacceptably high rate of puncture.

A.539

MODIFICATIONS ET VARIATIONS GEOGRAPHIQUES DES GROUPES DE TRANSMISSION DE L'INFECTION A VIH EN FRANCE

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Objectif. Préciser la répartition actuelle des groupes de transmission sur l'ensemble des sujets infectés par le VIH quelque soit le stade, en France.
Méthodes. Recensement de tous les sujets séro-positifs hospitalisés ou vus en consultation dans 20 Services de Maladies Infectieuses du 1er juillet 1987 au 1er juillet 1988.
Résultats. Sur 3873 sujets recensés, dont 80 % non atteints de SIDA, la répartition des groupes de transmission était la suivante : homosexualité ou bisexualité 37 %, toxicomanie iv 43 %, hétérosexuels 7,8%, transfusion et hémophiles 6,8 %, autres et indéterminés 5,1 %. Le pourcentage de toxicomanie iv était le plus élevé dans le Sud, à Marseille, 80 % et à Nice 66,6 %, et le plus faible dans le Nord, à Lille, 12 %.
Conclusion. Le groupe de transmission toxicomanie iv est pour l'ensemble des sujets séropositifs nettement plus important que pour le seul groupe des SIDA déclarés (20 % des SIDA en 1988). Ce groupe est surtout important dans la zone méditérranéenne, comme pour l'Italie et l'Espagne. Il représentera le groupe le plus important des malades atteints de SIDA dans les prochaines années en France.

A.540

HIV SEROPOSITIVE MEN INFECTED WITH MULTIPLE CMV STRAINS: A LONGITUDINAL STUDY OF THE RELATIONSHIP TO T-CELL SUBSETS

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Objective. To investigate the relationship between serial infection with multiple CMV strains and T-cell subsets.
Methods. We identified 56 asymptomatic HIV-1 seropositive homosexual men participating in a study of HIV-1 infection who excreted CMV from semen at two visits 5 to 9 months apart. CMV DNA was isolated from paired isolates in six men, cut with restriction enzyme and then subjected to junctional hybridization. Lymphocyte subsets were determined by flow cytometry.
Results. Paired isolates from each of 2 men gave identical banding patterns (Group 1). Four men were found to excrete a non-identical strain at the second visit (Group 2). Both groups had lower CD4 and CD8 counts at the second visit (mean decrease in CD4: 27% (Group 1), 35% (Group 2); mean decrease in CD8: 14% (Group 1), 33% (Group 2)).
Conclusion. Serial excretion of multiple CMV strains occurs in asymptomatic HIV infected homosexuals. All 6 subjects persistently shedding CMV had decreases in CD4 and CD8 cell counts. Evaluation of the remaining CMV isolates (in progress) is necessary in order to determine whether men with multiple strains have different changes in T-cell subsets than men with identical strains.

A.541

SAFER SEX BEHAVIOR REINFORCEMENT IN PUBLIC PARKS

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Objective: Reinforce safer sex behaviors among sexually active gay men.
Methods. Health department staff learned of the high frequency of contact for sexual purposes among gay and bisexual men, particularly at one public park in a gay-identified neighborhood in Dallas. The health department employees prepared packets for distribution in the park. Each packet contained condom packages coded with a red stripe, safer sex brochures, and a list of services available at the health department, including anonymous HIV antibody testing and counseling. The packets were distributed to park patrons who appeared to be in the park for the purpose of arranging sexual contact. Adult male park patrons were approached individually by health department staff using casual, non-threatening behavior. The park patrons were offered the plain white packets and were told the packets were "free product samples." Anecdotal information was collected about the manner of the patrons, the frequency of entering and leaving the park, the peak hours for patron contact in the park. Demographic information was collected.
Results. Coded condom packages were found in the park after the health department began the packet distribution. Patrons accept the packets, are not threatened, appear interested in the material and appreciate our effort in coming to them. Patrons have called the health department and ordered literature on HIV in individual and in bulk quantities. Conclusion: The low-key approach used by health department staff promotes a sensitive image of the health department as it also facilitates safer sex behavior reinforcement.

A.542

PREVENTION OF PERINATAL TRANSMISSION OF HIV

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Objective: To report progress to date by projects to prevent perinatal HIV transmission.
Methods: Nine demonstration projects evaluate and facilitate the use of contraception and encourage risk reduction among women HIV-infected or at highest risk for infection.
Results: The projects, funded for $4.6 million per yr, are a major way for CDC to develop perinatal HIV prevention interventions for implementation by State programs and provide additional resources targeting minority and highest-risk populations. Projects will address 2 factors determining HIV seroprevalence among newborns: HIV prevalence among women (15-44y) and birth rates among those HIV(+). Efforts have focused on limiting spread and increases in prevalence of HIV among women. However, effective program development requires data about contraceptive practices and attitudes and about reproductive decision-making among women such as female intravenous drug users (IVDUs) and sex partners of drug users--the mothers of 75% of pediatric perinatally-acquired AIDS cases. In 10 cities women who are crack users, IVDUs, sex partners of IVDUs, prostitutes, or HIV+ will be accessed in public clinics, obstetric units, drug treatment, through referral by community organizations, and by outreach; among 4000, efficacy of referral, use of contraception, and risk reduction will be evaluated and facilitated. Among them, pregnancy rates, knowledge, attitudes, and determinants concerning use of contraception will be assessed.
Conclusions: These projects should provide information to direct efforts to prevent perinatal HIV transmission.

A.543

VIH, SYPHILIS ET TOXICOMANIE.

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INTRODUCTION : L'échange de seringue chez les toxicomanes expose au risque de contamination VIH, les taux de séropositivité sont élevés (> 50%) chez les drogués en région parisienne. Les riques de transmission sexuelle sont peu documentés dahs cette population.

OBJECTIFS - METHODES : Préciser et comparer le mode de vie sexuelle, les taux de séropositivité VIH1, les marqueurs de la syphilis chez les toxicomanes IV et les toxicomanes sniffeurs. Conditions : consentement, confidentialité, anonymat.

RESULTATS : Population : toxicomanes de sexe masculin, incarcérés en Juin 87 : 63IV, 18 sniffeurs (jamais d'injection) Pas de différence statistique pour l'âge (27 ans), la fréquence de l'usage de drogue (3/jour) la durée de la toxicomanie (5ans), les caractéristiques de la vie sexuelle : 72 étaient hétérosexuels, 2 homosexuels, 5 bisexuels,pas de rapport 2 cas. 21 avaient des rapports uniquement avec leur concubine et 9 (11%) avec des prostituées. Parmi les partenaires sexuelles féminines 40% utilisaient des drogues IV. Une différence statistiquement significative est retrouvée pour les facteurs suivants :

	VIH +	VDRL et/ou TPHA +	Nouveau partenaire(1an)
IV n = 63	30 (45%)	17 (27%)	4
Sniff n = 18	0	2	1

CONCLUSION : lacontamination VIH1est liée à la toxicomanie IV. La fréquence de la syphilis chez les IV et sniffeurs fait craindre des risques de transmission hétérosexuelle du VIH1

A.544

DETECTION OF OCCLUSION vs LEAK IN CONDOM.RHEOLOGICAL TEST.

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Objective.The condom is recommended and used as an efficient barrier against HIV and others.In practice,the film of a condom may present irregularities or leaks.This has been resolved efficiently with rigorous sampling plans for leak-detection tests,realized in all standards by conductometric or electronical test(ET).But,as the test is made on a condom in repose and without mecanical tension,eventually existing micro-occlusions or micro-chaps would not be detected as leak.Given that a condom in use in sexual relations is submitted to forces and mecan.deformations,there could appear leaks,invisible in condom without tension,and the protection the is lost.To evaluate this loss of protection vs HIV due to appearance of leaks while using(stretching)condom,it is proposed to test with Rheological test(Pat.Met.) Methods.We tested with usual test ET and Rheological Test 2 homogenuous lots of 2 different manufacturers, considering the presence of leak at the indication of 50mV(ISO 4074,UNE 53625) and 50mV(Rheological Test RQTS 88.E1.PM1.) Results. With standard method ET (condom in repose)there was no leak found.The Rheological Test detected 1 and 14 leaks in the two manufacturers respectively. Conclusion.1) Condoms can present micro-occlusions or micro-chaps which will be transformed into leaks and holes and they will loose their protection effect against HIV when submitting them in use to forces and deformation.

2) The leak detection tests for condoms with the Rheological Test permit to reject non-safe condoms with micro-occlusions or micro-chaps which would not be detected by usual tests(ET).

A.545

EARLY COURSE OF HIV INFECTION IN 40 SEROCONVERTERS

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Objective. To study the natural history of HIV infection.

Methods. Forty homosexuals, who became seropositive from December 1985 to January 1988, were followed from 11 to 36 months (mean 23 months). The mean time between the last negative and first positive tests was considered to be the time of infection. Clinical,immunological and virological parameters were assessed at enrolment and every 4 months.

Results. Generalized lymphadenopathy developed in 15 patients from 3 to 15 months,hairy leukoplakia in 4 (after 6,15,17 and 22 months)and constitutional symptoms in 3 (after 11,21 and 29 months). The development of constitutional symptoms was accompanied by HIV antigenemia, but symptoms and antigenemia spontaneously regressed in 2 of 3 patients after few months.No statistically significant modification of immunological parameters was observed in about 50% of patients. Only one patient developed profound immunosuppression.

Conclusion. Our follow up study demonstrated the variability of the course of HIV infection. None of the laboratory parameters analyzed seemed of value in predicting the disease progression.

A.546

NATURAL HISTORY OF HIV INFECTION IN FEMALES SEEN AT THE MEDICAL COLLEGE OF VIRGINIA (MCV).

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Objective. To describe the natural history of HIV infection in females seen at MCV.

Methods. This study retrospectively compares the clinical course of 66 HIV infected women with 412 HIV infected men followed at MCV from 4/86 to 1/89.

Results. Females comprised 14% of the HIV infected population seen at MCV; 50 (77%) were black, 14 (22%) were white, and 1% was Hispanic. Their major risk factor for acquiring HIV was IV drug use 31 (47%), sexual contact 26 (40%), blood products 8 (12%) and 1% health care exposure. During this time 33% of the women had AIDS compared to 52% of the males. Although a similar proportion of men and women were taking zidovudine the mortality rate for females was only 16% compared to 30% of the male HIV infected population (p <0.05). Ten percent of men and women took zidovudine and T-cell counts were higher in women (p<.05). Of patients still alive survival time (date of HIV diagnosis to present) was longer in men than women (p<.05).

Conclusion. The natural course of HIV infection in women is less well known than in HIV infected men. The lower mortality rate for women in this study may reflect later infection. Further investigation is required concerning the natural history of HIV infection in women.

A.547

PROFIL ÉPIDÉMIOLOGIQUE DES INFECTIONS DUES AU VIRUS D'IMMUNODÉFICIENCE HUMAINE (VIH) EN ESTRIE.

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Objectif. Décrire la population infectée par le VIH dans un milieu plutôt rural afin d'en souligner les différences par rapport au milieu urbain.

Méthodes. Étude rétrospective de tous les cas de SIDA (S), para-SIDA (P.S.) et infections asymtomatiques (IA) diagnostiquées au CHUS et dans ses hôpitaux affiliés entre octobre 1982 et octobre 1988.

Résultats. 85 personnes infectées ont été diagnostiquées dont 30 S,20 PS et 35 IA. Les facteurs de risques (FR) pour cette population se lisent comme suit: homo-bisexualité 60%, drogues IV 2.3, sang et dérivés 17.6 et contact hétérosexuel 14.1. Le nombre de cas de S est passé de 3 par an en 1986 à 1 par mois en 1988. 40% des S étaient des hétérosexuels (He), dont 20% de femmes. Le contact avec une personne infectée (25%). La promiscuité He (33.3) et la transfusion de sang ou dérivés contaminés (33.3) étaient les FR le plus souvent identifiés chez les He. L'âge moyen des S est de 48.3 pour les femmes et 39.75 ans pour les hommes. 86% des cas de S ont été diagnostiqués en Estrie, mais 37% seulement se sont infectés en Estrie.

Conclusion. L'infection par le VIH est en progression constante en Estrie. Le S atteint la population He de façon plus importante que dans le reste du Canada (40% vs 18%): l'âge médian des personnes He atteintes, est relativement élevée (56a.). La contamination He (23% vs 5.9) et sanguine (13% vs 4.6) est plus élevée que dans le reste du pays. Une proportion importante des S diagnostiqués en Estrie s'est contaminée hors Estrie. Ces particularités régionales de l'infection à VIH devront être prises en considération dans les campagnes d'information et de prévention.

A.548

LONG TERM FOLLOW-UP OF HOMOSEXUAL MEN WITH PERSISTENT LYMPHADENOPATHY: ATTACK RATE FOR AIDS.

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Objective. To determine the attack rate for AIDS in a cohort of 93 homosexual men identified with lymphadenopathy between 1981-1983.

Methods. Cases of AIDS occuring in a previously described cohort (Medicine 1985; 64: 203-213.) followed at MSKCC were documented. Patients lost to follow-up (LF) were traced. The attack rate as of 30 Jan., 1989, was calculated (Kaplan-Meier survival curve).

Results. 25/41 LF were traced. 52 patients had been continuously followed. 3 HIV negative patients were excluded. 40 patients developed AIDS, 1 died without AIDS, 30 were alive without AIDS and 19 were LF. The attack rate for AIDS was 58.4% at 7 years.

Conclusion. The average annual attack rate for AIDS has been 8.3%/year in this population.

A.549

LACK OF ASSOCIATION BETWEEN FREQUENCY OF BLOOD DONATION AND SEROPOSITIVITY FOR HIV AND OTHER INFECTIONS; AN UNEXPECTED FINDING IN RIO DE JANEIRO - BRAZIL.

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Objective: Due to the importance of blood transmission in the difusion of infectious disease in RJ we have performed this study in order to better understand blood transmitted disease and frequency of blood donation.
Methods:2,858 (non-paid) blood donors (18 to 60 years old) from the hemoterapeutic center of our hospital, between january and june 1987 were submitted to VDRL, ELISA-ABOTT (HIV), Complement Fixation (Chagas) and RIA (HBsAg). An extensive questionnaire was submitted by a trained nurse in order to determine possible risk factors. Chi Square test and confidence limits were used for statistical analysis.
Results: The prevalence among blood donors (95% confidence interval) was found to be 4.45% for Lues (3.69-5.21);0.56% for Chagas (0.29-0.83);0.7% for HBsAg (o.39-1.1);0,21% for HIV (0.04-0,38); The overall reaction for at least one of these infections was 5.67% (4.82-6.52). There was no statistical significance ($p<0.05$) between frequency of blood donation and seropositivity for HIV, Chagas and HBsAg.Statistically significant results were found for Lues and blood donation frequency ($X2=7.75$ $p<0.001$). We have also tested for possible association among the positive blood samples, in wich Chagas and HBsAg were statistically significant ($X2=51.46$ $p<0.001$).
Conclusion: Our results show that the association between frequency of blood donation and reaction to most of the disease studied was very poor as it was for sexualy and blood transmited disease. Fidings about Chagas and HBsAg were unexpected.

A.550

SEROEPIDEMIOLOGY OF HUMAN IMMUNODEFICIENCY VIRUS TYPE-I AND VIRAL HEPATITIS INFECTION IN NEW YORK CITY INTRAVENOUS DRUG USERS (IVDUs)

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Objective. To examine the behaviors associated with HIV-1 and viral hepatitis infection in IVDUs enrolled in drug treatment.
Methods. As a part of a larger HIV seroprevalence study in which a standardized questionnaire was administered, 50 subjects recruited from patients enrolled in drug treatment in NYC in 1987. Sera was collected and analysed for HIV-1 antibodies (using ELISA and Western blot assays) and for hepatitis B virus (HBV) and hepatitis delta virus (HDV) antibodies and antigens.
Results. The HIV-1 infection rate was 54% and 86% of the subjects had at least one marker for HBV infection. Serological evidence of anti-HBc, anti-HBs, anti-HBe, HBsAg, and HBeAg was found in 86%, 70%, 38%, 2%, and 0%, respectively of the sample. No subject had serological evidence of HDV infection and HIV-1 was associated with anti-HBc ($p=.0073$) serostatus.
Conclusions. These findings are consistent with similar mechanisms of transmission between HIV-1 and HBV and suggest that a HBV vaccination program among IVDUs enrolled in drug treatment would have significant public health benefits.

A.551

TRENDS IN AIDS INCIDENCE BASED ON ACTIVE SURVEILLANCE IN 12 MEDICAL SCHOOL AFFILIATED HOSPITALS

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Objective. To demonstrate how trends in AIDS incidence can be assessed utilizing data obtained through active surveillance in 12 hospitals affiliated with the New Jersey Medical School.
Methods. Analyses will focus on descriptive methods for presenting data in tabular or graphic form. Survival analysis (with co-factors) will be used for comparing survival following diagnosis among population subgroups.
Results. Some of the major findings to be presented include:

1. Since 1981, 2219 confirmed adult cases of AIDS have been reported, including 75% males, 68% Black, 20% White, and 12% Hispanic.
2. After annual increases from 1981 to 1987, new cases declined in 1988.
3. The primary modes of transmission were: a) IV drug use (66%), b) homosexual/bisexual contact (16%), a and b (5%) and heterosexual contact (8%).
4. AIDS incidence among homosexuals/bisexuals has decreased; heterosexually transmitted AIDS has increased, accounting for 12% of new cases in 1988.
5. Case fatality rates are highest among homosexuals/bisexuals with AIDS.
6. Among homosexuals/bisexuals with AIDS, the incidence of Cryptococcosis and Kaposi's sarcoma is increasing; HIV encephalopathy is increasing among heterosexuals with AIDS.

Conclusion. The application of descriptive methods to local surveillance data can be useful for projecting future treatment needs, targeting population subgroups for intervention, and identifying leads for further investigation.

A.552

COINFECTION VIH1 ET HTLV1

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Objectif : rechercher la séroprévalence du HTLV1 chez des patients infectés par le VIH.
Méthodes : 170 sérums positifs pour le VIH ont été testés pour le HTLV1 par ELISA. Les sérums appartenaient à différents groupes à risque (toxicomanes, homoxesuels, post-transfusionnel, materno-foetal, et hétérosexuel). Les sérums positifs en ELISA ont été confirmés en Western Blot.
Résultats : 4 sérums ont été positifs en ELISA dont 2 confirmés par Western Blot.

	Sexe	Age (ans)	Origine géographique	Facteur de risque	P19	P24	P28	P53
Patient 1	M	27	France	Toxicomane	+	+	+	+
Patient 2	M	38	Sénégal	Hétérosexuel	+	+	-	-
Patient 3	F	31	Congo	Hétérosexuel	+	+	+	-
Patient 4	F	31	Haïti	Hétérosexuel	+	+	+	+

Un seul patient toxicomane était positif et présentait par ailleurs une cirrhose post-hépatique B. Le conjoint de la patiente 4 est VIH + mais HTLV1 -.
Conclusion : la séroprévalence ELISA HTLV1 apparait faible (2,4%) et survenant essentiellement chez des patients venant de zones de forte prévalence (Afrique, Caraïbes). Ces résultats apparaissent identiques à ceux d'autres études effectuées en région parisienne.

A.553

Human Immunodificiency Infection in the Elderly: A Retrospective Analysis of 20 patients

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From January 1985 to June 1988 Twenty (20) patients over the age 60 years were diagnosed with HIV Infection/Aids according to CDC criteria group I-IV. Their ages ranged from 60-85 years with a mean of 66.1. The group included 18 men and 2 women. The risk factors for the men were Homosexuality, 6/18 (33%), IVDA 3/18 (15%), Hetersexual contact 1/18 (6%), both IVDA and sexual contact 2/18 (11%), blood transfusion 2/18 (11%), unknown risk factor 4/18 (22%). The risk factor for both females was heterosexual contact. The initial presentation of AIDS in the men was opportunistic infection. Pneumocystic (PCP) 9/18 (50%), Mycobacterium Tuberculosis(MIB) 3/18 (11%), concomitant PCP and MIB, 1/18 (6%) and fatal bacterical sepsis 2/18 (11%). Two males had malignant lesions; one with Kaposis Sarcoma and the other with Multiple Myeloma. On of the two women had PCP and the other was an asymptomatic carrier. 50% of both males and females presented with oral thrush and 45% had a history of Herpes Zoster. Several significant differences were noted in contrast to younger patients (YP) less than the age of 60. 1. The course of the disease was more aggressive. Only 1 of 10 patients with PCP (100% with Adult Respiratory Distress Syndrome) survived the initial episode. 2. 75% of elderly patients died within 3 months of diagnosis, compared to an average life span of 18-24 months in YP. PCP was often confused with exacerbation of Chronic Lung Disease and Congestive Heart Failure. 4. Cryptococcal meningitis, Cerebral Toxoplasmosis and HIV Encephalitis were often confused with organic brain syndrome, cerebral arterosclerosis and alcohol related brain injury, with initial manifestations of mental deteriation and fatigue. 5. Drug toxicity including Azidothymedine was extremly common, (up to 70% in the elderly HIV population compared to only 30% in YP).
In conclusion elderly patients with HIV usually have a typical predentation, increased severity and prognosis of HIV related illness and greater drug toxicity.

A.554

HIV INFECTION IN JUDICIAL AUTOPSIES

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The violent deaths, the suspects deaths and deaths with any delictous evidence must be investigated by a judicial autopsy. Considering the stigmatizing character of AIDS, the high incidence in homosexual and drug abusers and the high prevalence in prisons we expected that suicide, homicides and suspect deaths could occur in persons with AIDS more than in the general population. Through a retrospective approach of the reports of the "Instituto Médico Legal" of Sao Paulo City a statistical analisis will be done of the victims seropositives to the HIV as well as a comparison with the behavior of AIDS in Sao Paulo City. It will be also discussed the probable nexus between AIDS and the mechanisms of death. From May 1985 to October 1988, 97 bodies infected by HIV arrived at the "Instituto Médico Legal". They represented 0,3% of all the autopsies performed in this period. Of these cases, 55,7% were from natural death, 23,7% from suicide and 20,6% from homicide.

A.555

ESTIMATES OF THE AIDS EPIDEMIC IN COSTA RICA, 1989-1993

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Objective. To estimate the size and impact of the AIDS epidemic.
Methods. Five-year projections were obtained by fitting onto four statistical models all cases from epidemic onset in 1984 through December 1988.
Results. The data best fitted the power curve. Linear regression, exponential and logarithmic curves produced smaller R^2's and improbable case projections that are either too small or too large. 1) Epidemic in homo/bisexual men: the power curve projected 1989 cases (R^2=1) to be about twice those of 1988; thereafter, the doubling time likely increases. 2) Total AIDS cases: fitting by models yielded numbers lower than the number of cases already detected. 3) Total cases minus homo/bisexual cases: estimates were also low. The poor fitting of this subcategory of cases is accounted for by the early and now controlled epidemic in hemophiliacs, with occurrence of similar yearly number of cases, since 1984.
Conclusion. AIDS incidence in homosexuals is rising steadily, with no evidence to decline in the next decade. AIDS in hemophiliacs is not rising.

A.556

[illegible] INFECTION (HIV-1, HIV-2, HTLV-1) IN ASYMPTOMATIC WEST AFRICANS LIVING IN SPAIN

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Objective. It has been postulated an African origin of Human T-lymphotropic retroviruses. While HIV-1 and HIV-2 produced AIDS, the HTLV-1 may be the etiologic agent of a subacute myelopathy and an acute T lymphocitic leukemia. However, the world widespread of these viruses may occur by infected African persons which have emigrated to developed countries. We studied the prevalence of HIV-1, HIV-2 and HTLV-1 antibodies in West Africans immigrants of Barcelona, an industrial region of Spain.
Methods. We studied 102 subjects (96 males and 6 females) who came from Gambia (50), Senegal (22) and Mali (29). They have been living in Barcelona since 1983. Mean age was 26.3. None of them referred risk factors for HIV infection, but more than 70% were heterosexual promiscuous, with frequent sexual intercourse with Spanish prostitutes. Antibodies to HIV-1, HIV-2 and HTLV-1 were investigated by ELISA and Western blot was used as confirmatory test in repeatedly reactive samples.
Results.

	HIV-1+	HIV-2+	HTLV-1+
ELISA	3	8	5
WESTERN BLOT	0	3	1

Conclusions. a) Presence of serological markers of HIV-2 and HTLV-1 infection (but not HIV-1) in asymptomatic West African residents in Spain. b) Heterosexually promiscuity is involved in all cases of HIV-2 and HTLV-1 positive men. As most of Spanish prostitutes are also intravenous drug abusers, we wish to draw attention to the possible role of prostitutes as transmitters of HIV-2 and HTLV-1 from subjects from endemic areas.

A.557

EVALUATION DE LA SUSCEPTIBILITE A LA PREVENTION DU SIDA CHEZ LES ETUDIANTS DES UNIVERSITES D'AIX-MARSEILLE

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Objectif : L'information est l'outil principal de la stratégie de prévention contre le SIDA. Une enquête d'évaluation de cette information a donc été entreprise chez les étudiants des Universités d'Aix-Marseille.
Méthodes : Un échantillon de 3.200 étudiants a été réalisé par la méthode des quotas en fonction des éléments statistiques des Universités (répartition par âge, sexe, année et type d'études). 3.200 questionnaires à volet de réponse anonyme ont donc été envoyés par courrier par l'organisme d'Assurance-Maladie couvrant ces étudiants. 844 réponses ont été exploitées.
Résultats : La population étudiante est informée principalement par les médias (87 %) et est très sensibilisée au risque de SIDA. Toutefois, leur comportement sexuel s'est peu modifié (73 %). 33 % possèdent des préservatifs mais seulement 8 % les utilisent toujours (fille ou garçon). Parmi ces 8 %, 79 % considèrent le SIDA comme une menace personnelle. Ceux qui n'utilisent qu'occasionnellement le préservatif sont plus nombreux (25 % des filles, 40 % des garçons). Les principaux défauts reprochés aux préservatifs sont tout d'abord la diminution de la spontanéité puis du plaisir. Enfin, 52 % des étudiants aimeraient bénéficier d'un dépistage gratuit et anonyme pour en connaître les résultats (84 %) et 75 % accepteraient de faire partie d'un groupe témoin subissant un test.
CONCLUSION : Nous récoltons les fruits d'un programme national de prévention basé sur l'information mais dont la réalisation a été anarchiquement monopolisée par les médias. Ceux-ci mélangent couramment les informations journalistiques aux informations à but préventif. Des efforts restent à faire pour coordonner toutes les sources d'informations afin d'aboutir à un programme cohérent qui gagnerait en impact.

A.558

THE HIV EPIDEMIC BEYOND THE EPICENTER: "INNER CITY" EPIDEMIOLOGY IN A PREDOMINANTLY WHITE SUBURBAN POPULATION

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Objective. To characterize the epidemiology of HIV infection seen in a university-affiliated teaching hospital located in a suburban setting beyond the New York City limits in Long Island.
Methods. Hospital and clinic records of the Div. of Infectious Disease were used to create a computerized data base. Referral patterns were determined using home phone area codes.
Results. From 1981 to 1988, 808 patients with HIV infection were seen. 63% were from Nassau and Suffolk Co. (area 516), and 26% from Queens/Brooklyn (area 718). The characteristics of the group (in %) are as follows:

MALE	FEMALE	WHITE	NON-WHITE	GAY	IVDA	HETERO	TRANSF	CHILD	UNK
76	24	79	21	40	36	10	5	4	5

The population was predominantly white in all risk groups. However, 59/195 (30%) of women were non-white compared with 110/613 (18%) men (p<0.01) and 25/79 (32%) heteros were non-white compared with 144/729 (20%) with other risks (p=0.02). 68% of hetero cases occurred in women. No trends were discernible when case distribution was analyzed by year.
Conclusion. An epidemiologic pattern of HIV infection like that seen in non-white inner city populations, with an increased proportion of cases occurring in women, IVDAs and by heterosexual contact, is present in a largely white population drawn mostly from suburban Long Island. However, even in this setting, non-white women are over represented among heterosexual cases and in the group as a whole.

A.559

REGIONAL DIFFERENCES IN SURVIVAL WITH AIDS AMONG GAY WHITE MALES IN THE UNITED STATES

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Objective. To examine geographic variation in survival with AIDS among gay white males in the United States.
Methods. Survival curves are calculated using data from a census of 24,668 AIDS cases reported to the Centers for Disease Control by 10/3/88. Analyses are presented by region and controlling for the presence of PCP. Randomly selected sub-samples of n=2,500 are used to calculate Mantel-Cox statistics testing for regional variations in survival.
Results. Median survival in the Northeast=20.8 months; median survival in all other regions is less than 15.6 months. Survival density functions are presented for all regions. Survival is shortened for cases with PCP, however, Northeast survival time is longer for both PCP and non-PCP cases. (Mantel-Cox chi-square w/4 df.=21.94;p=.0002) No differences are found in reporting bias or patient mix which explain the phenomenon.
Conclusion. Cases diagnosed in the Northeast survive significantly longer than cases diagnosed in other regions of the U.S.A.. Possible explanations include differences in the health care provided, patients' treatment preferences, and regional differences in the prevalence and severity of opportunistic diseases affecting persons with AIDS.

A.560

POSSIBILITIES OF FORECASTING HIV SPREAD IN LARGE POPULATIONS. A MODELLING TOOL FOR DECISION MAKERS

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In comparison between different methods of forecasting the development of an epidemic, computer based simulation techniques are well established and show several advantages, among them high speed, flexibility, transparency, and reproducibility.

The program "AIDS Spread Simulations and Projections" (ASSP) is a modelling tool and was elaborated under the years 1985-1988. The user's interface is didactically guiding and does not require special mathematical knowledge. It is, adapted to a personal computer of good standard (IBM AT or compatible), used by several health authorities since early 1988. The principal structure of the program and possible applications are described.

A.561 CORRELATION OF INCUBATION PERIOD AND PROGRESSION TO DISEASE IN HIV CARRIERS

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Comparing about 90 different clinical follow-up studies from various regions in the world, we tried to define the progression rates of HIV infected persons to AIDS. The main problem is that different patient groups never are fully equivalent concerning important variables as their distribution into age and risk categories. Although a point of time may be known, when they were infected, it is usually unknown, when exactly they got infected. Comparing various studies, the co-factor time shows to dominate and to explain the apparent inconsistency of results referred by different authors. The shape of the probability distribution of incubation periods seems to be influenced by a continuous malignification of the dominating virus strain in the host, a feature we do know as enhancement of pathogenicity by repeated host passages, here, intraindividually, speeded up to a regularly occuring event by selective pressure due to the rapid antigenic drift of lentiviruses and their tendencially changing receptor tropism.

A.562 HIV SEROPREVALENCE AT COOK COUNTY HOSPITAL, CHICAGO: A TWO-YEAR FOLLOW-UP

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Objectives. To determine the prevalence of HIV infection among persons at risk of HIV infection at Cook County Hospital, Chicago, in 1987 and 1988, and to compare trends among groups at risk.
Methods. From 1/1/88 to 12/31/88, 2,084 clients received HIV antibody counseling. Demographics: 42% women, 58% men; 69% black, 15% Hispanic, 15% white. Of 2,084 persons counseled, 1,146 (55%) were tested in 1988; in 1987, 1,042 people were counseled and 522 (50.0%) were tested. Two positive EIAs and a positive Western Blot were considered positive. Class IV HIV infection was excluded.
Results. Table I shows the results: TABLE I * - to be presented

	1987			1988		
	N	POS	%	N	POS	%
GAY/BISEX	181	110	60.8	*	98	*
GAY/BI IVDU	15	11	73.3	*	7	*
IVDU	200	66	33.0	*	121	*
HETERO PARTNER AT RISK	50	12	24.0	*	9	*
TRANSFSN RECIP	10	3	30.0	*	0	*
MULT HETERO PARTNER	66	6	9.1	*	33	*
PEDIATRIC - MTHR AT RSK	10	3	33.3	*	4	*
TOTALS	522	208	39.8	1,146	272	23.7

Of those positive in 1988, 181 (82%) were male, and 31 (18%) female. By race, 181 (66.5%) were black, 55 (20.2%) Hispanic, and 34 (12.5%) white. Four (1.5%) were newborn & 31 (11.4%) were 18-24.
Conclusions. Overall, a 30.7% increase in HIV seropositivity was observed from 1987-1988. Increased access to HIV counseling and testing resulted in a 170.3% increase in HIV seronegative persons at risk counseled. Increased numbers of infected IVDUs and heteros were identified.

A.563 WOMEN WITH AIDS: A CONTINUING STUDY 1988

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Objective: To describe the epidemiology and natural history of HIV infection in women in Newark, New Jersey.
Methods: This is a continuation of our study of women with HIV disease started in 1980. The addition of 174 new cases in 1988 makes a total of 538 women seen with HIV infection at our facility.
Results: The women represent the population of the area surrounding our hospital (Newark has been described as the poorest large city in the US), with 156 (89.6%) Black, 13 (7.5%) Hispanic and 5 (2.9%) White. Their age range was 19-55 with 1 (.6%) less than 20, 42 (24.1%) aged 20-29, 106 (60.9%) aged 30-39, 21 (12.1%) aged 40-49 and 4 (2.3%) aged 50-55. Their risk for infection was IVDA in 105 (60.3%), hetrosexual exposure in 37 (21.3%), unknown in 29 (16.7%) and transfusion in 3 (1.7%). Of 46 documented opportunistic infections (OI) 22 (47.8%) were PCP, 13 (28.3%) tuberculosis, 6 (13.3%) cryptococcal meningitis, 4 (8.9%) toxoplasmosis and 1 (2.2%) lymphoma. There were 25 deaths in 1988 with an average age of 34.1 years. The average length of time from diagnosis to death was 15.5 weeks with a range of 2 days to 44 weeks. (14.5 weeks - 1987).
Conclusion: This is the first year that the number of new cases is not much increased from the previous year (169 new cases in 1987). PCP and tuberculosis remain the most common OI. Of concern is the increased number of deaths in 1988 (20 in 1987) and the continued short time span from diagnosis to death in the inner-city woman.

A.564 SURVEY OF STREETWALKING PROSTITUTES IN NEW YORK CITY FOR ANTI-HIV-1 ANTIBODIES

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Objective. To determine the rates of HIV-1 exposure in streetwalking prostitutes of New York.
Methods. In 1985-1988 prostitutes working on the streets of New York City were tested for anti-HIV-1 antibodies. Blood was drawn on-site, and was tested for antibodies by ELISA with Western Blot confirmation. The women were queried as to their ages, number of years worked, and histories of risk behavior: including history of transfusions, intravenous drug use, or lovers who were known to be intravenous drug users.
Results. The rates of positivity declined from 1985 to 1988.

	1985	1986	1987	1988
Number HIV-1 Positive	4 (19%)	4 (9%)	4 (6%)	2 (5%)
Total Number of Samples	22	43	67	37

A total of 169 women were examined, of whom 14 (8.9%) were found to be infected. Of the 20 (12%) who admitted to intravenous drug abuse, 6 (30%) were positive. Of the 149 (88%) who denied intravenous drug use, 8 (5%) were positive. In 1982, a similar survey of T_4/T_8 cells among women who worked the brothels and the streets of New York City, showed a rate of 19% immune deficiency.
Conclusions. Although there has not been an increase in the rate of infection among prostitutes, there remain significant numbers (as many as 5%) of infected women working the streets. An in-depth study and program of outreach to prostitutes in all of metropolitan New York City will begin in March of 1989.

A.565 *EFFECT OF AGE ON AIDS ATTACK RATE IN HEMOPHILICS IN CALIFORNIA*

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Comprehensive Care is provided to 90% of hemophiliacs in California by 13 Centers. For the year 1987, these centers reported on patient HIV antibody status, age of patient, level of clotting factor deficiency and hemophilia type. The number of AIDS cases in California for the purposes of this study, was that reported to the CDC to 12/31/1987. The increase by age groups in the HIV positivity rate and AIDS rate was statistically analysed. HIV serological status was reported on a total of 1438 individuals with hemophilia A and B. Of these there were 860 individuals (59.8%) whose serological status was known: 537 known a-HIV positive patients (62.4%), 323 negative (37.6%) and 578 patients (40.2%) had not been tested. The attack rate of AIDS is defined as the number of cases of AIDS patients reported as compared with the number HIV positives. This rate for the group as a whole was 11.5% or 62 cases among 537 seropositives; 14.6% (54 in 527) for those patients over 21 years of age and 4.8% (8 in 167) for those under 21 years (p .001). Despite an equivalent distribution of the date of diagnosis of AIDS, there was a bimodal distribution in the rate of AIDS among the age groups with the 6-12 year old and > = 21 year age group showing higher frequencies than those in the 13-20 age group.

A.566 PREVALENCE OF ANTI-HIV IN I.V. DRUG USERS OF LATINA PROVINCE,ITALY.

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Objective.To investigate the prevalence of HIV infection in i.v. drug users (i.v.d.u.) and to assess the distribution of other know risk factors.
Methods.All the i.v.d.u. attending public methadone maintenance clinics in the province of Latina,were offered the HIV antibody test.
Subjects repeatedly HIV positive (Elisa Abbot) confirmed by Western Blot (W.B.) were also tested for Hepatitis B markers and for syphilis (VDRL,FTA,-TPHA).History and clinical examination were performed to detect presence of genital warts and other sexually transmitted diseases (S.T.D.).
A standardized questionnaire with questions on sexual preferences, number of sexual partners,prostitution, needle sharing was submitted to them.
Results.Results are shown in table; 90% often shared syringes,while 20% had 3 or more sexual partners in the previous year,5% were omo-bisexual and 3% were prostitutes.

i.v.d.u.	tested	HIV+	HBsAg+*	HBsAb+*	VDRL/FTA/TPHA*	S.T.D. (*of 302 HIV+)
1203	658	302	25	140	16	24

Conclusion.Our data show the high prevalence of HIV infection in i.v.d.u. in our province.The high frequency of needle sharing is noteworthy.
The possible contributory role of sexual at risk habits to HIV transmission in i.v.d.u. should be further investigated.

A.567

36 MONTHS FOLLOW-UP OF HIV-1 SEROPOSITIVE INDIVIDUALS

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Objective - To evaluate the re-classification risk in HIV-1 seropositive patients at various clinical stages according to the CDC system.
Methods - Patients belonging to at risk categories were included: 25 homosexuals, 211 drug addicts, 22 heterosexuals. They were classified at the first medical check according the CDC system: 40 CDC-II, 218 CDC-III. Selected patients were admitted to a follow up protocol (24 and 36 months). Every 6 months a clinical up date was performed.
Results - The percentage of re-classified patients is as it follows

from CDC-II

CDC	6	12	24	36
II	100	89	64	42
III		11	29	14
IVA			3	22
IVC1			2	12
IVC2			2	10

from CDC-III

CDC	6	12	24	36
III	100	90	73	70
IVA		2	8	10
IVC1		1	5	7
IVC2		7	14	13

Conclusions - Immunological features and clinical evolution show that a high risk population is included in CDC-II patients, who appear less stable during the follow up (58% evoluted if compared with 30% of CDC-III).

A.568

ABSENCE ACTUELLE DE HIV2 A BRAZZAVILLE(CONGO)

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OBJECTIFS: Contribution à épidémiologie de HIV2 en Afrique, à étude de réactions croisées HIV1 et HIV2.

METHODES: Dans 1022 sérums de malades, sélection selon critères Bangui, et 573 sérums de donneurs de sang: détection d'anti HIV1 et anti HIV2 par ELAVIA I et II et confirmation(quelques sérums) par LAV BLOT I et II.

RESULTATS: 1°- ELISA: 1.1-Malades: HIV1+ et HIV2- = 490/1022(47,9%);HIV1 + et HIV2 + = 26/1022(2,5%); HIV1 - et HIV2+ = 34/1022(3,3%).- 1.2-Donneurs de sang: pour mêmes tests successivement:20/573(3,4%); 28/573(4,8%) 79/573(13,78%). 2°- WESTERN BLOT: avec HIV1: Chez malades: 62/64(96,8%); profil fréquent: Env: GP160, GP110, GP41; Core: P18, P25, P34, P40, P55, P68. Un seul cas de perte de P25.Chez donneurs de sang: 25/48(52,08%) confirmés, mais 16/48 réactions seulement avec 1 ou 3 protéines du Core: P18, P25, P34, P40, P51, P55. 7/48: aucune réaction. Avec HIV2: ni chez malades, ni chez donneurs de sang aucune protéine Env(GP36/41, GP105/130) n'a donné de réaction. Mais 31/64(48,4%) : réactions croisées avec core (1 ou plusieurs protéines): sur 31 cas, P36 trouvé 30 fois(96,7%), P26= 19(61,2%), P41 = 8(25,8%), P6 et P56= 1fois chacun(3,2%).

CONCLUSIONS: a)- HIV2 actuellement absent à Brazzaville, mais nombreuses réactions croisées(nécessité de tests de discrimination).b)-Confirmation de réaction croisée dans Core. c)- Problèmes de faux positifs en transfusion. d)- Perte de P25 rare chez nos malades.

A.569

HETEROSEXUAL TRANSMISSION OF HIV INFECTION IN A GROUP OF POPULATION OF MADRID CITY

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Objective. Epidemiological study of HIV infection in 318 subjects with the only risk of heterosexual transmission.
Methods. Computerized data of Internal Medicine and Dermatology Units of the Clinic were used for the analysis. Twenty two social and sanitary parameters of 318 patients (51 men and 267 women) were followed during two years.
Results. The incidence of HIV infection was of 26 cases (8,17%), (21 cases of stage II, 2 cases of stage III and 3 cases of stage IV). In the study of concomitant disease, of HIV infected patients, oral candidiasis and seborreic dermatitis were found statistically significant.
Anal intercourse was the only risk habit found with statistically significant differences. Low use of condom in HIV infected (23,07%) and seronegative patients (20,54%) was also observed.
Conclusion.

- The results are similar to others obtained in other big cities
- Condom use must be a great task for health professionals, and more knoledge is needed in health are education to improve the use of preventive methods.

A.570

SAFE AND UNSAFE SEXUAL PRACTICES AMONG HOMOSEXUAL MEN, AND THE RISK OF HIV INFECTION

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Objective : To assess the risk of HIV infection among homosexual men, with regard to safe and unsafe sexual practices.

Methods : Cross-sectional study among 300 homosexual outpatients of general practitioners and venereologists of the Paris area. The subjects were of unknown or of previously negative serological status. Before being tested, they were ask to fill a self-administred questionnaire, which focused on frequencies of protected and unprotected sexual practices ; for protected ones, the frequency of lubricant use was asked, since oily-based lubricants might have damaged the condom. To adjust for previously established risk factors, i.e. promiscuity and unprotected anal receptive intercourse, the comparisons were made using the Mantel-Haenszel procedure. Significant variables were then tested using a logistic regression.

Results : Practices associated with seropositivity were : protected anal receptive intercourse with lubricant (base unspecified) ; receptive ano-oral sex ; and rectal douching after sex. Practices not associated with seropositivity were : insertive and receptive genito-oral sex ; protected anal receptive intercourse without lubricant. Forty percent of the subjects used oily-based lubricants.

Conclusion : Reducing promiscuity and unprotected anal intercourse would not seem to achieve total prevention of infection. The use of oily-based lubricants with condoms and rectal douching after sex should be avoided.

A.571

UNE CLASSIFICATION CIM-9 POUR LES INFECTIONS PAR LE VIH L'EXPERIENCE FRANCAISE EN MORBIDITE HOSPITALIERE

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* Direction des Hôpitaux. ** Service des Statistiques, des Etudes et des Systèmes d'Information. *** Direction Générale de la Santé. Ministère de la Santé. Paris. France.

Objectifs : Evaluer de nouveaux codes CIM-9 pour les infections VIH en morbidité hospitalière.
Méthodes : Par rapport aux codes nord-américains, la version française a été simplifiée et actualisée (définition OMS 1988). Les codes des diagnostics principaux et secondaires de 3 911 hospitalisations (court séjour et hôpital de jour) réalisées dans 16 centres de référence durant l'année 1988, ont été analysées pour juger de l'utilisation de ces nouveaux codes.
Résultats

	N	%	
044.0 Infection aigue	19	0.5	
.8 Asymptomatique	862	22.1	24.2
.9 Infection VIH.SAI	64	1.6	
043.0 Lymphadénopathie	609	15.6	32.6
.3 Autres formes mineures	663	17.0	

SIDA avéré avec :	N	%	
042.0 Infections opportunistes	834	21.3	
.2 Tumeurs malignes	130	3.3	
.3 Troubles neurologiques	56	1.4	
.4 Troubles généraux	183	4.7	43.2
.7 Affections multiples	462	11.8	
.8 Autres affections	16	0.4	
.9 SAI	13	0.3	

Les codes Sans Autre Indication (SAI) sont très peu utilisés (1.9 %) et concernent fréquemment des SIDA pédiatriques (6/13). Le code 042.8 est utilisé pour les pneumonies interstitielles lymphoïdes (7/16). Deux codes particuliers à la version française (042.7, 043.3) sont précisés : 1) en cas d'affections multiples (042.7), on note toujours une infection opportuniste (pneumocystose 51.3 %, toxoplasmose cérébrale 18.1 %, cytomégalovirus 15.6 %, candidose oeso-trachéo-bronchopulmonaire 13.4 %) souvent associée à un Kaposi (32.7 %) ; 2) les autres formes mineures (043.3) sont pour 56.3 % des infections (candidoses 53.5 %, zona 20.6 %) et pour 28.7 % des affections immuno-hématologiques (thrombocytopénies 71.4 %, agranulocytoses 19.9 %).
Conclusion : Ces codes CIM-9 apparaissent adaptés à la morbidité hospitalière.

A.572

EVALUATION OF A PEDIATRIC AIDS OUTPATIENT PROGRAM.

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C.P.S. Centro. Madrid Council. Spain.

OBJECTIVE: To evaluate the children's AIDS program carried out in an outpatient clinic located in the "Centro" district of Madrid city.

METHODS: 130 children ranging from the age of 15 days to 13 years were studied. Biological and psychosocial parameters were analized.

RESULTS: 108 children (83%) were seronegative and 22 (13%) had antibodies at any time of their. All seropositives children had seropositive mothers. 33 per cent of the 12 children over the age of 15 months, are infected (7,3,4, and 4 years of age). All except one of them of 4 years (P2-A), are asythomatics after 18 months of follow-up. Two children were not followed-up.

Of those infants under 15 months, 20 per cent (2) became seronegative and 80 per cent (8) are still seropositive.

No one of the 86 children living with seropositive adults, and sharing house hold goods (57% of these considered risk goods), were infected

CONCLUSIONS: A diminution of the incidence of HIV infection in children over the age of 15 months, was observed.

The lack of transmission in house holders.

To emphasize the importance of biologic and social factors in health state of these children.

The low rate of abandonment of the program as it was carried out in an outpatient clinic in the community.

A.573

FIRST CASE OF HIV1/HIV2 INFECTION IN CAMEROON

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**** CENTRAL HOSPITAL, YAOUNDE, CAMEROON.

Objective. To report the first case of HIV1 and HIV2 infection diagnosed in a cameroonian patient. Up till june 1988, 6 000 sera were screened for HIV2 antibodies and all were found negative.

Methods. Systematic screening of patients referred to the University teaching Hospital, using Elisa test (Behring HIV1 and Elavia2) and Western Blot (Dupont and Diagnostic Pasteur) for confirmation.

Results. A 28 years old patient referred for prolong fever, weight loss and oral candidosis was recently found HIV1 and HIV2 positive. Looking at the past medical history, the patient had frequented West Africa.

Conclusion. From this case study, we should start thinking about the presence of HIV2 in Cameroon, considering the frequent movement of people between neighbouring countries.

A.574

HIV SPREAD IN PROSTITUTE POPULATION IN TOULOUSE (FRANCE)

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**Service de Dermatologie, CH La Grave, Toulouse, FRANCE.

Objective. To assess the risk of contamination through prostitution (male or female) in our city.
Methods. We systematically screened anti HIV-1 antibodies in 97 female prostitutes (9 coming from Ghana) and 16 travestites or transsexuals, regularly consulting at the Venereal Diseases Centre since May 1985, to January 1989. Screenings were realised using 2 immunoenzymatice techniques (Abbott and Wellcome). All positive sera were confirmed by the Western-blot assay (Du Pont De Nemours)
Results. 5 of the 97 prostitutes were seropositive : we screened the first one in 1985, two others in 1986, one in 1987, and one who seroconverted in 1988. But two of them were intravenous drug abusers, so it was not possible to incriminate sexual transmission with certainty. None of the Ghanean was seropositive. Among the travestites and transsexuals, one patient seroconverted in 1985, and 3 patients were seropositive (2 in 1986 and 1 in 1987). For these patients drug addiction is unknown.
Conclusion. The prostitute population of Toulouse seems to be relatively free of HIV-1 contamination. But these results do not entirely reflect the true situation as a marginal prostitution also exists with people who are generally not subject to any control. Although these results are relatively reassuring, elementary precautions must be taken to prevent the spread of the disease, since contamination through prostitution has been shown to be a real risk.

A.575

THE NEW CASE DEFINITION CRITERIA, ITS IMPACT ON EPIDEMIOLOGICAL SURVEILLANCE IN SPAIN.

De Andrés, Rafael*; Tello, Odorina**; Madrano, Mª José**.
* Secretaría General del Plan Nacional sobre el SIDA;
** Subdirección General de Información Sanitaria y Epidemiología, Madrid Spain.

Cumulative AIDS cases in Spain on date December 21st. 1988 are 2165. Modifications of case definition criteria for reporting AIDS were undertaken in August 1987 by CDC, accepted by WHO in September and applied by the European countries since January 1st 1988. We have studied the impact of these new criteria of case definition among cases diagnosed in Spain since 1981. Since January 1st. 1988 a 72.58% case increase has been detected applying the new criteria of case definition in respect to the old ones. By the new criteria the retrospective revision of cases diagnosed before this last date classified as no AIDS by the old criteria means a 13.19% increase in 1984, 10,76% in 1985, 13,88% in 1986 and 30.13% in 1987. This impact is clearly higher among IVDU (47,34%) and children born from mothers at risk (58.33%) than in the homosexual transmission category (17.27%). The impact is also different by pathological and transmission categories. Kaposi sarcoma is increased 1.29% in the homosexual transmission category and 4.76% among the IVDU. Nevertheless, a 22.56% increase associated to opportunistic infections is detected in the homosexual transmission (800% increase associated to extrapulmonar tuberculosis) 26.93% among IVDU (7,900% increase associated to tuberculosis extrapulmonar), a 10.00% in the heterosexual transmission category and 47.22% among children born from mothers at risk. Conclusions: 1) Different impact is observed in different country areas in respect to pathological background and epidemiological pattern. 2) The relevance of these results is important for epidemiological analysis, trends and predictions. 3) This different impact should be considered by Publich Health strategies and policies on people's perception about the case number increase.

A.576

PREVALENCE OF DIFFERENT RETROVIRUS IN SPANISH INTRAVENOUS DRUG USERS DURING 1.987-1.988. CLINICAL FINDINGS OF SEROPOSITIVES.

Contreras G., Garcia Saiz A., Vallhonrat E., Varela J.M., Peres Alvarez L., Najera R. Instituto de Salud Carlos III, Madrid, Spain.

OBJETIVE.- To analyze the seroprevalence of HIV-2 and HTLV-I in spanish intravenous drug users (IVDA) and the clinical findings of seropositives to HIV-1 in relationships to the antigenemia status. We determine as well — the incidence of coinfection with other infectious agents.

METHODS.- Sera collected from 4.269 IVDAs were tested (1.888 in - 1.987 and 2.381 in 1.988). The presence of anti-HIV-1, -HIV-2, -HTLV-I antibodies was revealed by ELISA. IFA and WB was used as a confirmatory test. — Antigen ELISA test was used for HIV p24 antigen detection.

RESULTS.- The prevalence of HIV-1 was 64,7% in 1.987 and 61,9% in 1.988. Data collection are ongoing and analysis suggests up to date that a - 70% of seropositives still asyntomatic and a 30% shows some patology related with HIV infection. We are currently performing the seroprevalence of anti-HIV-2 and HTLV-I in a group of IVDAs with statistic significance. A 8% shows HBsAg and a 2,5% active syphilis.

CONCLUSION.- The prevalence rate, about 60% during 1.987 and 1.988 and similar to previous years, is high enough to indicate a serious problem of HIV infection among the spanish drug users. Very preliminary results indicate no incidence of HIV-2 and HTLV-I in this IDVA population.

A.577

CONTROL OF HIV TRANSMISSION IN THE NATIONAL BLOOD BANK IN MALI

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Since the beginning of the national AIDS program in Mali in 1987, the national blood bank was one of the strategic points for detection, prevention of the transmission of the human retrovirus and the follow up of the prevalence of HIV infection among blood donors. Blood donation was performed from pregnant women, young military recruits and students. Consecutivly in 1987 a total of 1140 blood samples and in 1988 a number of 1841 were tested using "Rapid Elisa mixt" to detect HIV1 and HIV2.

The positive samples were then confirmed by Western Blot.

Results : A steady increase in the seroprevalence of HIV infection was observed. Among 1140 sera in 1987, nineteen (19 = 1.66 %) and 1988 out of 1841 sera, seventy six (76 = 4.1 %) were found positive. This represent a total increase of 256.25 % in one year.

Conclusion : In both years the studied cohort was not randomised and and is not representative of the Malian population. Allthough in the country the infection rate is generally low, an evidence of rapid expansion of the epidemic is demonstrated in this study. Beside dispositions undertaken for transfusion of safe blood only, a large restructuration program has started which intend to improve the technical basis and conservation of blood.

Thus the efforts of the national AIDS committee to prevent the transmission of the retrovirus should be activly reinforced.

A.578

THE NEW CASE DEFINITION CRITERIA, ITS IMPACT ON EPIDEMIOLOGICAL SURVEILLANCE IN SPAIN. De Andrés, Rafael*; Tello, Odorina**; Madrano, Mª. José**.
* Secretaría General del Plan Nacional sobre el SIDA;
** Subdirección General de Información Sanitaria y Epidemiología, Madrid, Spain.
Cumulative AIDS cases in Spain on date December 21st. 1988 are 2165. Modifications of case definition criteria for reporting AIDS were undertaken in August 1987 by CDC, accepted by WHO in September and applied by the European countries since January 1st 1988. We have studied the impact of these new criteria of case definition among cases diagnosed in Spain since 1981. Since January 1st. 1988 a 72.58% case increase has been detected applying the new criteria of case definition in respect to the old ones. By the new criteria the retrospective - revision of cases diagnosed before this last date classified as no AIDS by the old criteria means a 13.19% increase in 1984, 10,76% in 1985, 13,88% in 1986 - and 30.13% in 1987. This impact is clearly higher among IVDU (47,34%) and children born from mothers at risk (58.33%) than in the homosexual transmission category (17.27%). The impact is also different by pathological and transmission categories. Kaposi sarcoma is increased 1.29% in the homosexual transmission - category and 4.76% among the IVDU. Nevertheless, a 22.56% increase associated to oportunistic infections is detected in the homosexual transmission (800% increase associated to extrapulmonar tuberculosis, 26.93% among IVDU (7,900% increase associated to tuberculosis extrapulmonar), a 10.00% in the heterosexual transmission category and 47.22% among children born from mothers at risk. Conclusions: 1) Different impact is observed in different country areas in — respect to pathological background and epidemiological pattern. 2) The relevance of these results is important for epidemiological analysis, trends and predictions. 3) This different impact should be considered by Publich Health — strategies and policies on people's perception about the case number increase.

A.579 AIDS IN THE NORDIC COUNTRIES - PREVENTION AND CONTROL

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Psychological, social, administrative and political aspects of AIDS in the Nordic countries have been reviewed by the Nordic School of Public Health.

As expected, the countries appear quite similar. Specified AIDS-commissions have been established, closely linked to governments. Specific target groups like homosexuals have been involved in preventive activities. Health education has been depicted the most important issue to combat AIDS. Large campaigns have been launched directed to the general public and towards groups like school children and health personell. Knowledge about AIDS has been seen to be generally good and improving. Systematic knowledge about sexual behaviour, however, is virtually nonexisting. Donated blood and organs are compulsorily tested. Anyone person can have a test and remain anonymous except in Iceland where the person has to identify himself at the test site, but is reported by code.

Treatment and care is similar in the Nordic countries basically handled by the health authorities. Voluntary and private organisations are, however, more important than generally in the health sector.

Differences exist in legislation. In Sweden and Iceland HIV-infection is under the law for sexually transmitted diseases. In Finland, it is a notificable disease while there are no specific legislation concerning HIV-infection in Denmark and Norway.

A.580 RISK PROFILE FOR HIV INFECTION AT A SEXUALLY TRANSMITTED DISEASE CLINIC.

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Objective. To determine HIV risk profile of HIV infected individuals in an STD clinic population, and coexisting STD's at time of diagnosis.
Methods. One hundred and forty patients were counselled and tested for HIV antibody, at an inner city STD clinic over a 7 month period. Thirteen (9 %) patients tested positive for HIV antibody by ELISA and Western Blot. Due to anonymous testing only 6 patients could be identified for post testing counselling and follow up.
Results. All 6 patients were males, mean age 29.2 ±7.4(SD) years. Risk factors identified were : Intravenous Drug User, 5 (39 %) patients; Homosexuals, 4 (31 %) patients; Sex with prostitute, 2 (15 %) patients; Intravenous Drug User and Homosexual, 1 (7 %) patient; Unknown, 1 (7 %). Four homosexuals had syphilis with an RPR titer ranging between 1 : 8-4096. 1 patient had a rising RPR titer despite treatment with I.M Penicillin (total 7.2 million units). 3/6 patients had evidence of an ulcer or skin breakdown at the time of diagnosis.
Conclusion. The above data suggest that the majority of patients identified with HIV infection in an STD setting are still within a recognised high risk group. However sexual behaviour patterns need to be modified in order to limit heterosexual transmission. Patients with genital area skin breakdown appear to particularly be at increased risk for acquiring syphilis and HIV infection.

A.581 Evaluation of a multidisciplinary HIV diagnosis anc management centre, Sydney, Australia.

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Albion Street (AIDS) Centre, Sydney Hospital, Sydney, Australia.

Objective: To provide a multidisciplinary diagnosis, ambulatory care and early intervention service for persons infected with HIV.
Method: The Albion Street (AIDS) Centre, established in March 1985, is staffed by 45 full time professional and support staff including doctors, nurses, counsellors and research officers. The Centre provides free and confidential pre and post-test counselling, HIV antibody testing, medical management of HIV related signs and symptoms, referral and emotional support groups. A computer based medical record system was developed and implemented to enable management of ongoing epidemiological surveillance, evaluation of risk education programmes and early intervention drug trials.
Results: To the end of December 1988 a total of 11340 clients had been tested at the Centre, 9049 male, 2259 female, 24 transsexual or unknown, 1179 intravenous drug users and 401 prostitutes. Of the total 1448 (12.8%) were diagnosed as HIV antibody positive, 1365 (94%) were homosexual or bisexual. 36 (5.6%) of the heterosexual intravenous drug users and 7 (1.5%) of blood transfusion recipients tested were infected. Over 70% of cases initially diagnosed by private physicians.
Conclusion: The comprehensive and specialised services provided by the Centre have resulted in it becoming the major referral clinic for management of early HIV infection. The Centre provides an early diagnosis and management model that facilitates effective implimentation and evaluation of intervention strategies aimed at slowing disease progression.

A.582 VIRAL HEPATITIS B(HBV)AND AIDS IN RISK COMMUNITIES IN THE NORTH-EAST OF ARGENTINA(NEA)

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*Centro de Tecnología en Salud Pública,UNR;**Comité Prevención SIDA,Rosario, Santa Fe,Argentina.

Objective. To study the attack rate of HBV and HIV in drug addicts(IVDA)and homosexuals(HS),compared with the general population as per samples collected from voluntary blood donors(VBD).
Methods.Studies were made on samples from communities seeking medical advice in response to COPRES appeal.HBV-carriers were differentiated thru ELISA HBsAg and previously infected ones, thru ELISA anti-HBc. All sera were searched for HIV thru ELISA and confirmed thru immunoelectrotransference(WB).
Results.

Community	HIV	(No)	HBsAg(+)	%	Anti-HBc(+)	%
IVDA	(+)	(154)	16	(10)	90	(58)
	(-)	(373)	32	(8.6)	231	(62)
TOTAL		527	48	(9.3)	321	60
HS	(+)	(43)	3	(7)	32	(75)
	(-)	(408)	28	(7)	306	(75)
TOTAL		451	31	(7)	338	75

Conclusion.HBV-infection is 5 to 8 times more frequent in the above risk population than among VBD in the NEA. HBV attack rate is higher among HS than among IVDA. HBV-chronic carriers were found more often among IVDA than among HS. There are more HBV-chronic carriers among HIV+IVDA than among HIV+HS. If IVDA samples are received in blood banks as VBD ones, HBV transmission risk will grow accordingly, unless adequate controls are implemented. HIV presence is not statistically significant to determine HBV presence in each population.

A.583 LYMPHADENOPATHY IS A WEAK PREDICTOR OF CLINICAL OUTCOME IN HIV INFECTION

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Objective. To determine the relationship of lymphadenopathy to clinical outcome in HIV infection.
Methods. Lymphadenopathy was measured by trained examiners in a population-based sample of 385 men from the San Francisco Men's Health Study who were seropositive at entry in Fall 1984. The incidence of symptoms of progressive HIV infection and of AIDS were determined at 42 month's follow-up.
Results. The presence of ≥2 extrainguinal nodes ≥1 cm and the presence of total peripheral lymphoid mass ≥ 10 cm were both associated with slight but not statistically significant increased risk of developing both HIV-related symptoms and AIDS.

Risk of:	Symptoms	Odds Ratio (95% CI)		Odds Ratio (95%CI)
< 2 Nodes	31/83 (37%)	1.4 (1.0-1.9)	14/98 (14%)	1.5 (0.9-2.6)
≥ 2 Nodes	121/232 (56%)		63/285 (22%)	
< 10 cm	78/159 (49%)	1.3 (1.0-1.7)	38/192 (20%)	1.5 (0.9-2.4)
≥ 10 cm	31/47 (66%)		18/60 (30%)	

In a multiple regression analysis controlling for CD-4, beta-2 microglobulin and symptoms, lymphadenopathy did not independently predict AIDS (p=0.7).
Conclusion. Lymphadenopathy measured in two ways predicts future development of clinical illness or AIDS only weakly in HIV infection.

A.584 DIAGNOSIS AND MORTALITY TRENDS IN AN OUTPATIENT AIDS CLINIC

Keyes, Craig; Kelly, J.; Marte, C.
Bellevue Hospital Center/Community Health Project NY,NY USA.

Objective: To review trends in diseases of diagnosis and death in a community based primary care AIDS clinic population as a basis for improved management.
Methods: All cases (169) of AIDS diagnosed from 1/1/86 to 1/1/89 in a primary care out-patient AIDS clinic were reviewed for index diagnosis, year of diagnosis, diagnosis of death and year of death.
Results: Trends in diseases of diagnosis and diseases of death over three years are as follows:

Disease of Diagnosis

	1986	1987	1988
PCP	21(41%)	21(40%)	19(40%)
KS	22(43%)	17(32%)	13(27%)
All Other	8(16%)	15(28%)	16(33%)

Disease of Death

	1986	1987	1988
PCP	8(36%)	4(11%)	0(0%)
KS	1(5%)	7(20%)	8(35%)
Unknown/ Wasting	2(9%)	10(29%)	10(37%)
All Other	11(50%)	14(40%)	9(33%)

Conclusion: With the advent of PCP prophylaxis and improved management, mortality from PCP has decreased while the incidence of PCP has not changed significantly in our clinic population. More aggressive PCP prophylaxis may reduce the incidence of PCP as an index diagnosis. Mortality from pulmonary KS has increased, although KS has been less frequently diagnosed overall in these patients. The increasing number of AIDS diagnoses based on other diseases suggests that one should be alert to subgroups who would benefit from earlier diagnosis and treatment. Of special concern are the increased deaths from unknown causes. Perhaps more aggressive work-up might have elicited a definite diagnosis amenable to treatment, e.g., extrapulmonary pneumocystis.

A.585

SEROLOGICAL TREND FOR 22 MEXICAN HOMOSEXUAL PATIENTS THAT ARE SINTOMATIC AND ASINTOMATIC SEROPOSITIVE

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Objetive.
To determine the presence of HIV Ag and the absence of p24 for one full year in 22 patients that were positive asintomatic and sintomatic.
Methods. The study was done in 16 asintomatic patients, 3 in fase I, 2 in fase II, and 1 with ARC. A determination of ENV/CORE and detection of HIV Ag in serum was made to each and everyone of them.
Results. The ones on fase II showed absence of p24 and only one was positive for HIV Ag; the patient with ARC was negative for p24 and positive for HIV Ag and one of the asintomatic patients showed absence of p24 and HIV Ag negative the rest of the patients did not show presence of p24 non HIV Ag
From this group of patients 5 have died and only one with HIV Ag positive in serum manifested all fases of the illness while the other four were victims of fulminant neurological alterations
Conclusion.
Acording to these finding we can conclude that for the group of patients, the trending stablished turned out to be quite interesting since for those patients that go through all fases of the illness it is posible to detect HIV Ag and the loss of p24 at a certain stage while in those that presented neurologicial alterations the HIV Ag was never detected.

A.586

PREVALENCE OF HBV AND HDV MARKERS IN PATIENTS INFECTED WITH HIV IN BUENOS AIRES.

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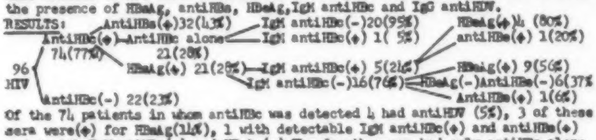
OBJETIVE: The purpose of this study is to evaluate the prevalence of HBV and HDV markers in a group of patients infected with HIV. METHODS: 96 patients (70 males-26 females between 15 and 53 years) were studied. 72 were IVDA, 17 homosexual, 6 partners of HIV(+)Patients and 1 hemophilic. The HIV seropositivity was detrmined by EIA and WB and they were all studied with HBV and HDV markers by EIA. AntiHBc titers were screened and on the positive patients it was detected the presence of HBsAg, antiHBs, HBeAg, IgM antiHBc and IgG antiHDV.

RESULTS:



Of the 74 patients in whom antiHBc was detected 4 had antiHDV (5%), 3 of these sera were (+) for HBsAg (14%), 1 with detectable IgM antiHBc(+) and antiHBe(+) and 2 with IgM antiHBc(-) and HBeAg(+). The fourth serum had only antiHBc alone (AntiHBcIgM-); 2 of these patients were IVDA, 1 homosexual and 1 bisexual IVDA. CONCLUSIONS: It's to be concluded that in the wholed population studied 77% had positive HBV markers and in the 22% HBsAg was found. The high prevalence of AntiHBc alone to be linked to parenteral addiction. The 5% of antiHDV that represents the 14% of the positive HBsAg sera, confirms the high rate of this virus in relationship to intravenous drug abusers in our country.

A.587

HAUTE PREVALENCE DE L'HTLV-1 ET FAIBLE PREVALENCE DU HIV CHEZ LES LEPREUX DE COTE D'IVOIRE.

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Objectif : Les études concernant lèpre et HIV ou HTLV-1 sont exceptionnelles. Il était intéressant d'étudier :

- la prévalence HIV et HTLV-1 chez les lépreux par rapport aux témoins
- l'influence des formes de lèpre et des zones géographiques sur la séropositivité

Matériel et méthodes : 584 sérums de lépreux et 812 sérums de population témoin ont été soumis à des tests de :

- dépistage HIV-1 et HIV-2 par ELISA Abbott recombinant HIV-1/HIV-2 EIA
  HTLV-1 par ELISA Abbott HTLV-1 EIA
- Confirmation HIV par Western blot Pasteur (Rapid Lav Blot 1 et 2)
  HTLV-1 par Western blot "maison" avec la souche HUT 102

Résultats :

	Lépreux	Témoins	Stat.
HIV	4,9 %	3,9%	NS
HTLV-1	14,4 %	1,9%	S (p 0.001)

En fonction des zones géographiques les prévalences chez les lépreux varient de 0,9 à 7,7% pour HIV et de 3,2 à 30,3 % pour HTLV-1. Il n'y a pas de différence significative de séropositivité pour un rétrovirus donné selon la forme de lèpre.
Conclusion : Les lépreux de cette étude menée en Côte d'Ivoire ne sont pas plus souvent infectés par le HIV-1 et/ou HIV-2 que les populations témoin.
Le virus HTLV-1 est retrouvé de façon significativement plus élevée chez les lépreux que chez les témoins (14,4% contre 1,9%). Il semble exister chez les lépreux des "clusters" HTLV-1.

A.588

EPIDEMIOLOGIC SURVEILLANCE OF HUMAN IMMUNODEFICIENCY VIRUS IN THE INDUSTRIAL CITY OF SIBERIA

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Investigation of the epidemiology of human immmunodeficiency virus (HIV) is based on case detection in the Centers for Disease Control. As of December 1988, 45,807 cases of HIV have been tested in non-endemic areas. In the first stage of our investigation the inquiry-test data for all persons with clinically manifested immunodeficiency were used for detecting cases needed further clinical and immunological assays. A total of 1,078 of 45,807 reported cases with clinically manifested immunodeficiency were subjected to clinical and immunological testing. HIVs kill by damaging and ultimately destroying host's immune system, therefore cases with T-helper cell insufficiency were of our special concern. A randomized study for HIV identification was carried out in 40,7033 donors and in 3,473 cases, members of a high-risk group (homosexuals, drug addicts, intravenous drug abusers and women at risk), as well as in 523 foreigners and Soviet people who might have imported HIV from abroad. Immunoenzyme analyses were assayed in 37,867 cases by Soviet test-system and by MR-700 Microplate Reader, Zeidel Medizin Technik FRG. Our epidemiologic surveillance helped to detect one seropositive patient for HIV. This patient had been on a business trip abroad for about two years. Our data suggests that epidemiologic surveillance is recommended for AIDS identification in the non-endemic areas. All individuals at risk should be tested for direct HIV control.

A.589

AIDS: KNOWLEDGE AND ATTITUDES AMONG DIFFERENT ETHNIC GROUPS

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AIDS is an international as well as a national public health problem. Since the identification of acquired immunodeficiency syndrome (AIDS) in 1981, the number of cases has steadily increased throughout the world. The World Health Organization estimated that the world total of AIDS cases will reach up to three million over the next five years. Despite the considerable national effort to promote AIDS education among the public, there are still some misconceptions regarding some alledged modes of transmission of AIDS.

To study the ethnic differences in knowledge, attitudes, and beliefs abount AIDS, we surveyed 161 U.S. residents from 31 different countries. An anonymous self-administered questionnaire was developed to compile this data.

The results of this survey suggest that AIDS-related knowledge is generally incomplete and there are still misconceptions about AIDS regardless of ethnicity or national origin. However, Americans and Europeans were more aware of some of the modes of contracting AIDS than people from Asia, the Middle East, or Africa. We conclude that some ethnic and nationa groups are more likely to have misconceptions about AIDS than others. Therefore, additional public educational programs and activities with special outreach programs for ethnic groups in the United States must be accomplished through methods that are culturally sensitive if they are to be effective.

A.590

AIDS ON LONG ISLAND.

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Objective. To describe the characteristics of the AIDS epidemic on suburban Long Island.

Methods. A retrospective review of epidemiologic and demographic data from the records of AIDS patients seen at Nassau County Medical Center (NCMC) during 1987 and 1988 was performed.

Results. Nassau County is the suburban area with the largest number of AIDS patients in the United States. NCMC is a NY State-designated AIDS Center operated by the county government. The AIDS Program includes a 25-bed inpatient unit and an outpatient clinic with >1500 visits annually. During 1987 and 1988, 229 CDC-confirmed AIDS patients were seen. Of these, 172 were men (75%) and 57 were women (25%). 57% were intravenous drug abusers (IVDAs), 28% were homosexual or bisexual males (HS/BS), 3.5% were from an endemic area, 3% were heterosexual contacts of HIV-infected persons (HET), and 4% had no identifiable risk. The others were children or acquired HIV through exposure to blood products. Among IVDAs (n=113), 55% are black and 45% are white. In 1988 specifically, 51% were white and 49% were black.

Conclusion. Risk factors for AIDS on suburban Long Island parallel those of New York City. At NCMC, blacks account for nearly half of all AIDS patients seen during the past two years, although they comprise only 7% of the total population in Nassau County. Women now account for 25% of cases. In contrast to New York City, the number of white IVDAs on Long Island is significantly larger, and equal to the number of black IVDAs in the region. These trends may reflect the patterns of AIDS demographics in suburban communities, especially those in close proximity to New York City and should be useful in planning for the care of the increasing numbers of HIV-infected patients expected in the future.

A.591

ELECTRONIC REPORTING SYSTEM FOR AIDS SURVEILLANCE IN CANADA

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Objective: To describe the development of an electronic system for national reporting of AIDS surveillance data.
Methods: AIDS is a reportable condition in all provinces and territories in Canada. Through collaborative efforts between the provincial/territorial Ministries of Health and National Health and Welfare, a systematic method of reporting AIDS cases was established using a standardized case report form.
Results: The case report form was developed to collect demographic information, behavioural risk factors, clinical, and laboratory data. Completed forms are sent to the provincial/territorial Ministries of Health for evaluation and are then forwarded to the Federal Centre for AIDS. In 1986 the provinces/territories were introduced to an electronic bulletin board system, designed to facilitate data collection and dissemination. They were provided with custom computer software, and hardware where needed, to standardize the method of reporting cases electronically. Training workshops were provided to familiarize key groups with software and the process of transmitting data electronically.
Conclusions: This standardized method of reporting provides rapid collection of data and dissemination of reports. Effective communication between key groups plays an integral part in the success of this and other surveillance systems.

A.592

A.593

AN UPDATE ON HIV-SEROPREVALENCE STUDIES IN THE NETHERLANDS.

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Currently available data on HIV seroprevalence among selected groups in the Netherlands are inadequate to assess the spread of the epidemic among homosexual men, intravenous drug users or the population-at-large. So far, only volunteer studies have been conducted. Additional surveys are required: 1) to establish a base-line of infection levels in selected groups, 2) for public health management and policy, and 3) for modelling and prediction of the course of the epidemic.
Various options for conducting such surveys are discussed, and existing blood collections and hospital samples are identified. Anonymous testing of some of these blood samples is proposed to eliminate the self-selection bias which renders studies comprised of voluntary participants uninterpretable. Some legal and ethical objections have been raised that so far have prevented anonymous testing in the Netherlands. There is no general agreement yet that anonymous testing is needed to collect information that otherwise would not be available, and that such testing is justifiable if anonymity of the data is assured. In the meantime seroprevalence studies with informed consent will be considered in pre-selected institutions, to document wether compliance is high enough for valid inferences to be made from such studies.

A.594

PREVALENCE OF HIV-1 ANTIBODY AMONG GAY MEN IN THE U.K.: DIFFERENCES BETWEEN CLINIC ATTENDERS AND NON-ATTENDERS.

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Objective: To estimate the prevalence of HIV-1 antibody in the homosexually active male population of England and Wales and, bearing in mind that current estimates of prevalence and possible spread are based on those attending STD clinics, to estimate the differences between clinic attenders and non-attenders.
Methods: 525 gay and bisexual men in two centres in the U.K., London and South Wales, were recruited using a variety of methods and interviewed in a non-clinic setting. Blood samples were volunteered from 346 (66%) of these and tested for HIV-1 antibody using the Wellcome competitive assay. Positives were confirmed in the first instance with the Abbott recombinant assay.
Results: In London, 19 (9.4%) of the bloods tested positive to HIV-1 antibody. and in South Wales, 5 (3.4%). When allowance is made for verifiable test results from those who did not provide blood samples, these rates rise to 13.4% and 3.9% respectively. The proportion of positive results among those attending clinics was 13.4% in London and 7.4% in South Wales while the proportions among non-clinic attenders were 5.7% and 1.1% in the two sites. The higher rates among the clinic attenders are comparable with those obtained in clinic studies in comparable areas of the U.K.
Conclusions: Rates of seroprevalence of HIV-1 among gay and bisexual men based on bloods collected at clinics appear to be overestimates.

A.595

LA DEMANDE D'EXAMEN SEROLOGIQUE HIV CHEZ LE MEDECIN GENERALISTE

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Depuis le mois de mai 1988, la demande pour un test HIV a été introduite dans le progamme d'enregistrement de morbidité de 150 médecins généralistes sentinelles constituant un réseau représentatif des médecins généralistes de Belgique. L'objectif est d'évaluer dans quelle mesure le médecin généraliste est confronté avec le problème du SIDA, de suivre l'évolution de la demande au cours des années et de caractériser les situations dans lesquelles cette demande est formulée.
L'enregistrement est anonyme et comprend les données suivantes : âge et sexe, motif de la demande, comportement à risque éventuel, test HIV effectué ou non.
Les résultats des premiers mois de l'enregistrement montrent que moins d'une demande par mois et par médecin (0,8) est actuellement rencontrée. Près de 70% des femmes qui demandent un test ne présentent aucun facteur de risque alors que la proportion n'est que de 44% chez les hommes. Le taux de positivité des tests demandés est de l'ordre de 1,3%. Les résultats sont comparés avec ceux qui ont été enregistrés en France et en Suisse par des réseaux comparables.

A.596

A.597 EPIDEMIOLOGICAL, POLICY AND PLANNING ISSUES IN HIV DISEASE IN A BRITISH HEALTH REGION

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Objective To describe the epidemiological, policy and health services planning issues in relation to HIV disease within a region of the British National Health Service.
Methods Data on the regional epidemiology of HIV disease and the distribution of services were reviewed and the strategic policy and planning issues identified.
Results The North East Thames is the British health region second most affected by AIDS and has consistently contributed approximately 18% of all cases of AIDS diagnosed in the United Kingdom. Analyses of the geographic distribution of people with AIDS by where they receive medical care and where they live reveals that a few central London districts have attracted a disproportionate number of people with AIDS. These central London districts would be unable to continue to provide care for the vast majority of people with AIDS in the region. The Regional Health Authority has developed a policy for service development based upon the available epidemiological information. The strategy includes upgrading genitourinary medicine and problem drug services throughout the region, providing care as close as possible to where people live and establishing an appropriate balance between hospital, home and non-home non-hospital services. All districts have been funded to undertake educational, training, counselling and health promotion activities. Limitations within this approach to planning services are identified.
Conclusion The British National Health Service provides the potential for developing coordinated services of a high standard on a regional basis.

A.599 DECONTAMINATION OF AN HIV CONTAMINATED CPR MANIKIN:

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OBJECTIVE: Manikins are used widely for cardiopulmonary resuscitation (CPR) training. Simulating a "worst-case scenario", a manikin was contamined in different experiments with either cell-free or cell associated HIV-1. Recommended decontamination procedures were compromised by maintaining a wet surface for 10 or 5 sec rather than the recommended 30 sec. The experiment also addressed the relative contributions of chemical disinfection and the mechanical action of wiping.
METHOD: The manikin was contamined with either a virus saturated swab containing cell-free HIV-1 ($5x10^5$ infectious units/ml) or with a pipette containing cell-associated HIV-1 ($5x10^6$ chronically infected CEM cells/ml). The decontamination procedure consisted of 70% isopropyl alcohol sponge or spray or dry 4x4 sponge for 10 or 5 sec, drying time of 30 sec and 5 sec of wiping the surface. After each maneuver a sample from the manikin surface was obtained, cultured in AA5 or CEM cells and the presence of virus determined by reverse transcriptase assay and by quantitative p24 antigen detection (Elisa).
RESULTS: HIV-1 was detected after manikin contamination but not after disinfection with alcohol for 10 or 5 sec. HIV-1 was detected both after initial contamination and after wiping with a dry 4x4 sterile sponge.
CONCLUSIONS: Decontamination of an HIV-1 cell free or cell associated contaminated CPR manikin was achieved in 5 sec with either a 70% isopropyl alcohol sponge or spray, but not using only a dry 4x4 sponge demonstrating the importance of chemical disinfection.

A.601 RESISTANCE OF HUMAN IMMUNODEFICIENCY VIRUS TO DISINFECTANTS AND FIXATIVES

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Previous reports that HIV is susceptible to disinfectants are based on suspension tests. We tested 70% alcohol (IMS, Alcohols Ltd.; final concentration ethanol 63.8%, methanol 3.5%, water 26.5% v/v), acetone, 1% and 2% alkaline glutaraldehyde (Cidex, Surgikos Ltd) against HIV dried on a surface. The following inocula were dried in triplicate on to sterile coverslips and immersed in disinfectant: 1) Cell-free HIV in 10% serum at 10^4 TCID (TCID = reciprocal of the highest dilution of virus infecting tissue cultures within 7 days); 2) 10^4 HIV-infected T-lymphocytes; 3) Cell-free HIV (10^4 TCID) in neat serum. At timed intervals disinfectant was rinsed off with PBS-A. Coverslips were cultured for 21 days in RPMI with C8166 cells and examined for syncytia and HIV antigens; positive cultures were passaged into fresh cultures to confirm infectivity. Disinfectant-free and toxicity controled were performed.
Results: 70% alcohol failed to inactivate cell-free or cell-associated HIV within 20 minutes. Acetone, tested only against cell-associated inocula, failed to inactivate HIV within 40 minutes. 2% and 1% glutaraldehyde inactivated cell-free and cell-associated HIV within 2 minutes. In the presence of neat serum 2% glutaraldehyde remained effective but 1% failed to inactivate HIV within the 15 minutes tested. Conclusion: Acetone and 70% alcohol failed to kill HIV on surfaces within 40 and 20 minutes respectively; serum greatly reduced the efficacy of 1% glutaraldehyde.

A.598 OUTREACH TO IV DRUG USERS AND SEX PARTNERS: SATISFACTIONS AND DISSATISFACTIONS OF OUTREACH WORKERS

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Objective: Ex-addict workers are widely used for AIDS outreach to IVDUs and their sex partners. Our objective is to describe the characteristics of indigenous ex-addict outreach workers hired to provide AIDS prevention and education information to intravenous drug users and their sex partners in New York City, and to detail some of the satisfactions and dissatisfactions they encounter as employees.
Methods: A total of 66 outreach workers were employed by Narcotic and Drug Research Inc. during 1986-1988 to provide AIDS risk reduction information to IV drug users and their sex partners. Information was available through interviews with the 27 outreach workers currently employed by the agency and a review of agency records for all outreach workers.
Results: Of the 66 workers, approximately two-thirds (65%) were male and their ethnic composition was 58% Black, 39% Hispanic and 3% White. Most outreach workers were ex-addicts, recruited from various treatment modalities. Staff turnover at the end of one year of employment was 54%, i.e., of the 52 workers hired in 1986 and 1987, more than half were no longer employed by the organization within one year after their hiring date. Information on the satisfactions and dissatisfactions encountered by these employees is being collected and the data are being analyzed focusing on organizational issues (e.g., career paths available) and individual issues (e.g., burnout).
Conclusions: The relatively high turnover rate of these employees indicates that further study of the satisfactions and dissatisfactions experienced by these workers is needed, so that measures to address the dissatisfactions can be incorporated in employee policies.

A.600 RADIORESISTANCE OF HIV-1 IN A BONE ALLOGRAFT MODEL

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Objective. To study the feasibility of inactivating HIV-1 in bone graft material by gamma irradiation.
Methods. Serial dilutions of HIV-1 (10^1-10^6 $TCID_{50}$/ml) were subjected to gamma irradiation under conditions simulating those within a bone allograft. Radiated and control specimens were cultured on H9 cells which were subsequently evaluated for cytopathic effect and p24 antigen production.
Results. High titers of virus (10^6 $TCID_{50}$/ml) were not inactivated by gamma irradiation up to 0.55 MRad. p24 antigen values (ng/ml) for lower titered radiated (R) and control (C) virus exposed to 0.4 MRad is shown:

			day 0	day 4	day 6	day 10
10	$TCID_{50}$/ml	(R/C)	0/0	0/0	0/0	0/7.6
10^2	"	"	0/0	0/0	0/.36	0/>500
10^3	"	"	0/0	0/.03	.31/3.6	362/>500
10^4	"	"	0/0	.11/.43	4.3/42.1	>500>500
10^5	"	"	0/0	2.0/4.5	4.3/>500	>500/>500

Cytopathic effect was observed in all cultures in which p24 antigen production was detected.
Conclusion. Doses of gamma irradiation previously recommended to inactivate many viruses including HIV-1 appear inadequate in this model. Higher doses or alternate methods of ensuring allograft sterilily with respect to HIV-1 may be required.

A.602 POTENTIAL FOR HIV TRANSMISSION VIA BLOOD GLUCOSE MONITORING DEVICES

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We are following a 43 year old HIV-positive insulin-dependent diabetic woman whose only known exposure to HIV was from vaginal intercourse with her HIV-positive bisexual husband. The woman indicated to us that since 1981 she has screened family members, friends, and relatives for diabetes by performing fingerstick glucose determinations on them. She would routinely use a single disposable lancet to draw blood from several individuals in rapid succession, after pricking herself, without wiping the lancet. Four family members who had shared a lancet with our patient during the past year have been screened and are HIV-negative.
We found that packaging material of the lancet's used by our patient contain no warning labels against sharing lancets. A local survey of 3 brands of lancets and 3 brands of lancet holders indicated that only 1 brand had labels warning about potential transmission of diseases with the devices. We also found no warning labels on some brands of insulin syringes. Diabetic equipment such as lancets and syringes represent a potential mode of transmission for HIV and other blood-borne pathogens. We speculate that the practice of sharing used lancets as demonstrated by our patient, a well-educated middle socio-economic class women, may be more common among diabetics than is generally recognized. Physicians and diabetic educators should educate their diabetic patients about the proper use of lancets and syringes and appropriate warning labels should be required on these products.

A.603

SIMILAR MAGNITUDE OF THE AIDS EPIDEMICS AMONG HOMOSEXUAL MEN IN COSTA RICA AND IN THE UNITED STATES

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Objective. To compare the incidence of AIDS in homosexual and bisexual men in Costa Rica, with that in the United States, from the year the epidemics were first recognized ("year one").
Methods. "Year one" was 1981 for the U.S.A. and 1985 for Costa Rica. Cumulative incidence rates (per million) were calculated using the total number of cases among homo/bisexual men only, and the estimated yearly poulation of males 15 to 64 year, for each country. Rates were compared during eight years of epidemic: 1981-1988 for the United States and 1985-1992 for Costa Rica. Comparison used real numbers for the period 1981-1988, and estimated (power curve) numbers for the period 1989-1992 for Costa Rica.
Results. The cumulative incidence in homo/bisexual men in "year one" was 3.3 per million in the U.S. and 1.3 in Costa Rica. Differences between the two countries disappeared by "year three" of the epidemic. Thereafter, the ratio Costa Rica/U.S. incidence rates was close to 1.0 or actually 1.0.
Conclusion. Incidence rates show an epidemic in Costa Rican homo/bisexual men, of similar magnitude to that in the U.S., when comparison is made from the "year one" of the epidemic in each country.

A.605

MULTIPLE GROUP MODELS WITH HETEROGENEOUS MIXING FOR THE TRANSMISSION DYNAMICS OF HIV/AIDS

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Objective. Specify ways of constructing multiple group models that take into consideration the social/sexual structure of a population; to present analytical results for single and multiple group models for the spread of HIV/AIDS; and to discuss the consequences of the "nonstandard" behavior observed in the multiple group models.
Methods. Mathematical Techniques are used in the analysis of these models (mathematical analysis and global bifurcation theory) and simulation techniques (numerical methods).
Results. We show that our single group models are robust and hence good building blocks for multiple group models (through the mixing theory of Blythe and Castillo-Chavez). We also show that, contrary to current thought, multiple group models can have multiple endemic equilibria.
Conclusion. These results show that the dynamics of standard epidemiological models is not as simple as previously thought. The consequences of these results in the 'real' world have to be assessed.

A.607

ADDITIONAL RISK FACTORS IN HIV POSITIVE PERSONS AS MONITORED BY A NATIONAL HIV NOTIFICATION SYSTEM

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Objective. To study additional risk factors (e.g. sexual contact with person known to be HIV positive, sexual contact in a hyperendemic country, sexual contact with prostitutes), regarding persons notified as HIV positive where transmission category is known.
Method. The Department of Infectious Disease Control (DIDC), National Institute of Public Health, Oslo, Norway is in charge of the national surveillance of HIV infection and AIDS. HIV positive persons are reported to DIDC semi-anonymously.
Results. The various transmission categories, age groups, sex and other relevant categories are compared concerning data on additional risk factors. Up to 31/12/88 a total of 734 notifications of HIV positive persons were received at DIDC. Forty-four out of 121 persons with transmission category heterosexual practice were infected in hyperendemic countries and were also born in hyperendemic countries, 18 out of 121 were infected in hyperendemic countries, but were not born there, 6 women were infected by bisexual males. Other data will be available later.
Conclusion. More detailed data than just the transmission category is valuable in a national HIV notification system in order to improve the surveillance of the HIV epidemic.

A.604

HETEROSEXUAL CONTACT PATTERNS OF 429 PREGNANT NON-IV DRUG USING WOMEN IN THE SOUTH BRONX, NY, IN 1988

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OBJECTIVE: To quantify the probability of heterosexual exposure to HIV-I for non-IV drug using sexually active women in an area with high levels of HIV-I (especially among males age 25-34); and to explain known differences in seroprevalence by age, geography, and race/ethnicity among women of childbearing age.
METHOD: As part of an AIDS education and prevention project, we studied heterosexual contact patterns (HCP) of 429 non-IV drug using Black and Hispanic women receiving 1st trimester abortions at a clinic in the South Bronx (S.Bx). Structured interviews of these women between 4-7/88 elicited age, race/ethnicity (RACE), location of residence (RES), frequency of intercourse and drug use history of subjects (SUBJ) and their current sexual partners (CSP).
RESULTS:

	AGE OF WOMAN (N=429)				
	< 20	20-24	25-29	30-34	≥ 35
Age of CSP: Median (Range)	21(15-30)	26(19-55)	30(20-55)	34(23-60)	39(28-56)
Sex with CSP age 25-34	11.5%	46.0%	64.2%	69.3%	16.7%
Same RACE as CSP	89.5%	85.9%	92.5%	92.5%	83.9%

RES of CSP (zip code): same as SUBJ 41%; & adjacent 59.4%; S.Bx 70.2%; Bx 81.8%.
CONCLUSIONS: This study of HCP in the S.Bx indicates close concordance of the RACE and RES of non-IVDU sexually active women with their CSP, and an age-specific pattern of increased exposure, for 20-34 year old women, to high risk males. These patterns of heterosexual exposure are consistent with known age, RACE, and geographic differences in seroprevalence levels in the S.Bx, and suggest that HCP may play an important role in determining such distinctions.

A.606

Perinatal and Heterosexual Transmission Through HIV-Positive Women

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Since 1984, we have examined HIV-infected women and their partners in order to gain information on infectiosity, perinatal & heterosexual transmission rates, and possible relations between these factors. 44 Women examined in this period had born a total of 47 children since their HIV infection. 10 children are positive for HIV, 31 are negative for antibodies and direct virus identification; in 6 cases, HIV status is still questionable. A comparison between the group of women having infected their children and those not having transmitted the virus, shows no difference regarding immunological parameters, stage of HIV infection, tests for lues, CMV, and HBV. Of the women having infected their children, 60% were HIV stage 2a (Frankfurt classification); 40% were 2b with a median T4 cell count of 430 (27-964), the median ratio being 0.66 (0.03-0.92), duration of infection being 1-6 years. Out of 44 women, 33 women's partners are known and were tested for HIV: 16 are positive, 18 are negative for HIV. In no case had the man been infected by his HIV-positive female partner, also women having infected their children did not infect their partners.
Conclusion: Regarding immunological status, HIV stage at first examination, and tests for CMV, lues and HBV, there was no difference between mothers of infected, and mothers of non-infected children. The women having infected their children were immunologically good. This allows the conclusion that infection of children is also possible at an early stage of the mother's infection.

A.608

COMPARISON OF SURVIVAL EXPERIENCES OF NEW YORK AND CALIFORNIA MEDICAID AIDS PATIENTS

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Objective. To compare the survival experiences, hospital length of stay and costs of care of Medicaid AIDS patients in New York and California adjusting for severity level at the first recorded AIDS hospitalization.
Methods. Medicaid claims for AIDS patients in New York and California from 1983-1987 are linked in order to form longitudinal records of care for each patient. Patient characteristics including demographic factors, diagnoses and service utilization are summarized into monthly profiles. An AIDS staging system, developed using expert judgment, is applied to determine the severity level of the patients at selected intervals in the course of the disease. Life table and survival analysis techniques are used to study time from diagnosis within a distinct stage until death and to determine the relative risk of death for defined population groups.
Results. Survival curves and resource utilization patterns for AIDS patients classified by stage of disease are compared for patients from the two states and by year of diagnosis. Relative risks of death for patients by selected clinical complications are reported.
Conclusion. Distinct stages of the disease are useful to analyze survival experiences over time and to control for severity when comparing resource utilization patterns across different geographic areas. This is especially important in comparing New York and California AIDS patients due to major differences in the transmission mode of the infection.

A.609

PREDICTING IN-HOSPITAL MORTALITY FOR AIDS PATIENTS: A VALIDATED MODEL.

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Estimating prognosis for a hospitalized AIDS patient is essential for optimal clinical management. We developed a prediction model for in-hospital mortality using admission data abstracted from 128 patient admissions to the Royal Victoria Hospital (RVH). This model was subsequently validated on 62 patient admissions to the Montreal General Hospital (MGH).

Using univariate analyses, stepwise logistic regression analyses, and clinical judgment, we identified independent predictors of in-hospital death including serum albumin (ALB) ($\beta = -1.32$), serum lactate dehydrogenase (LDH) ($\beta = +0.0047$), and leukocyte count (WBC) ($\beta = +0.27$) (all p's<0.05). High, medium, and low-risk groups for in-hospital mortality were defined where the probability of dying was set at 100%, <100% to >5%, and $\leq$5% respectively. Using the resulting RVH regression scores and 2x2 contingency table analysis, we determined the cutoff scores that corresponded to the above risk groups. The validity of the RVH model was then tested by classifying admissions at MGH. In-hospital mortality for the high, medium and low-risk groups was 100% (2/2), 42% (10/24) and 14% (5/36) respectively.

We conclude that routine admission laboratory tests associated with inanition (ALB), pneumocystis pneumonia (LDH), and other infections (WBC) help predict the outcome of hospitalizing patients with AIDS.

A.610

A.611

A.612

EVOLUTION OF THE CLINICAL AND LABORATORY PARAMETERS OF ONE PATIENT WITH HIV INFECTION IN THE FIRST YEAR AFTER HIS DOCUMENTED DATE OF SEROCONVERSION.

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Objective: To present the pattern of changes in the clinical and laboratory findings observed during the first year after the date of seroconversion.
Method: A HIV-seronegative patient was admitted to our hospital suffering from a mononucleosis - like syndrome. On the 23rd day of his hospitalization and while he was free of any symptoms, he seroconverted. His clinical, haematological (Hct, Hb, White cell count and differential, platelets, ESR) and immunological (HIV Ag, Western Blot, lymphocyte subpopulation) profile was evaluated every 3 months for a period of 1 year.
Results: Since the time of seroconversion the patient remained symptomless. The size and number of his lymphnodes was reduced but they remained pathological (> 1 cm in diameter). His haematological values improved after the cessation of the clinical syndrome and remained within normal limits. The T4-lymphocyte count progressively increased to almost normal limits. The T8-lymphocyte count decreased significantly but without restoration to normal limits and the T4/T8 ratio improved. HIV-Ag remained negative and the full spectrum of antibodies appeared within the first trimester and remained positive since then.
Conclusions: The patient's transition from the acute AIDS stage and seroconversion (CDC Group I) directly to PGL (CDC Group III) was accompanied with an improvement of his clinical, haematological and immunological profile.

A.613

INFLUENCE OF HIV ON PRISON INMATE (PI) DIALYSIS (D) TRENDS

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Purpose: To assess the influence of HIV on PI D trends at AKCF.
Methods: Hospital and D unit record review.
Results: From 7/82 thru 12/88, 64 male NY State PIs underwent D, including 50 IVDUs and 14 non-IVDUs. Early (7/82-12/84) and later (1/85-12/88) D experiences for IVDUs were compared. No difference in: % of pts. who were IVDUs, # with serious infections requiring systemic Rx (6/21 vs 14/29), or mortality rate (2/21 vs 4/29). However: incarceration-D initiation interval decreased from 42 ± 35 mos (early on) to 11 ± 16 mos for IVDUs not on prior D, # of infectious episodes/pt. with serious infection increased from 1.5 ± 0.8 to 2.5 ± 1.2, # of deaths due to AIDS increased from 0/2 to 4/4, incarceration-death interval for IVDUs who died decreased from 42 ± 6 mos to 10 ± 8 mos, and # of IVDUs on CAPD increased from 1/21 to 11/29.

Eighty-one percent of IVDUs underwent HIV testing in 1987 and 1988. 12/13 (92%) were pos. Before 11/87, 6/39 IVDUs had transplants, but 0/11 were transplanted in 1988.
Conclusion: Most PIs on D are IVDUs who are usually HIV positive. They are experiencing more rapid decline in renal function, more infectious episodes and earlier mortality. More are undergoing CAPD and few, if any, are being transplanted.

A.614

HIV INFECTION IN PATIENTS ATTENDING A HOSPITAL BASED SEXUALLY TRANSMITTED DISEASES CLINIC

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Objective. To determine HIV seroprevalence in patients who are attending STD clinic in a high prevalence area.
Methods. All patients attending an urban Hospital-based STD clinic were offered HIV-1 testing in a period between 8/88 and 12/88. Patients were given pretest, with posttest counseling scheduled two weeks following the initial visit. Risk information was collected by an interviewer using a structured questionnaire. HIV antibodies were determined by ELISA screening and confirmed by Western Blot.
Results. Data from 91 patients were analyzed and their seroprevalence was 19%. HIV Seroprevalence by risk category

Risk	Male% HIV +/total	%	Female HIV +/total	%
Gay/Bisexual	1/2	50	-/-	
IV Drug User	1/1	100	3/6	50
Sex partner	0/5	0	0/2	0
Prostitute (non-IVDU)	-/-		1/6	17
No risk	3/25	13	8/45	17
Total	**5/32**	**16**	**12/59**	**20**

Conclusion. The prevalence of HIV seropositivity in individuals attending an STD clinic is higher than previously reported. Even accounting for some misclassification of risk factors it appears that heterosexual transmission of HIV is a major route of infection in this STD population.

A.615

RISKS ASSOCIATED WITH ACQUIRING CHANCROID GENITAL ULCERATIVE DISEASE AND HIV INFECTION: A CASE CONTROL STUDY

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Objective. To identify risks associated with acquiring chancroid and to evaluate the seroprevalence of human immunodeficiency virus (HIV) infection among men presenting with chancroid and gonorrhea to a New York City Department of Health sexually transmitted diseases clinic.
Methods. This case-control study was performed from 8/87 - 3/88 by interviewing all study participants. The case group consists of 66 men who had a chancroid ulcer, had positive cultures for H. ducreyi, and were without positive darkfield microscopies. The control group consists of 237 men who had urethritis and positive cultures for N. gonorrhoeae.
Results. On univariate analysis, cases were more likely than controls to be uncircumcised, to have exchanged a commodity for sex, and to have used crack. Homosexual behavior was noted in 4/66(6%) of cases, and 35/237(15%) of controls. Heterosexual cases were 6 times as likely as heterosexual controls to have a reactive RPR for syphilis. Antibodies for HIV were noted for 18% of cases and 17% of controls. Multivariate analysis, controlling for age, circumcision status, sexual behavior, ethnicity, exchange of drugs or money for sex, use of crack and IV drugs, RPR, and HIV antibody status confirmed that chancroid was predictive of a reactive RPR, commodity exchange, and a lack of circumcision.
Conclusions. In this study, chancroid was strongly associated with a reactive RPR, an exchange of drugs or money, and a lack of circumcision.

A.616

LOSS OF SEROLOGIC AND VIROLOGIC MARKERS OF HIV-1 IN ASYMPTOMATIC HIV-1 INFECTED HOMOSEXUAL MEN.

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OBJECTIVE: To follow virological and serological changes in 4 asymptomatic homosexual men who seroreverted from positive to negative for HIV-1 during the initial 2-2.5 yrs of evaluation. Peripheral blood mononuclear cells (PBMCs) of these participants showed detectable HIV-1 DNA by the polymerase chain reaction (PCR) method [Ann Intern Med 1988;108:785-90].
METHOD: Sera and PBMCs from these men were collected prospectively during 2-2.5 yrs of additional follow-up and tested for serological markers, PCR analysis and HIV-isolation. Phorbolester acetate (TPA), PHA, and U.V. treatment were used to activate HIV-1 expression.
RESULTS: Three men did not show detectable HIV-1 DNA by PCR (sk38/39 primer pair) and remained negative for serological markers and isolation of HIV-1 in the 2.5 yrs following seroreversion. CD_4 cells and CD_4/CD_8 ratic were normal. The fourth man became and remained seropositive during the last 2 yrs. HIV-1 DNA was detected in his PBMCs by PCR technique. His T-helper count declined and ratio was inverted. Attempts to activate expression of HIV-1 in PBMCs failed to show viral replication.
CONCLUSION: These data suggest that the three men with negative PCR and no serologic markers of HIV-1 may have cleared infection during the course of follow-up. Alternatively, PCR results may be limited by failure to detect of provirus remaining latent in a sequestered site.

A.617

HIV INFECTION IN LORRY DRIVERS AND THEIR ASSISTANTS IN EASTERN AFRICA

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Objective. To quantify prevalence of HIV infection among long distance lorry drivers, and their assistants, in eastern Africa.
Methods. Sixty-eight lorry drivers and their assistants were tested for HIV while in Kampala, Uganda, in October 1986. Data were collected on travel history, prostitute contact and history of STD. Specimens were considered positive if they were repeatedly reactive to two separate ELISA assays and confirmed by Western blot and immunofluorescence.
Results. Twenty-four of the 68 (35.2%) had antibodies to HIV 1. Most had visited many of the 7 countries served by Mombasa in the previous 3 years. Both negative and positive individuals had extensive prostitute contact in the countries visited, and this was not significantly different between the two groups. Although negative by usual HIV tests, 7 persons had evidence of HIV, as determined by IgM and antigen testing. If these individuals are included, the rate of HIV infection is 45.5%.
Conclusion. High rates of HIV infection are seen in this group. Routine methods of HIV detection may not identify all infected individuals.

A.618

RISK OF INFECTION BY HUMAN IMMUNODEFICIENCY VIRUS IN HEALTH CARE WORKERS (HCW).

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Objective: To evaluate the risk of occupational transmission of HIV.
Methods: We have prospectively followed a cohort of 76 HCW who reported at least one episode of direct exposure to body fluids of HIV infected patients (presence of antibodies againts the HIV by at least two ELISA test and confirmed by Western Blot in 89.4 % of the cases) and who agree to participate.
Results: All 76 HCW denied risk factors for acquiring HIV infection in a confidential self administered questionnaire. All were seronegative by ELISA test, at the moment of the exposure to HIV infected body-fluids and none of them seroconverted after a median follow-up of 17 months (range 2 to 40 months).
Conclusion: Our results as well as the findings of the other authors indicate that HCW are at minimum risk for HIV transmission from occupational exposure.

A.619

AIDS SURVEILLANCE IN SICHUAN, CHINA

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Objective. To monitor introduction of AIDS from the outside world.
Methods. We used antigen slides of T-cell line infected with HIV and indirect immunofluorescent antibody technique(IFA) for the detection of antibodies against HIV in sera of persons at high risk.
Results. So far, in our laboratory 1,327 sera collected from high risk groups of AIDS including Chinese workers coming back from Mideast and African countries, Chinese and foreign businessmen, students, visiting schoolars, and others coming in and going out of China between January 1987 and November 1988 were tested by IFA. No positive result was obtained.
Conclusion. To date, 19 AIDS cases have been found in China and among them no AIDS case of native Chinese who was infected by HIV through homosexual and/or heterosexual intercourse was discovered. Because of dramatic increase of prostitutes in Sichuan Province and of the incidences of sexual transmitted diseases, sooner or later, AIDS will be introduced in the native population in China and more recently a sera collected from a young service girl working at a hotel in Wuhan city in Hubei Province was found to be sero-positive by IFA and other tests. It is an unavoidable task for us to enhance AIDS surveillance in our Province and it is urgent to obtain support and collaboration from scientists and individuals engaging in AIDS in the world.

A.620

THE PRESENCE OF TUMOR NECROSIS FACTOR (TNF) IN SERUM AND IN LYMPHOCYTE CULTURES OF HIV-POSITIVE AND NEGATIVE HOMOSEXUAL SUBJECTS.

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Objective. *Recent reports have described the presence of TNF in the sera of HIV-positive symptomatic (ARC,AIDS) individuals. We, therefore, attempted to correlate the presence of TNF in serum and in the supernatants of lymphocyte cultures with the presence of various viruses isolated from different body sites in HIV positive (H+ve) and HIV negative (H-ve) asymptomatic homosexual volunteers as well as AIDS patients and heterosexual controls.*
Method. *Sera and supernatants of lymphocyte cultures were obtained from 22 H+ve and 22 H-ve and were tested for presence of TNF by ELISA. Routine virus isolation were performed on samples taken from 5 body sites simultaneously (urine, semen, throat, rectum & blood) collected on same day as serum + LC. The sera of 32 patients with AIDS and 5 heterosexual controls were also examined for presence of TNF.*
Results. *As previously reported we found a high incidence of +ve virus isolation in both H+ve & H-ve volunteers. Thus virus culture was positive for CMV, or Enteroviruses, in 19 HIV+ve and 17 HIV -ve volunteers. TNF (20-200 pg/ml) was detected in the serum and LC supernatants of 20 HIV +ve and in all 17 HIV -ve persons with positive virus culture. Although the most frequently isolated virus was CMV, the highest TNF levels were correlated with isolation of enteroviruses. Of the AIDS patients 5 with severe (< 100 T4 cells/ml) and seven with stabilized forms of AIDS had none or very small amounts (< 10 pg/ml) of TNF in serum. The other 20 AIDS patients who had active opportunistic infections had serum TNF-levels ranging from 30 to 220 pg/ml.*
Conclusion. *The results suggest that the presence of TNF in sera or LC supernatants is related to the presence of viral infections or other opportunistic infections rather than to HIV infection per se.*

A.621

THE SEARCH FOR A COFACTOR IN AIDS-RELATED KAPOSI'S SARCOMA (KS): ASSESSMENT OF NITRITE INHALANT USE IN STUDIES OF HOMOSEXUAL MEN WITH AIDS.

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The epidemiology of KS in AIDS (the concentration among white homosexual men and the declining proportion of cases) suggests that HIV may not act alone as its cause. In transfusion-acquired AIDS from donors in whom KS subsequently developed, KS is rare, suggesting that a specific strain of HIV is not responsible. The use of nitrite inhalants and an "unknown" sexually transmitted agent have been proposed as KS cofactors. Objective. To review self-reported nitrite inhalant use, comparing AIDS-related KS and those with opportunistic infections. Methods. Studies (First authors: Darrow, Goedert, Haverkos, Mathur-Wagh, Osmond, Polk) have collected data about nitrite use from homosexual men with AIDS and compared use by disease outcome. Study design, wording of questionnaires regarding nitrite use (kindly provided by investigators), and published results were analyzed. Results. Three studies find a strong association between use of large quantities of nitrites and the development of KS, three do not. The differences in outcome may be due to differences in study methods, particularly sample size (range 19-150) and variation in measurement of nitrite use. Conclusions: The results of studies concerning nitrites and KS are inconclusive. Carefully designed epidemiologic and laboratory studies are needed to determine the cause(s) of KS in AIDS.

A.622

OCCURRENCE AND PROGNOSTIC VALUE OF AIDS-RELATED CLINICAL MANIFESTATIONS IN HIV-1 SEROPOSITIVE HOMOSEXUAL MEN

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Objective. To use a clinical index to quantify early clinical progression of HIV-1 infection and determine the prognostic value of a single examination. Methods. A clinical index derived from early symptoms and signs of HIV-1 infection was used to score men based on data collected semiannually. Proportions of men with high scores were taken as prevalences of clinically significant immunodeficiency (CSID). $CD4^+$ cells were considered separately. Prognostic value of the index was based on life table probabilities of AIDS. Results. In 3.5 years of follow-up, prevalence of CSID rose from 4% to 34% in 1714 seropositives (SPs) and from 2% to 19% in 242 seroconverters (SCs). The initially healthy SPs and SCs had similarly rising prevalence (Table).

% of initially healthy who develop CSID alone and CSID + CD4 count < 400 at:

		Mos	0	6	12	18	24	30	36	42
[SPs], CSID	N=364	after	0	1	1	2	5	7	12	12
", CSID or CD4 <400		entry	0	6	6	8	16	18	25	29
[SCs], CSID	N=104	after	0	0	1	1	2	9	12	-
", CSID or CD4 <400		1st +	0	4	14	12	18	29	38	-

Overall, men with higher score progressed faster. High scores predicted progression earlier in men with low and later in men with high $CD4^+$ count. Conclusion. CSID rose 3-4% annually in healthy men with HIV-1 infection. The clinical index may be helpful in assessing progression of HIV-1 infection.

A.623

DETECTION AND QUANTIFICATION OF HIV-1 ANTIBODIES IN SEMEN

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OBJECTIVE. To measure levels of HIV-1 antibodies (Abs) of IgG, IgA and IgM subclasses in human seminal plasma (SP) from HIV seropositive men, and to compare titers to those in matched serum.
METHODS. Semen was obtained from 28 HIV-1 seropositive men and from 16 seronegative men. Corresponding serum samples were obtained from 11 men. HIV-1 Ab immunoglobulin subclass was determined in a DuPont ELISA using alkaline phosphatase-linked goat anti-human IgG, IgA or IgM Abs (Sigma). SP was screened at a 1/20 dilution for IgG Abs and at 1/4 dilutions for IgA and IgM Abs.
RESULTS. In 27 of 28 (96.4%) known seropositive men, anti-HIV-1 IgG Abs were detected in SP. None of the samples from seropositive men had detectable levels of IgA or IgM subclass anti-HIV-1 Abs. None of 16 known seronegative men had detectable levels of anti-HIV-1 Abs of any subclass in SP. In 11 seropositive men, anti-HIV-1 IgG Ab-titers were compared in serum and SP:

HIV-Ab	Titer Range	Median T.	Ser:SP Range	Median Ser:SP Ratio
Serum	20 - 327,680	20,480	8:1 - 2048:1	512:1
SP	0 - 640	40		

CONCLUSION. Detection of anti-HIV-1 Abs in SP was 96.4% sensitive and 100% specific when compared with serum values. However, anti-HIV-1 Ab titers were markedly lower in SP, and no secretory IgA was detected, consistent with transudation and not local production of antibody.

A.624

ELECTRON MICROSCOPIC (EM) ANALYSIS OF SEMEN FROM HIV SEROPOSITIVE MALES.

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Objective. To determine if the structural composition of semen changes following infection with HIV.
Methods. Transmission EM analysis of semen samples from HIV+ males (n=20).
Results. Normal semen contains spermatozoa plus a variable population of round cells composed of white blood cells (WBC) and immature germ cells released inadvertently and prematurely from the seminiferous epithelium. Based on the prevalence of their components, semen samples could be classified into 4 groups:

Group 1:	Essentially normal (6)
Group 2:	Increase of immature germ cell population; many abnormal (6)
Group 3:	Numerous abnormal late stage spermatids plus other immature germ cells; spermatozoa concentration decreased (4)
Group 4:	Few spermatozoa; samples consist of either: a) immature germ cells; b) anuclear cytoplasmic bodies; or c) WBC (4)

Conclusion. These data suggest a pattern of changes, with a decline in the concentration of spermatozoa but a concomitant increase in abundance of round cell types. Group 4 contained 3 samples obtained from males symptomatic for AIDS. These findings correlate with data from the examination of testes from 33 AIDS cadavers where regardless of age, duration of HIV infection, and cause of death, the testis was consistently azoospermic. Further work is in progress to understand the mechanism(s) that cause this azoospermia.

A.625

QUANTIFICATION OF CD4 LYMPHOCYTES, MACROPHAGES AND HIV ANTIGEN LEVELS IN VAGINAL SECRETIONS OF HIV+ WOMEN

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Objective. To quantitate HIV host cells (HHC) and HIV antigen in vaginal secretions (VS) of HIV seronegative women (n=5) and asymptomatic HIV+ women (n=7), women with CDC IV nonAIDS (n=5), and women with AIDS (n=6).
Methods. 30 VS were obtained from 18 HIV+ women and 20 VS from 5 low risk HIV^- women. Cell smears were analyzed by immunoperoxidase technique, using monoclonal antibodies to relevent leukocytes and HIV antigens. Cell free filtered supernatants were tested for HIV antigen by ELISA before and after culture.
Results. Potential HHC were detected in VS from HIV^- women only during menses and the proliferative phase. Levels were increased in asymptomatic women ($1.4x10^5 \pm 2.4x10^5$) and peaked in CDC IV women ($6.6x10^5 \pm 7x10^5$), as compared to HIV^- women ($3.3x10^4 \pm 3.3x10^4$). In AIDS, these cells declined to low levels ($1.2x10^4 \pm 2x10^4$), which may reflect HHC decline in the systemic circulation. AZT treatment did not affect HHC dynamics. HIV p24 antigen was not detected in either cell smears, fresh VS or culture supernatants.
Conclusion. Potential HHC are rare in the vagina of HIV^- women. Levels are increased in HIV+ women. Levels of HHC are highest in symptomatic HIV+ women prior to developing AIDS. The inability to detect HIV antigen in VS indicate that concentrations of infectious virus may be low in these fluids.

A.626

PETS AND HIV DISEASE: A SURVEY OF PROVIDERS' KNOWLEDGE AND ATTITUDES

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Objective. To assess the knowledgebase of physicians expert in the care of individuals with HIV infection with regard to their understanding of zoonotic diseases and their attitudes regarding the interactions of their patients and their pets.
Methods. A 14 question survey was distributed to membership attending the San Francisco County Community Consortium meeting in January 1989. Members were aware that a presentation regarding pets and HIV disease would occur during the meeting. The questionnaires were returned prior to the presentation.
Results. Thirty-seven physicians completed the questionnaire. Only 19% of the respondents felt comfortable with their present knowledge on zoonotic disease. In selecting from a list of potential zoonoses that had been diagnosed in their patients with AIDS, 27 reported diagnosing toxoplasmosis; campylobacterosis (21); salmonellosis (19); ringworm (7); cat scratch disease (6); mites (4); psittacosis (3); pasteurellosis (2); brucellosis (1). Only 1 responded that they had diagnosed toxoplasmosis in a patient that they strongly suspected was transmitted from the patient's pet cat, with the other 26 having diagnosed toxoplasmosis responding negative. Forty-three percent believed however that cats pose a significant health threat to persons with AIDS/HIV infection. Birds were felt to pose a threat by 30 %; farm animals 22%; dogs 11%; all pets 3%. Sixteen percent of the respondents felt that no pets posed a significant health risk to their HIV infected patient populations. Ninety-seven percent suggested that companion animals are a major source of support and comfort for patients with HIV disease and 76 % felt that the benefits of pet ownership probably outweigh zoonotic risks. Sixty-two percent never recommend to their patients that they give away their pets after diagnosis. However, 68 % advised their patients with AIDS or HIV infection not to clean litter boxes; 38 % advised against adopting a stray kitten or puppy; 24 % not to feed pets raw meat and 22 % not to adopt a new pet. Of the responding physicians, 57 % currently owned a pet of their own, while 38 % have owned pets in the past.
Conclusion. The majority of physicians believed that the benefits of pet ownership for their patients with HIV disease outweighed the risks of potential zoonoses, especially if some precautions are taken.

A.627 A COMMUNITY-BASED HIV ASSESSMENT UNIT: HOW DOES IT WORK ?

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Objective. To describe how patients at high-risk for HIV infection are evaluated and treated by an interdisciplinary team of providers at a community-based HIV Assessment Unit.
Methods & Results. Woodhull Medical & Mental Health Center, a division of NYC Health and Hospitals Corporation, is a large municipal hospital serving an impoverished, medically underserved, black and latino community. Bushwick Family Health Center has been designated by Woodhull as the community-based facility for outreach, screening, evaluation and treatment of HIV-related diseases. The majority of high-risk patients are IV drug users and their sexual partners. An interdisciplinary team of providers, including clerks, administrators, nurses, physicians (*internists, pediatricians, psychiatrist*), and social workers, has been trained to meet the needs of this community. The roles of Team members and their interactions with patients will be discussed. An approach to the medical and psychosocial interventions provided to high-risk and HIV-infected patients will be presented. Emphasis will be placed on the medical protocols designed for a community-based setting. The process will be illustrated by following theoretical at-risk patients from initial referral to staff involvement and treatment.
Conclusion. A community-based program provides an ideal setting for an interdisciplinary team approach to the care of patients with HIV-related diseases or who are at high risk. This is particularly effective in an impoverished black and latino community.

A.628 EVALUATION OF COMPLIANCE RATE IN A CLINIC SERVING MINORITY AND LOW INCOME COMMUNITIES

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Objective: To determine compliance rates for HIV-seropositive persons in a socioculturally sensitive clinic (SSC) setting from communities that are considered "traditionally noncompliant".
Method: Missed appointments rates were compared between the SSC and the ambulatory care network (ACN). The overall broken appointment rate was determined as a proportion of total appointments. Retrospective chart review explored factors contributing to missed appointments taking into account race, sex, age, risk behavior, treatment regimen and protocol. Patient specific missed and scheduled visits, and explanations of missed visits were documented.
Results: The average broken appointment rate in the SSC is 15%, and 40% in the ACN. When rescheduled appointments are considered the noncompliance rate falls below 10%. Factors contributing to missed appointments were conflict with work schedules, lack of child care, lack of adequate transportation, family illness, and hospitalization.
Conclusion: The overall compliance rate in the SSC is significantly higher than the ACN documenting (1) the importance of accounting for SSC variables in traditionally noncompliant com-munities (2) given the visit intensive regimens for HIV disease, clinic structure must be modified for communities with these variables, to increase participation in ambulatory care and research protocols (3) the social role of women as caretakers, regardless of their health status, is underestimated as a contributing factor to noncompliance in HIV disease treatment in these communities .

A.629 PREVALENCE OF ANTIBODIES AGAINST HIV-1 and HTLV-1 IN AFRICAN SERA SAMPLES COLLECTED DURING THE 1960's

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Roche Diagnostic Systems, Inc., Nutley, New Jersey, U.S.A., and *University of Michigan, Ann Arbor, Michigan, U.S.A.

Objective. To study the prevalence of HIV-1 and HTLV-1 infections during the 1960's in Ghana amoung the Akan, Ga-Adangbe, and Ewe tribes.
Methods. 404 archived sera samples from Ghana collected as early as 1960 were used in this study. Sera was screened for the presence of antibodies against HIV-1 and HTLV-1 using Roche recombinant HIV-1/HTLV-1 antigen combination screening EIA. This assay has been shown to have high specificity and sensitivity. Samples which showed reactivity in the HIV-1/HTLV-1 combination test were further evaluated for the presence of HIV-1 or HTLV-1 by using specific recombinant antigens.
Results. Thirty-five out of 404 (8.7%) samples showed reactivity with HIV-1-/HTLV-1 combination fusion proteins. Fourteen of the samples (3.5%) showed presence of antibodies against HIV-1 (gp120/gp 41). Fifteen out of 35 positives immuno-reacted only with HTLV-1 recombinant antigen (3.7%). Six samples had antibodies against both HIV-1 and HTLV-1 (1.5%).
Conclusion. HIV-1 and HTLV-1 infections may be more prevalent than estimated during the 1960's in Africa.

A.630 TRAINING THE HEALTH CARE PROFESSIONAL: THE AIDS REGIONAL EDUCATION AND TRAINING CENTERS PROGRAM OF THE HEALTH RESOURCES AND SERVICES ADMINISTRATION (HRSA).

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United States Public Health Service, Rockville, Maryland, USA.

Objective. To establish regional AIDS education centers that will provide multidisciplinary training for health care professionals.
Methods. With a projected cumulative total of more than 300,000 AIDS cases by 1992, it is essential that health care providers be trained in the diagnosis, management and treatment of HIV-infected patients. The insufficient number of providers active in the care of AIDS patients presents a major gap in the health care delivery system. In recognition of this problem, the United States Congress appropriated funds to establish the AIDS Regional Education and Training Centers Program.
Results and Conclusions. To date, thirteen centers have been created. These regional education and training centers provide multidisciplinary HIV/AIDS training for health care personnel within the framework of the following three goals: 1) Training community primary care providers to incorporate strategies for HIV prevention into clinical priorities as well as to diagnose, manage, and counsel patients and their families; 2) Training individuals to serve as instructors in their local area; and 3) Educating health care professionals in providing sensitive and integrated care of AIDS patients through the improvement of their understanding of the complexities of the disease.

A.631 INCREASED SUSCEPTIBILITY OF UNSTIMULATED PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMC) AND CD8+ CELL-DEPLETED PBMC TO IN VITRO INFECTION WITH HIV AFTER INGESTION OF 2 TO 4 BEERS.

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Objective. To determine the duration of the previously described effects of acute ethanol ingestion on HIV infection of PBMC in vitro (FASEB J 2:A831, 1988) and the influence of removal of CD8+ cells on these phenomena.
Methods. PBMC isolated from 3 healthy non-alcoholic vounteers before and almost daily after consumption of 0.7-1.3 (mean 1.1) liters of beer, and PBMC depleted of CD8+ cells by panning 2 times on anti-CD8, were cultured for 28 days (12 wells each) with HIV-1 (HTLV-IIIB) and fresh IL-2 (6 U/ml) every 3 days. HIV replication was estimated by: a) counting the syncytia appearing after overnight incubation with SUP-T_1 cells, and b) assay of HIV-p24 by antigen capture enzyme immunoassay in 48 hr supernates (depleted PBMC only).
Results. HIV infection of PBMC was detectable only if CD8+ cells were removed in vitro or if the PBMC were obtained ½ to 1½ days after ethanol ingestion. The latter was associated with a 3-fold rise in syncytium formation when CD8+ cell-depleted PBMC were used. Means of 4 syncytia per well were found before beer consumption, 12 per well the morning after, and 6, 5 and 2 per well 1½, 2½ and 4½ days, respectively, after ingestion of beer.
Conclusions. CD8+ cells prevent HIV infection of normal unstimulated PBMC. Prior ingestion of beer increased the susceptiblity of PBMC to HIV infection in vitro for at least 1½ days. Alcohol-associated enhancement of HIV replication occurred after removal of CD8+ cells and thus was not due entirely to the loss of CD8+ cell function previously ascribed to alcohol ingestion.

A.632 THE OPPORTUNISTS IN HUMAN AIDS (HAIDS) ARE ZOONOTIC.

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Objective. To explore animal diseases and animal products with respect to HAIDS.
Materials. The opportunists associated to HAIDS were searched in the AIDSLINE database with GRATEFUL MED™ software and scrutinized vis-a-vis the concept of zoonoses [1]. The number of publications devcted to each were recorded (in parentheses) as an estimate of their relative importance. Most of them, as indicated with an asterisk (*), are also CNS infective .
Results. Cytomegaloviruses (694) and influenza (15) viruses are well spread in the animal kingdom. *Pneumocystis carinii* (630) is a parasite of rodents, Toxoplasmosis (212*) autochthonous to cats and Cryptosporidiosis (96*)to several other species. Cryptococcosis (141*), histoplasmosis (50*) and coccidioidomycosis (15*) are saprozoonoses and candidiasis (160*) is common in animals. The mycobacterioses (135*), including tuberculosis, are infections of, or shared with, animals. Salmonellosis (30), campylobacteriosis (10) and listeriosis (10*) are, frequently, although not always or only, associated to foods of animal origin. Cat scratch disease (3) and lyme disease (3) are also involved in HAIDS.
Conclusion. Opportunists, the major causes of death in HAIDS, are zoonoses [1] and thus conceivably acquirable from animals and/or animal products. The epidemiology of this approach needs urgent evaluation. Used in conjunction with the animal AIDS models [simian (SAIDS), feline (FAIDS), bovine (BAIDS), equine (EAIDS) rabbit (RAIDS), murine (MAIDS), etc], they could be useful in the pathobiological modelling of HAIDS. The HIVs themselves are infective both to closely related (primates) as well as to far removed (rabbit) animal species, share common ancestors with the animal lentiviruses and thus are zoonotic.

1. Acha & Szyfres, 1987, PAHO/WHO, Scient. Publ No. 503.

A.633

EPIDEMIOLOGIC STUDY OF CHILDREN OF HIV INFECTED WOMEN IN PRIMARY HEALTH CARE.

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C.P.S. Centro. Madrid Council. Spain.

OBJECTIVE: To show social and sanitary variables influencing HIV positive children and HIV negative children, of HIV infected women before pregnancy.

METHODS: Analytic and descriptive study of 40 social and sanitary parameters obtained of cases studied in the pediatric unit between january 87 and january 89.

RESULTS: Characteristics of studied children related to HIV infection.

Positive children:	Not followed-up	changed to negative	stage
< 15 months	0 (0%)	2 (20%)	P0=8 (80%)
> 15 months	2 (16,6%)	6 (50%)	P1A=3(25%) P2A=1(8,3%)

Control group: All the cases continued beeing seronegative without lost cases in follow-up.

No significant differences were found between the two groups except for the relation between brest-feeding and positive serostatus of the child.

CONCLUSIONS: The frequency of seroconvertion to HIV of brest-fed children is lower than the one found in not brest-fed children (p<0.001).

More studies of individual factors in perinatal transmission are needed.

The evolution of children of more than 15 months was satisfactory. That could be related to the preventive character of our children's AIDS program, that make possible early diagnosis of asympthomatic children. Other series published refer to children consulting hospitals because they have a pathologic process.

No one of the seropositive children that become negative turned to be seropositive again.

A.634

HIV-2 INFECTION IN SARDINIA

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Objective: HIV-2 infection has been found only in few cases in Italy but no data are,by now,known about the presence or absence of this virus in Sardinia were there are about 15.000 drug abusers(DA) on 1.500.000 inhabitants and 1500 beta-thalassemic(BT)patients.Considering that AIDS cases are rapidly increasing expecially among drug abusers and the high frequency of transfusion in BT we have made the present work to know if this second "AIDS virus" is or is not present in our island.
Methods: Sera from 288 individuals(94 DA,58 BT,17 hemofiliacs,36 partners of HIV-1 infected people,9 young men from Senegal and 33 subjects without any known risk factor)have been submitted to ELISA,WB and RIPA for HIV-1 and HIV-2.
Results:On 69 sera HIV-1 positive 58(84%)were also positive for HIV-2.On the 219 anti HIV-1 negative sera 5(2.3%) showed a strong reaction against HIV-2 (ELISA and WB).Four sera belonged to DA and 1 was from a young Senegalese man.Only few very faint cross-reactivity against HIV-1 epitopes were found in 1 HIV-2 positive serum while a cross-reactivity(anti-core) anti HIV-2 was present in the majority of anti HIV-1 positive sera.
Conclusion: The above data demonstrate that also in Sardinia there is a presence of HIV-2 and it is significant that 4 of the 5 cases are from DA and 1 is from Africa.This suggest the importance of a wider screening for this virus among DA and people in relationships with Africans.The strong cross-reactivity HIV-1 versus HIV-2 needs of more specific tests to better discriminate between the two viruses.

A.635

TRANSMISSION HETEROSEXUELLE DU VIH: SURVEILLANCE HOSPITALIERE EN AQUITAINE, FRANCE, 1985-88

Poumerol, G.*; Chasterie, A.*; Morlat, Philippe**; Lacoste, D.**; Dupon, M.**; et le Groupe d'Epidémiologie Clinique du SIDA en Aquitaine (G.E.C.S.A.)**
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**Centre Hospitalier Régional Universitaire de Bordeaux (CHRU), Bordeaux, France;

Objectif. Un système de surveillance épidémiologique des sujets infectés par le VIH a été mis en place au CHRU de Bordeaux. Il permet d' étudier les différents modes de transmission de l'infection.
Méthode: Les services hospitaliers participants incluent leurs patients séropositifs depuis 1985. A chaque consultation, les données sont recueillies sur un questionnaire standardisé puis sont rendues anonymes et informatisées. Les caractéristiques épidémiologiques suivantes sont enregistrées pour chaque patient: âge, sexe, groupe ou comportement à risque pour le patient et son (ses) partenaire(s) sexuel(s), motif de la demande de sérologie.
Résultats. Au 10 Octobre 1988, 648 adultes séropositifs ont été inclus (sexe ratio Homme/ Femme H/F= 3:1). Parmi ces sujets, 415 (64%) sont hétérosexuels (H/F= 1,6:1), dont 58 (14%) ont comme seul facteur de risque identifié un contact avec un (des) partenaire(s) à risque ou séropositif(s). Les femmes prédominent dans ce sous groupe (H/F= 1:3). De 1985 à 1988 on observe une augmentation régulière de la part relative de la transmission hétérosexuelle parmi l'ensemble des sujets inclus (4 % à 11%). Cette tendance est parallèle à l'augmentation de la demande de sérologie chez les partenaires de sujets à risque ou infectés. Parmi les 41 femmes infectées par contamination hétérosexuelle, le (les) partenaire(s) a (ont) été identifiés comme toxicomanes IV dans 61% des cas, 80% de ces partenaires toxicomanes IV étant connus comme séropositifs. Chez les 18 hommes infectés par contamination hétérosexuelle, les rapports sexuels avec une (des) prostituée (s) est (sont) retrouvés dans 7 cas et avec des toxicomanes dans 4 cas.
Conclusions. En Aquitaine, la population hétérosexuelle contaminée par voie sexuelle se caractérise par une prédominance de femmes infectées au contact de toxicomanes. Ce mode de transmission pourrait jouer un rôle prépondérant dans la diffusion de l'infection à la population générale.

A.636

CARACTERISTIQUES EPIDEMIOLOGIQUES DES NOUVEAUX SEROPOSITIFS VIH DANS LE CENTRE-OUEST DE LA FRANCE : EVALUATION DE L'INCIDENCE ET DES COMPORTEMENTS.

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Objectif : avoir des marqueurs d'évaluation de la compréhension et de l'application des mesures de prévention véhiculées par les campagnes d'information ; en surveiller l'évolution au cours du temps dans le but de mieux cibler les actions.
Méthodes : les marqueurs choisis ont été : 1° la mesure de l'incidence des nouveaux cas de séropositivité ; 2° l'enregistrement simultané de paramètres comportementaux. Il s'agit d'un enregistrement permanent à partir des laboratoires effectuant les sérologies en Western Blot et en collaboration avec les médecins prescripteurs.
Résultats : une enquête réalisée en région centre-ouest du 1 juin au 31 août 1988 à partir de 6 centres hospitaliers universitaires a analysé 68 dossiers de sujets dépistés depuis le 1 janvier 1988. Soixante-douze pour cent de cette population appartenait aux deux groupes à risque : homosexuels-bisexuels (44%) et toxicomanes IV (28%). Seulement 30% des cas avaient fait d'eux-mêmes la demande de sérologie, soit du fait de leur appartenance à un groupe à risque, soit en raison de l'apparition des symptômes. Dans ces deux groupes, le tiers des sujets n'avait pas connaissance de leur risque de contamination. Le tiers des sujets homo-bisexuels et la moitié des toxicomanes avaient préféré ignorer leur statut sérologique. Ces résultats ont motivé la mise en place à partir du 1 janvier 1989 d'un enregistrement permanent dont les premiers résultats feront aussi l'objet de la publication.
Conclusion : l'espoir d'enrayer l'épidémie est actuellement fondé sur la prise de responsabilité des sujets contaminés vis-à-vis de la dissémination du virus et sur une connaissance des situations à risque par ceux qui peuvent être exposés.

A.637

PROFILE OF HIV-INFECTED PATIENTS AT SAN FRANCISCO GENERAL HOSPITAL OUTPATIENT CLINICS.

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Objective: To document characteristics of patients who receive medical care at SFGH AIDS adult outpatient clinics.
Methods: Of 2000 patients receiving primary care at SFGH AIDS clinics, 100 charts were randomly selected from a computer list of visits from December 8 to 13, 1988.
Results: There were 92 males and 8 females, average age of 38 (median=38, range 25 to 58). There were 79 Caucasian, 10 Black, 7 Latino, 1 Asian, and 1 Native American. Breakdown by initial diagnosis and average time from diagnosis to present was 25 PCP cases (13mos), 11 KS(24.5mos), 39 ARC(15mos), 8 LAN(24.5mos), 5 HIV+ (4mos), 5 at risk(4mos), 6 other OI(16mos) and 1 dementia (2mos). 30 have a history of recreational drug use, with 15 still actively using. Fifty-five have used zidovudine and 33 have used aerosol pentamidine with 24 patients on both agents. There were 28 on zidovudine and acyclovir. Chronic drug use ranged from 0 to 11,with 44 on 3 to 5 drugs and 8 patients each on either 2 or 6 drugs. An average of 2.2 allergies were reported(median=2, range 1 to 8) in 25 patients, while 35 had NKA and 40 were unknown.
Conclusion: The HIV-infected population at SFGH is unlike the US distribution of cases due to the greater incidence of Caucasian homosexual individuals. Patient profiles from other areas of the country are currently not available for comparison. Future studies need to determine if there are regional differences in standards of treatment affecting morbidity and mortality. Improved therapeutic monitoring may contribute to a better understanding of HIV disease.

A.638

A COMMUNITY-BASED MODEL FOR PRIMARY CARE AT AN HIV ANTIBODY ALTERNATE TEST SITE

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Objective. We set up a community-based clinic in Los Angeles at a HIV antibody alternate test site for the medical and psychological evaluation of antibody-positive testees.
Methods. Health history, physical exam, laboratory tests and psychological assessment were obtained on 1200 subjects from the alternate test site over a period of three years (1/86 to 12/88).
Results. Subjects were white (75%) and male (99%) with 15% Hispanic and 7% black. Seven hundred eighty nine were asymptomatic, while 211 exhibited only mild fatigue and low-grade fever. Physical exam showed 54% had swollen lymph nodes, 5% had onychomycosis, and 4% had thrush. Despite normal white blood cell counts, the mean number of T4 lymphocytes was 408 cells/mm^3. Psychological assessment revealed 43% with symptoms of depression or situational anxiety.
Conclusion. Our study suggests that medical and psychological evaluation should be provided at HIV antibody test sites. Evaluation of HIV antibody-positive persons in conjunction with an alternate test site facilitates the early detection and treatment of HIV-related medical and psychological problems.

A.639

HEALTH WORKERS FOR THE AIDS EPIDEMIC IN THE USA: WHAT WE KNOW AND WHAT WE NEED TO KNOW

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Objective. To define available and needed information regarding health worker training and deployment to cope with AIDS. Methods. The literature through 1988 was reviewed and 29 persons knowledgeable about different aspects of staff training and utilization were interviewed. Results. More than 100 relevant citations were found though only about 25 offered substantive findings. No estimates were found as to likely staffing or training requirements except in the case of internists. Most of 18 reported knowledge and attitude studies found major knowledge gaps and 20 to 40% of the respondents had substantial fears of and/or aversion to caring for HIV-infected persons. Infection control requires much more attention. Information on other than physicians is very limited and no studies were found that explicitly examined skills and practices. The six reviewed descriptions and evaluations of training programs reported improvements in knowledge levels though evaluations have generally been very limited and have not explored the relationships between knowledge, attitudes, and behaviors. Conclusions. Reported research on training needs and methods is still very limited in scope, rigor and comparability. Although experience should provide an adequate basis for setting near-term priorities, research should be intensified, especially as regards: 1) the development of cost-effective methods for training, particularly as it relates to skill development and attitude change; 2) estimating future training requirements and costs; and 3) documenting preferred methods for improving personnel recruitment and retention in HIV programs.

SECTION B

Aspects cliniques

Clinical Aspects of AIDS

Le VIH chez les enfants
HIV in Children

M.B.O.1

HIV-RELATED SYMPTOMS IN CHILDREN BORN TO HIV POSITIVE MOTHERS - RESULTS FROM THE EUROPEAN COLLABORATIVE STUDY

Catherine Peckham for the European Collaborative Study. Collaborating centres include: Padua, Berlin, Edinburgh, Madrid, Valencia, Amsterdam, Stockholm and Genoa.

Objective To describe the natural history of HIV infection in children. Method In the European Collaborative study of children born to HIV positive mothers, children are being followed with three -monthly clinical and laboratory testing by standard protocol. Only children who were 18 months or older at their last visit were included in this part of the analysis. AIDS/ARC is defined as previously reported. Significant HIV related symptoms are defined as two or more of the following: persistent generalised lymphadenopathy, persistent hepatomegaly, persistent splenomegaly, chronic or recurrent diarrhoea, acquired microcephaly, growth retardation, regression of developmental milestones, persistent fever of unknown origin, viral or bacterial infections. Results Of the 315 children enrolled by 20 January 1989, 13 have developed AIDS/ARC (5 of whom have died), and a further 27 had symptoms suggestive of HIV infection. Of the 118 children followed for more than 18 months, 27 were presumed to be infected. Of these, 10 were diagnosed as AIDS/ARC, 7 had symptoms suggestive of HIV infection and 10 were well when last seen. Of the 91 presumed not infected children over 18 months, 1 showed symptoms suggestive of HIV infection. Time to onset of first symptoms will be presented. As yet no child has developed AIDS/ARC after the age of 9 months. The most common presentations of symptoms and immunological findings will be described.

M.B.O.2

NATURAL HISTORY OF INFANTS BORN TO HIV POSITIVE WOMEN

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OBJECTIVE: To determine the rate of "perinatal" transmission and to describe the natural history of children born to HIV SP mothers. METHODS: Drug Using (DU), Haitian, and referred women identified in prenatal clinics, and their offspring, are followed for 4 yrs; clinical, lab and immunological data are collected at regular intervals. RESULTS: From 1/86 to 10/88, 160 women delivered, 74 (46%) were SP. Of 70 SP live births, 8 (9%) were lost to follow up. Of 30 children ≥15 mos of age, 10 (33%) were HIV infected. Seven of these 10 had AIDS,(3 are dead) 2 had P_2A class of HIV infection and 1 was asymptomatic. The initial clinical manifestations included: Hepatosplenomegaly (HS) at 1 to 5 mos in 6, Hepatomegaly (H), at 3 and 6 mos in 2, and neurological abnormalities (NA) by 1 year in 1 infant. Persistent lymphadenopathy (PL) was present in 7/10 by one year of age. In contrast, of 20 infants that seroreverted (SR) (mean age: 22 mos, range 15-31 mos) 2 had failure to thrive and 2 had microcephaly (all born to DU mothers). None had H, HS or PL. Immunoglobulins were high in infected infants while SR had normal values. Percent T_4 Cells and T_4/T_8 were lower in the infected infants, however, these values did not predict infection early in life. All infants that SR have remained seronegative. CONCLUSION: One third of infants born to SP mothers were infected and the majority had infection detected clinically by 1 year of age.

M.B.O.3

PROSPECTIVE STUDY OF INFANTS BORN TO MOTHERS SEROPOSITIVE TO HIV1. FRENCH HIV IN NEWBORN STUDY GROUP. (Paris, Nice, Toulouse, Bordeaux).

S. Blanche, F. Veber, MJ. Mayaux, C. Rouzioux, AM. Dulidge, ML. Moscato, C. Griscelli

This cohort include now more than 400 mother-child couples. The last analysis concern 308 children. Of the 117 infants analyzed at 18 months of age, 27 % showed certain HIV infection, 65 % were symptom free and have become seronegative whilst 8 % were seronegative but presented discrete symptoms possibly related to an HIV infection. The infants infected by HIV were divided up among different groups as regards their clinical status at 18 months of age : 2 infants were symptom-free, 11 had non-specific general symptoms of moderate intensity and 19 suffered from a severe evolutive form of HIV infection of whom 6 have died. At birth, the infants infected by the HIV virus did not differ from the rest in terms of weight, height, head circumference and frequency of evident malformations. Nonetheless, a rise in the rate of IgM in the serum was found (78 ± 81 mg/dL against 38 ± 39 mg/dL ; $p < 0.03$) and a drop in the number of CD4 blood lymphocytes (2054 ± 1221 mm^{-3} against 2901 ± 1195 mm^{-3} ; $p < 0.006$) As expected, infants born to drug-addicted mothers, whatever their viral status were smaller, lighter and had a smaller head circumference. The percentage of infants infected at 18 months was not influenced by the mode of contamination of the mother nor by the mode of delivery. The difference observed between infants born to symptomatic mothers and infants born to symptom-free mothers was not significant. It would appear that breast-feeding led to a higher risk of infection in the child (83 % against 25 % $p < 0.01$) although number of breast-fed infants in this study was very low. The risk was the same for infants living with their mother as for those raised in an institution or in a foster family.

M.B.O.4

PROSPECTIVE EVALUATION OF IMMUNE FUNCTION IN INFANTS BORN TO HIV-SEROPOSITIVE MOTHERS

Rogers, Martha; The NYC Perinatal HIV Transmission Collaborative Study Group. CDC, Atlanta, GA; NYC Dept. of Health, NY, USA.

Objective To evaluate immune function in infants of mothers at risk for HIV. Methods CD4, CD8, and Ig are measured every 2-6 mos from birth in infants of mothers at risk for HIV. Infected infants (CDC-defined) were compared with those born HIV+ who remained well and seroreverted and infants born HIV-. Results. Of 89 infants born to HIV+ mothers, 14 are infected (HIV-inf) and 19 have seroreverted and are well (HIV-SR). 44 infants of indeterminate status and 12 lost to follow-up were excluded from analysis. 86 infants were born to HIV- mothers (born HIV-); 34 are lost. Immunologic test results are shown:

	CD4 Counts-mean (SD)			IgG Levels-mean (SD)		
	0-1mo.	3-6 mo.	9-12 mo.	0-1 mo.	3-6 mo.	9-12 mo.
HIV-inf	3048(1706)	1344(1129)	1346(329)	1526(324)	995(544)	2526(1013)
HIV-SR	3358(1337)	3342(922)	3456(846)	1148(404)	619(452)	865(447)
Born HIV-	2863(1316)	3950(1643)	3106(1658)	1163(372)	517(193)	731(228)
	p=0.5	p=0.0015	p=0.15	p=0.05	p=0.0025	p=0.0001

6/7 infected infants tested vs 4/11 HIV-SR and 22/53 infants born HIV- had elevated IgG at 0-1 mo. 9/10 infected infants tested vs 2/15 HIV-SR and 2/31 infants born HIV- had elevated IgG during the follow-up period. 5/5 infants tested who developed opportunistic infections had CD4 counts <1000/mm^3 during the course of illness vs 1/6 other infected infants tested, 0/15 HIV-SR infants tested, and 3/46 infants born HIV-. Conclusions Elevated IgG is an early and consistent sign of HIV infection. Low CD4 counts are seen primarily in association with opportunistic infections and were not observed at birth.

M.B.O.5

PREDICTIVE VALUE OF BETA 2 MICROGLOBULIN LEVEL IN SERUM FROM CHILDREN BORN TO HIV INFECTED MOTHERS

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(1) : Hopital Trousseau, Paris, France; (2) CRSSA, Fontenay aux Roses, France; (3) Institut Pasteur, Paris France; (4) Hopital Saint Louis, Paris, France.

Objectives: To determine the predictive value of beta 2 microglobulin seric level in infants born to seropositive mothers, though, in several studies, high level of beta 2 microglobulin appears to be pejorative predictive parameter in HIV infected adults.
Methods: From 1985 to 1989 , 29 children born to HIV infected mothers were evaluated in beta 2 microglobulin seric level at neonatal period, and after one month of live .12 children (group A) have documented HIV infection ; 17 children (group B) do not have any biological symptom of HIV infection (11 months of survey at least , negative viral cultures and no seroconversion). Beta 2 microglobulin amount was determined in serum using radioimmunoassay. Statistics were performed according to non parametric methodology.
Results: In neonatal period , it doesn't appear any statistically significant difference of beta 2 microglobulin levels between the two groups , probably related to the transplacental passage of the beta 2 microglobulin . After one month , mean levels are : 4 mg / l in group A (infected) and 1,98 mg / l in group B (no biologic sign of HIV infection), these populations being statistically different ($p<0,03$). From the 12 HIV infected children : 1) among the 8 children whose beta 2 microglobulin level was greater than normal value, 7 developped AIDS related symptoms within 1 to 5 months, one remaining asymptomatic. 2) 4 had normal levels: 3 seropositive asymptomatic and 1 who developped LAS . All children without biologic symptoms of HIV infection had normal beta 2 microglobulin level after one month of life, and none of them developped biological symptoms of HIV infection (11 to 37 months of survey).
Conclusion: After neonatal period, high level of seric beta 2 microglobulin is of pejorative prognosis in children born to HIV infected mothers.

M.B.O.6

HIV1 DNA DETECTION BY PCR FOR STUDIES ON PERINATAL HIV TRANSMISSION IN AFRICA.

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Objective. To investigate the feasibility and potential interest of PCR in studies on perinatal HIV1 infection in Africa.
Patients. Leucocytes blood samples (PBL) were obtained from HIV1 positive and negative mothers in Brazzaville (Congo). In this area a 4% rate of HIV1(+) is observed in mothers child clinics. 2 groups were analyzed. Group I : 14 newborns (1 day), 7 and 7 from HIV1(+) and (-) mothers. Group II : 13 babies (2 to 9 months) born from HIV1(+) mothers.
Methods. HIV1 DNA was tested strictly under code in PBL. PCR was performed with 60 cycles and 3 sets of primers (Pol and Env). Serology : Western-blot and ELISA.
Results. Group I (newborns) : 5/7 and 2/7 scored (+) for HIV1 DNA sequences in newborns from HIV1(+) and (-) mothers respectively. The 2 Western-blot(-) mothers of PCR(+) newborns were however found (+) with a quick test. GroupII (babies) : 9/13 scored (+) for HIV1 DNA. 6/13 had clinical symptoms consistent with HIV infection and all scored (+) for PCR.
Conclusion. 1) Reliable results can be obtained with PCR on blood samples during studies conducted in Africa. 2) Our data likely indicate a high rate of maternal HIV transmission in this area. 3) PCR should be included in ongoing epidemiological studies in Africa.

Coordination des soins : le point de vue du personnel infirmier
Coordinating Care: Nurses' Perspectives

M.B.O.7 AN INTERDISCIPLINARY APPROACH TO AIDS CARE: ST. PAUL'S EXPERIENCE

Goldstone, Irene, St. Paul's Hospital, University of British Columbia, Vancouver, British Columbia, Canada.

Objective: To describe the coordinated, interdisciplinary management of patients with HIV infection at St. Paul's Hospital (SPH).

Since the early days of the AIDS epidemic it has been apparent that we are confronted with a biological and social challenge that does not fit a traditional model of patient care management. Recognising this, and that AIDS care does not fall within the purview of a single medical specialty, SPH has developed an interdisciplinary model of patient care. This model relies on the full participation of the family practitioners, medical specialists, hospital and home care liaison nursing staff, AIDS dedicated social workers, pharmacists and other related disciplines. The primary focus is on the clinical care of patients, with a special emphasis on identifying and providing direction for the resolution of psychosocial problems. There is a high degree of commitment to research and education at all levels. There is an emphasis on quality of life and treatment through outpatient care which is greatly facilitated by a dedicated HIV Clinic and close liaison with community support services. These services have allowed the successful expansion of our AIDS program to 5,367 inpatient days (1988-89) and 10,000 outpatient visits (1988). This represents 75% of the AIDS related care in the province of British Columbia.

M.B.O.8 THE IMPACT OF AIDS ON FAMILIES OF HAEMOPHILIACS IN WALES

Beese, Jacqueline, University of Wales College of Medicine, Cardiff, South Wales, U.K.

Objective. To describe the impact of Aids on the families of affected Welsh Haemophiliacs.
Anyone involved with haemophiliacs has to be impressed by their courage in getting on with the business of living in spite of the debilitating nature of the disease. Now over fifty individuals living in Wales are facing a new obstacle - HIV infection as a result of contaminated blood products; six have already died. The sex linked mode of inheritance means that more than one family member may be affected. Method. The data on which the study is based was collected over a period of twelve months from the families of adult males and children attending a haemophilia centre. The qualitative holistic approach of grounded theory is used to explain the subjective dimensions of their human experiences.
Results. At least one wife has seroconverted, others have not made love since their husbands were found to have contracted the Aids virus, largely due to the fact that their husbands recoil from physical strain. Parents have a huge burden to bear, some have experienced publicity surrounding the death of a child, several having other affected children face stigma and social isolation, others live in fear of being identified.
Conclusion. Marriages are under stress, there is evidence of poor communication between partners who frequently keep the knowledge to themselves, wondering how long they are going to be able to keep it quiet.

M.B.O.9 THE CHALLENGE FACING NURSING IN CENTRAL AFRICA

Kopolo, Olive. Department of Nursing, University Teaching Hospital, Lusaka, Zambia.

M.B.O.10 A COMPARISON OF THE PROJECTED NURSING CARE NEEDS OF HOSPITALIZED AIDS AND NON-AIDS PATIENTS

Lydia Ivanus, I. Corbett, S. Grover, et al.
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Objective. To confirm the observation that the nursing care requirements of hospitalized AIDS patients (AP) are greater than those of hospitalized non-AIDS patients (NAP).
Method. Staff nurses used the patient classification system, Project of Research in Nursing (PRN) to quantify projected patient nursing care needs. This validated tool describes patient care needs by integrating workload measurement with the nursing process (assigning a value to each anticipated nursing intervention: debridement of wound = 6 points). The advantage of this approach is that it allows for the individualization of the measurement (time) of care required (not given) as scheduled for the patient. Daily PRN scores of 69 AP admitted in 1986 were retrospectively collected from nursing records. Two matched controls without AIDS, admitted concurrently to the same service, were sought for each AP resulting in 129 NAP on whom data could be found.
Results. The mean daily projected nursing care hours were: 16±10.5 for all hospitalized AP, and 10.9±7.4 for all hospitalized NAP. Patients requiring an intensive care setting: 35.8±21.6 for AP and 24.3±18.1 for NAP. Patients admitted to a nursing unit: 14.5±5.2 for AP and 10.0±4.8 for NAP. The mean length of stay for all AP was 24.6±26.4 and 11.9±10.4 for NAP.
Conclusion. Nurses estimated that AP require 52% more nursing care than NAP. This information supports nursing judgment and intuition by providing an objective measurement of workload which is valuable for resource management.

M.B.O.11 HOME NEEDS (CARE FOR AIDS PATIENTS)

Maynard, Pat. St. Elizabeth Nursing Home, Don Mills, Ontario, Canada.

Diagnostic et histoire clinique de l'infection par le VIH
Natural History and Diagnosis of HIV Infection

M.B.0.12 CHANGING PATTERN OF PNEUMOCYSTIS CARINII INFECTIONS

Hopewell, Phillip C. San Francisco General Hospital, San Francisco, California, U.S.A.

M.B.0.13 ANIMAL MODELS OF *PNEUMOCYSTIS CARINII* PNEUMONIA

Queener, Sherry F.; Bartlett, M. S.; Smith, J. W.
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Objective. To develop a model of *Pneumocystis* pneumonia that would consistently produce a good yield of uniformly heavily infected animals suitable for drug testing or biochemical work.
Methods. Virus-free female Sprague-Dawley rats weighing 130 - 150 gm are immune suppressed by: a) cortisone acetate 250 mg/kg twice weekly, b) dexamethasone 1.2 mg/L in drinking water continuously, or c) methylprednisolone 40 mg/kg once weekly. Drinking water contains 0.5 gm/L tetracycline. Rats receive standard laboratory chow (23% protein). Transtracheal injection of 10^6 to 10^7 organisms is performed 4 to 7 days after the start of immune suppression.
Results. Virus-free rats used in these studies are also *Pneumocystis*-free. The rate at which they become infected naturally depends upon the level of exposure to already-infected animals. Transtracheal inoculation of these rats speeds the development of heavy *Pneumocystis* infections so that rats may be harvested for biochemical work by 6 to 7 weeks. Rats are also more uniformly infected by this mechanism. Tests of drug for therapy may be started at 4 weeks and harvested at 6 to 7 weeks; for relapse studies a subset of each test group is continued on immune suppression without further drug therapy for an additional 2 to 4 weeks. Tests of drugs for prophylaxis start at the time of inoculation and run 6 weeks.
Conclusion. Transtracheal inoculation of *P. carinii* into immune suppressed rats produces consistently heavy infections and allows efficient drug testing in therapy, prophylaxis and relapse protocols. These heavily infected rats are also good sources of organisms for biochemical studies.

M.B.0.14 TREATMENT OF *PNEUMOCYSTIS CARINII* INFECTIONS: ANTIMICROBIALS

Toma, Emil. Hôtel-Dieu de Montréal and Université de Montréal, Québec, Canada.

The current treatment for *Pneumocystis carinii*(PC) infection are efficacious in more than 90% of cases. Different factors contributed to this progress: better educated physicians and patients; earlier diagnosis; better management; extended knowledge of pharmacokinetics of PC drugs; the effect (s) of AZT treatment, etc. However, the incidence of adverse reactions is high and the initial therapy should often by changed. Several therapeutic principles are now recognized, such as: do not treat empirically; make an early specific diagnosis; non-specific tests (except for blood gases at rest and exercise), are not cost-effective and delay the etiologic diagnosis; consider PC also in subtle or atypical cases; mild to moderate clinical forms could be treated orally; dosage modifications have few effects on adverse reactions or survival; in the presence of side effects better change the initial therapy, etc. For patients failing and/or unable to tolerate "conventional" therapy 3,still investigational, approaches are available: eflornithine, trimetrexate/leucovorin and clindamycin/primaquine; however their effectiveness, safety and recurrence rate are not appropriately assessed. New therapeutic regimens will be probalby suggested but all these treatments should be evaluated in well-designed controlled clinical trials and not to be used indiscriminately.

M.B.0.15 NEW DEVELOPMENTS IN THE TREATMENT AND PROPHYLAXIS OF PCP

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Despite a number of therapeutic advances, PCP remains the most common serious opportunistic infection in HIV-infected individuals. Two recent developments have shown promise in potentially altering morbidity and mortality associated with this condition. These are:

Adjunctive Corticosteroid Therapy: previous retrospective work suggested that adjunctive systemic corticosteroids could have a favourable effect by reversing respiratory failure, hasten defervescence and minimizing side effects to commonly used antimicrobials. More recently, we have demonstrated in a placebo controlled trial that adjunctive oral corticosteroids (60 mg PO, OD for 7 days followed by a 14 day tapering course) can also prevent the development of clinical acute respiratory failure in patients with moderately severe PCP. This has had a significant beneficial impact, not only decreasing mortality but also improving quality of life. A welcome spin off of this approach has been the decrease in admissions to the Intensive Care Unit and earlier discharge of patients with AIDS-related PCP.

PCP Prophylaxis: the experience in leukemic patients and more recently the report by Fischl et al focused our attention on the great potential value of PCP prophylaxis in AIDS. Unfortunately this was difficult to instrument because of the generally poor tolerance among HIV-infected individuals of the commonly used prophylactic regimens. We have recently concluded a Canadian cooperative placebo controlled trial of the efficacy and safety of aerosolized pentamidine for the secondary prophylaxis of AIDS-related PCP. Patients were randomly allocated to receive pentamidine 60 mg/dose or placebo. The drug was delivered via a hand held ultrasonic nebulizer (FISONEB®, MAD = 2.5-5.0 microns) over 15 to 20 minutes. Patients received an induction treatment consisting of 5 doses in 14 days followed by one dose bi-weekly thereafter. 162 patients were randomized at the time that the study was terminated. Of the 32 cases of PCP identified during the follow-up period, 27 of them occur among the 78 placebo treated patients while only 5 occur among the 84 patients receiving active therapy ($p<.001$ chi sq). Both groups were similar in terms of baseline data and median follow-up. Side effects were uncommon and generally well tolerated. In contrast to previous reports, the tolerance of aerosolized pentamidine was extremely good and overall adverse events were rare. Our study conclusively demonstrates that aerosolized pentamidine is highly effective in the prevention of AIDS-related PCP.

* National Health Scholar, Health & Welfare, Canada

Manifestations buccales du SIDA
Oral Manifestations of AIDS

M.B.0.16

ORAL PATHOLOGY IN 105 HIV-REACTIVE PATIENTS IN BUENOS AIRES

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Objective. To present the first systematic study on oral pathology in HIV-reactive patients (HIV+Pt) in Latin America.
Methods. A total of 105 HIV+Pt with lesions in the oral cavity were examined over 8 months (Apr.-Dec.'88) by means of clinical exams, dental-eye photograph, culture and biopsy.
Results.

Pathology	HIV+	%	Pathology	HIV+	%
Erythematous candidiasis	101	96.1	Angular cheilitis	21	20
Villous leukoplasia	19	18	Erythema	16	15.2
Prog.ulcerative parodontitis	9	8.5	Pseudomembranous candidiasis	9	8.5
Gingivitis	9	8.5	Herpetic stomatitis	6	5.7
Hypertrophic gingivitis	5	4.7	Hyperplastic candidiasis	4	3.8
Petechiae - Telangiectasis	4	3.8	Ulcer-necrosing gingivitis	3	2.8
Recurring ulcerative aphthae	2	1.9	Xerostomia	1	0.9

Conclusion. Candidiasis in its different forms was the most frequently found lesion (64.1%); villous leukoplasia was the second one. All the HIV+Pt studied belonged to groups II and III provided by the CDC. Only 9 Pt had pseudomembranous candidiasis -updated and well-known name of this disease. Early or very small lesions of the oral cavity are likely to be regarded too lightly by clinicians if the latter lack the skilled contribution of stomatologists. A new classification of AIDS-related diseases should include appropriate stomatological information.

M.B.0.17

ORAL MANIFESTATIONS OF HIV INFECTION IN AFRICAN PATIENTS

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Objective. To describe type and prevalence of the oral manifestations associated with HIV infection in hospitalized African patients.
Methods. Consenting patients of a systematic 50% sample of all hospitalisations between 10/15/1988 and 30/11/1988 in 2 internal medecine wards of Mama Yemo Hospital in Kinshasa, Zaire, were tested for HIV antibodies and underwent an exam of the oral cavity.
Results.

	HIV (+) (n=100)	HIV (-) (n= 88)	P-value
Any oral complaint	88%	48%	.0000
Any type of candidiasis	62%	26%	.0000
Pseudomembraneous candidiasis	31%	6%	.0000
Atrophic candidiasis	30%	21%	NS
Hyperplastic candidiasis	2%	0%	NS
Parotid swelling	6% *	0%	.07
Kaposi sarcoma	5%	0%	NS
Aphtous ulcers	5%	0%	NS
Necrotising gingivitis	4%	1%	NS

* Two patients had bilateral and 4 unilateral chronic painless parotid swelling.
Condylomata and herpes simplex were rare (1%), and present in HIV(+) patients only. Periodontitis, and hairy leukoplakia were not observed.
Conclusion. Oral disease, especially candidiasis, is common in hospitalized Zairian patients with HIV infection. Hairy leukoplakia seems infrequent in this population. Chronic painless parotid swelling was highly predictive for HIV seropositivity.

M.B.0.18

DEMONSTRATION OF EBV-DNA PRIOR TO THE OCCURENCE OF OHL AND ITS CORRELATION WITH THE CLINICAL STATUS

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Objective: To investigate the prevalence of Epstein-Barr-virus (EBV) and human papilloma virus (HPV) in epithelium of the tongue of HIV patients and control persons.
Methods: Filter in-situ hybridisation assays for the detection of EBV-DNA and HPV-DNA were used. The clinical status of the HIV patient was determined according to the Walter-Reed classification system (WR).
Results: Whereas EBV-DNA could not be detected except at low concentrations in 3 of 35 HIV-negative control persons, HIV patients with oral hairy leukoplakia (OHL) contained EBV-DNA at high concentrations. In contrast to the unambiguous presence of EBV in OHL, none of the specimens scored positive for HPV-DNA types 6, 11, 16 and 18. EBV-DNA could also be demonstrated in the epithelium of the tongue of 19 out of 32 HIV patients without OHL. 3 of these patients developed OHL within 4 to 7 months. On the average, HIV patients without OHL were WR 3.44 and HIV patients presenting with OHL WR 4.36 ($p < 0.07$). HIV patients with detectable EBV-DNA were WR 4.05 and HIV patients without EBV-DNA WR 2.54 ($p < 0.0004$).
Conclusion: The demonstration of EBV in OHL means not only a silent carrier status, but in the absence of HPV-DNA an essential role of EBV in the pathogenesis of OHL. Moreover, the clinical status of HIV patients could be more reliably predicted by the demonstration of EBV-DNA than by the occurence of OHL. Thus the demonstration of EBV-DNA may be an earlier and more valuable prognostic marker for the progression of the HIV disease than the occurence of OHL.

M.B.0.19

SEXUAL PRACTICES AS RISK FACTORS FOR CANDIDIASIS AND HAIRY LEUKOPLAKIA: THE ORAL AIDS EPIDEMIOLOGY PROJECT.

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Schools of * Medicine & ** Dentistry, University of California, San Francisco, The Oral AIDS Center; *** Department of Public Health, San Francisco, CA, U.S.A.

Objective: To test the hypothesis that some sexual practices would increase the risk for oral lesions caused by infectious agents, ie., candidiasis (CD), hairy leukoplakia (HL).
Methods: The Oral AIDS Epidemiology Project is a collaborative project with several prospective cohorts of HIV infected individuals where the examiners (who are blind to serostatus) have been trained in the diagnosis of oral lesions, and use a common oral exam form. The cohorts collect extensive histories of sexual behaviors and in addition to detailed physical exams collect blood for immunologic measures. Odds ratios were used to compared sexual practices in seropositive gay men with normal oral exams and those with specific lesions. Only men with HL (n=110) candidiasis (n=51) or a normal exam (n=301) in the 1987 exam are included in this analysis. 34 men reported oral-anal sex and 245 reported oral-genital sex.
Results: Odds ratios *[95% C.I.]*

	Candida	Hairy Leukoplakia
Oral-Genital Sex	2.33 *[.79, 6.90]*	3.87 *[1.84, 8.12]*
Oral-Anal Sex	1.00 *[.21, 4.82]*	.94 *[.38, 2.34]*

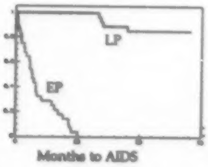
Conclusion: The increased risk of both infections with oral-genital sex implies that both may be contributed to by sexual activity. The low prevalence of oral-anal sexeven if under reported, makes it unlikely to be as important as other sexual practices. Conversely HL and CD may be markers for men who continue to be sexually active and may offer possible outcome measures for behavioral intervention studies in healthy seropositive men designed to promote safer sexual practices.

M.B.0.20

RISK FACTORS FOR RAPID PROGRESSION FROM HAIRY LEUKOPLAKIA (HL) TO AIDS.

Greenspan, Deborah*; Greenspan J.S.*; Overby G.*; Borowsky C.**; Hollander, H.**; Feigal, D.W.**. * Schools of Dentistry & **Medicine, University of California San Francisco, Oral AIDS Center SF CA, USA.

Objective. To determine factors predictive of early progression to AIDS after HL.
Methods. This case control study defined outcome as early progression (EP) or late progression (LP) based on whether AIDS developed within 1000 days. 27 patients with LP and 28 with EP were selected from the earliest cases in a cohort of 508 patients who have been diagnosed at the Oral AIDS Center at UCSF since 1982. Complete follow-up was obtained from patient and family contact, referring physician and hospital records, and state death records.
Results. Some risk factors most likely reflected duration of HIV infection. Hepatitis B and syphilis infection were both associated with an odds ratios of 4 for early progression, and probably were markers for men whose sexual activities were high risk early in the epidemic. Persistent generalized lymphadenopathy, *Herpes zoster*, *H. simplex*, and oral candidiasis were not more frequent in the EP than LP groups. Other risk factors reflect current immunologic competence. T cell subsets were not available from this early cohort, but skin testing was available in 29. Skin test anergy for candida was strikingly predictive; 17 of 19 nonreactive were in the EP group; all 10 of who reacted were in the LP group.



Conclusion. Rapid progression from HL is not universal. Positive candida skin testing predicts longer time to AIDS.

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M.B.0.21

ORAL KAPOSI'S SARCOMA IN AIDS: MANAGEMENT WITH INTRALESIONAL CHEMOTHERAPY

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Objective. To observe the efficacy of local intralesional Vinblastine in management of oral Kaposi's sarcoma (KS).
Methods. All patients had histologically proven intraoral KS. Patients with bilateral palatal lesions were selected, one side was treated with intralesional 0.2 to 0.8 mg of Vinblastine (0.2 mg/ml) following local anesthesia. Patients were seen every two weeks following injection. In addition to palatal lesions, lesions affecting the gingiva and tongue were treated using the same technique.
Results. 10 patients with bilateral palatal lesions were treated. All were homosexual/bisexual males, demonstrating HIV positivity and meeting the diagnostic criteria of AIDS. Age range - 24 to 56 years (mean 37.6 years). After a single injection with Vinblastine, the mean reduction in tumor size of the palatal lesions was 51% While, increase of the untreated KS occurred in 7 of 10 patients. 4 patients received repeat treatments to the same lesions with an overall reduction in size of 71% Combining the results with 1 or 2 injection treatments, the mean reduction in surface area of the palatal lesions was 63% Follow-up was a mean of 3.6 months. Discomfort following injection was assessed using visual analogue scales with pain of 24 to 48 hours reported: 2 patients reported no pain, 3 patients mild pain, 4 moderate pain and 1 severe pain. Pain was controlled with oral analgesics. The gingival and tongue lesions showed more complete reduction in size than the palatal lesions treated.
Conclusion. The use of intralesional Vinblastine appears to provide good palliation of oral KS lesions without significant side-effects due to the treatment.

Nouvelle technique de diagnostic rapide et améliorée
New Improved Rapid Diagnosis

M.B.O.22 IMMUNOLOGICAL CHARACTERIZATION OF RECOMBINANT HIV ENVELOPE PROTEINS

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A set of nine proteins essentially encompassing the entire HIV envelope gene have been synthesized in *Escherichia coli*. Since the levels of expression range from 2 to 20 per cent of the bacterial mass, it has been possible to purify several of these proteins in milligram quantities. The purification procedures involve extraction with salts and detergents followed by high performance liquid chromatography (HPLC). The identity of several of the proteins has been confirmed by determination of the amino-terminal amino acid sequence. The immunological properties of these proteins were analyzed by the immunoblot (Western blot) procedure using a panel of sera from HIV positive individuals. Eight of the proteins reacted strongly with at least some of the sera indicating that there are a large number of determinants in the HIV envelope that can elicit an immune response in humans. Six of the sera showed some degree of reaction with all positive sera tested indicating that they have potential use as antigens in diagnostic tests. Two of these proteins, from clones 318 and 566, were tested in an ELISA assay. While both antigens reacted with HIV sera, the protein from clone 566 was found to be more sensitive and specific than that of clone 318. Clone 566 is from the transmembrane (gp41) region. The sensitivity and specificity of the ELISA using clone 566 protein was found to be equivalent to an ELISA using immunoaffinity-purified native gp41. This recombinant protein thus can be the basis of a test for HIV infection that does not involve the use of viral products. We have produced several monoclonal antibodies to the recombinant proteins and are using them to map the immunological determinants of the native envelope gene.

M.B.O.23 ANTIBODY RESPONSES TO ACCESSORY GENE PRODUCTS IN HIV-1 INFECTION.

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Objective. Determination of Ab responses against nef-, rev-, and tat-gene products of HIV-1 in a cohort of 134 initially asymptomatic HIV-1 seropositive men and 72 men who seroconverted for Ab to HIV-1 structural proteins; analysis of possible relationships between Ab responses to HIV-1 nef, rev, and tat vs. disease progression and serological and immunological markers predictive of rapid disease progression.
Methods. Enzyme-immunoassays based on E.coli expressed nef-, rev-, and tat-gene products were performed on sequential sera from the above men.
Results. In 68% nef-specific Ab, once detected, persisted. In some men nef-specific Ab were transiently (7%) or intermittently (5%) detectable. Nef-specific Ab were not found in 20%. An absent, or transient, or intermittent nef-specific Ab response was significantly associated with the absence of Ab to core proteins, with core antigenaemia and with low CD4+ cell counts, i.e. profiles predictive of rapid disease progression. Although more cases of AIDS and AIDS-related disease (21/86 vs 28/180) occurred in the nef-Ab negative group than in the positive group, this difference did not reach significance. Data regarding Ab responses against HIV-1 rev and tat will also be presented.
Conclusion. Expression of HIV-1 accessory gene products in vivo may reflect disease progression in HIV-1 infection.

M.B.O.24 SEROREACTIVITY TO HIV-1 VIF, TAT, AND NEF PROTEINS

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Objective. Determination of the prevalence of antibodies against HIV-1 vif, tat, and nef proteins in sera of HIV-1 infected patients from different clinical stages.
Methods. HIV-1 vif, tat, and nef genes were cloned in procaryotic vectors and were expressed in total (tat) or as MS-2 fusion proteins (vif, nef). These proteins were employed in immunoblot and RIPA-PAGE experiments. The specificity of reactions was confirmed by competition experiments and with control sera from HIV negative patients.
Results. Analysis of 100 serum samples showed a low percentage of sera reactive with vif and tat (15% and 25%, respectively) in asymptomatic HIV positive carriers. This percentage increased to 75% and 40%, respectively, in patients with AIDS. In contrast, 85% of the sera investigated showed a reactivity with the nef protein regardless of the stage of disease.
Conclusion. Our data indicate an early antibody respon[illegible]f and a relatively late immune response to tat and vif.

M.B.O.25 A RAPID AND SIMPLE PROCEDURE FOR FIELD TESTING OF HIV-1 ANTIBODIES

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ORGENICS Ltd., Yavne, ISRAEL

Objective. Evaluation of the HIV-1 antibodies ImmunoComb kit.
Methods. Serum and plasma specimens were tested in the HIV-1 Antibody ImmunoComb™ test kit. Fifty microliters of each specimen are inserted into a specimen well of a Developing Plate, containing all the reagents required for running the ELISA procedure to completion. A mixture of 3 synthetic polypeptides, representing two gp41 epitopes and one gp120 epitope (gp160 conserved), are attached in the form of spots to projections ("teeth") of a flat plastic card. The ImmunoComb card is inserted into the specimen-containing wells to allow attachment of the anti-HIV-1 antibodies to the polypeptides. Thereafter, the card is moved through compartments containing washes, alkaline phosphatase anti-human IgG conjugate and BCIP-NBT chromogenic system. Positive specimens result in a purple-grey spot at the location of the peptide mix. The whole procedure takes 30 minutes at room temperature and can be carried out in a non-laboratory environment. Sensitivity and specificity were calculated relative to the Western Blot results.
Results. Over 3000 specimens, including early seroconvertors and Western Blot indeterminates were tested at various medical centers in Europe and Israel. The ImmunoComb kit demonstrated 99.2% sensitivity and 99.64% specificity.
Conclusion. The use of a conserved epitope and high local concentration of antigen makes the ImmunoComb procedure a rapid and accurate assay kit for the detection of HIV-1 antibodies, which is operable anywhere.

M.B.O.26 A RAPID WHOLE BLOOD APPLICATION FOR HIV ANTIBODY TESTING USING LIPOSOME-BASED TECHNOLOGY.

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The demand for more rapid HIV antibody testing has resulted in the development of a 5-minute, whole blood test, storeable at room temperature, which eliminates the need for conventional cell separation methods. Purified inactivated HIV cell-lysate antigen is immobilized on a membrane incorporated into a flow-through device. Diluted human whole blood is applied to the device and washed. The liposome-based detector reagent is added, and the reaction is visually read. A pink triangle indicates a reactive result; a pink dot used as an internal control indicates a negative result. Preliminary results from a study utilizing 185 whole blood specimens obtained from cadavers yielded a correlation of 99%, when compared to a licensed HIV ELISA. Correlation with Western blot was 100% for Western blot positive specimens. Two reactive specimens were non-reactive by ELISA and Western blot indeterminate, resulting in a specificity of 98.9%. These data demonstrate the efficacy of a rapid test using whole blood for the Medical Examiner's Office, Emergency Room, physician's office, and third world countries where instrumentation and cold storage are not readily available.

M.B.O.27 A MULTISITE STUDY OF A PARTICLE AGGLUTINATION TEST FOR DETECTION OF HIV ANTIBODIES

Schiff, Robert*; Piccirilli, R.**; Busch, M.***; Peetoom, F.****; and Tegtmeier, G.*****.
*Schiff & Company, N. Caldwell, NJ, **NE Penn. Region ARC, Wilkes Barre, PA, ***Irwin Memorial Blood Bank, San Francisco, CA, ****ARC Blood Services, Portland, OR, *****Community Blood Center of Greater Kansas City, MO.

Objective. To compare performance of the SERODIA-HIV Assay to screening tests for the detection of HIV antibody.
Method. Blood donor and library samples were collected at 4 blood banks. Samples were tested by the SERODIA-HIV Assay (Fujirebio, Inc., Japan) using the FASTEC 901 pattern reader and assayed by either the Abbott or Genetic Systems Enzymeimmunoassays. Results were compared on initial and repeat testing. "Western Blot" was performed on samples which were repeat reactive in any of the assays.
Results. On initial testing of 10,481 samples agreement between the screens and SERODIA HIV was 98.8%. After retesting, the agreement was 99.3%. Of 152 samples that were repeat reactive by the screening tests and SERODIA and tested by Western Blot, 143 were positive, 4 indeterminate, and 3 negative. Of 69 samples that were screening test positive and SERODIA negative and then tested by Western Blot, 68 were negative and 1 was indeterminate. 4 samples that were screening test negative and SERODIA positive showed 2 positive by Western Blot, 1 negative and 1 indeterminate.
Conclusion. SERODIA appeared more sensitive than the Genetic Systems or Abbott procedures, especially during dilution studies, showed no false negatives and had fewer false positives than the screening tests.

Traitement des infections associées à l'immunodéficience causée par le VIH
Management of Infections Associated with HIV Immunodeficiency

M.B.0.28 TOXOPLASMOSIS

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M.B.0.30 TUBERCULOSIS (TB) AND ATYPICAL MYCOBACTERIA IN PATIENTS WITH HIV INFECTION

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TB is common in HIV-seropositive populations with a high prevalence of M. tuberculosis infection. TB is often an early AIDS related opportunistic infection, occurring when CD4 cell counts are still relatively high (>200/ul). Clinical manifestatious may be atypical, especially in extremely immunosuppressed patients, though 60-80% of patients have pulmonary disease. Common radiographic findings include diffuse infiltrates and adenopathy. Tuberculin reactivity is found in 40 to 80% of patients. Response to standard antituberculosis therapy is generally excellent; lifelong therapy may not be necessary. Prevention of tuberculosis with prophylactic treatment of tuberculin-reactive HIV-seropositive persons is an urgent public health priority.

M. avium-complex (MAC) is a late complication of HIV-related immunosuppression. Most MAC disease is probably a result of recent infection, and all HIV risk groups are equally affected. Several distinct clinical syndromes are associated with MAC infection. While MAC causes considerable morbidity, its contribution to mortality is unclear. Treatment is difficult as most isolates are resistant to standard antituberculosis drugs. Studies in animal models and limited human data suggest that newer regimens may control MAC disease. Prevention of MAC infection may be possible with prophylactic therapy.

M.B.0.32 CRYPTOSPORIDIOSIS, ISOSPORIASIS AND MICROSPORIDIOSIS

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Explosive, chronic, fatal, nonbloody diarrhea with/without dissemination pose a very serious management problem in AIDS, especially those caused by Cryptosporidium Isospora, belli, and Microsporidia. These protozoans are easily detected in stool specimens using acidfast or immunofluorescent staining procedures, except Microsporidia which has not been demonstrated in stool and thus requires intestinal biopsy. Transmission is mostly fecal-oral, sexual, water/food borne, animal contact and possibly inhalation. Risk factors include travel to tropical countries, homosexuality immunocomprised, etc. Disseminated infection involves cholecystitis, hepatitis, pulmonary infection, for Cryptosporidium and myositis hepatitis for Microsporidia. Although Cryptosporidiosis in nonimmunocomprised host is self-limited, in AIDS, it is resistant to multiple therapies. Spiramycin and transfer factor have limited success. Currently, the most promising treatment is hyperimmune bovine colostrum from cows vaccinated with cryptosporidial antigen given to AIDS associated symptomatic patients resulting in long term remission. Isosporiasis with a much lower incidence than cryptosporidiosis is less devastating. Response to atabrin and sulfamethoxazole has been noted with/without recurrences in some earlier infections. Little is known of Microsporidia, the newly recognized pathogen in homosexual men with AIDS. Cases known so far are all fatal. In conclusion, drastic research is definitely needed to reduce high morbidity and mortality of these opportunistic infections in AIDS.

M.B.0.29 "CRYPTOCOCCOSIS"

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M.B.0.31 HUMAN CYTOMEGALOVIRUS (HCMV) INFECTIONS IN AIDS: DIAGNOSIS AND ANTIVIRAL TREATMENT.

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Objective. To correlate HCMV antigenemia and viremia with symptoms and ganciclovir (GCV) treatment in AIDS patients with sistemic HCMV infections. Methods. Antigenemia was determined in peripheral blood polymorphonuclear leukocytes (PMNLs) by IFA using a MAb to HCMV immediate early antigens (EA) (2h assay), and viremia by IFA staining of "shell vial" cell cultures (inoculated with a known number of PMNLs) 24h p.i. using a MAb to HCMV EA. Results. Overall, 33 of the 85 (38.8%) AIDS patients examined had reactivated HCMV infection, 14 of 55 (25.4%) had viremia and 7 of 30 (23.3%) both viremia and antigenemia. Of these, the 2 patients with a high number of positive PMNLs had high fever and were thus treated with GCV, with final disappearance of fever and virus from blood. Of 89 blood samples tested, 78 (87.6%) gave concordant results for both viremia and antigenemia, 9 (all taken during GCV therapy) were positive for antigenemia only and 2 for viremia only. Conclusion. By monitoring HCMV antigenemia and viremia it seems possible to anticipate onset of symptoms and to earlier initiate and carefully evaluate effectiveness of GCV treatment.

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Infections concomitantes du SIDA
Concomitant Infections in AIDS

M.B.O.33 THE SPECTRUM OF NEUROSYPHILIS IN HIV-INFECTED INDIVIDUALS*

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OBJECTIVE. To describe the spectrum of neurosyphilis in HIV-infected individuals.
METHODS. Retrospective review of all cases of neurosyphilis in HIV-infected individuals diagnosed at St. Paul's Hospital, over the 2 year period ending December 31, 1988.
RESULTS. Neurosyphilis was identified in 7 HIV-infected homosexual males over the study period. Only 1 patient was known to have AIDS at the time of diagnosis. All of them had a history of at least 1 episode of primary syphilis, up to 32 months prior to the diagnosis of neurosyphilis for which they received benzathine penicillin 2.4 million units IM. Presenting neurological symptoms were varied, including 1 or more of the following: headache (n=4), focal signs (n=4) and dementia (n=1). A characteristic maculopapular rash on palms and soles was present in 3 patients, and one patient also had a dark field positive penile chancre. One patient was completely asymptomatic. Serum RPR and CSF-VDRL were positive in all cases. CSF examination further revealed elevated proteins and increased cellularity (predominantly lymphocytes) in all cases. CT-scan of the head was abnormal in 2 cases (a non enhancing mass and multiple infarcts). All patients were treated with IV aqueous penicillin with daily doses in excess of 18 million units for 10 days. Clinical, serological and CT-scan improvement was documented in all cases.
CONCLUSIONS. The treatment of early syphilis as presently recommended may not be adequate in HIV-infected individuals who appear to be at an increased risk for progression to neurosyphilis. Its presentation can vary from completely asymptomatic to florid neurological deficit. Response to therapy appears to be uniformly good. Whether or not HIV-infected individuals who have positive syphilis serology should have routine CSF even in the absence of neurological symptoms, remains to be established. Prospective studies should be undertaken to further characterize the interaction between HIV infection and syphilis.

* Supported in part by the National Health Research Development Program (NHRDP), Health & Welfare, Canada.

M.B.O.34 CONCOMITANT SYPHILITIC AND HIV INFECTION

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Objective. Evolution of syphilis have been studied in a population of HIV with regard to progression mode and clinical pictures. Reciprocal interactions between syphilis and HIV have been suggested based on the observation of unusually aggressive forms of treponemic infection, particularly at the CNS level.
Methods. 37 homosexual, mean age 27 years, AIDS affected, have been observed. The following parameters were considered: clinical feature, course of the diseases, degree of immunodeficiency (Th/Ts), serological and immunological data (including CSF examination). In 36 cases, the clinical immunological feature of syphilis was not found to be significantly influenced by the superimposition of HIV infection nor by HIV related diseases. In only one case (G.A., male, 52 years, AIDS with PCP, CMV, HSV, Candida Th/Ts 0.52) presenting with clinically overt tabe dorsalis, the evolution to neurosyphilis seemed to be accelerated by HIV infection. Serological features (siero and liquor-isoelectrofocusing) indicated possible reinfection. The patient was treated with Bayercillina (Propicilline) standard dose.
Results. Except for the case above reported, the observations of our series does not confirm the hypothesis of a synergistic effect between the two infections. Reinfection, therefore by treponemic after HIV seroconversion seem to be the only event able to activate an unusual, aggressive forms of treponemic infection.

M.B.O.35 EFFECT OF PREVIOUS SYPHILIS INFECTION ON CSF ABNORMALITIES IN HIV-1 INFECTED INDIVIDUALS

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Objective: To determine whether previous syphilis infection is associated with specific CSF abnormalities reflecting increased CNS HIV-1 activation in HIV-1 infected individuals.
Methods: 82 homosexual/bisexual men had CSF analysis as part of a prospective neurological study. Six additional HIV-1 seropositive individuals with previous syphilis infection were included. None had neurosyphilis, opportunistic CNS infections or HIV-1 related neurological disease. All had negative serum RPR or RPR titers <1:4 consistent with previous treatment and all had negative CSF VDRL. CSF analysis included cell count (WBC), total protein (Prot), oligoclonal bands (OCB), immunoglobulin concentration (IgG%), IgG index, blood brain barrier integrity (BBB), and HIV-1 isolation. Previous syphilis infection was assessed using serum FTA.
Results:

	CSF parameters: proportion abnormal							Blood CD4
	WBC ≥ 5	Prot ≥ 45	OCB ≥ 1	IgG% ≥ 6.1	IgG index ≥ 0.7	BBB ≥ 6.0	HIV Culture	Count (mean $\pm$ SD)
FTA + (n=30)	6/28	7/30	8/29	11/28	15/28	45/57	6/24	492 $\pm$ 373
FTA - (n=58)	20/56	15/58	21/56	20/57	27/57	15/20	15/58	528 $\pm$ 266

No significant differences were observed in comparing group means of the CSF parameters. An equally high rate of CSF abnormalities were noted in FTA + individuals as in the FTA - group.
Conclusions: Prior syphilis as assessed by FTA serostatus is not associated with a higher rate of CSF abnormalities. This suggests that previous syphilis infection does not lead to increased HIV-1 activation within the CNS.

M.B.O.36 TRAITEMENT DE LA TOXOPLASMOSE CEREBRALE PAR LA CLINDAMYCINE ET LE 5-FLUOROURACILE.

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La toxoplasmose cérébrale (TC) représente, au cours du SIDA, la plus fréquente des infections opportunistes du système nerveux central (25 à 40% des cas). L'association de référence pyriméthamine-sulfadiazine (PYR- SULF) fait preuve d'une toxicité telle que d'autres combinaisons thérapeutiques sont en cours d'évaluation : parmi celles-ci, in vivo PYR-clindamycine (CLIN), in vitro PYR-5fluorouracile (5FU) dont l'activité anti-toxoplasmique serait synergique. Nous rapportons le cas de 3 patients (pts) traités par CLIN-5FU en raison d'une intolérance hématologique absolue à la PYR et la SULF. Patients. 3 pts (2 hommes et 1 femme d'âge moyen 34 ans) n'ayant jamais reçu de sulfamide ou de PYR, sont traités pour une TC par SULF- PYR avec acide folinique. 2/3 pts reçoivent de l'AZT dont l'un pendant le traitement anti-parasitaire (thrombopénie périphérique sévère). SULF-PYR arrêté en moyenne à J24 pour aplasie grave est relayé par CLIN-PYR avec des interruptions itératives de 1 à 4 mois responsables de rechutes chez chacun des 3 pts. Méthodes: 2/3 rechutes sont traitées en perfusion par CLIN (4,8g/j)-5FU(1,5mg/KG/j) (1/10 de la posologie utilisée en chimiothérapie), la 3è étant traitée d'emblée par 5FU seule pendant 1 mois (hépatite à la CLIN). Lors de l'introduction du 5FU, 2/3 pts sont sevrés de tout traitement anti-parasitaire depuis 1,5 mois, le 3è étant sous CLIN seule depuis 10j. Résultats: Le patient en monothérapie au 5FU rechute au bout d'1 mois; l' IRM du 2è est à 2 mois normale en dehors d'une encéphalite VIH, pour le 3è la CLIN est arrêtée à J10 (toxidermie sévère) l'IRM à 1 mois montrant une disparition de l'oedème avec un abcès stable en taille mais moins évolutif. La tolérance biologique est parfaite pour les 3 pts et pour les 2 derniers l'amélioration clinique est spectaculaire. Discussion: L'activité anti-toxoplasmique de l'association 5FU-CLIN n'a jamais été démontrée; cependant sur la base d'études in vitro ce traitement a été tenté chez 3 pts en impasse thérapeutique. Les résultats partiels obtenus appellent 3 remarques : la méconnaissance de la pharmacocinétique du 5FU à cette faible posologie (passage neurologique, modalité de perfusion), la responsabilité de la CLIN dans l' efficacité de l'association, enfin le recul insuffisant sur ce petit nombre de patients. Conclusion: L'association 5FU-CLIN peut être intéressante en cas d'impasse thérapeutique de la TC du SIDA: une évaluation préalable in vitro et chez l'animal paraît souhaitable.

M.B.O.37 CENTRAL NERVOUS SYSTEM TOXOPLASMOSIS IN AIDS PATIENTS. EFFICACY OF AN INTERMITTENT MAINTENANCE THERAPY

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OBJECTIVE. To describe the characteristics of 34 episodes of Central Nervous System (CNS) toxoplasmosis and the efficacy of an intermittent (2 days per week) maintenance therapy to avoid relapses.
METHODS. CNS toxoplasmosis was accepted when the clinical and CT scan findings were consistent unless an alternative diagnosis became apparent. Treatment was performed with pyrimetamine (P) (25 mg) plus sulfadiazine (S) (100 mg/kg) or clindamycin (C) (2400 mg) daily during 3 weeks. Same drugs and dosage were used for maintenance therapy but given only 2 days per week.
RESULTS. Thirty four episodes of CNS toxoplasmosis developed in 29 (15.1 %) of the 192 AIDS cases diagnosed during a 24 months period. Twenty (69%) were drug addicts and the toxoplasmosis was the first opportunistic infection in 15. Focal neurological signs (64.7%) were the most common clinical presentation and ring-like contrast enhancing lesions (55.9%) the most common CT scan finding. A basal IgG antitoxoplasmic antibody titer) 1/20 was found in all cases. Twenty four patients (82.8%) survived the first episode and could be followed-up. Three (27.3%) among the 11 who decided not to perform any maintenance therapy relapsed. Conversely none of 13 with an intermittent maintenance therapy (11 with P/S and 2 with P/C) relapsed, during a median follow-up of 6 months.
CONCLUSION. CNS toxoplasmosis is a frequent opportunistic infection in Spanish AIDS patients and an intermittent long term maintenance treatment with P/S or even with P/C was effective for preventing relapses.

M.B.O.38 MORTALITY, TREATMENT RESULTS AND RELAPSE RATES OF PULMONARY TUBERCULOSIS IN AFRICAN HIV(+) AND HIV(-) PATIENTS

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Objectives. To assess mortality, efficacy of anti-tuberculous(TB) therapy, and relapse rate of pulmonary tuberculosis (pTB) among HIV(+) and HIV(-) patients in Kinshasa, Zaire.
Methods. We tried to trace 754 smear (+) pTB patients who participated in in a 1987 crossectional HIV seroprevalence study among TB in- and outpatients. Patient records were reviewed to assess mortality. All survivors were invited to participate in a prospective study. After completing 1 year anti-TB treatment patients were evaluated by clinical exam, sputum Ziehl smear, TB culture, HIV serology and chest X-ray, and later, bimonthly by sputum smear.
Results. Mortality: data were available from 631 (84%) patient records. Sixty (38%) of 155 HIV(+) and 26 (5.5%) of 476 HIV(-) patients had died within 12 months after TB diagnosis (p(0.0001).
Treatment results: 349 (46%) patients were evaluated after completing TB treatment. Eleven (14%) of 79 HIV(+) and 39 (14%) of 270 HIV(-) patients had a (+) TB culture (all M.tuberculosis). Eight (73%) of 11 HIV(+) and 32 (82%) of 39 HIV(-) TB culture (+) patients had (-) sputum smears. Relapse rate: 5 (7%) of 68 HIV(+) and 23 (10%) of 231 HIV(-) patients had a smear (+) pTB relapse within 6 months after stopping anti-TB drugs.
Conclusion. In this study surviving HIV(+) patients responded equally as well to anti-TB treatment as HIV(-) patients, but HIV (+) patients had higher mortality rates. Surviving HIV(+) pTB patients were not at increased risk of pTB relapse.

Pédiatrie : développement neurologique des enfants infectés par le VIH
Pediatric: Neuro-Development in HIV Infected Children

M.B.0.39

NEUROLOGICAL INVOLVEMENT AND PRONOSTIC FACTORS AFTER MATERNO-FETAL INFECTION

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Ninety four HIV1-infected infants (present median age 3 years) have been serially followed : 20 % of patients had intense, and 6 % moderate neurological abnormalities (onset during the first year for 60 % of patients). Intense neurological abnormalities were correlated with an increased risk of death (relative risk : 8, survival rates at 3 years 30 % vs 94 % in other patients), with the presence of opportunistic infections and, at initial evaluation, with presence of a low lymphocytic proliferation rate to antigen stimulation, a low T4 count, with the absence of anti P18 and P25 antibodies in serum. A low or negative titer of anti HIV antibodies in CSF was also correlated with intense neurological disease. Conversely, an intra blood brain barrier anti HIV antibodies synthesis was observed in all tested patients without neurological disease. Abnormalities in CT scan were found in 37,5 % of patients with neurological disease, usually late during the course of the disease.

In conclusion : (1) The evolution of HIV infected infants was bimodal, one groupe having a poor prognosis and a severe encephalopathy and the other a better prognosis and no frank encephalopathy (although an intermediate degree of mental retardation might be frequent) ; (2) intensity of neurological disease and immunodeficiency were highly correlated.

M.B.0.40

A PROSPECTIVE STUDY OF NEUROLOGICAL DEVELOPMENT IN INFANTS AT RISK FOR HUMAN IMMUNODEFICIENCY VIRUS (HIV-1) INFECTION.

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Objective: To prospectively determine the nature and prevalence of neurological and developmental abnormalities in infants of HIV-1 infected women. Methods: Sixty infants of HIV-1 seropositive women and 8 uninfected controls were evaluated every 3 months for neurological and developmental (using the Bayley Scale) abnormalities. Results: The mean enrollment age of subjects was 3 months (range 2-26 months). Of the infants born to seropositive women there were 15 HIV-1 infected infants, 9 uninfected infants and 36 infants of indeterminant status. Statistically significant differences were found in the frequency of abnormal neurological findings and below average Bayley scores, ($p<0.01$ and $p<0.05$, respectively; Fisher's exact test), when the study groups were compared with each other and with controls. Nine of the 15 HIV-1 infected infants had abnormal neurological examinations and 7 had Bayley Scales between 1 to 3 SD below normal. Neurologic findings included hypertonia (6), hyperreflexia (5), truncal hypotonia (4) and acquired microcephaly (4). Of the 7 known HIV-1 infected children with normal neurological examinations none had abnormal Bayley Scales. Six of 7 uninfected infants born to seropositive mothers had normal neurologic and developmental exams. Conclusions: Neurological abnormalities were detectable in the first year of life in 60% of known HIV-1 infected infants. Further study of this group is needed to determine whether all children ultimately develop abnormalities.

M.B.0.41

THE COURSE OF NEURODEVELOPMENTAL FUNCTIONING IN THE INFANTS OF IVDA AND HIV SEROPOSITIVE PARENTS

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Objective. To study the medical and neurodevelopmental effects of various teratogens on the offspring of high risk and substance abusing parents.
Methods. Pregnant women with both high risk and substance abusing behaviors who attended hospital affiliated clinics were offered enrollment in a multicenter NIH sponsored program. A cohort of 34 infants born to these mothers were followed longitudinally during the first year of life with serial standardized developmental evaluations and medical and neurological assessments. Thirty-two percent of the mothers were seropositive for HIV. A Kent State Adaptation was performed on the Bayley Scales of Infant Development in order to delineate strengths and weaknesses in different areas of functioning.
Results. Early results during the first year of life indicate that the general rate of development is slower in the HIV positive group compared with the non-infected group. Prelinguistic language skills were more delayed than other areas of functioning (chi square significant at the $<.05$ level). Among the seropositive infants, no regression in developmental skills was noted except during periods of acute illness. Subjects were matched and no significant differences were found in social support, level of maternal education and parity.
Conclusions. Current data indicates that subtle central nervous system(CNS) impairments may be more pervasive earlier than previously documented in HIV seropositive infants and they differ from patterns in older children.

M.B.0.42

PROSPECTIVE NEURODEVELOPMENTAL OUTCOME OF INFANTS WITH PERINATALLY ACQUIRED HIV INFECTION AND THEIR CONTROLS.

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OBJECTIVE. To assess the neurodevelopmental sequelae of HIV infection in children.
METHOD. As part of a prospective neurodevelopmental follow-up, 47 children born to HIV seropositive mothers and 71 born to seronegative controls were evaluated at 1,3,6,9,12 and 18 months of age using age appropriate instruments (Einstein and Bayley Scales, and the Fagan Test of Visual Memory), by an examiner blind to the infants' serostatus.
RESULTS. Of the infants born to seropositive mothers, 10 were clinically infected; 17 seroreverted by 15 months of age and 20 were of indeterminate status. No differences in development were found when comparing the infants of HIV infected mothers with those of the seronegative mothers. Of the 10 HIV infected infants, 9 had HIV disease. Eight of the 9 had motor disabilities, 6 of whom presented with mental retardation. Three showed progressive deterioration. At every age, infected infants had more delays than did the controls. Eight of the 10 HIV infected infants had developmental delays before 18 months of age, in contrast to disability rates of 5% in the seronegative controls ($p<.01$) and 18% in seroreverters ($p<.05$). The disability rate of infants who had seroreverted did not differ from the controls.
CONCLUSION. The data demonstrate a strong relationship between perinatally acquired HIV infection and neurodevelopmental disability.

M.B.0.43

THE ADAPTIVE BEHAVIOR OF CHILDREN WITH SYMPTOMATIC HIV INFECTION AND THE EFFECTS OF AZT THERAPY.

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Encephalopathy, manifested by neuropsychological deficits and loss of developmental milestones, is a major concomitant of pediatric AIDS. Although there have been subjective descriptions of behavioral changes observed in HIV infected children, the effect of encephalopathy on the everyday behavioral functioning in these children has not been measured. Therefore, the social and personal behavior of children with symptomatic HIV infection was assessed before and after AZT treatment to determine the impact of anti-retroviral therapy on the adaptive behavior in a pediatric AIDS population.

Twenty-three children with AIDS, participating in protocols at the NCI Pediatric Branch to evaluate the efficacy of AZT, received drug therapy for six months. At baseline the children ranged from one to twelve years of age (mean age = 5.9 years). Eleven patients were categorized as encephalopathic according to loss of developmental milestones and positive head CT scan findings prior to starting AZT.

Adaptive behavior was assessed before and after treatment with the Vineland Adaptive Behavior Scale, a semi-structured interview administered to the child's parent or primary caregiver. This scale yields standardized scores in four domains: communication, daily living, socialization, and motor skills, and an overall index of adaptive functioning. Each area is further divided into subdomains.

Pretreatment measures indicated that the adaptive functioning of encephalopathic children was in the mildly deficient range and significantly lower in all domains and subdomains than the clinically non-encephalopathic children who performed in the average to low average range. More specifically, children with encephalopathy were significantly more impaired in their expressive as compared to receptive language; in contrast, the non-encephalopathic children exhibited comparatively higher expressive skills. After six months of AZT therapy, significant improvements were observed for both groups in communication (receptive and expressive language), daily living (personal care and community skills), socialization (interpersonal and play skills), and overall adaptive behavior. However, there were no significant changes in fine and gross motor skills. Several domains of adaptive behavior were found to significantly correlate with IQ scores, behavioral ratings, and some hematological measures particularly at baseline. These results specifically demonstrate the profound effect that encephalopathy has on the everyday functioning of children with symptomatic HIV infection and suggests that AZT therapy can have a positive impact on behavior.

M.B.0.44

Neurologic Disease in Pediatric HIV Infection:

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Objective: To describe the spectrum of neurologic disease in Pediatric HIV infection and follow the course of direct injury to the nervous system.
Methods: 130 children were seen over a period of 5 years by a single child neurologist, utilizing a standard neurologic examination, CAT scans of the brain, spinal fluid evaluation and Somatosensory Evoked potentials (SEP).
Results: Progressive encephalopathy marked initially by language abnormalities, and hypotonia progressing to spastic tetraparesis and acquired microcephaly was common. Children exhibiting static encephalopathy initially exhibited progressive signs with longer follow-up. Five children exhibited improvement in enhanced environment. Seizures were uncommon. CAT scan findings were prognostic of outcome. SEP studies revealed striking abnormalities in subcortical structures. EEG studies and spinal fluid evaluations were not helpful.
CONCLUSIONS: HIV produces a wide spectrum of neurologic involvement with a variable, but usually progressive course. Neurologic involvement is seen in nearly 90% of infected children.

Traitement : essais de l'AZT
Therapy: AZT Trials

M.B.0.45 VALIDATION OF THE SURVIVAL EXPERIENCE AMONG A LARGE COHORT OF AIDS PATIENTS TREATED WITH ZIDOVUDINE

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Objective. To validate and extend the original survival experince reported in a large cohort of AIDS patients who received zidovudine through a compassionate-release program.
Methods. Through a compassionate-release system, 4805 AIDS patients began treatment with zidovudine over a six-month period in late 1986 and early 1987. These patients were also closely monitored for an additional 5 months by means of a structured epidemiologic study and data from a limited drug distribution system. Survival experience up to 44 weeks after treatment initiation has been published. However, because the loss-to-followup rate in the original population was high, an effort was made to validate actual survival in a subcohort of all patients treated in sites participating in another study where retrospective data collection provided nearly complete followup.
Results. The validation study confirmed the original survival experience reported and extended that experience beyond 12 months. Prognostic effects of baseline hemoglobin level and functional status as well as the elapsed time between diagnosis and treatment were examined.
Conclusion. A validation study has confirmed previous findings and allowed assessment of survival beyond that reported previously for a subset of patients. The extent to which these data can be generalized to the original population will be discussed.

M.B.0.46 SURVIVAL PATTERNS OF ZIDOVUDINE TREATED AIDS PATIENTS COMPARED TO UNTREATED CONTROLS.

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Objective. In order to establish the influence of antiviral therapy on survival of AIDS patients, we compared survival patterns of patients receiving zidovudine with survival patterns of a control group of patients who were contemporaneously not receiving ZDV.
Methods. All italian adult AIDS cases reported between January '87 and March '88 were included in this study. Of those, 272 began ZDV therapy between August '87 and May '88 and have been treated for more than 30 days, while 773 remained untreated till July '88, most of them because of organization problems. Age, gender and risk factor (77% I.V. drug abusers) distributions were similar in the two groups. Survival was calculated for each patient from the date of diagnosis through July 31, '88, by Kaplan-Meier method . Wilcoxon test was used to evaluate differences between curves.
Results. Survival at 12 months for treated patients was 90.9% (SE=2.48) while survival of untreated patients was 44.4% (SE=2.28) ($p<0.0001$). Survival pattern of patients who initiated therapy but voluntarily interrupted within 30 days approached the survival of untreated patients (55.3%). Stratification for clinical presentation and semester of diagnosis, and geographical location of clinical centers didn't significantly affect the differences in survival of the two groups of patients.
Conclusions. Data obtained clearly confirm that ZDV therapy is associated with increased survival of AIDS patients, also when comparison is made with untreated controls and not simply with historical controls.

M.B.0.47 NATURE, TIME COURSE AND DOSE DEPENDENCY OF ZIDOVUDINE RELATED SIDE EFFECTS. RESULTS FROM THE MULTICENTRE CANADIAN AZIDOTHYMIDINE TRIAL (MCAT).*

Ruedy, John; Montaner, JSG; Gelmon, K; Fanning, M; Smith, JRM; Falutz, J; Tsoukas, C; Gill, J; Wells, G; O'Shaughnessy, M and Wainberg, M. Multicentre Canadian Azidothymidine Trial (MCAT). Canada

OBJECTIVE. To characterize the nature, time course and dose dependency of zidovudine related side effects in early HIV-infected individuals.
METHODS. DESIGN: Multicentre prospective, dose range finding study. SUBJECTS: 74 HIV positive homosexual men belonging to CDC groups II, III and IVC2. INTERVENTION: Following a 3 week observation period, volunteers were treated with zidovudine 600 mg/day for 18 weeks, 900 mg/day for 9 weeks and 1200 mg/day for 9 weeks followed by a washout period of 6 weeks after which they were re-started on 1200 mg/day or the highest previously tolerated dose at q8h intervals. Subjects were randomly assigned to q4 or q8h regimens within CDC groups while initially taking 600 and 1200 mg/day. FOLLOW-UP: Clinical and laboratory evaluations were performed at 3 week intervals.
RESULTS. Symptomatic adverse effects were present in 96% of subjects, most commonly nausea (64%), fatigue (55%) and headache (49%). These were generally self-limited, reappearing briefly at each dose increment. A decrease in hemoglobin occurred shortly after initiation of therapy. This was not dose dependent and reversed rapidly upon discontinuation of treatment. A red blood cell count decrease, a mean cell volume increase and a granulocyte count decrease developed early in a dose independent fashion, reverting at least partially during the washout phase. The decrease in reticulocyte count was dose related between 600 and 900 mg/day with no further change when the dose was escalated to 1200 mg/day. Bone marrow changes occurred rapidly as demonstrated by megaloblastosis in 95% of 65 specimens at week 18. LDH remained unchanged through out the 60 weeks. These effects were not dependent on study site, CDC group or drug regimen (q4h vs q8h).
CONCLUSION. Zidovudine related hematological effects include a mild macrocytic megaloblastoid anemia with a decrease in reticulocyte count and granulocytopenia. These appear to be dose independent in the range 600 mg to 1200 mg/day and rapidly reversible upon discontinuation of the drug. The fact that these effects are maximal on the smallest dose employed (600 mg), supports the need for efficacy studies at lower doses than those currently recommended.

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* Supported by a grant from National Health Research Development Programme (NHRDP), Health & Welfare, Canada.

M.B.0.48 DOUBLE-BLIND PLACEBO CONTROLLED STUDY OF RECOMBINANT HUMAN ERYTHROPOIETIN IN AIDS PATIENTS WITH ANEMIA CAUSED BY HIV INFECTION AND ZIDOVUDINE.

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Objective: To assess the efficacy and toxicity of recombinant Human Erythropoietin (re-HuEPO) in AIDS patients (pts) with anemia while receiving Zidovudine (AZT).
Methods: Pts treated at our institution who were entered into a multi-institutional placebo controlled study of re-HuEPO in AIDS pts with anemia while receiving AZT are described. Pts were included if their Hematocrit was <30%, they were transfusion dependent, or had a 15% or greater drop in their Hmt while on AZT. Pts were randomly assigned to re-HuEPO (Ortho Pharm.) 100U/kg SQ tiw or placebo [P (Human albumin)] for 12 wks. An open label (OL) period of 24 wks followed, with dose escalation not to exceed 900U/kg/wk. Baseline EPO levels, weekly CBC, reticulocyte count, and blood transfusion (bld trf) requirement were recorded.
Results: 7 pts have been enrolled in the study. Baseline median Hgb level was 10.5gm/dl (range 8.9-11.8). Median bld trf units were: baseline 3, range (2-11), P controlled period 3, range (0-6), and during OL period 0 range (0-6). 4 of 7 (57%) received no bld trf during the OL period. Two of 7 (29%) continued to require frequent blood transfusions during the OL period. Comparison of baseline EPO levels, dose of AZT, in relation to response to re-HuEPO will be presented. No adverse effects were seen.
Conclusions: 1) The use of re-HuEPO in AIDS pts is safe; 2) re-EPO can decrease the bld trf required of a select group of AIDS pts while on AZT; 3) Response may inversely correlate with endogenous EPO production.

M.B.0.49 TOXICITY OF COMBINED AZT/GANCICLOVIR (DHPG) THERAPY IN AIDS PATIENTS

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Objective: To assess the incidence of serious hematologic toxicity during combined AZT/DHPG therapy (Rx). Methods: 26 patients (pts) were treated with combined Rx from Jan 1986 to Dec 1988. No cytokines were used. DHPG maintenance was 5mg/kg/d x7d/wk in 17/26 pts, x5d/wk in 9/26. Toxicity strategy: for NIH grade 3 (gr3) granulocytopenia, 50% AZT 100% DHPG dose; for gr4 granulocytopenia, 0% AZT 0% DHPG; anemia, transfusion only. AZT and DHPG doses were escalated as soon as granulocytes >500.
Results: Average duration of combined Rx was 12.1 wks/pt (range 4-30wks/pt). AZT dose = 1200mg/d for 48% of wks of Rx, 600mg/d for 26% and <600mg/d for 26%. One episode of gr4 granulocytopenia was associated with gram-negative bacteremia. No serious bleeding was observed during Rx.

	GRANULOCYTOPENIA		THROMBOCYTOPENIA			ANEMIA
#episodes	gr3(500-749)	gr4(<500)	gr2(50-74K)	gr3(25-49K)	gr4(<25K)	<6.5G/Hb
total	30	19	2	5	1	10
per pt	1.2	0.7	--	--	--	av. 2.4u/pt transfused
range	1-4	0-4	0-1	0-1	0-1	0-9u/pt

Conclusions: Despite previous reports, prolonged combined AZT/DHPG Rx is possible. Temporarily lowered doses of AZT may be required by hematologic toxicity. Patients should not be denied the benefits of anti-retroviral therapy as toxicity is tolerable.

M.B.0.50 ONE YEAR FOLLOW-UP OF ZIDOVUDINE PLUS ACYCLOVIR IN ASYMPTOMATIC HIV-SEROPOSITIVES

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Objective. To study the tolerance, toxicity and immunologic effects of zidovudine (ZDV) plus acyclovir (ACV) in asymptomatic HIV-seropositives.
Methods. Twenty gay men in CDC group II were given ZDV (500 mg/day) plus ACV (2 or 4 grams/day) and followed with frequent clinical and laboratory monitoring.
Results. At week 52, 16 men remained well and in the study. Three had withdrawn because of subjective toxicities of the drugs; 1 was diagnosed with non-Hodgkin's lymphoma at week 7. Two men required permanent dose reduction because of side effects. Hematologic changes noted were a decrease in mean red blood count (5.03 to 4.04, $p=0.0001$) and an increase in mean corpuscular volume (87.3 to 105.4, $p=0.0001$). Hemoglobin, neutrophil count and platelets were unchanged. Changes in mean LDH (165 to 219 U) and total bilirubin (0.65 to 0.91 mg/dl) were significant; mean creatine kinase rose from 148 to 203 U, but this was not significant ($p=0.20$). Total lymphocyte counts were unchanged; total mean CD4 lymphocytes were 512 at entry and 580 at week 52. ($p=0.33$).
Conclusion. ZDV and ACV at these doses are tolerated by the majority of asymptomatic HIV-seropositives for at least one year. Immunologic stability as measured by total CD4 count is encouraging, but efficacy in preventing disease progression is unproven and awaits the results of controlled trials.

Prophylaxie de la PCP
PCP Prophylaxis

T.B.0.1

FOLLOW-UP STUDY OF PATIENTS RECEIVING PENTAMIDINE AEROSOL FOR PROPHYLAXIS OF PCP

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Objective. To evaluate the efficacy of inhaled pentamidine in prevention of PCP during a 6 to 18 month follow-up period.
Methods. 51 patients with HIV (ARC/AIDS) have been maintained on pentamidine, 150 mg every two weeks by inhalation. Group One: 17 patients with prior PCP and with mean T4 of 106 cells/cu mm. Group Two: 34 patients with ARC/AIDS without history of PCP and mean T4 of 262 cells/cu mm. All patients received AZT and acyclovir.
Results. Incidence of drug toxicity, PCP, and death was compared.

Patient Group	Toxicity	PCP or Recurrent PCP	No. of Deaths
I (N=17)	0	2	6
II (N=34)	0	0	0

The 6 deaths in I were unrelated to PCP.
Conclusion. Aerosolized pentamidine is effective prophylaxis against pulmonary Pneumocystis carinii in HIV immunosuppressed patients.

T.B.0.2

EFFETS DES AEROSOLS PROPHYLACTIQUES DE PENTAMIDINE SUR LA FONCTION RESPIRATOIRE A MOYEN TERME

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Objectif. Evaluer la tolérance pulmonaire des aérosols de Pentamidine (APM) par la mesure de la capacité de transfert à l'oxyde de carbone (TLCO) et du gradient alvéolo-artériel en oxygène Δ (A-a)O2.
Méthodes. 46 patients SIDA ont été suivis pendant au moins neuf mois à la suite d'1 (ou 2) épisode (s) de pneumocystose (Mo).
Groupe contrôle (n = 10) ; groupe APM (n = 36) : APM 1 fois/mois.
La TLCO à l'état stable (% de la valeur théorique) et Δ (A-a)O2 (torrs) ont été mesurés à : M1 et M7 (1 et 7 mois après la pneumocystose). Aucun des 46 patients inclus dans cette étude n'a présenté de rechute de pneumocystose avant M9.
Résultats.

	M1		M7	
	TLCO %	Δ(A-a)O2 t	TLCO %	Δ(A-a)O2 t
Groupe contrôle	58,5 ± 14,1	22,8 ± 14,4	67,1 ± 16,9	30,2 ± 17,7
Groupe AMP	66,5 ± 15,6	14,1 ± 11,7	72,7 ± 16,5	15,4 ± 11,9

La TLCO augmente de façon non significative dans les deux groupes. Δ (A-a)O2 reste stable dans le groupe APM et augmente de façon non significative dans le groupe contrôle.
Conclusion. Les aérosols de Pentamidine ne semblent pas entrainer de troubles fonctionnels respiratoires dans la limite de la durée de cette étude.

T.B.0.3

AEROSOL PENTAMIDINE FOR *PNEUMOCYSTIS CARINII* PNEUMONIA PROPHYLAXIS: A 3 ARM RANDOMIZED TRIAL.

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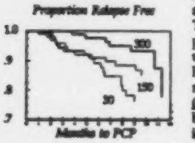
Objective: To determine the efficacy of aerosol pentamidine for prophylaxis against *Pneumocystis carinii* pneumonia (PCP) in high risk HIV infected patients.
Methods: 408 patients were randomized to treatment with either 30mg q2w, 150mg q2w or 300mg q4w of aerosol pentam (AP) stratified into groups: prior PCP (PCP, n=256); Kaposi's Sarcoma (KS, n=56); or ARC and other AIDS diagnoses (OT, n=116). AP was delivered with a Marquest Respigard II nebulizer (particle MMAD=1.42 microns).
Results: Mean follow up in ongoing patients was 301 days (range 190-347). Intention to treat (ITT) analysis and analysis of PCP events of PT on study (OS) i.e. 28 days of eligibility and <60 days after last Rx showed 63 and 48 events (17% and 13%), respectively. Only 9 PCP events occurred in the KS or OT strata; 75% of all PCP events were histologically confirmed. The log-rank statistics comparing the three arms (ITT) were: p=.006 for 30 vs. 300, p=.19 for 30 vs. 150, and p=.17 for 150 vs. 300. Cox regression models to adjust for number of prior PCP episodes, time since last PCP and zidovudine use. The reduction in relative hazard (300 vs. 30) was 2.1 fold (p=.01).
Conclusion: There is a dose response showing 300mg q4w is best despite the longer interval between treatment. Since this is a dose response study, it underestimates the benefits of AP compared to no treatment.



T.B.0.4

SUCCESSFUL CHEMOPROPHYLAXIS FOR PNEUMOCYSTIS WITH DAPSONE OR BACTRIM

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Objective. An open study of the efficacy and tolerance of dapsone or bactrim in the prevention of pneumocystis (PCP).
Methods. We studied 221 patients (pts) who were at high risk for PCP from 4/85 to 6/88 and received prophylaxis. All pts had either <250 T4+ cells/mm3, severe constitutional symptoms (17 pts), or a prior opportunistic infection (OI).
Results. The mean T4+ cells at the time of treatment initiation was 142 (range, 9 to 573). 173 pts received dapsone (avg 9.4 mos, range up to 43 mos) and 48 pts received bactrim (avg 8.2 mos, range up to 57 mos). 2/173 pts receiving dapsone 25 mg qid and 0/48 pts receiving bactrim ds 1 tab bid developed PCP (p=0.37, NS). In contrast, 26 episodes of PCP occurred in 23 pts who refused prophylaxis (avg 9.6 mos, range up to 29 mos). 10% of pts receiving dapsone and 38% of pts receiving bactrim prophylaxis experienced an adverse reaction (p<0.0001). Pts hypersensitive to 1 drug generally tolerated the other. 1/29 pts receiving both dapsone and AZT had to be withdrawn from dapsone because of a sustained drop in Hct. 15 pts developed Kaposi's Sarcoma while receiving dapsone. No pts receiving dapsone developed cryptosporidiosis. 125 pts receiving dapsone and 20 pts receiving bactrim developed other OI or malignancies; 89 pts on dapsone and 8 pts on bactrim have died.
Conclusions. Both dapsone and bactrim are equally effective in preventing PCP but a higher percentage of pts receiving bactrim experienced adverse reactions.

T.B.0.5

LOW DOSE DAPSONE (D) PROPHYLAXIS (PX) OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

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Objective. We evaluated the safety, efficacy and cost effectiveness of D as PX of PCP.
Methods. D (50-100 mg/d) was given as oral PX of PCP to 24 patients (PTS) with AIDS (21 PTS) or ARC (3 PTS). All PTS were male; mean age was 36.3 yrs.; mean duration of disease was 9.7 mos. Three PTS received D as 1^{o} PX and 21 as 2^{o} PX; the maximal daily dose was 100 mg in 10 and 50 mg in 14.
Results. Mean duration of PX is 108 d (range: 21-450 d). There are 88 total patient mos. of PX: 71 on 50 mg/d, 17 on 100 mg/d; 17 PTS (71%) remain on PX, 4 are alive off PX and 3 have died (none of PCP). One PT relapsed with mild PCP on PX after 4 wks. of D (50 mg/d), was treated successfully with D and trimethoprim and remains well on D (100mg/d). Suspected toxicity occurred in 5 PTS (rash in 3); D was stopped in 4/5; none had serious sequelae. Monthly cost of PX per PT at our institution is $1.43 for 50 mg/d of D, $2.85 for 100 mg/d and ~$400.00 for inhaled pentamidine (4mg/kg every 14d).
Conclusion. D (50-100 mg/d) is inexpensive and well tolerated. Our results suggest that even 50 mg/d is effective PX of PCP in AIDS. Comparative trials with alternative PX agents and dose finding studies of D for PX of PCP are in order.

T.B.0.6

TRIMETHOPRIM-SULFAMETHOXAZOLE FOR SECONDARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA IN AIDS

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Objective. To determine if maintenance therapy with trimethoprim-sulfamethoxazole (TS) prevents recurrent infection with Pneumocystis carinii pneumonia (PCP) in patients with the acquired immunodeficiency syndrome.
Methods. Records were reviewed on all patients who had received at least 3 months of therapy with zidovudine (ZD) following an initial episode of PCP.
Results. 23 patients were identified. 12 of these patients also received TS in a dose of one double-strength tablet BID (group 1). 11 patients were not treated with TS or any form of prophylaxis for PCP (group 2), 10 because of previous adverse reactions. The two groups were comparable with regard to the severity of PCP (A-a gradient of 44.8 and 46.3 respectively) and time interval between diagnosis of PCP and initiation of ZD (1.7 vs. 1.8 months respectively). None of the patients in group 1 developed PCP during 101 patient-months of follow-up (mean 8.4 months). In group 2, there were eight episodes of PCP, three fatal, during 90 patient-months of follow-up (mean 8.2 months) ($p<0.001$). The one year mortality was 1/12 (8%) in group 1 and 4/11 (36%) in group 2 ($p<0.05$). ZD dosage was reduced in 2/12 patients in group 1 because of neutropenia and 4/11 patients in group 2 secondary to anemia. This difference was not significant.
Conclusion. TS is effective in the secondary prophylaxis of PCP in patients being treated with ZD, improves survival, and is not associated with increased bone marrow toxicity.

Le SIDA dans les pays en voie de développement
AIDS in the Developing World

T.B.0.7

EVALUATION OF DEFINITIONS FOR AIDS CASE SURVEILLANCE

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Objective. To measure and compare the sensitivity and specificity of 3 surveillance case definitions for AIDS currently recommended for Brazil (MH), for the USA (CDC), and for Africa (WHO) on a large group of hospitalized patients in Rio de Janeiro, Brazil.
Methods. Medical history, physical exam, and chart review were done on 245 non-surgical inpatients (vide Sereno, AB, *et al*) to determine whether they met the MH, CDC, or WHO criteria for AIDS. The "gold standard" was defined as a repeatedly-reactive ELISA test to either HIV-1 or HIV-2 with Western blot bands representing ≥2 gene regions of the corresponding virus. There were 110 HIV+'s and 135 HIV-'s in the study. Weighted analysis adjusted for the random sampling used to select HIV-'s. Overall HIV+ prevalence was 24%.
Results. The sensitivities of the MH, CDC, and WHO definitions were 50%, 52%, and 59%, respectively. Specificities were 99%, 99%, and 96%. PVPs: 96%, 96%, 89%. PVNs: 86%, 86%, 88%. Only 3 cases of *Pneumocystis* pneumonia (PCP) and 4 of cerebral toxoplasmosis (CT) were lab confirmed. Nine (29%) of 31 patients diagnosed with PCP, and 12 (43%) of 28 with CT met neither the clinical nor lab criteria of the MH.
Conclusions. Current AIDS definitions have poor sensitivity when laboratory confirmation of AIDS-related diseases is impractical. Although improved clinical/serological definitions for AIDS may not help clinicians diagnose specific opportunistic diseases, they may prompt earlier suspicion of HIV infection. Revision of the MH AIDS definition is planned in 1989, based on empirical data generated in a related study (vide Perez, MA, *et al*).

T.B.0.8

HIV-1 AND HIV-2 INFECTION PREVALENCE IN THE MORTUARY-ABIDJAN

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Objective. To determine the prevalence of HIV-1 and HIV-2 infections in cadavers and to examine causes of mortality.
Methods. All cadavers (hospital and community deaths) in Abidjan's largest morgue (Treichville) were prospectively studied. Each corpse was examined, and had post-mortem blood tested by ELISA for HIV-1 and HIV-2. Positives will be tested by Western blot. Death certificates were reviewed for cause of death.
Results. Four hundred and eight hospital and 116 community deaths were studied. In hospital cases (M:F ratio 1.9; 41% <15 years old) the prevalence of HIV-1 and/or HIV-2 infection (ELISA ONLY) was 25% in deaths <1 month; 16% 1-11 mos; 10% 1-4 years; 4% 5-14 years; 36% 15-19 years; and 48% 20 years or more. Peak seroprevalence (66%) was found in persons 30-39 years. Of 108 community deaths (M:F ratio 3:1) 90% were >15 years old; 36% were HIV positive. Wasting was more frequent in HIV positives (113/183; 62%) of all age groups than in seronegatives (139/341; 41%) (p<.001). Of 34 tuberculosis deaths 24(71%) were HIV positive. In cases with completed death certificates, causes of death potentially HIV-associated were reported in 79/111(71%) of HIV positive and in 73/294(25%) HIV negative cases (p<0.001). The relative frequency of HIV-1 and HIV-2 infections will be presented.
Conclusion. (1) AIDS attributable mortality is high. (2) Levels of HIV infection in the mortuary are high; staff must take suitable precautions.

T.B.0.9

ETUDE COMPAREE DES PREVALENCES HIV-1, HIV-2 ET HTLV-1 CHEZ LES LEPREUX DE 4 PAYS : COTE D'IVOIRE, CONGO, SENEGAL, YEMEN.

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Objectif : Déterminer la séroprévalence des rétrovirus HIV-1, HIV-2 et HTLV-1 au sein d'une population particulière : les lépreux. En effet, il apparaît une énorme disparité de prévalence HIV selon les rares publications concernant HIV et lèpre.
Matériel et méthodes : 1244 sérums de lépreux provenant des 4 pays cités ci-dessus ont été soumis à un test de dépistage :
des anticorps HIV (Abbott recombinant HIV-1/HIV-2 EIA)
des anticorps HTLV-1 (IF sur cellules HUT 102, clone B2 et Abbott HTLV-1 EIA) puis à une confirmation par Western Blot :
HIV : New Lav Blot 1 et 2, Diagnostics Pasteur
HTLV-1 :avec la souche HUT 102 + RIPA et dot blot quand necessaire.
Les sérums de population "témoin" ont été étudiés selon la même démarche.
Résultats :

	Lépreux			Témoins		
	nb	HIV +(%)	HTLV-1 +(%)	nb	HIV +(%)	HTLV-1 +(%)
Cote d'Ivoire	584	4,9	14,4	812	3,9	1,9
Congo	318	3,7	9,7	479	7	1,8
Sénégal	223	0,9	0,9	281	0,4	0,3
Yémen	119	0	0	51	0	0

Conclusion : Les résultats ont été analysés en fonction du pays, de la zone géographique, des formes de lèpre, de l'age, du sexe. La prévalence HIV est comparable à celle des témoins, alors qu'il existe des "clusters" pour HTLV-1 chez les lépreux de Cote d'Ivoire et du Congo.

T.B.0.10

CLINICAL MANIFESTATIONS OF HIV-1 AND HIV-2 INFECTIONS IN ABIDJAN, COTE D'IVOIRE

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Objective. To examine the clinical manifestations of persons with serologic reactivity for HIV-1 and HIV-2.
Methods. For July - November 1988, hospitalised patients in Abidjan were interviewed and examined for symptoms and signs of the WHO clinical case definition for AIDS. Serum was tested for HIV-1 and HIV-2 by whole virus ELISA. All reactive sera will be tested by virus specific Western blot, and dually reactive specimens by type specific peptide ELISA.
Results. Of 1794 patients, 879 (49%) were reactive by ELISA; (9% HIV-1; 3% HIV-2; and 37% dually reactive). The WHO definition was 28% sensitive, 90% specific, and had a predictive value of 74% for HIV infection. Compared with seronegative individuals, persons with only HIV-2 reactivity more frequently met the WHO case definition for AIDS (10/36 vs 83/888; odds ratio 2.1), had chronic diarrhea (8/36 vs 44/899; OR 3.2), and had wasting (32/36 vs 348/891; OR 2.1). All major and minor criteria of the WHO definition were significantly associated with dual reactivity. Results of type specific peptide ELISA and Western blots will allow more accurate assessment of the association between symptoms and signs of AIDS and HIV-1 and HIV-2 infections.
Conclusion. ELISA reactivity to HIV-2 only as well as dual serologic reactivity was associated with manifestations similar to those observed in HIV-1 infected patients.

T.B.0.11

2 YEARS EXPERIENCE FROM AN AIDS CLINIC IN UGANDA

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Objective: To present the experience gained from running the first clinic exclusively for HIV patients in one of the East and Central African countries significantly burdened by HIV disease.

Method: In 1987 an AIDS clinic was set up in Kampala Uganda, to follow up HIV infected people and to offer them treatment and counselling services.

Results: To date 799 patients have been seen 441(55%0 males and 358(45%) females. Male patients were older, with an average age of 32 and 28 for the females. Chief complaints included weight loss 80%, recurrent fevers 78% and recurrent diarrhoea 58%. There were 59 patients with Kaposi sarcoma of which 34 were male and 25 females. Sex ratio was 1:1.04 and age range was 16-55 years with an average of 32. Females were younger (average 28) than males (average age 34). This observation was statistically significant. Good information on the period between the time of onset and death was available in 52 patients. The mean was 71 weeks with a range of 8-288 weeks.

Conclusion: The clinic has shown that the survival of the symptomatic African patient can also be long. Given appropriate treatment of the opportunistic infections plus counselling this survival period could be improved.

T.B.0.12

EPIDEMIOLOGICAL APPROACH OF TUBERCULOSIS IN AIDS PATIENTS - BRAZIL. 1982 - 1988.

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Objective. To describe epidemiological aspects of Tuberculosis among Brazilian AIDS patients.
Methods. The data registered in the National Surveillance System for AIDS was analysed by crosstabulation according to gender, age, educational level and risk groups, and through chi-square statistics and the method of Mantel Haenszel.
Results. From the total of 5219 AIDS cases reported, 1068 (21%) presented Tuberculosis as an AIDS - related disease, at the moment of reporting. Tuberculosis is the third most frequent related disease preceded by Candidiasis (53%) and PCP (29%). The prevalence of Tuberculosis in AIDS patients rose from 10% in 1984 to a maximum of 22% in 1988.
There is a non significant difference between the prevalence rates for male (21%) and female (23%) cases.
The prevalence of Tuberculosis in the 15 - 39 age group was 3 times higher than that observed for patients 15 years old or less.
When comparing the prevalence of tuberculosis in patients with high level of education (10%) it was lower than that observed in the group of patients with inferior level of education (22%).
The prevalence rate of Tuberculosis for female AIDS IVDU(s) patients (34%) was greater than that observed for both female heterosexual cases (21%) and transfused female cases (13%).
The odds ratios of Tuberculosis for male IVDU(s) patients were 2 and 3 for homo/bisexual and hemophiliac patients respectively.
It was observed that there was no significant difference when IVDU and heterosexual male patients as well as IVDU and recipients of blood/components male cases were compared related to Tuberculosis as an associated disease.
Conclusions. Tuberculosis is a very important AIDS related disease considering its prevalence rates and its epidemiological aspects associated to demographic and some behavioural features of AIDS patients. The interaction between AIDS and Tuberculosis will have a great impact on the epidemiology of Tuberculosis and the clinical profile of AIDS in Brazil.

Traitement des infections par le VIH
HIV Therapy

T.B.O.13 AZT UPDATE

Fischl, Margaret. University of Miami School of Medicine, Miami, Florida, USA.

T.B.O.14 NEW ANTI-HIV DRUGS: HOPE FOR THE FUTURE

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It is clear that new therapeutic strategies must be developed for all stages of HIV infection and disease. As with most infectious micro-organisms, drug side effects and microbial resistance will limit the impact of any one drug to only certain selected clinical disease settings and patients and for limited periods in the natural history of the infection. Fortunately, at this time, more intense effort and funding has been directed at controlling this organism than any other agent in history. As a result many novel rationally developed chemical and biologic therapies are being explored. Both receptor based and post translational agents as well as several new reverse transcriptase directed inhibitors are in Phase I and 2 testing. An approach to setting the best dose, route and schedule of new agents is being developed based on surrogate markers, namely serum P24 and CD4+ cells. The latter are also being utilized for evaluation of the optimum dosage and the role of each component given in combination therapy. Combination therapy should diminish emergence of drug resistance and allow dose reduction to lessen both short and long term occurrence of side effects. Unfortunately, one of the most interesting combinations of two agents with different mechanisms of action (AZT and αIFN) is complicated by both agents showing hematotoxicity. Then, as is currently underway within the U.S. AIDS Clinical Trial Group, only very careful and complete probing of the full response surface will reveal the optimum combination. The use of biologics, like interleukin-2, are also complicated as one must work against the organism through host responses and hence their use can be very disease stage-specific. Yet, in all these areas, progress is being made and will be summarized in this presentation.

T.B.O.15 LES IMMUNOMODULATEURS : THERAPEUTIQUE ALTERNATIVE OU ASSOCIÉE DE L'INFECTION PAR LE VIH

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Les immunomodulateurs sont des substances d'origine diverse susceptibles de moduler ou de modifier la réponse,à un signal donné,des cellules du systéme immunitaire.Notre compréhension des mécanismes de l'immunodéficience liée à l'infection par le VIH et des modéles animaux actuellement disponible est incompléte,Un immunomodulateur ne peut donc être proposé chez l'homme qu'aprés avoir déterminé un certain nombre de facteurs: son influence sur les différents éléments de la réponse immunitaire,sa toxicité,son antigénicité et ses propriétés antivirales éventuelles,enfin son éfficacité sur les modéles animaux les plus appropriés.
Une classification des immunomodulateurs est proposée : elle distingue,selon leur origine, deux groupes de substances: les substances homologues fabriquées par l'organisme lui-même au niveau ou en dehors du systéme immunitaire,les substances hétérologues comprenant des produits de toute origine : extrait de plantes, de bactéries ou produits de synthése.
Les différentes modalités d'utilisation sont envisagées en tenant compte, notamment des propriétésimmuno-stimulantes, immuno-restoratrices et immuno-dépressives propres à chaque condition d'utilisation des immunomodulateurs.Aprés avoir envisagé les différentes modalités de l'étude pré-clinique, différentes étapes du développement clinique seront proposées en se référant notamment aux recommandations de l'OMS.
Les indications de l'utilisation des immunomodulateurs comme traitement alternatif ou associé de l'infection par le VIH seront discutées.

T.B.O.16 RESISTANCE TO HIV DRUGS

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*University of California San Diego and San Diego VA Medical Center, USA, ** Wellcome Research Laboratories, Beckenham, U.K.

AZT resistant isolates of HIV can be isolated from the blood of patients with AIDS or AIDS-related complex during prolonged therapy with the drug (Larder, Darby and Richman, Science 243:1731, [1989]). These observations were made possible by a plaque reduction assay with a $CD4^+$ HeLa cell line. Fifty percent inhibitory (ID_{50}) values of isolates from untreated individuals ranged from 0.01 to 0.05μM. In contrast most isolates from patients who had received AZT for 6 months or longer exhibited decreased sensitivity with isolates from several patients showing increases of ID_{50} values of greater than 100 fold. Sequential isolates from several patients exhibited progressive, step-wise increases in resistance. Cross resistance to AZdU was observed in all 5 AZT resistant isolates, but no cross resistance has been observed to AZG, ddC, ddI, d4T, carbovir, foscarnet, or interferons α, β or γ. Studies with additional compounds, studies with isolates from patients with different disease status or drug therapy, and studies of mechanism of action are in progress. The results of some of these additional studies and the implications of these observations will be discussed.

Transmission périnatale du VIH
Perinatal Transmission of AIDS

T.B.0.17 PERINATAL TRANSMISSION IN INDUSTRIALIZED COUNTRIES

Peckham, Catherine. Institute of Child Health, University of London, London, United Kingdom.

T.B.0.18 ESTIMATES AND PROJECTIONS OF PERINATAL TRANSMISSION OF HIV

Chin, J. World Health Organization, Geneva, Switzerland

The global epidemic of HIV infections is believed to have started during the late 1970s/early 1980s. As of mid-1989 over 150,000 cases of AIDS have been officially reported to WHO. The majority of these reported cases have been among homosexual men and IV drug users, primarily in developed countries. However, it is becoming increasingly clear that these official reports grossly underestimate the true magnitude of disease and deaths attributable to HIV infections, especially among infants and children who acquired their HIV infection from their mothers during, or shortly after pregnancy (perinatal transmission).

Reliable estimates of the number and distribution of HIV infected infants are needed to begin the difficult task of responding to this increasing global problem. The Global Programme on AIDS (GPA) of WHO, has estimated the number of HIV infected women globally in 1987-88 to be about 1.5 million. Using an epidemiologically based projection model, GPA/WHO has estimated that close to 80,000 HIV infected infants may have been born in sub-Saharan Africa from 1980 through 1987. In 1985 to 1987 alone, the total number of HIV infected infants in Africa was estimated to be over 55,000; the estimated number of HIV infected births increased from less than 100 in 1980 to over 20,000 in 1987. Short-term projections for Africa using this model are that by 1992 there will be at least a cumulative total of about a quarter of a million infants infected with HIV due to perinatal transmission.

T.B.0.19 MODES, RATE, AND RISK FACTORS FOR PERINATAL TRANSMISSION OF HIV

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Objective To review current knowledge regarding modes, rate, and risk factors for perinatal transmission of HIV and to pose future research questions.

Methods. Information for this discussion comes from review of literature, analysis of CDC-reported AIDS cases, and prospective studies of perinatal transmission of HIV.

Results. Evidence indicates that mothers can transmit HIV to their infants in utero, through transplacental passage of the virus, and through breast feeding. Transmission during the intrapartum period, through exposure to maternal blood and vaginal secretions, probably also occurs, but has been difficult to prove. The proportion of perinatal transmission attributable to each of these 3 modes is unknown, however. The incubation period for CDC-reported perinatally acquired cases is significantly shorter than that of transfusion-acquired cases, suggesting that in utero transmission may play a significant role. The frequency of transmission from mothers to infants reported from several European and U.S. studies is around 30%. These studies largely involve women in the early stages of HIV infection. Risk factors for perinatal transmission are largely unknown; however, studies suggest that mothers with more advanced disease and those with depressed CD4 counts are more likely to transmit.

Conclusion. The increased transmission rates observed for mothers with advanced disease could be related to either a higher titer of virus or a more pathogenic strain. Further study of these risk factors and the timing of perinatal transmission is needed so that optimal prevention strategies can be developed and instituted.

T.B.0.20 DIAGNOSIS OF HIV IN INFANTS

Griscelli, Claude. Hôpital des enfants malades, Paris Cedex, France.

T.B.0.21 NATURAL HISTORY OF HIV INFECTIONS IN CHILDREN

Scott Gwendolyn B. University of Miami School of Medicine, Department of Pediatrics, Miami, Florida, USA.

Infections à *Pneumocystis carinii*
Pneumocystis carinii Infections

T.B.O.22 NATURAL HISTORY AND STAGING OF HIV INFECTION

Redfield, Robert. Walter Reed Army Institute of Research, Rockville, MD, USA

T.B.O.23 CLINICAL DIAGNOSIS OF AIDS AND RELATED DISORDERS

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For individuals who are infected with HIV, morbidity and mortality are produced by three major processes: 1) opportunistic infections and tumors; 2) direct organ involvement by HIV; 3) immunologic processes such as antigen-antibody complex disposition. The quality and duration of patient survival can clearly be improved by prompt diagnosis of those processes that are treatable. Thus major emphasis must be directed at diagnosing the infectious complications that are responsible for causing 90% of deaths. Immunologic monitoring can predict when patients are most likely to be susceptible. Some diagnoses such as cerebral toxoplasmosis, cytomegalovirus retinitis, candida esophagitis, and perirectal Herpes simplex can be made presumptively on clinical or radiologic grounds and response to therapy can be assesses. Other diagnoses such as pneumocystis pneumonia, cryptococcal meningitis, and the causes of diarrhea must be made specifically by microbiological or histologic criteria.

T.B.O.24 RELEVANT ISSUES IN THE CLINICAL DIAGNOSIS OF AIDS IN THE DEVELOPING WORLD

Zacharias, Fernando. Pan-American Health Organization, Washington, D.C., USA.

T.B.O.25 PROGNOSIS FACTOR

Rozenbaum, Willy. Unité des maladies infectieuses Hôpital Rothschild, Paris, France.

Traitement de la PCP
PCP Treatment

T.B.0.26

AEROSOLIZED PENTAMIDINE *VS.* TRIMETHOPRIM-SULFAMETHOXAZOLE (TMP-SMX) FOR ACUTE *PNEUMOCYSTIS CARINII* PNEUMONIA (PCP): A RANDOMIZED DOUBLE BLIND TRIAL.

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* State University of NY at Stoneybrook; ** University of California, San Francisco; *** University of Southern California;**** National Institues of Allergy and Infectious Diseases.

Objective: To evaluate the efficacy and safety of aerosolized pentamidine as treatment for acute PCP in AIDS patients.
Methods: Patients with suspected PCP are randomized at 24 centers pending confirmation of PCP and receive either aerosolized pentamidine (600 mg in 6 cc daily) or TMP-SMX (TMP:15 mg/kg/day + SMX:75 mg/kg/day) with either placebo aerosol or placebo IV. Standard treatment course is 21 days with six months follow-up for recurrences and adverse events.
Results: 205 of the target of 240 eligible patients have been enrolled (17 currently in treatment). Pooled data from the two treatment arms as of January 13,1989:

	N	Rate
Eligible patients completing acute therapy	188	---
Randomized drug changed for poor efficacy	43	22.9%
Expired during acute treatment period	13	6.9%
Major adverse event during acute treatment*	70	37.2%
PCP recurrence months 1-3 of follow-up (N=136)	8	5.9%
PCP recurrence months 4-6 of follow-up (N=74)	6	8.1%
Extrapulmonary pneumocystosis	0	0%
Pulmonary hemorrhage	0	0%

* *(Predominant adverse events: Rash, fever, neutropenia, nausea, elevated SGOT/SGPT)*

Conclusions: Rates of toxicity, initial treatment failure and mortality are not excessive relative to other studied PCP treatments. PCP recurrence rates are also relatively low.

T.B.0.27

THE IMPROVING SURVIVAL RATE AFTER INTENSIVE CARE FOR *P. CARINII* PNEUMONIA AND RESPIRATORY FAILURE

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*Robert Wood Johnson Clinical Scholars Program, Stanford University, **San Francisco General Hospital and the University of California, San Francisco.

Objectives. To determine the survival rate of patients with AIDS, *P. carinii* pneumonia (PCP), and respiratory failure who are admitted to the ICU, and to determine whether an improving survival rate (as compared to an earlier era) can be attributed to patient selection.
Methods. The study used a retrospective cohort design. Patients with AIDS and PCP who were intubated for respiratory failure at San Francisco General Hospital between January 1986 and December 1988 were studied. Hospital survival rate, long-term outcome, and severity of illness (including APACHE II scores) were measured, and compared to those of patients with PCP and respiratory failure hospitalized between 1981 and 1985.
Results. The hospital survival rate for the 35 patients in the 1986-88 cohort was 40%, compared to 14% for the 42 patients in the 1981-85 cohort ($p<0.01$). Age, episode of PCP, time since AIDS diagnosis, vital signs at hospital and ICU admission, oxygenation, albumin, lactate dehydrogenase, and APACHE II scores did not differ significantly between the two cohorts. Anti-PCP therapy was similar in both cohorts. Although corticosteroid use was much more frequent in 1986-88 cohort than in the earlier era (77% vs. 5%), its use in individual patients was not associated with better outcomes. There was no significant difference in 1 year survival rates between the 2 cohorts (8% vs. 2%, by life table analysis).
Conclusions. The short-term outcome of patients with AIDS, PCP, and respiratory failure in 1986-88 has improved as compared to an earlier era. The improvement cannot be explained by patient selection, based on commonly measured prognostic variables, or by therapeutic advances. This improvement may result in a change in ICU utilization by patients with AIDS.

T.B.0.28

TRIMETREXATE (TMTX) SALVAGE THERAPY OF PCP IN AIDS PATIENTS WITHOUT ANY THERAPEUTIC OPTIONS: INTERIM RESULTS OF THE 1ST AIDS "TREATMENT IND" PROTOCOL

Feinberg, Judith, Katz, D; McDermott, C; Myers, M; Hoth, D; AIDS Program, National Institute of Allergy and Infectious Diseases, Bethesda,Maryland,USA

Objective: To evaluate TMTX salvage therapy of PCP in AIDS patients(pts) who cannot be treated with standard therapies (ST), trimethoprim-sulfa and IV pentamidine. TMTX is the first AIDS drug to be distributed under the FDA's new "treatment IND" mechanism, which permits access by any licensed US physician to a promising investigational drug with evidence of safety.
Methods: Pts with morphologically-confirmed PCP, polys + bands ≥ 1000, platelets $\geq 50K$ who have experienced serious toxicity to both ST and/or have not responded to ST are treated with IV TMTX 45 mg/m^2 x 21 days and leucovorin 30 mg/m^2 x 24 days. Successful completion of study therapy is defined as survival at 1 month follow-up.

Results:	Intolerant	Refractory	Intolerant/Refractory
	n (%)	n (%)	n (%)
no.treated(as of 12/5/88)	115	34	6
1st episode of PCP	52 (45)	33 (97)	5 (83)
intubated at entry	24 (21)	20 (59)	3 (50)
days of ST at entry(r)	10.8 (0-38)	17.5 (11-26)	9.6 (7-13)
died	34 (30)	27 (79)	3 (50)
survived	54 (47)	2 (6)	3 (50)
withdrew - adverse event	16 (14)	2 (6)	0 (0)

Conclusions: TMTX is an effective (39% survived) and well-tolerated salvage therapy for desperately ill AIDS patients. The "treatment IND" is a useful mechanism for providing wide access to promising investigational therapies.

T.B.0.29

ORAL CORTICOSTEROIDS PREVENT ACUTE RESPIRATORY FAILURE IN AIDS-RELATED PENUMOCYSTIS CARINII PNEUMONIA *

Montaner, Julio SG; Lawson, L; Levitt, N; Belzberg, A; Schechter, M; and Ruedy, J. AIDS Research Program, St. Paul's Hospital, University of British Columbia, Vancouver, BC, Canada.

OBJECTIVE. To assess the role of adjunctive oral corticosteroids in the prevention of acute respiratory failure in patients with moderately severe AIDS-related Pneumocystis carinii pneumonia (PCP).
METHODS. Randomized, double-blind, placebo controlled trial. A total of 60 patients are being studied. Inclusion criteria includes:

I. First episode of PCP
II. PaO_2 45 to 85 mm Hg. (FIO_2=21%)
III. No other active pulmonary pathology
IV. No contraindication for systemic corticosteroids
V. Not on anti-PCP medication for more than 24 hours

Consenting subjects are randomized in blocks of 10 to placebo or prednisone 60 mg/day PO OD for 7 days followed by a 14 day tapering regimen. Acute respiratory failure (ARF) is defined as a 10% drop in oxygen saturation at day 3 as measured by pulse oximetry while breathing room air. Patients developing ARF are considered a failure of treatment and the code is broken.
RESULTS. To date, 30 subjects have been studied. Mid point interim analysis demonstrates that ARF developed in 6 out of 15 patients receiving placebo versus 1 out of 14 patients receiving adjunctive corticosteroid therapy ($p<.05$ Fischer exact test). All 6 patients developing ARF in the placebo treated group recovered rapidly after the initiation of corticosteroid therapy. The single patient who developed ARF in the corticosteroid group went on to die on day 6. One further patient in the corticosteroid group, died after resolution of his PCP from an unrelated cause (CNS lymphoma).
CONCLUSION. Oral corticosteroids prevent the development of acute respiratory failure in patients with moderately severe AIDS-related PCP. Furthermore, our results support the use of corticosteroids after respiratory failure develops in patients with AIDS-related PCP.

* Supported by a grant from the National Health Research Development Programme (NHRDP), Health & Welfare, Canada.

T.B.0.30

EFLORNITHINE IN PCP CASES RESISTANT TO CONVENTIONAL THERAPY.

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OBJECTIVE : To describe our experience with Eflornithine as a salvage treatment in HIV positive patients with Pneumocystis Carinii Pneumonia (PCP) having failed to respond to Co-Trimoxazole or Pentamidine.
METHODS : 28 HIV positive patients with a microscopically confirmed episode of PCP received Eflornithine (400mgs/kg) IV continous infusion having failed to respond to either Co-Trimoxazole or IV Pentamidine as assesses by worsening CXR, PaO2 and failure of temperature and respiratory rate to normalise.
RESULTS : 18 patients survived (64%) and 10 died during treatment with Eflornithine. There was no statistical difference between initial PaO2 in survivors vs non survivors but there was a worse CXR in non survivors vs survivors. No ventilated patients recovered. 30 adverse events in total were recorded : anaemia 13, thrombocytopaenia 5, and phlebitis 15. All patients receiving greater than 10 days Eflornithine survived. Eflornithine was discontinued due to marrow suppression in 3 patients.
CONCLUSION : Eflornithine is a valuable drug for salvage treatment of non responsive cases of PCP but does exhibit bone marrow toxicity.

T.B.0.31

CLINDAMYCIN/PRIMAQUINE FOR P. CARINII PNEUMONIA IN AIDS.

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Objective. To assess the tolerance, safety and the clinical outcome of clindamycin/primaquine (Clin/Pri) in the treatment of P. carinii pneumonia (PCP) in patients with AIDS.
Methods. This is an open clinical trial including patients with AIDS in whom "conventional" therapy for PCP failed or was not tolerated. The clinical outcome was assessed in patients with proven or highly probable PCP. The tolerance and safety was monitored in the above patients and in patients with possible PCP.
Results. So far 33 episodes of PCP (19 proven; 8 highly probable and 6 possible) were treated: 1st episode -21 cases and 2nd episode -12 cases. The Clin/Pri was given after 2-26 days of "conventional" therapy in 27 patients and as the initial treatment in 6 cases. Clinical response was defined as: cure - 23 patients; improvement - 2 cases; failure- 2 patients. The onset of clinical response was less than 48 h in 18 patients, 72 h in 5 patients and 6 days in 2 patients. Adverse reactions were encountered in 15 out of 33 patients: morbiliform rash in 14 patients (with fever, leukopenia or nausea in 3,2 and 1 of them respectively); mild diarrhea - 1 case. The duration of follow-up was 1 week 11 ½ months; eight patients were followed for more than 7½ months. In spite of no specific anti PCP prophylaxis only 3 patients had a relapse after 10, 10 and 9 months respectively.
Conclusion. Our results prove that a controlled comparative trial with Clin/Pri in the therapy of PCP in AIDS patients is feasible and worthy.

Problèmes de laboratoire dans le diagnostic du SIDA
Laboratory Issues in the Diagnosis of AIDS

T.B.0.32

LES ANTIGENES HIV-1 CIRCULANTS

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La présence d'antigènes HIV-1 dans le sérum de sujets infectés est le reflet de la replication persistante du virus dans l'organisme. Leur détection est réalisable par des techniques d'immunocapture qui sont commercialisées. Ces techniques sont fiables, faciles à réaliser, sensibles et reproductibles à condition de connaître les limites de leur utilisation et de l'interprétation des résultats obtenus :

- le dosage des protéines virales doit être exprimé en pg/ml pour obtenir une bonne reproductibilité ;
- l'évaluation de la valeur-seuil doit être faite dans ses plus basses limites ;
- l'utilisation de détergents capables de lyser le virus est nécessaire pour l'obtention d'une meilleure sensibilité et, en fait, permet l'évaluation de deux paramètres différents : les protéines virales solubles d'une part, et les particules virales complètes d'autre part. On démontre qu'il n'y a pas de proportionalité directe entre ces deux paramètres, dont la valeur prédictive pourrait être différente.

Les antigènes HIV-1 circulants représentent un élément essentiel et indispensable pour le suivi biologique des patients et pour l'évaluation des thérapeutiques anti-virales. La présence d'antigènes HIV-1 circulants est le plus souvent corrélée à une évolution clinique défavorable. Cependant, l'absence d'antigénémie circulante chez certains sujets atteints de SIDA pose le problème de l'interférence des anticorps et des immuns-complexes et révèle bien que cet examen est certes le reflet d'une replication virale, mais aussi celui d'un équilibre antigènes/anticorps complexe.

T.B.0.33

SEROLOGY TESTS FOR THE DIAGNOSIS OF AIDS

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The serological tests most commonly used for the diagnosis of HIV infection have been enzyme immunoassays using whole viral lysate to capture anti-HIV antibodies. These screen tests have been configured to have high sensitivity and specificity; consequently, all positive results must be validated by a second procedure, such as immunoblot, immunofluorescence (IFA) or radioimmune precipitation (RIP). In most settings, these tests are highly reliable and quality assurance programs have demonstrated this. In some countries, these assays have been modified to detect antibodies eluted from dried blood spots for use in large scale epidemiological studies. Newer HIV screen tests include those using recombinant proteins, synthetic peptides and antigens from both HIV-1 and HIV-2 as the capture antigens. Competitive EIA tests are particularly suitable for differentiating HIV-1 and HIV-2. Immunoblots utilizing recombinant proteins are available and have undergone preliminary evaluation. Simple, often rapid, HIV antibody detection assays have been developed for use in developing countries and emergency situations in developed nations. The performance characteristics of these tests can be quite good, but positive results must be verified by another method such as RIP, IFA or immunoblot. Antigen capture assays may be used to detect HIV p24 in serum. This procedure has been used both for monitoring the efficacy of drugs under clinical evaluation and providing a prognostic indicator of patient outcome. The efficacy of most of these commercially available reagents is excellent, but continued successful delivery of testing strategies requires adequate product and user quality assurance programs. International collaborations, for example, those sponsored by the World Health Organization and the Pan American Health Organization have been established to assist in the development and implementation of quality assurance programs.

T.B.0.34

IMMUNOLOGY MARKERS

Lawrence, Jeffrey, Cornell University, New York, N.Y. U.S.A.

T.B.0.35

Viral Culture as an Adjunct to Clinical Trials: Isolation of AZT-Resistant Variants of HIV-1.

Mark A. Wainberg*; Rooke, R.; Tremblay, M.; Soudeyns, H.; Fanning, M.; Montaner, J.S.G.; O'Shaughnessy, M.; Gelmon, K.; Falutz, J.; Tsoukas C.; Gill, J.; Ruedy, J.
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Our laboratory has participated in a Canadian AZT trial, designed to assess the effects of this drug on patients with Group II or III HIV-associated disease. Seventy two patients entered into this trial received 600 mg AZT per day for 18 weeks, 900 mg for 9 weeks and 1200 mg for an additional 9 weeks. After 36 weeks, drug was withheld for 6 weeks and started again after 42 weeks at 1200 mg per day. Attempts to culture HIV were routinely carried out during this period. A significant increase in the percentage of cases from whom HIV could be successfully isolated was observed both at the end of the drug wash-out period, and during the period following (80% postwash-out vs 40% prewash-out). This corresponded to decreased time to culture positivity following the wash-out period (11 days vs 19 days).

We have also shown that HIV could be isolated under conditions in which AZT (10 μM) was included in the primary viral culture medium in each of two cases in which patients had received AZT for longer than 36 weeks. Assessment of frozen viral isolates, obtained from patients on long-term AZT therapy, has revealed the presence of AZT-resistant virus in each of 9 additional cases. This property of drug resistance appeared stable, and did not disappear when such viruses were replicated in the absence of drug. These AZT-resistant isolates were, however, susceptible to inhibition by each of four other nucleoside analogues. Supported by Health and Welfare Canada.

T.B.0.36

NEW TECHNOLOGIES FOR THE DIAGNOSIS OF AIDS

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Specific testing for HIV antibodies and virus markers has permitted accurate diagnosis of AIDS and HIV infection. As the AIDS epidemic continues to spread, there will be a sustained need for more sensitive and quantitative assays. Higher sensitivity is needed to permit earlier diagnosis of infection which will become increasingly important as effective therapeutic interventions are developed to prevent the disease. Higher specificity is needed to decrease the number of false positives and to permit correct diagnosis of HIV infection in a larger spectrum of clinical situations where there is an incomplete or indeterminate antibody profile. Quantitative tests for monitoring the virus burden and state of activity in an infected person are also needed to improve the ability to assess the clinical status of the patient and to evaluate the efficacy of new drugs and possibly vaccines.

The use of rDNA-derived antigens has already shown great promise in the advancement of diagnostic testing. For developing countries, the availability of rapid, simple and inexpensive tests for HIV infection will offer the greatest hope for prevention of transmission of the virus particularly through screening of the blood supply. The application of DNA probe technology, particularly PCR, has already opened a new horizon for direct detection of the virus. This technology has proven useful for detecting infection in seronegative persons, for measuring virus expression and for finding and discriminating variant HIVs.

Diagnostic testing for HIV will remain an important aspect of disease control even as prevention and therapy are developed for these infections. Fortunately, technology advancement for diagnosis of retrovirus infections has entered a very dynamic phase and considerable progress can be expected in the development of novel diagnostic tests and test applications.

Pharmacologie et toxicité de l'AZT
AZT Pharmacology and Toxicity

W.B.0.1

PHARMACOKINETICS OF ZIDOVUDINE IN EARLY HIV-INFECTED HOMOSEXUAL MALES.*

Ruedy, John; Montaner, JSG; Le, T; Gelmon, K; Fanning, M; Smith, J; Falutz, J; Tsoukas, C. Multicentre Canadian AZT Trial (MCAT). Canada.

OBJECTIVE. To characterize the pharmacokinetics of zidovudine (ZDV) in early HIV-infected homosexual males within the frame of the multicentre Canadian AZT trial (MCAT).
METHODS. DESIGN: Multicentre, prospective, dose range finding study. SUBJECTS: HIV positive homosexual males belonging to CDC group II, III and IV C2 with helpers > 270 M/L. INTERVENTION: Following a 3 week observation period, volunteers were treated with ZDV 600 mg/day for 18 weeks, 900 mg/day for 9 weeks and 1200 mg/day for 9 weeks followed by a washout period of 6 weeks after which they were re-started on ZDV at 1200 mg/day or the highest previously tolerated dose. Upon re-initiation of therapy timed blood samples were obtained after a single 400 mg ZDV dose for serum level measurement by HPLC of ZDV and it glucuronidated metabolite (G-ZDV). Serum levels were obtained at 0, 20, 40, 60, 90, 120, 180, 240, 300 and 480 minutes. ANALYSIS: Analysis of variance was performed to compare mean area under the curve (AUC), peak serum level (C max), time to peak serum level (T max) and half life (T 1/2) of ZDV and G-ZDV between different CDC groups and study sites.
RESULTS. Data from 59 subjects was available at the time of this analysis. They were distributed as follows: Pharmacokinetic data (mean ± SD) is shown below. CDC groups II:16, III:25, IVC2:18; Study sites Montreal 20, Toronto 16 and Vancouver 23. No significant differences were found between CDC groups or study sites.

	ZDV	G-ZDV	BOTH
AUC	9.52 ± 5.79	34.90 ± 11.32	42.54 ± 12.03
C max	7.50 ± 4.99	21.27 ± 7.63	27.32 ± 9.12
T max	0.92 ± 0.41	1.15 ± 0.49	1.09 ± 0.52
T 1/2	1.91 ± 2.47	1.67 ± 2.12	1.32 ± 1.31

CONCLUSIONS: This preliminary analysis suggests that zidovudine pharmacokinetics in early HIV-infected homosexual males is similar to that described in AIDS patients. Although a considerable degree of inter-subject variability was present this could not be accounted for on the basis of CDC group or study site.

* Supported by a grant from the National Health Research Development Programme (NHRDP), Health and Welfare, Canada.

W.B.0.2

A PHASE ONE STUDY OF ZIDOVUDINE (AZT) IN INFANTS, LESS THAN THREE MONTHS OLD, AT RISK FOR HIV INFECTION.

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Objective. To determine the safety, tolerance, and the pharmacokinetics of AZT in infants, less than three months of age, exposed at birth to HIV.
Methods. Eight asymptomatic infants, < 3 months of age, who were born to HIV positive mothers were enrolled in a phase 1 study of AZT. The first 5 infants received single, 2 mg/kg doses of AZT IV on days 1 and 14, and PO on days 2 and 15; they were then treated with AZT, 2 mg/kg PO q6h from day 16 to 45. The subsequent 3 infants received single, IV doses of 3 mg/kg on days 1 and 46, and PO on days 2 and 45; then 3 mg/kg PO q6h from day 3 to 44. After each of the single doses, blood samples for AZT levels were drawn at regular intervals over 8 hours. Single CSF samples were also obtained at varied times through a dose interval. The drug was continued for up to six months in 4 infants proven to be infected with HIV.
Results. AZT was well tolerated by infants, with only one developing anemia (Hb≤10.0) during therapy, and none neutropenia (ANC≤500). Total body clearance (Cl) of AZT increased significantly, with a concurrent decrease in half-life ($T_{1/2}$) after 30 days of age (Table). Cl in infants > 30 days was comparable to that in adults. Oral absorption was satisfactory, and bioavailability (F) varied with age, from .52 to .81(Table). CSF:plasma ratios ranged from 0.13 to 0.50.

Age Group	$T_{1/2}$ (hrs)	Clearance (ml/min/kg)	F (2mg/kg) (%)
≤30days	2.29±0.76	17.2±5.69	0.81±0.17
>30days	1.5±0.29	23.8±2.37	0.52±0.04

Conclusions. AZT, at oral doses of 2 mg/kg q6h in infants < 1 month, and 3 mg/kg q6h in infants > 1 month of age results in concentrations comparable to those attained in adults receiving therapeutic doses. AZT is well tolerated by infants at these doses.

W.B.0.3

PHARMACOKINETICS OF ZIDOVUDINE IN IDU RELATED HIV INFECTION.

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Objective: A pharmacokinetic trial of zidovudine in injection drug use (IDU) related HIV.
Methods: 6 males and 6 females, with a mean age of 26.5 years (22-39) were treated with Zidovudine. They appeared to have discontinued IDU but were currently using orally or by inhalation cannabis, benzodiazepines, methadone, and/or dihydrocodeine. They spent the first week in hospital on 250 mgm. zidovudine 6 hourly. Three sampling periods of 6 hours over 14 days occurred to determine the pharmacokinetics of zidovudine.
Results: Differences in the pharmacokinetics of AZT were observed for all parameters in the 10 patients on oral opiates, benzodiazepines or cannabis (Gp I) compared to the two patients taking only cannabis and/or benzodiazepines (Gp II) and reported normal values (Gp III).

	Gp I (± S.D.)	Gp II (± S.D.)	Gp III (± S.D.)
Area Under Curve (uMol.hr)	12.4 ± 4.0	4.6 ± 1.25	6.51 ± 1.71
t1/2 (h)	1.04 ± 0.31	0.73 ± 0.08	1.0 ± 0.49
Clearance (ml/min/kg)	23.3 ± 7.2	58.6 ± 24.6	36.6 ± 4.7
Peak (uMol)	7.7 ± 3.8	2.83 ± 1.4	5.01 ± 1.25

Conclusion. Oral opiates and benzodiazepines alters the pharmacokinetics of zidovudine. The mechanism is as yet unknown and therefore further studies are required.

W.B.0.4

PROBENECID INHIBITS THE METABOLIC AND RENAL CLEARANCES OF ZIDOVUDINE IN HUMAN VOLUNTEERS

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Objective. Probenecid is a drug which may be coadministered with zidovudine (AZT) to slow its elimination rate, allowing the attainment of the desired therapeutic outcome while administering lower doses of AZT. The main objective of this work was to examine the mechanism of this interaction and to quantify the effect of probenecid on the metabolism and renal excretion of AZT during a balanced crossover study in two normal volunteers.
Methods. AZT was administered as a 200-mg single oral dose in the absence (control) and the presence (probenecid treatment) of probenecid with a one-week washout period between treatments. Probenecid treatment was 500 mg oral doses every 6 hours, started three days before AZT administration. Plasma and urine samples were collected frequently over a 12-hour period, and analyzed for probenecid, AZT, and AZT glucuronide (GAZT) using a sensitive and specific HPLC method.
Results. During the probenecid treatment, the probenecid plasma concentrations ranged from 100-150 μg/ml. Probenecid affected neither the protein binding nor the plasma/RBC distribution of AZT. Probenecid coadministration increased the AZT AUC to twice its control value, resulting from a 50% decrease in AZT total body clearance. The AZT renal clearance, calculated from renal excretion rates and average plasma concentrations, decreased from 350 ml/min to 220 ml/min during the probenecid treatment. This effect on renal clearance corresponds approximately to a 50 % decrease in the net renal secretion clearance.
Conclusion. Our results have shown that probenecid inhibits AZT glucuronidation and AZT renal excretion in normal volunteers.

W.B.0.5

EFFECT OF ACETAMINOPHEN (ACET) ON THE PHARMACOKINETICS OF ZIDOVUDINE (AZT)

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Objectives. Determine if the disposition AZT is altered by co-administration with ACET since both drugs are metabolized by hepatic conjugation.
Methods. Of 26 AIDS patients receiving 200 mg AZT every 4 hrs, 13 received 325 mg of ACET every 4 hrs for 72 hrs; 6 were treated with 650 mg every 4 hrs for 72 hrs; and 7 were treated with 650 mg every 4 hrs for 7 days. Prior to and at the end of the ACET treatment, serial blood samples were drawn and analyzed by HPLC for AZT and 5'-glucuronyl AZT (GAZT).
Results. The average pharmacokinetic parameters for AZT and GAZT before and after ACET treatment were not significantly different (p>0.05).

	AZT Parameters					
ACET Dose	Pre-ACET			Post-ACET		
	AUC	Cl	t½	AUC	Cl	t½
325 mg q4h x 3 da	1462.4	88.9	0.94	1594.6	81.5	0.84
650 mg q4h x 3 da	2532.5	51.3	1.36	2474.3	52.5	1.51
650 mg q4h x 7 da	1950.6	66.7	1.84	1369.7	94.9	1.04

Conclusions. Under the conditions of this study, concurrent treatment of AZT and ACET showed not significant effect on the dispositon or clearance of AZT or GAZT in AIDS patients. If the co-administration of ACET with AZT therapy causes increased hematologic toxicity, the mechanism probably does not involve the inhibition of glucuronidation of AZT.

This study was supported by the AIDS Clinical Trials Program of NIAID.

W.B.0.6

LONG TERM NON-HEMATOLOGICAL ADVERSE EFFECTS OF AZT AND ITS EFFECT ON PRE-TREATMENT SYMPTOMATOLOGY

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Objective: To determine the long term effect of AZT on pre-existing symptomatology as well as the nature, severity and time course of side effects related to long term use of AZT initiated in early HIV infection.
Methods: The Canadian Multicentre AZT Dose Range Finding Study enrolled 74 HIV positive men (CDC groups IIB, III, and IVC2). Subjects were treated with AZT 600 mg/day for 18 weeks, 900 mg/day for 9 weeks, 1200 mg/day for 9 weeks, followed by a washout period of 6 weeks, after which they were restarted on 1200 mg/day or the highest previously tolerated dose.
Results: Initial symptomatic adverse effects of AZT were frequent and wide-ranging. Most commonly, they manifested as nausea (64%), fatigue (55%), headache (49%), mood disturbances (29%), and rash/pruritus (28%). In all subjects, adverse effects disappeared by the end of the 6 week washout period. Of those who reported a particular adverse effect upon starting AZT, 34% re-experienced nausea, 32% fatigue, 19% headache, 47% mood disturbances, and 8% rash/pruritus when therapy was reinstituted. Most common symptoms reported prior to the administration of AZT included chronic fatigue (28%), night sweats (22%), rash (22%), and chronic sinus congestion (18%). All of these symptoms were significantly reduced during the course of the trial.
Conclusion: Upon restarting AZT, non-hematological adverse reactions were reported by fewer subjects than with initial drug administration. AZT has an apparent effect in decreasing pre-treatment symptomatology.

Traitement : thrombocytopénie
Therapy: Thrombocytopenia

W.B.0.7 ZIDOVUDINE AS A POSSIBLE TREATMENT FOR THROMBOCYTOPENIA ASSOCIATED WITH AIDS AND ARC.

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Objective: HIV-related thrombocytopenia is well-described and available treatments are generally unsatisfactory. The study examined whether or not zidovudine (azidothymidine) had a possible role in its treatment.
Method: 19 patients with ARC or AIDS (1 heterosexual non-drug user and 18 homosexuals) were maintained on zidovudine 200 mg four-hourly. Following starting the drug, regular haematological follow-up was conducted over a period of 12 weeks.
Results: 9 of the 19 patients were thrombocytopenic (defined as a platelet count of < 150 x 10^{9}/l) prior to starting zidovudine. By the end of the first week of treatment, 11 out of 19 (58%) exhibited a rise in platelet count of 20% or more compared to their baseline pre-treatment count. Of the 9 patients with low platelets prior to treatment, 7 showed a rise in count (of greater than 20% in 5 of these cases) at 1 week, while counts in one remained unchanged and one showed a fall from his baseline count. At 12 weeks, 4 out of the 11 responders (37%) had maintained this initial rise; these 4 patients had all been thrombocytopenic prior to zidovudine and all had also shown a significant rise at 1 week. The one initially-thrombocytopenic patient with a fall from baseline at 1 week showed a 58% rise from baseline by 12 weeks.
Conclusion: Zidovudine may represent a useful additional treatment for HIV-related thrombocytopenia.

W.B.0.8 THE EFFECT OF ZIDOVUDINE ON PLATELET COUNT IN HIV-ASSOCIATED THROMBOCYTOPENIA *

Montaner, Julio SG; Le, T; Gelmon, K; Fanning, M; Falutz, J; Tsoukas, C; Wells, G; O'Shaughnessy, M; Wainberg, M and Ruedy, J. Multicentre Canadian Azidothymidine Trial (MCAT), CANADA

OBJECTIVE. To characterize the nature, time course and dose dependency of zidovudine effect on platelet counts in thrombocytopenic HIV infected individuals within the Multicentre Canadian AZT Trial.
METHODS. DESIGN: Multicentre, prospective, dose range finding study. SUBJECTS: 12 HIV positive homosexual men; CDC groups IIB, III and IVC2; helper count >270 M/l and platelet count <150 G/l INTERVENTION: Following a 3 week observation period, subjects received zidovudine 600 mg/day for 18 weeks, 900 mg/day for 9 weeks, 1200 mg/day for 9 weeks, no drug for 6 weeks and 1200 mg/day or the highest previously tolerated dose for 18 weeks for a total of 60 weeks of therapy. FOLLOW-UP: Clinical and laboratory evaluations were performed at 3 weeks intervals. ANALYSIS: Analysis of variance was used to compare mean platelet values at each zidovudine dose. Where statistical differences were found analysis of variance was performed within the dose period to characterize timing and magnitude of the maximal change.
RESULTS. Initial platelet count (To) was 81 ± 37, and increased to 129 ± 51 ($p<.0001$) with low dose zidovudine, reaching a peak at 9 weeks (9 wks vs 0 wks, $p=.01$). Platelet count remained above initial values while on zidovudine (600 mg vs To, $p<.0001$; 900 mg vs To, $p= .0005$; 1200 mg vs To, $p =.0002$). The zidovudine effect on platelet count was not dose related (900 mg vs 600 mg, $p=.16$; 1200 mg vs 600 mg, $p=.25$; 1200 mg vs 900 mg $p=.82$). Platelet count decreased to initial values upon discontinuation of therapy (0 mg vs To, $p=.07$) to increase once again when therapy was reinstituted (1200' mg vs 0 mg $p = .036$) to levels above the initial counts (1200' mg vs To, $p<.0001$) and similar to those observed upon initiation of therapy (1200' mg vs 600 mg $p=.37$). The timing of the platelet count increases upon reinstitution of therapy was similar to that seen upon initiation of therapy. Overall subjects could be easily divided into sustained responders (n=4); transient responders (n=4) and non-responders (n=4).
CONCLUSION. Zidovudine therapy produced a sustained increase in platelet count among thrombocytopenic, HIV-infected individuals. Although a considerable degree of variability was observed, it is apparent that this effect is drug related but dose independent.

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W.B.0.9 THE EFFECT OF ZIDOVUDINE ON HIV-ASSOCIATED THROMBOPENIA

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Objective. Among 440 HIV-AB positive patients in all stages of HIV infection 20 (4.5%) had HIV-associated thrombocytopenia (platelet counts <100 000/qmm). The prevalence among homosexual men was 3.2%, among IVDA 7.8%. This study was designed to describe the effect of zidovudine on HIV-associated thrombopenia.
Methods. Seven patients with HIV-associated thrombopenia (4 CDC AIDS; 3 ARC) were treated with zidovudine, corresponding to the standard directions concerning indication and dosage (1000 mg/day). Platlet activity under zidovudine treatment was also observed in 9 non-thrombocytopenic patients (7 CDC AIDS, 2 ARC). Thrombocytes were counted, by a standard method, before zidovudine therapy and at week 2, 4, 10 and 20 after starting therapy.
Results. In patients with HIV-related thrombopenia we saw a significant increase in thrombocytes shortly after the beginning of zidovudine therapy. The average increase in thrombocytes after 1.8 weeks was 56 900/qmm (+94%), after 5.2 weeks 57 300/qmm (+106%), after 12.5 weeks 46 600/qmm (+79%) and after 21.0 weeks 80 000 (+169%) compared to the basic level (60 700/qmm; range 23 000-103 000/qmm). The average difference compared to the basic level in non-thrombocytopenic patients (224 000/qmm) was -0.[illegible] after 1.2 weeks, +3.0% after 4.7 weeks, +9.9% after 14.5 weeks and +7.8% after 21.1 weeks.
Conclusion. Zidovudine seems to be an effective treatment for HIV-[illegible]ted thrombopenia. After an observation period of 20 weeks, the initial increase of [illegible]ocytes could be maintained. The platlet increasing effect of zidovudine seems to be limited to patients with HIV-associated thrombopenia. The long-term effect, the efficacy in severe forms of HIV-associated thrombopenia and the pharmaco-physiological mechanisms will be subject to further investigations.

W.B.0.10 THE EPIDEMIOLOGY OF IMMUNE THROMBOCYTOPENIA (ITP): ARE INCREASES IN ITP IN THE POPULATION A MANIFESTATION OF THE HIV EPIDEMIC ?

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Objective. To determine if the HIV epidemic is reflected in increased rates of ITP in a province with a relative low incidence of HIV infection.
Methods. Two cases of HIV-associated ITP prompted a retrospective review of all cases of ITP in the province of Nova Scotia from January 1, 1980 to December 31, 1987. Hospital records were reviewed using ICD-9 codes and a strict case definition. In addition, all hematologists and internists seeing patients with ITP were identified and their records reviewed by mail. Demographic and clinical information was abstracted for analysis using standard census data. Patients were not directly contacted for assessment of risk factors for HIV infection.
Results. 224 cases of ITP were detected. The M:F ratio was 1:1.8. Ages ranged from 1 mo - 93 yrs. ITP rates increased from 2.1 X 10^{5} in 1980 to 3.8 X 10^{5} in 1986-1987. More cases (63/131) occurred in the sexually active age group (15-49 years) in 1984-1987 than in 1980-1983 (32/193)(p=0.03). Cases from ages 0-14 and >49 age group were stable (61 vs 68). Cases of known HIV-associated ITP (4) appeared in 1984, 1985 and 1986 in our study.
Conclusion. No previous population-based studies of ITP have beendone. Our study suggests that increases inITP may be explained by an increased incidence of HIV in a sexually active population. All patients with ITP who are sexually active should have diagnostic tests for HIV.

W.B.0.11 TREATMENT OF SEVERE HIV-RELATED THROMBOCYTOPENIA IN DRUG USERS

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Objective.To evaluate the response to High Dose Immunoglobulines, anti-Rh (D) immunoglobulines and AZT, in severe HIV-related Thrombocytopenia.
Methods.57 i.v. drug users with PTL<25x10^{9}/l and bleeding were treated in three different ways:

Patients	M	F	age	PTL(x10^{9}/l)	CDC stage			mean f.-up*
HDIg 0.4g/kg/die x 5 days *	20	9	19-34	2-18	9/II	20/III	0/IV	18.5
antiRhIg 15µg/kg/die x 8 days **	13	4	21-30	1-20	5/II	10/III	2/IV	7.8
AZT 800-1200 mg/die	9	2	19-34	5-22	0/II	8/III	3/IV	4.6

* with recalls; **mainteinance with 400 µg x 2/weekly; * months

Results.	Haemorragies		early response			late response		
	pre	post	100	50	25	100	50	25
HDIg	29/29	15/29	5/29	5/29	12/29	3/29	1/29	4/29
antiRhIg	17/17	3/17	6/17	6/17	2/17	5/17	4/17	2/17
AZT	11/11	2/11	2/11	2/11	4/11			

Conclusions.HDIg and antiRhIg have similar effects as emergency treatment. AntiRhIg is easier to administrate, but untoward effects (haemolysis in 3/17 c[illegible] with Hb<9g/l) may limit the use. During a short follow-up AZT increased PTL count and resolved the bleeding in 8/11 cases.

W.B.0.12 HIV-1 ASSOCIATED THROMBOCYTOPENIA:- DISAPPOINTING LONG TERM RESULTS OF SPLENECTOMY.

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Objective: Steroids, intravenous immunoglobulin (IVIG), zidovudine and splenectomy have all been used in an attempt to treat symptomatic HIV-1 associated thrombocytopenia. Although no consensus exists on the best form of treatment, splenectomy has become popular. Since previous reports have provided only short term follow-up, we have evaluated the long term outcome of splenectomy when performed for HAT.
Methods: Nine patients (asymptomatic HIV positive =6, ARC=1, AIDS=2) had their spleens removed between 1986 and 1988. Platelet counts were checked monthly with a mean period of follow-up so far of 14.5 months (range 2-26 m).
Results: The mean (+/- sem) pre-operative platelet count (/mm^{3})was 22 000 +/- 9 000. Five patients received steroids, and 2 received IVIG prior to splenectomy. The mean weight of the spleens was 380 +/- 87 g. The immediate post-operative response was satisfactory with a mean platelet count of 342 000 +/- 88 000 at hospital discharge (mean hospitl stay 7.6 days), with 7 of the 9 patients having a count of > 100 000. However, the initial increase was not sustained in most patients. Only 2 patients have remained in complete remission (> 150 000) off all other medication, 5 patients have had a partial response (50 000 < pl < 150 000), and 2 have had no response (pl < 50 000, or a failure to increase by > 50 000). Platelet counts during the period of follow-up have ranged from 10 000 to 1 172 000. Four patients have required medical therapy {ZDV = 1, steroids = 3 (2 non-responders and 1 partial responder)} following splenectomy in an attempt to increase their platelet counts. There have been no post-operative episodes of clinically significant hemorrhage or pneumococcal bacteremia. Only 1 patient has had progression of HIV disease (ARC to AIDS). CD4 lymphocyte counts have remained stable in the 6 asymptomatic HIV positive patients.
Conclusion: In contrast to previous studies, our long term follow-up suggests that splenectomy when performed for HAT produces highly variable results. A complete response was uncommon with post-operative platelet counts fluctuating over a wide range. Additional medical therapy was frequently required. We therefore believe that clinicians should be cautious about splenectomy as the first line of treatment.

Qualité des soins offerts aux personnes atteintes de SIDA
Quality of Care for Patients with AIDS

W.B.0.13

SYMPOSIUM - Quality of Care for Patients with AIDS
- Role of Community Physician

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The community physician plays a pivotal role in provision of high quality care to persons with AIDS (PWAs). Any physician dealing with patients has the need to listen, to observe, to advise, and to console. In coping with AIDS, there is the additional need to advocate for our patients to provide quality care.

The physician plays different roles in each community in which he/she works. As members of the global community, one is guided by the aims of the World Health Organisation within the Global Programme for AIDS. These are information, education and communication to prevent further transmission of Human Immunodeficiency Virus and to provide care to those already infected. Within national and regional communities, one functions as educator, care-giver, and case reporter. Within the community of health care providers, one may be seen to be the coordinator of other care providers both institutional- and community-based, in addition to other roles.

Special roles may evolve in considering the community of patients of each physician. Physicians working within the general community have roles different from those of physicians whose patient community encompasses primarily gay/bisexual men, hemophiliacs or injection drug users

W.B.0.14

HOSPITAL CARE OF AIDS PATIENTS

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Due to the medical, social, ethical and psychological backgrounds of AIDS patients, HIV infection has to be viewed globally. To face the enormous medical complexity of HIV infection, re-examination of established care structures has to be considered. In this respect, as demonstrated by the SFGH model, hospital care should be a part of a coordinated program including out-patient clinic (ambulatory care) and community based organizations.

Depending available resources, commitment of health care providers, pre-existing structure such as infectious diseases department, and volume of patients inter hospital variability in care exists.

Ideally, hospitalized AIDS patients should benefit from a dedicated in-patient unit or at least an integrated network of relevant sub-specialities. To provide coordinated care and treatment for the complex multiple problems which overwhelm the patients, AIDS team should comprise infectious diseases specialists, oncologists, generalists in internal medicine and family practice, psychiatrists and psychologists and social workers in liaison with consultant physicians (mainly pulmonology, neurology, gastroenterology and dermatology). This multidisciplinary coordination should ensure optimal medical care and expert nursing and should reduce stress in AIDS care providers. In addition, psychological support for staff and volunteers as well as stress reduction program addressing education and information on infection control policy, ethical response and professional responsability and psychological burden should be part of hospital policy.

W.B.0.15

THE OUTPATIENT CLINIC IN AIDS CARE

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The most effective, humane and efficient care for HIV disease requires well-conceived use of the resources outside the acute hospital setting, particularly of the outpatient clinic. In San Francisco, dedicated AIDS clinics have allowed for the provision of comprehensive medical and psychosocial care that is oriented to the patient's common needs. In one model, physicians of varying professional/specialty backgrounds work as a team supplemented by experienced nurse practitioners and physicians assistants. Social needs are provided by professional and volunteer counsellors, social workers and psychiatrists. Representatives of several community-based organizations are on the clinic staff and are able to provide effective referral to the services of these organizations. Also, clinic nurses are expert in HIV disease recognizing and resolving potential problems. This system combined with a model AIDS inpatient unit, has enabled the continual reduction in the average length of hospital stay without compromising the quality of medical care delivered. Costs of HIV disease care are lower in the San Francisco area than elsewhere in the United States.

The role of the outpatient clinic is central to the model of care in San Francisco. It serves as the home of the full-time provider staff and has provided a base for extensive studies of the cost of AIDS care as well as of new therapies. The opportunity to interact with a full range of HIV disease patients reinforces the commitment of the staff to maximize the time these persons spend in the community, further controlling overuse of in-patient services. This model works well in caring for a large population of patients most of whom are educated homosexual men in a city with a supportive attitude to AIDS issues. Clearly, stresses would exist in many other settings that complicate HIV disease care. Many hospitals are reluctant to openly provide AIDS care and populations of drug users with HIV infection are burdened by other health and economic concerns. Nevertheless, dedicated AIDS services have been used in diverse situations with common success.

W.B.0.16.A

AIDS AND US VETERANS: A COMPREHENSIVE CARE APPROACH IN A NATIONAL HEALTH CARE SYSTEM

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Objective: To describe how the Department of Veterans Affairs (VA) national health care system has responded to the needs of veterans with AIDS.
Methods: VA has one of the largest and most complex health care systems in the world, consisting of 172 medical centers, 231 outpatient clinics, 117 nursing homes, 27 domiciliaries and 194 Vet centers, employing approximately 230,000 individuals. VA has cared for approximately 7,000 AIDS patients using a comprehensive, multidisciplinary approach.
Results: Quality health care has been provided approximately 6% of all AIDS patients in the US in 145 different medical centers. The comprehensive continuum of care includes voluntary testing with intensive pre- and post-test counseling, clinical evaluation and treatment, as well as hospital based home care, chronic placement and hospice care, including bereavement counseling for partners and family. Advanced research is conducted in many medical centers by the same clinicians caring for the patients and patients have opportunity to participate in clinical trials and other research studies. Health professional and other staff training programs in AIDS are ongoing in the VA.
Conclusion: Over 6% of all of the AIDS patients in the USA come to the VA for care. This large, government run health care system has responded to the epidemic with clinical care, research and educational programs. These coordinated efforts have made it possible for any eligible veteran in the US to receive care for their AIDS related problems at any VA medical center.

W.B.0.16

HOME CARE THERAPY

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In 1982, when Visiting Nurses and Hospice of San Francisco (VNH) began to receive referrals for people diagnosed with AIDS, Hospice interdisciplinary team members began to face organizational challenges regarding the provision of services for this population. Traditional family support systems were often insufficient, attendant care was often needed around the clock, and both private and public insurances were usually inadequate to cover the cost of care.

Since that time, VNH has provided support services to over 2000 persons with AIDS/HIV disease in the home setting or in the agency's residential care facility, Coming Home Hospice. This presentation will describe the development of the VNH AIDS Home Home Care and Hospice Program, and the special clinical features of the interdisciplinary team approach which combines the skills of nurses, social workers, trained paraprofessionals ("attendants"), and volunteers with the support of family members or friends to provide home and hospice care to persons with AIDS.

I. Overview of the AIDS Home Care and Hospice Program
    A. Development from 1982-1989
    B. Implementation of the interdisciplinary team approach

II. Management of the terminally-ill AIDS patient at home
    A. Several important clinical considerations
        1. Pain and symptom management
        2. Mental status deterioration
        3. Substance abuse

    B. Psychosocial Concerns
        1. Multiple loss issues
        2. Lack of traditional supports
        3. Minimum financial resources

III. Reimbursement considerations

Manifestations cliniques
Clinical Manifestations

W.B.0.17

CONTRASTING DETERMINANTS OF SUSCEPTIBILITY TO REITER'S SYNDROME AND PSORIASIFORM MANIFESTATIONS ASSOCIATED WITH HIV INFECTION.

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Objective. To investigate the possible contribution of genetic susceptibility to the development of HIV-related arthrocutaneous disorders that could be considered to be in the spectrum of spondyloarthropathies, and to determine their comparability to clinically similar disorders occurring among individuals not infected with HIV. These disorders include Reiter's Syndrome, psoriasiform rashes and other forms of chronic arthritis and enthesopathy such as psoriatic arthritis.
Methods. HLA typing was performed. All HLA class I alleles of the B and C loci, including those that have been described as disease susceptibility markers for these disorders in the general population, were assayed.
Results. In a case study of 21 patients with HIV-associated incomplete or complete Reiter's syndrome, HLA-B27 occurred in 15, or 71%. Antecedent infection with bacteria associated with reactive arthritis was documented in 30% of these individuals, further emphasizing the similarity of this syndrome with non-HIV-associated Reiter's syndrome. In contrast, among 8 patients with psoriasiform lesions identified in a prevalence study of 62 HIV clinic attendees, of whom one met the criteria of psoriatic arthritis, there was no statistically significant association ($p<.05$) between the presence of a psoriasiform rash and the HLA alleles Cw6, B7, B17, Bw16 or Bw57 when compared to 27 HIV infected controls without skin disease or to normal ethnically matched controls.
Conclusion. These findings suggest that among HIV-infected individuals the development of Reiter's syndrome involves an immune recognition event primarily dependent upon HLA-B27 molecules, whereas the pathogenesis of psoriasiform lesions in HIV patients, despite their resemblance to lesions in Reiter's syndrome, proceeds by distinct pathways that do not involve events influenced by specific polymorphic class I molecules.

W.B.0.18

CLINICOPATHOLOGIC AND IMMUNOCYTOCHEMICAL STUDY OF THE EYE IN AIDS: OBSERVATIONS IN 25 CASES

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Methods. The general medical, neurologic, and ophthalmologic findings in 25 cases of AIDS with complete post-mortem examination (including the eyes and CNS) were reviewed. All eye and CNS sections were embedded in paraffin and in celloidin and stained with H&E, PAS, Bodian/LFB (Loyez, Grocott, Ziehl. Immunocytochemical studies were performed on frozen and/or paraffin sections (eyes/CNS) to detect : HIV-1, CMV, Toxo, Crypto, JC and leukocyte/macrophage antigens.
Results : Males-20, Females-5; Age 23-61; Risk: Homo-15, IV-5, Africa-5.

		Opthalmology	Gen Path	Neuropath	Ocular Path
A) Cotton wool spots		10	-	-	1
B) Infections :	CMV	8	7	6	8
	Toxo	3	0	11	1
	HIV-1	ND	ND	12	?
	Other	0	7	2	retinitis
C) Tumors :	Kaposi sarcoma	0	11	0	0
	Lymphoma	uveitis	1	2	1

Conclusions. 1) The most commonly observed pathologic ocular finding in AIDS is CMV; the infection detected fundoscopically is always associated with systemic dissemination. In only 2 cases CMV was found both in the eye and the brain. 2) Cotton wool spots are frequent and transient at fundoscopic examination but difficult to demonstrate pathologicaly. 3) Toxoplasmosis/ lymphoma and Kaposi sarcoma, although often seen in the CNS and viscera respectively, rarely involve the eye.

W.B.0.19

CHANGING PREVALENCE OF MALIGNANCIES IN MEN AT SAN FRANCISCO GENERAL HOSPITAL DURING THE HIV EPIDEMIC.

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Objective. Kaposi's Sarcoma (KS) and Non-Hodgkin's Lymphoma (NHL) are malignancies recognized as index AIDS diagnoses. There is clinical suspicion that infection with HIV may increase the incidence of other malignancies. We have continued an ongoing study of hospital records to obtain the prevalence of malignancies in men at SFGH between 1979 and 1988.
Methods. We reviewed pathology, cytology, and autopsy reports on all men over 18 years old at SFGH between 1979 and 1988, and noted age, tumor type, primary site, and date of diagnosis.
Results. A. All Ages

	Year				
Tumor	79-80	81-82	83-84	85-86	87-88
KS	0	9	169	200	218
NHL	11	8	32	48	76
Basal Cell CA skin	26	28	38	75	72
Sq Cell CA anus	2	2	6	8	12
Condyloma Acuminata	16	29	35	62	61
Hodgkin's	1	4	13	14	7
Melanoma	4	5	4	12	12
Sq Cell CA Head/Neck	35	29	45	59	36
Sq Cell CA skin	12	13	22	17	16
Lung CA (all types)	56	42	37	64	39

B. By Age

	Year				
Tumor	79-80	81-82	83-84	85-86	87-88
Age 18-49					
KS	0	9	155	172	197
NHL	5	5	20	33	55
BCC	4	5	9	30	33
SCC anus	0	0	0	4	8
Age 50+					
KS	0	0	5	12	13
NHL	5	3	7	7	10
BCC	21	22	25	40	39
SCC anus	2	2	0	3	1

Conclusion. We describe an increased prevalence of several tumors at SFGH coinciding with the HIV epidemic. There is a striking increase in KS, NHL, Basal Cell CA of the skin, and Sq Cell CA of the anus that is most pronounced among young men. Risk group analysis is ongoing.

W.B.0.20

MALIGNANT LYMPHOMAS IN HIV INFECTED PATIENTS: CLINICAL AND PATHOLOGICAL FEATURES.

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Frequency, clinical features and histological types of malignant lymphomas in HIV infected patients were determined. Clinical and autoptical data from patients were evaluated. Organ tissue specimens were examined conventionally and using immunohistochemical staining techniques.

Incidence of ML: 18/190 (9 %) AIDS patients (patients with Hodgkin lymphoma [HL] were classified as having AIDS). NHL (n=14): High grade B-cell lymphomas with extranodal manifestations were found in all 14 cases. Burkitt lymphoma was seen in 2/14 cases. Most frequently found extranodal sites: CNS (n=7) and GI-tract (n=7). In three cases NHL was limited to the CNS. Treatment with common regimens (n=6) led to remission in 4/6 cases, five of these six patients died (survival time max. 6 months). One of the treated patients is alive (follow-up 36 months). HL (n=4): Mixed cell type HL in the stages 3 or 4 (Ann Arbor) was found in all cases. In two treated cases complete remission was achieved. These patients are still alive (survival time 15 and 24 months).

Malignant lymphomas in AIDS are predominantly NHL. High grade B-cell NHL with extranodal manifestations are most frequently found. Prognosis is commonly poor and may only be improved by treatment initiated early in the disease. HL are presumably more frequent than estimated and has a good prognosis. Hodgkin lymphomas are probably associated with AIDS.

W.B.0.21

THE VALUE OF LYMPH NODE BIOPSY IN HIV INFECTION

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Objective. to study the correlation between lymph node histopathology and clinical evolutio in HIV infection.
Methods. Thirty-nine patients with generalized lymphadenopathy, seropositive to HIV-1 (36 patients) or to HIV-2 (3 patients) were biopsed from July 85 to December 88. Conventional morphology and immunopathological studies were performed.
Results. Three histological subtypes of lymph node reactions were observed: Type I - Follicular hyperplasia with follicular alterations; Type II - Mixed hyperplasia; Type III - Lymphocyte depletion. Follicular alterations such as follicular fragmentation, islets of lymphocytes in germinal centers and naked germinal centers were observed in type I and type II. These two types were detected in PGL and ARC while lymphocyte depletion was always associated with AIDS. Immunological studies on frozen sections showed decreased CD4 lymphocytes with predominance of CD8 lymphocytes and severe alterations of the dendritic network of follicular dendritic cells. Tuberculosis with massive necrosis was observed in 9 cases (23.7%). In one case numerous large and pale histiocytes were associated with an atypical mycobacteria. HIV associated tumors were observed in 9 cases: Kaposi's sarcoma (3) and non- Hodgkin's lymphoma (6).
Conclusions. In our experience the histologic and immunopathologic patterns of lymph nodes are correlated with the clinical and immunological stage of infection. A progression in histological pattern follow clinical evolution.

W.B.0.22

INCREASED PULMONARY CAPILLARY VOLUME DURING AIDS-RELATED KAPOSI SARCOMA (KS).

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Although rarely life-threatening, pulmonary localisations of KS (PKS) often raise the problem of the differential diagnosis from opportunistic infections and are usually ascertained by use of fiberoptic bronchoscopy (FO) and broncho-alveolar lavage (BAL).

AIDS patients, whatever their status towards KS or pulmonary infections, may have a reduced lung transfer factor for carbon monoxide (TLCO), as do asymptomatic HIV+ patients. We reasoned that PKS, even unapparent, might however result in increased capillary volume (Vc) because of the vascular nature of the tumoral proliferation. We studied therefore 11HIV+ patients and 13 AIDS patients with cutaneous KS (CKS). Age, sex, height and weight were, on average, the same in both groups. None of the patients had a history of AIDS-related or other pulmonary disease.TLCO was measured using the single breath technique. Membrane conductance (Dm) and Vc were calculated from determinations of TLCO made on two different gas mixtures.

Lung volumes, TLCO and Dm were, on average, the same in both groups but Vc was higher in CKS (132 ml, range 78-216 % of predicted) compared to HIV+ patients (100 ml, range 78-103% of predicted) ($p < 0.002$, Mann and Whitney U-test), with little overlapping between groups. Visible bronchial lesions or increased siderophage count in BAL fluid confirmed the diagnosis of intra-thoracic KS in 2 of 3 AIDS patients submitted to FO.

These results suggest that Vc measurement may be a useful non-invasive screening procedure for PKS, which could appear unexpectedly frequent. If these results are confirmed through radiologic and pathologic correlation, the finding of an increased Vc in an AIDS patient with CKS might render unnecessary invasive pulmonary investigations.

Séance thématique
Specialty Session

Aspects cliniques
Clinical Aspects of AIDS

Hémophilie : histoire clinique et études de cohortes
Hemophilia: Natural History/Cohort Studies

W.B.0.23

SURVIVAL OF PATIENTS WITH HEMOPHILIA-ASSOCIATED AIDS IN THE UNITED STATES

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Objective. To examine the survival of hemophilic patients after the diagnosis of AIDS.
Methods. Using national hemophilia-associated AIDS surveillance data and the life-table method of analysis, we calculated the median survival and the cumulative probability of survival for all and selected subgroups of U.S. hemophilic patients after the diagnosis of AIDS.
Results. The median length of survival was 11.7 months; the cumulative probability of survival was 49.2 ± 2.0% at one year and 28.9 ± 2.3% at two years. The length of survival varied by age at the time of AIDS diagnosis:

	<13 years	13-29 years	30-59 years	60+ years
Median survival	12.0 mo	16.4 mo	9.8 mo	3.0 mo

Patients diagnosed before 1986 had a median survival of 6.4 months compared with 15 months for those diagnosed in 1986 or later. Length of survival did not differ significantly by race, coagulation disorder, AIDS manifestation at the time of diagnosis, or region of residence. Seven patients survived longer than 36 months after AIDS was diagnosed. These patients were more likely to have met only the 1987 revision of the CDC AIDS surveillance case definition than other patients.
Conclusions. Patterns of survival among hemophilic AIDS patients are similar to those reported in other risk groups, excluding patients with Kaposi's sarcoma. Length of survival decreased with increasing age and improved over time. In contrast to other risk groups, no difference in survival was associated with race.

W.B.0.25

NATURAL HISTORY AND PATHOGENESIS OF HIV INFECTION IN PATIENTS WITH HEMOPHILIA

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Objectives: To evaluate the natural history of HIV infection and HIV specific immune responses in patients with hemophilia.
Methods: A prospective study of 164 individuals with hemophilia was carried out over a 5 year period. Specific studies included HIV viral culture, serum p24 detection, lymphocyte surface marker analysis, neutralizing and ADCC antibody studies, and detection of HIV specific CTL activity.
Results: Over the first five years of observation 21 of 136 seropositive individuals (15%) developed AIDS. HIV was isolated from approximately 80% of infected individuals and 18% had detectable (>30 pg/ml) p24 core antigen in serum. Absolute numbers of CD4 T cells progressively declined in 84% of those infected while 16% had stable absolute CD4 cells. Activated (DR positive) CD8 T cells progressively increased from <2% to ≥12% of total CD8 T cells. Eighty percent of HIV seropositive individuals had detectable circulating cytotoxic T cells directed against HIV gag and envelope proteins. In addition HIV seroconversion was rapidly followed by the appearance of ADCC antibodies (titers from 1:1000 to 1:1,000,000) directed against only HIV envelope proteins. Neutralizing antibodies were slow to appear and persist in extremely low titer (from <1:5 to 1:80).
Conclusion: These results suggest that persistence of active CTL and ADCC responses in the absence of broad neutralizing antibody may result in progressive immune attrition with development of symptomatic disease.

W.B.0.27

CANADIAN NATIONAL HEMOPHILIA STUDY (CNHS): HIV INFECTION IN HEMOPHILIA (HEM) AND OTHER BLEEDING DISORDERS (1985-1989).

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The CNHS initiated in Jan 1985 enrolled 372 patients from 12 Canadian Hemophilia Centers. These include 283 Hem A, 48 Hem B, 37 von Willebrand disease (vWD) and 3 others. There were 98 children and 274 adults. 210 patients had severe, 73 moderate and 89 mild diseases. In Jan 1989, 323 patients remained in the cohort, as 26 had withdrawn, and 23 had died. 16 of the deaths were due to AIDS. Several observations are notable: (I) The HIV seropositive (pos) rate was discordantly higher among Hem A (163 of 249 pos) than Hem B (2 of 43), vWD (4 of 28) or others (1 of 3). The most important determinant for pos was the use of non-heated factor VIII concentrates as 91% of those severe Hem A receiving this product were pos. Two of 4 pos vWD had received this product. One possibility is that before heated concentrates were supplied (Jul 1985), the Canadian volunteer plasma donation system was self sufficient for factor IX concentrates, whereas 50% of the factor VIII had to be imported. (II) Progression of HIV disease was evident. At enrollment, of the 164 pos patients (44% of 372) CDC II, III & IV diseases were 112, 46 & 6. At the lastest visits, 170 patients were pos (53% of 323). The CDC II, III & IV diseases were 47, 77 & 46. Including the 16 who died of AIDS, the number with CDC IV disease had increased from 6 to 62. (III) 6 patients seroconverted in 1987. This was traced to a factor VIII concentrate dry-heated at 60°C x 30 h.

W.B.0.24

CUMULATIVE RISK FOR AIDS AND OTHER HIV OUTCOMES IN A COHORT OF HEMOPHILIACS IN WESTERN PENNSYLVANIA

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Objective. To describe the distribution of AIDS and HIV-related outcomes following HIV seroconversion in a cohort of hemophiliacs.
Methods. A well-characterized cohort (n = 84) of HIV-infected hemophiliacs from Western Pennsylvania, on whom HIV seroconversion data are known, have been followed prospectively for development of clinical manifestations of HIV infection including AIDS, AIDS-related complex (ARC), and CDC class IV infection. Kaplan-Meier estimates of cumulative risk for AIDS and other significant HIV outcomes by duration of HIV infection were determined.
Results. Of the 84 HIV-infected hemophiliacs, 27 (32%) have developed AIDS and 12 (14%) have developed ARC or CDC Class IV symptoms (thrush, herpes zoster). No cases of AIDS were observed in under two years' duration of infection. Using Kaplan-Meier product-time-limit-method estimates, by 4, 6, and 7-1/2 years' duration of infection, the proportion developing AIDS is 12, 29, and 43%, respectively. The cumulative estimate for developing either AIDS or ARC/IV by 7-1/2 year duration is 60%. By age, for those > 30, 18-30, and < 18 years, the proportion developing AIDS by 6 years after infection is 50%, 25% and 5% (p < .01).
Conclusion. Half of this cohort has developed AIDS or ARC/IV by 6 years' duration of infection. There appears to be a significantly shorter incubation to AIDS/HIV outcome in those over 30 years of age at seroconversion.

W.B.0.26

NATURAL HISTORY OF HIV IN PATIENTS OF THE BONN HAEMOPHILIAC COHORT STUDY.

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Objective. To describe the natural history of HIV-infection in adult hemophiliacs.
Methods. 343 adult patients at Bonn Hemophiliac Center were tested positive for HIV in 1985. Since 1986, 313 patients have been regularly followed up, including clinical examination, routine laboratory, lymphocyte subtyping, western blot and virus isolation.
Results. Six years after infection 16% (55/343) of the entire cohort had developed AIDS. The most frequent manifestation of AIDS was: PCP: 51%, HIV-encephalopathy: 25%, toxoplasmosis: 7%; NHL: 7%. One KS was observed.
In 86% of patients T4 cell count decreased 30% or more over the observation period. Prognostic markers for progression to AIDS (other than decreased T4 cell count) were elevated IgA, successful virus isolation and loss of anti-p24-antibodies.
In asymptomatic patients not treated with AZT (n=213), T4 cell count decreased 87 cells/year. Actual T4 cell distribution:

<100	101-200	201-300	301-400	401-500	501-600	>600	(T4-cells)
11	29	37	33	36	25	42	(patients)

Conclusion: Our findings suggest that most HIV-infected hemophiliacs will eventually develop AIDS.

W.B.0.28

NINE YEAR FOLLOW-UP OF A COHORT OF 112 ANTI-HIV SEROPOSITIVE HAEMOPHILIACS

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Objective To assess the natural history of HIV disease in 111 infected haemophiliacs and 1 sexual contact.
Method Patients were reviewed at frequent intervals from the time of seroconversion (established by retrospective testing in 59 (53%) patients) until November 1988.
Results The first seroconversion was November 1979 and the last July 1985. The median length of follow-up from the first positive anti-HIV result was 5 years 1 month. By 30 November 1988, 65/112 (58%) patients were symptomatic and 21/112 (19%) had developed AIDS.

SYMPTOMATIC			AIDS		
	Thrombocytopenia	7 (6%)		HIV wasting syndrome	2
	Herpes zoster	11 (10%)		Oesophageal candida	2
	Bacterial infections	16 (14%)		PCP	10
	Oral candida	17 (15%)		Aspergillus pneumonia	1
	Seborrhoeic dermatitis	22 (20%)		MAI	1
				Cerebral toxoplasmosis	1
				Lymphoma	2
				Staphylococcal septicaemia with cerebral abscesses	1

Amongst 59 haemophiliacs with a known date of seroconversion the calculated cumulative incidence of symptoms was 90% and of AIDS 70% after 9 years of seropositivity (Kaplan-Meier estimate).
Conclusion This nine year follow-up confirms that the majority of anti-HIV positive patients progress to symptoms and AIDS. This cohort may provide a control for future studies of therapy in asymptomatic patients.

Infection par le VIH : atteintes à certains organes
HIV Infection: Organ Specific Involvement

W.B.O.29

CLINICAL GASTROINTESTINAL (GI) DISEASES IN AIDS
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The GI tract is vulnerable to immune deficits, due to poor physical protection and a contaminated external environment. Multiple complications occur, based upon specific immune deficits in secretory immunity, impaired T-cell function, macrophage dysfunction and diminished immune surveillance against neoplasms. Oral and esophageal disorders usually are due to yeast infections, while aphthous ulcers also are common. Intestinal diseases can be grouped as primary infections of enterocytes, secondary involvement from systemic or otherwise diseminated disorders, and a syndrome of inflammatory bowel disease. Enterocyte infections are caused by protozoans such as cryptosporidium, microsporidium and isospora produce a clinical picture of 'short bowel syndrome'. Secondary involvement by viruses, such as CMV, fungal infections, mycobacterial infections, or tumors are prevalent. There is a prominent systemic reaction such as wasting, as variable focal symptoms based upon the precise site of disease expression. Many HIV-infected patients have an inflammatory bowel disease of uncertain etiology. Recent studies suggest that HIV may be a primary pathogen in the gut. Liver disease often is related to mycobacterial or viral causes but biliary tract diseases can cause major morbidity. The major sequelae of intestinal dysfunction are progressive malnutrition and dehydration, though other specific medical or surgical complications occur.

W.B.O.30

CLINICAL BONE MARROW INVOLVEMENT

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United Kingdom

W.B.O.31

CLINICAL CENTRAL NERVOUS SYSTEM INVOLVEMENT

Pederson, Court. Department of Infectious Diseases, Hvidovre Hospital, Hvidovre, Denmark.

W.B.O.32

PATHOLOGY OF THE CENTRAL NERVOUS SYSTEM IN AIDS
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The neuropathological examination of the human central nervous system in AIDS discloses lesions in most cases and these are frequently a significant cause of morbidity and mortality. A wide variety of lesions are found and these may be classified in four groups:
A) Direct Human Immunodeficiency Virus infection: the most characteristic process is a subacute encephilitis associated with multinucleated cells in ill-defined microglial nodules. White matter demyelination and vacuolar myelopathy are frequently part of the picture. The pathogenecity seems mostly mediated by the microglia-macrophage complex but the physiopathology is yet poorly understood.
B) Opportunistic infections: toxoplasmosis, several types of viral encephalitis (cytomegalovirus and PML being the most frequent), mycoses and mycobacterial infections are the most frequent.
C) Cerebral tumors: approximately 5% of AIDS patients will develop a primary intracerebral lymphoma which is usually of B-Cell Type. The Ebstein-Barr virus is presumed to play an important role in its etiology. Secondary CNS involvement by systemic lymphomas or Kaposi sarcomas is also found.
D) Non specific and non AIDS-related lesions.
In AIDS, two or several of the above mentioned groups of lesions or infectious organisms may be found in the same patient. Also, variations according to age groups, countries and patient subgroups as related to the etiology of the syndrome are now recognized.

W.B.O.33

THE LUNGS, THE CAUSE OF DEATH, AND BACTERIAL INFECTIONS IN AIDS: WHAT AUTOPSY STUDIES SHOW
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The lungs are the primary target of the most serious opportunistic infections of AIDS, the ones most frequently responsible for AIDS patients' deaths. Autopsy studies in the early years of the AIDS epidemic showed an extremely high rate of cytomegalovirus (CMV) infection at the time of death, with CMV pneumonia frequently playing an important role in the patients' deaths. Throughout the epidemic, most AIDS autopsy studies have corroborated the widespread clinical impression that Pneumocystis carinii pneumonia is the most common cause of death in AIDS patients. Recently, in a series of 46 AIDS autopsies at the New England Deaconess Hospital and Lahey Clinic in Boston, we found that bacterial (non-mycobacterial) infections were sole or contributing causes of death in 17 cases (37%). Eleven of these 17 bacterial infections were pneumonias due to Staphylococcus aureus, generally superimposed on Pneumocystic carinii pneumonia, CMV pneumonia or lung injury from previous bouts of such processes. Given the particular propensity of Staphylococcus aureus to superinfect lungs injured by other infections, recognized in multiple secondary epidemics of Staphylococcus aureus pneumonia following influenza epidemics, it is not surprising for Staphylococcus aureus to emerge as a secondary opportunist in AIDS patients with previous or underlying lung disease. These results confirm the importance of respiratory failure as a mode of death and show the importance of bacterial infections in general, and Staphylococcus aureus pneumonia in particular, in patients with AIDS.

Infections associées au SIDA
AIDS Related Infections

W.B.0.34 INTRAVITREAL GANCICLOVIR ADMINISTRATION FOR CMV RETINITIS IN 11 AIDS PATIENTS

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Objective. Evaluation of intravitreal ganciclovir (DHPG) administration for CMV retinitis in AIDS patients, given poor intravitreal penetration of systemic therapy.
Methods. 11 AIDS patients (9 adults –6 PDA, 2 homosexual men, 1 sexual partner and 2 children) affected by CMV retinitis (3 in both eyes) were treated with a total of 5 intravitreal injections of DHPG (200 ug. each) in a period of 15 days. In 3 patients retinitis was the indicator disease of AIDS. CMV isolation was obtained in 5 patients. Retinal photos and fluorescein retinography were performed before, at the end of treatment and in the follow-up (every 3 mo.s).
Results. In 9 patients resolution of active necrotizing retinitis was rapid, leaving large atrophic pigmented areas and visual improvement. In 2 patients no changes in visual acuity were observed (because of optical disk involvement). No local complications were noted. Reactivation of retinitis occourred in 2 patients (18%.at 2nd and 3th mo.). 5 patients died (after 6±5 mo.s) (no one for CMV disease), 6 are still alive (after 3±1 mo.s).
Conclusions. Intravitreal DHPG therapy for CMV retinitis in AIDS patients seem to be more effective than systemic therapy (without adverse local reactions, and no systemic complications) and much more easely handled.

W.B.0.36 FOSCARNET TREATMENT OF CYTOMEGALOVIRUS RETINITIS IN AIDS

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Cytomegalovirus (CMV) retinitis is a common cause of blindness in AIDS in the absence of therapeutic intervention. 20 patients were enrolled over 9 months with acute first episode CMV retinitis in an open study using intravenous foscarnet. Infusion was given continuously over 21 days at a rate of 230 mgm/kgm/day with an initial bolus of 30 mgm/kgm. Upon completion, 7 patients were maintained at a dose of 90 mgm/kgm for normal creatinine infused over 3 hours, 5 days per week for up to 12 weeks. Fundoscopic exams, hematologic and chemistry analysis were monitored weekly. Acute therapy of 20 patients led to complete response in 15(75%), partial response in 2(10%) and deterioration in 3(15%). Of the 7 on maintenance, 1 withdrew due to inconvenience of protocol, 3 relapsed on day 12, 18, 30 respectively, 1 discontinued due to progressive disability and died 10 days later, and another showed progressive retinal deterioration. One finished and continues on compassionate therapy. Changes in renal function requiring modification of doses was the most common adverse event. 2 patients required peritoneal dialysis but recovered after discontinuing foscarnet. 3 patients showed thrombocytopenia, 3 leukopenia and half of the patients had progressive anemia. 6 of the 20 patients were on Retrovir during treatment and of these 1 developed leukopenia which could have been the result of Retrovir alone and 3 had anemia. Foscarnet successfully suppressed CMV in most patients. Recurrence of disease while on maintenance with further retinal damage requiring re-treatments emphasizes the need for better maintenance dosing.

W.B.0.38 INTESTINAL MICROSPORIDIOSIS AS A CAUSE OF DIARRHEA IN AIDS

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Objective. Enterocytozoon bieneusi (EB), a new species of the phylum of protozoa, Microspora, has been reported associated with chronic diarrhea in a total of 11 AIDS patients in USA, Europe, and Africa. Diagnosis was based solely on the ultrastructural identification of this small intracellular parasite in SI biopsies. The objective of this study is to determine the role of intestinal microsporidiosis in the etiology of diarrhea in AIDS.
Methods. Small intestinal (SI) biopsies from AIDS patients with chronic diarrhea and without pathogens identified in standard paraffin sections and in stool specimens were studied by light microscopy (LM) of semi-thin (1-3um) plastic sections and transmission electron microscopy (TEM)
Results. EB microsporidial infection of the SI was diagnosed by TEM in 20 (22 biopsies) of 67 (71 biopsies) homosexual AIDS patients with chronic diarrhea and no other identified pathogen. Parasites and spores were visible by LM in plastic sections from 17 and 21 of the biopsies, respectively. In retrospect, parasites were also visible by LM in many of the standard H&E-stained sections. Infection was confined to villous enterocytes, especially of the tips, and was associated with degeneration, necrosis, and mucosal sloughing. Spores appeared to be released into the lumen from necrotic cells. Colorectal biopsies have been negative for EB.
Conclusions. EB infection of the SI may be an important cause of diarrhea in AIDS patients, and with experience, can be diagnosed at the LM level.

W.B.0.35 MONITORING OF CYTOMEGALOVIRUS (CMV) ANTIGENEMIA DURING TREATMENT OF SERIOUS CMV INFECTION IN AIDS PATIENTS

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Objective. To determine the effect of therapy against CMV on CMV antigenemia in AIDS patients in comparison with the effect on CMV viremia.
Methods. Prospectively 6 AIDS patients were followed. Three patients had CMV retinitis, 2 CMV related wasting disease and 1 CMV colitis. All patients received antiviral therapy against CMV in standard regimen, intravenous immunoglobulin (2 patients), ganciclovir (5) or foscarnet (1). Induction therapy was followed by outpatient maintenance therapy with ganciclovir starting at 5 mg/kg. Blood samples were assessed one to two times weekly for the presence of CMV by direct staining (by an immunoperoxidase assay) of CMV antigens (CMV Ag) in leukocytes (CMV antigenemia), quantitatively expressed as a number of CMV Ag positive cells, and by virus isolation (CMV viremia).
Results. Before treatment all patients were positive by direct CMV Ag detection, as well as by isolation of CMV. CMV immunoglobulin had no favourable effect, neither on the number of CMV Ag positive cells or on CMV viremia, nor on clinical symptoms. During induction therapy with ganciclovir or foscarnet both CMV antigenemia and viremia became negative in all patients. However, CMV antigenemia remained longer detectable (1–4 weeks) than CMV viremia (less than 1 week). During maintenance therapy (6–8 months) in 3 patients 1 continued to be negative for both antigenemia and viremia, 1 remained negative vor viremia, but was intermittent positive with a low number of CMV Ag positive cells and in 1 increasing CMV antigenemia predicted by 6 weeks positive CMV viremia and clinical deterioration, suggesting resistance to ganciclovir in spite of renewed induction therapy.
Conclusion. Detection of CMV antigenemia seems to be more sensitive than CMV viremia in monitoring the virological response to CMV induction and maintenance therapy. A rise in the number of CMV Ag positive cells during maintenance therapy could be an early marker for failure of antiviral therapy.

W.B.0.37 DIFFERENCES AMONG PULMONARY (PT), EXTRAPULMONARY (ET) AND DISSEMINATED TUBERCULOSIS (DT) IN HIV-INFECTED PATIENTS.

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OBJECTIVE. To establish clinical and prognostic differences in HIV-infected patients with PT and those with ET or DT included in AIDS according to new criteria.
METHODS. From 1984 to 1988, 53 seropositive patients were diagnosed of T due to M. tuberculosis culture (44), finding of granulomas with acid-fast bacilli (7) or clinical basis (2). Mean age was 30±6, 42 were men, 44 drug-addicts and in 45 T was the initial complaint to look for medical care. Only two patients have T before AIDS and all recived standard chemotherapy with a mean follow-up of 15.5 ± 14 months.
RESULTS. Treatment cured 90% of the patients and presently 79% of them survive. 25 cases showed PT (13 localized and 12 extended); 13 ET (8 lymphatic) and 15 DT (9 with miliary pattern). The chest radiographs showed focal infiltration with cavities in the upper lobes (22), atypical pattern (4) and miliary infiltration (9). The tuberculin test was positive in 37% and the most useful diagnostic test was sputum examen and culture. Main differences between PT and ET/DT were:

	P T	E/D T	P-value
Cases: 1984-86 / 1987-88	12 / 13	4 / 24	0.01
M. tuberculosis isolation	24	20	0.04
Lung symptoms / adenopathy	22 / 9	17 / 21	0.05
Positive tuberculin test	56 %	28 %	0.05
CD4 / µL (M+SD)	407 ± 155	179 ± 170	0.003
Opportunistic infections	6	20	0.001
Defervercesce since treatment	4.3 ± 3.5	28 ± 27 (days)	0.01
Overall deaths / T deaths	2 / 0	3 / 5	
Mean survival (months)	22 ± 17	9 ± 6	0.001

CONCLUSIONS. In Spain, HIV-associated T usually appears early in the course of HIV infection and shows a favorable response. Although it has been emphasized on its atypical manifestations, difficult diagnosis and poor survival, almost half of our cases manifested as typical PT with low case-fatality rate. During recent years it has been appreciated an increasing rate of ET and DT in relation with the progressive immunodeficiency of the HIV-infected population; however they continue with favourable responses to chemotherapy and satisfactory survival in the short-term.

W.B.0.39 IMPROVED SURVIVAL IN AIDS PATIENTS WITH OPPORTUNISTIC INFECTIONS.

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Objective. To examine changes in survival following opportunistic infections in AIDS patients since the beginning of the AIDS epidemic.
Methods. Survival following the diagnosis of each opportunistic infection was calculated using the Kaplan-Meier method in 780 AIDS patients seen at Memorial Sloan-Kettering Cancer Center since 1979. Results were examined by year of diagnosis and by comparing patients diagnosed prior to 1986 and during and after 1986.
Results. Number of cases and median survivals (months) for infections commonly diagnosed during life:

	PCP(#1)	T. gondii	M.tb	M.a.-c.	Cryptoc.
	#/ surv.	#/surv.	#/surv.	#/ surv.	#/surv.
1979-85	181/ 8mos	22/4mos	14/6mos	94/ 2mos	12/3mos
1986-88	191/ 18mos	10/10mos	10/11mos	68/ 4mos	20/6mos

Conclusion. Median survivals appear to have increased for some infectious complications of AIDS. Treatment differences included: introduction of zidovudine; use of PCP prophylaxis and more intensive follow-up with earlier treatment.

Atteintes neuropsychiatriques
Neuropsychiatric Involvement

W.B.O.40

PREVALENCE AND PREDICTORS OF DEPRESSION IN GAY AND BISEXUAL MEN DURING THE AIDS EPIDEMIC: THE SAN FRANCISCO MEN'S HEALTH STUDY.

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Objective. To describe prevalence and predictors of depression in gay and bisexual men living in an epicenter of the AIDS epidemic.
Methods. 568 single males participating in the San Francisco Men's Health Study (a population-based longitudinal study of single males in SF) were assessed in 1985 and 1987. Depression was assessed using the Center for Epidemiological Studies (CESD). 16 predictor variables (demographic, social support, loss to AIDS, health status, substance use, and homophobia) assessed in 1985 were analyzed for their predictive relationship to depression in 1987.
Results. 20% of the men met the criteria for depression in 1987. 54.9% had experienced the loss of a lover or friend to AIDS. 45.7% were seronegative, 38.2% were HIV+ asymptomatic, 6.9% had symptoms of ARC, while 4.6% had been diagnosed with AIDS. Predictors of depression in 1987 were previous depression, HIV disease progression, loneliness, loss of loved one to AIDS, satisfactoin with social support, and numbers of persons one could count on for support. These accounted for a significant proportion of the variance (r= .64, R2=.40).
Conclusion. Depression is a common experience for gay and bisexual men in San Francisco. Strategies for coping for worsening health status, for dealing with loss, and for gathering and keeping social support may assist individuals in coping withthe epidemic.

W.B.O.41

IS THERE ADAPTIVE "HABITUATION" TO LOSS IN THE AIDS EPIDEMIC?

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Objective. To explore the psychiatric toll of AIDS deaths and of other major, negative life events among NYC gay men. Methods. Data derive from 160 gay men participating in a prospective cohort study. Subjects were predominantly White, middle class, with a mean age of 38; 75% were HIV+. Current depressive symptoms were assessed clinically (Hamilton Depression Scale) and by self-administered checklists (e.g., Dohrenwend Demoralization Scale; SCL-53, depression subscale). Results. Contrary to expectations, no direct association was found between subjects' reports of the number of deaths from AIDS (overall and categorized separately into close friends, former lovers, lovers at the time of death) since the start of the epidemic or in the last 6 months, and any measure of depressive symptoms. For example, the correlation of number of recent losses with level of demoralization was -.15 (p<.10). Analyses dichotomizing recent deaths into none vs. one or more; controlling for potentially confounding variables, e.g., social network, and for HIV status, did not alter these results. In marked contrast, other recent negative events correlated with demoralization at .34 (p<.0001). Conclusion. This lack of association between AIDS deaths and depressive symptoms may reflect a capacity for adaptive "habituation" to certain types of loss among high risk groups.

W.B.O.42

NEUROLOGICAL AND NEUROPSYCHOLOGICAL DEFICITS IN 240 HIV - SEROPOSITIVE HEMOPHILIACS IN WR 2 - 6

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We present the data of 240 HIV - seropositive hemophiliacs and 30 HIV - negative hemophiliacs as controls . According to the criteria of WALTER REED (WR) the patients were staged : 105 pat. as WR 2 , 44 as WR 3 - 5 , 22 as WR 6 . The examination program covered a neurological status , an EEG - analysis and a neuropsychological test - battery (AVLT , MWTB , CI , Benton , d-2 , v. Zerssen , BFS) .
In WR 6 patients we saw a statistical significance (p o.o5) for the following neurological deficits : polyneuropathy , subacute encephalitis , lesions of the Fasc. gracilis / cuneatus . A significance were found in EEG for focal activity and diffuse slowing in WR 6 patients . Also in these patients we observed a left hemispheric deficit in verbal memory (significance p o.o5) . By tendency we found comparable data for WR 5 patients . Only in some cases we found a correlation between the neuropsychological and the EEG - data .
Our data suppose only a statistical significance for neurological , neuropsychological and EEG - data in WR 6 patients - but these results have still to be proved for WR 5 patients .

W.B.O.43

SLOWED COGNITIVE PROCESSING IN HIV+ PATIENTS IN COMPARISON TO PSYCHIATRIC CONTROLS

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Objective. To investigate cognitive decision time in HIV+ individuals.
Methods. Fifty (50) HIV+ individuals referred for neuropsychological testing and 15 seronegative patients with adjustment disorders (ADJ DIS) were tested on simple (SRT) and choice (Go: No-Go) visual reaction time tasks. Patients were classified in Walter Reed Stages 1-5; the majority had persistent lymphadenopathy (WR-2, 52%); 84% were in WR Stages 1-3. The ADJ DIS patients were matched with the HIV+ group on education, depression, anxiety, and number of recent stressful life events.
Results. The HIV+ patients were significantly slower than the ADJ DIS controls on both the simple and choice reaction time tasks (p<.01). Moreover, the HIV+ patients displayed significantly delayed decision time (choice minus SRT) in comparison to the controls (103 vs. 65 msec). This same difference held when the groups were equated for SRT by eliminating the scores of 11 HIV+ patients with SRTs outside the range of controls. Failures to inhibit response rarely occurred in either group.
Conclusions. Relatively asymptomatic HIV+ patients may exhibit slowing of cognitive processing that cannot be attributed to depression or anxiety. Similar findings have been reported in patients with "subcortical" dementia (e.g., progressive supranuclear palsy), and may be one of the earliest manifestations of HIV+ related cognitive dysfunction.

W.B.O.44

NEUROPSYCHOLOGICAL CHANGE ON LONGITUDINAL ASSESSMENT: PREVALENCE AND PATTERN IN HIV SPECTRUM DISORDERS

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Objective. Recent interest has focused on the course of cognitive and memory problems that may be manifested in HIV infection. This study explored the prevalence and pattern of change over 1.5 years on a variety of neuropsychological measures in men with HIV spectrum disorders.
Methods. 103 seropositive homosexual men with at least one HIV-related symptom were recruited from the UCSF AIDS Clinic and administered neuropsychological screening batteries, in addition to psychosocial self-report and interview measures, at 3 time points about 6 months apart. A subset of 66 subjects had neuropsychological data available for both Times 1 and 2.
Results. Unexpectedly, the group as a whole showed improved neuropsychological functioning from Time 1 to 2. The neuropsychological status of 25 Ss improved without declining in any area, while 26 Ss showed mixed, mild changes over time, and 15 declined without showing any improvement. Most measures of distress decreased over time, and scores on anxiety decreased significantly. However, there were no significant group-mean differences on measures of depression or anxiety between those who improved and those who declined in neuropsychological status. Surprisingly, neither improvement nor decline was related to the use of AZT.
Conclusion. While 23% of our sample showed clear evidence of neuropsychological decline over time, 38% of those retested showed notable improvement. These results suggest that neuropsychological functioning in some patients may not show a pattern of inexorable decline. These findings have important implications for assessments and interventions with HIV patients.

W.B.O.45

FURTHER EVIDENCE OF LACK OF HIV-1 RELATED COGNITIVE IMPAIRMENT DURING THE ASYMPTOMATIC STAGES: THE MULTICENTER AIDS COHORT STUDY (MACS).

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Objective: To determine the prevalence of cognitive abnormalities among asymptomatic HIV-1 infected men (CDC Groups II/III) using comprehensive neuropsychological (NP) testing.
Methods: Participants in the Multicenter AIDS Cohort Study (MACS) Neuropsychological study were referred for comprehensive NP testing either as controls or because they previously had tested positive on either a NP screening test or a standardized neurological questionnaire. The NP testing included the Shipley Hartford Scale, Block Design (WAIS-R), Rey Complex Figure, Warrington Recognition Memory, Trails A & B, and the Paced Auditory Serial Addition Test. Participants with a diagnosis of ARC or AIDS were excluded from this analysis. The effects of azidothymidine were not analyzed separately.
Results: Analysis of data from 181 seronegative (SN) and 225 seropositive (SP) men showed no difference in age, education, handedness, ETOH or drug use between the serostatus groups. Comparison of group means revealed no significant differences in performance between SN's and SP's on any of the NP measures. Less than 10% of the SP's had abnormal performance on individual subtests (2 SD's below mean for SN's), which did not differ significantly from SN's.
Conclusions: These findings provide additional evidence, using more comprehensive testing, that the prevalence of NP abnormalities in otherwise healthy HIV-1 infected homosexual men is low, and not different from uninfected SN controls. These results confirm our previous conclusions based on initial NP screening of healthy HIV-1 infected men in the MACS cohort.

W.B.O.45.A Voir/See page 1059

Essais cliniques : points de vue des "acteurs"
Clinical Trials: The "Actors" Perspective

W.B.0.46

INVESTIGATORS PERSPECTIVE

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W.B.0.48

THE ROLE OF THE PHARMACEUTICAL INDUSTRY IN DRUG AND VACCINE DEVELOPMENT

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The pharmaceutical industry has responded to the need for various strategies to intervene in the HIV global epidemic in a remarkably broad and rapid manner. Diagnostics became available within a year of the discovery of HIV as the etiologic agent, the first drug was approved only three years later, as was the first vaccine clinical trial. At the present time, there are over 50 companies involved in the development of over 60 medicines for the treatment or prevention of HIV infection.

Clinical trials remain the single most important means of assessing the actual safety and efficacy of new medicines, and the pharmaceutical industry has been working cooperatively with governmental organizations and others to evaluate potentially useful new agents. While there have been problems in the implementation of programs, the overall model of government/industry cooperation in the development of HIV-related medicines is one which PMA member companies support. Specific suggestions for improving the working relationship among industry, government, clinical research centers, and patients will be made.

W.B.0.50

THE CHALLENGE OF TESTING THERAPIES FOR HIV INFECTION

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W.B.0.47

Clinical Trials in AIDS: The Regulatory Perspective,
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FDA, in its regulatory role, is a major player in new drug development in the U.S.A. This role has become more intensive and extensive in AIDS drug development, as outlined in new interim regulations (21 CFR 312 Subpart E). From the scientific/regulatory perspective, three issues have been most problematic in the design and conduct of clinical trials in AIDS. The first issue stems from constraints on the choice of the most appropriate control group, whether placebo, no treatment, dose comparison, active, or historical control. A second major issue is selection of primary outcome measures on which decisions regarding efficacy should be made, particularly for new antiretroviral agents. A beneficial impact on important clinical endpoints is required to demonstrate efficacy of a new drug in most diseases. In the case of complex, chronic, life-threatening diseases such as AIDS, pressure builds rapidly to substitute near-term, "harder" clinical endpoints. The third major issue is timing of access to experimental drugs by patients with life-threatening diseases. The individual's "right" to try a new drug very early in development may conflict with society's need to determine systematically which drugs are safe and effective, and which are not. If appropriate and well-designed, randomized controlled trials (RCT) are not conducted during the "window of opportunity" following the demonstration of preliminary safety and activity, but before widespread use makes RCT difficult to perform because of the presumed but not proven efficacy of the drug, therapeutic advances in the treatment of AIDS will be delayed if not lost.

W.B.0.49

PATIENTS PERSPECTIVE

Paul Leblanc

W.B.0.51

ETHICS AND CLINICAL TRIALS
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The randomized clinical trial (RCT) is the gold etnadard for establishing the validity of medical therapies. RCTs must be conducted in accord with established ethical norms including: There should be a) sound scientific design, b) competent investigators, c) a reasonable balance of risks and benefits, d) informed consent, and e) equitable selection of subjects. This presentation is an overview of some of the more difficult ethical problems encountered by clinical trialists. Must subjects be informed that their therapy has been selected by chance? What should they be told about preliminary data and about alternatives to participation in the RCT? What is the role of the null hypothesis (or clinical equipoise) in the ethical justification of the RCT? Are placebo controls justified when subjects have lethal diseases? Is participation in a RCT a burden or a benefit? Should vulnerable populations be protected from the burdens of participation or assured access to the benefits of participation in RCTs? In what circumstances should alternative designs -- e.g., historical controls -- be considered? Satisfactory answers to such questions require careful consideration of the relevant facts about particular RCTs and prospective subject populations.

Thérapie : la ribavirine et les autres médicaments anti-VIH
Therapy: Ribavirin and Other Anti-HIV Drugs

Th.B.O.1 PHASE I TRIAL OF ORAL RIBAVIRIN IN HIGH RISK PATIENTS FOR AIDS

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Objective. To determine tolerance and effect on virologic and immunologic surrogate markers with escalating doses of oral ribavirin in homosexual men.
Methods. Two groups of eight men each received either 1200 or 1600 mg ribavirin daily for 12 weeks (Grps A and B respectively). An additional 15 men who had received maintenance ribavirin 800 mg daily for 44-52 weeks also received similar escalating doses for 20 weeks (Grp C). Within and between group comparisons were made in the analysis of per patient changes from baseline over time.
Results. Clinical adverse reactions occurred in 17 of 31 and anemia and reticulocytosis in all subjects. No reduction in HIV activity (antigen capture assay or serum p24 antigenemia) nor significant immunologic enhancement (serum beta-2 microglobulin levels, antigen-induced proliferation or gamma interferon production)were noted. Lymphopenia affecting all subsets occurred at both daily dosing but was more pronounced in Grp B.

	8 week-Baseline			12 week-Baseline		
Within Group	CD4	CD8	CD2	CD4	CD8	CD2
Grp A (p value)	-24(.08)	0(.57)	-177(.11)	-48(.02)	-35(.94)	-146(.29)
Grp B (p value)	-132(.02)	-448(.02)	-642(.02)	-134(.07)	-308(.02)	-377(.02)
Between Group						
Grp AvsB-p Value	0.60	0.02	0.15	0.95	0.01	0.09

Similar results were observed in Grp C subjects.
Conclusions. Oral ribavirin 1200 or 1600 mg daily for 12-20 weeks had no enhanced effect on virologic or immunologic surrogate markers. Lymphopenia was observed in all treatment groups and was more marked in those subjects receiving 1600 mg daily.

Th.B.O.2 PHASE I/II TRIAL OF RIBAVIRIN + ISOPRINOSINE IN ASYMPTOMATIC HIV VIREMIC GAY MEN

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**Maryland Medical Laboratory, Baltimore, Maryland, USA.

Objective: To assess the safety, toxicity, clinical, immunologic and anti-viral effects of this oral 2-drug combination administered daily for up to 3 months.
Methods:
Subjects: HIV culture-positive (x2) gay men, CDC Groups II or III, CD4 counts (x3) between 150-400 mm³.
Treatment: Isoprinosine: 4 gm (1 gm QID)/day, all men.
Ribavirin: ARM A - 1200 mg(400 mg TID)/day x5, then 800 mg/day.
ARM B - 1200 mg/day.
Results: Five of 9 men on ARM A & 5 of 6 men on ARM B have completed at least 2 months of treatment. No clinical toxicities or HIV-related events were observed. Treatment was associated with a generalized lymphopenia affecting all lymphocyte subsets including CD4. Major pre- and 2-3 month post-treatment results are:

		# HIV-CULT. POS.	MEAN TIME (DAYS) TO POS. CULT.	MEAN CD4/mm³	MEAN % CD4	MEAN CD4/CD8
ARM A	pre-rm	5	10.8±1.0(SEM)	330±17]p<.01	21±3	0.42±0.09
(n=5)	post-rm	5	9.6±1.1	214±18	21±3	0.39±0.08
ARM B	pre-rm	5	12.8±1.6]p<.05	336±32]p<.10	24±3	0.49±0.10
(n=5)	post-rm	5	7.6±0.5	242±27	28±4	0.54±0.13

Three men in ARM A were p24 antigenemic, and levels did not change on treatment. On serial monitoring (Q month) no improvements were noted in DTHS skin reactivity, in in vitro lymphoproliferative responses [to mitogens, alloantigens, and soluble antigens], or in NK activity.
Conclusion: Although well-tolerated at the doses and schedule employed, the combination of ribavirin and isoprinosine did not result in HIV-suppressive or in immunorestorative effects. (Supported by NIAID, NIH, Cooperative Agreement No. 1U01-AI25867).

Th.B.O.3 2',3' DIDEOXYCYTIDINE (DDC) IN THE TREATMENT OF PATIENTS WITH AIDS AND ARC

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Objective: To evaluate tolerance and antiviral activity of dideoxycytidine (ddC) in a multiple dose study in patients with AIDS or ARC.
Methods: Twenty-one patients with AIDS or ARC with p24 antigen > 70 pg/ml and T4 cells < 400 cells/mm³ received ddC orally at a dose of either 0.03 mg/kg once a day or 0.01 mg/kg every 8 hours for 24 weeks. P24 antigen, T4 counts and toxicity parameters were monitored.
Results: At 0.03 mg/kg, mild peripheral neuropathy was reported in 3 of 11 patients between weeks 8 & 17. At 0.01 mg/kg, no cases of peripheral neuropathy were noted. Other adverse experiences included mild dyspepsia and nausea. 2 of 8 patients who received 0.03 mg/kg had > 50% decrease in p24 antigen at the end of therapy, as compared to 9 of 9 patients who received 0.01 mg/kg. Of these nine, 4 had a > 70% reduction. T4 counts in the majority of patients either remained constant or rose transiently. No clear trend was observed in cutaneous delayed type hypersensitivity, weight and Karnofsky scores. No significant bone marrow toxicity was observed with either dosing regimen.
Conclusion: ddC at low doses was well-tolerated. Different dosing schedules and regimens demonstrated a different degree of antiviral activity. The 0.01 mg/kg regimen was most effective. Further study to evaluate ddC long-term safety and efficacy using clinical endpoints is warranted.

Th.B.O.4 ESCALATING DOSE PHASE I STUDY OF INTRAVENOUS AND ORAL 2',3'-DIDEOXYINOSINE (DDI) IN PATIENTS WITH AIDS OR ARC

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Objective. Two pyrimidine drugs with activity against HIV, AZT and ddC, belong to the dideoxynucleoside (ddN) family. In this study, we report a Phase I trial of ddI, a purine ddN analog.
Methods. 20 patients with AIDS or ARC were given 2 weeks of ddI IV, followed by 4 or more weeks of oral dosing (given with antacids) at twice the IV dose. Six dosing regimens were tested, ranging from IV doses of 0.2 mg/kg every 12 hr to 1.6 mg/kg every 8 hr.
Results. Oral bioavailability (given with antacids) was 35%, and ddI penetrated into the CSF. Two pts dropped out at 1 wk (1 because of *Cryptococcal* meningitis and1 for personal reasons); the other 18 completed 6 or more wks of dosing. One pt (also on TMP/SMX) developed neutropenia after 20 wks, one pt developed a morbilliform rash, and some pts reported some difficulty sleeping or irritability; otherwise, toxicity was minimal. No macrocytosis was seen. No anti-HIV response was seen at the lowest dose; however, the 15 evaluable pts on the 5 higher doses showed evidence of an anti-HIV effect. In these pts, the T4 count increased from 141±25 at entry (mean±SEM) to 226±43 at wk 2 (p<0.001) and 193±37 at wk 6 (p<0.01 c/w entry). All 7 pts with detectable serum HIV p24 antigen (Ag) at entry had a decline by wk 2 (116±97 pg/ml at wk 2 vs. 191±49 at entry; p<0.02). Six of these 7 pts sustained the drops in p24 Ag at wk 6. Four anergic pts developed delayed type hypersensitivity reactions by wk 6; 4 pts had increased *in vitro* proliferative responses to soluble Ag. The pts generally had increased energy and gained a mean of 2 kg wt.
Conclusion. In short term testing, ddI appears to be an oral anti-retroviral agent with significant clinical activity but with minimal toxicity.

Th.B.O.5 PHARMACOKINETIC STUDIES OF RECOMBINANT SOLUBLE CD4 IN PATIENTS WITH AIDS AND AIDS RELATED COMPLEX

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Objective. To describe the pharmacokinetics of intravenous bullous injection of recombinant soluble CD4 in patients with AIDS and ARC.
Methods. Patients with AIDS and ARC, T-cells <400 and normal hematologic and serum chemistries were enrolled in this study. One intravenous line was placed for pharmacokinetics; a second intravenous line was placed in each patient for drug administration. Soluble CD4 was administered over 2 to 3 minutes by slow intravenous push. Pharmacokinetic studies were drawn at 10, 20, 30, 45, 60, and 90 minutes as well as 2, 3, 4, 6, 8, 12, 16, and 24 hours post-infusion. Pharmacokinetic studies were performed on days 1 and 56. The analysis for CD4 was performed using two monoclonal assay system.

Results.	Dose	N (patients)	Duration (Hours)	Peak ng/ml
	1 ug/kg	6	1.5-4	17-43
	10 ug/kg	10	2-6	100-480
	30 ug/kg	8	8-24	400-1250

Conclusions. Recombinant soluble CD4 given in intravenous bullous can be detected from 1.5 to 4 hours after administration at a dose of 1 ug/kg and the peak is 12-43 ng/ml. At 10 ug/kg the peak is 100-480 ng/ml. At 30 ug/kg the peak is 400-1250 ng/ml. Doses at 100 ug/kg and 300 ug/kg are being analyzed and IV subcutaneous and intramuscular doses have begun. Recombinant soluble CD4 can be detected in the serum in patients with AIDS and ARC. Increased dose of CD4 will increase the peak concentrations and the duration of CD4 detection.

Th.B.O.6 ESCALATING DOSE TOLERANCE TRIAL OF RECOMBINANT SOLUBLE CD4 IN HUMANS

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Objective. To study the safety and pharmacokinetics of recombinant soluble CD4 (rsCD4) when administered to humans by intramuscular or intravenous routes.
Methods. We performed an escalating dose tolerance trial of rsCD4 (Receptin) in which daily doses of 1 to 30mg rsCD4 were administered to a group of patients with AIDS or AIDS related complex who were preselected for the absence of antibodies to rsCD4. Patients were followed for adverse clinical and laboratory events during the 28 day dosing period. Pharmacokinetics of rsCD4 were determined after intravenous and intramuscular administration. Antiviral activity of rsCD4 was assessed by serum p24 antigen determination, and quantitative HIV-1 cultures obtained from peripheral blood mononuclear cells and plasma.
Results. rsCD4 was well tolerated when administered by the intramuscular or intravenous routes. No significant changes in hematologic, hepatic, or renal function were observed. No antibodies to rsCD4 were detected following therapy. Pharmacokinetics of rsCD4 following intravenous and intramuscular administration, and immunologic and antiviral efficacy parameters will be presented.
Conclusion. rsCD4 is well tolerated by humans receiving the drug for periods of up to one month.

Test de dépistage par réaction en chaîne des polymérases
PCR Diagnostic Test

Th.B.0.7

A METHOD FOR QUANTITATING RELATIVE AMOUNTS OF HIV PROVIRAL SEQUENCES IN PBMCS BY THE POLYMERASE CHAIN REACTION (PCR)

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Objective. To quantitate by the polymerase chain reaction, the amount of HIV proviral DNA sequences present relative to the total amount of input DNA in a sample. The availability of such an assay will allow the monitoring of proviral load during the natural history of infection and during various therapeutic regimen.
Method. Human placental DNA was spiked with known copies of HIV molecules and coamplified in the presence of a primer pair that amplifies a 130 bp fragment of HIV-1 and a primer pair that amplifies a 242 bp cellular sequence; HLA-DQα. Amplified products were detected by autoradiography following hybridization with HIV and HLA kinased probes and separation by polyacrylamide gel electrophoresis. Because of differences in size, the amplified products can be differentiated. To quantitate the amount of each product, the gels were scanned with a radioanalytic system. Standard curves were generated by plotting the amount of HIV and HLA products produced against known amounts of each target present prior to amplification. By extrapolating from the standard curves, the relative amount of HIV targets in a given sample was determined.
Results. By altering the ratio of HIV and HLA primers, we were able to simultaneously amplify both sequences without compromising the HIV signals. We demonstrate that 10-800 molecules of HIV can be quantitated after 30 cycles of amplification, 200-3200 molecules with 25 cycles, and 3200-51,800 molecules with 20 cycles of amplification
Conclusion. We demonstrate in model studies that HIV and HLA sequences can be quantitatively co-amplified. In addition, a quantitative readout was obtained for both sequences. Results describing extension of these studies to cell lines and patients on antiviral therapies will be presented.

Th.B.0.9

EVALUATION OF THE POLYMERASE CHAIN REACTION (PCR) IN A WELL CHARACTERIZED COHORT OF HOMOSEXUAL AND BISEXUAL MEN: PCR-POSITIVE, HIV-ANTIBODY NEGATIVE RESULTS ARE RARE

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Objectives: To evaluate PCR for HIV DNA in a cohort of homosexual and bisexual men whose clinical and HIV-antibody (Ab) status is known.
Methods: We conducted blinded PCR testing on frozen lymphocytes from 167 men participating in prospective studies of HIV infection. Thirty cycles of amplification were conducted, followed by detection with probes corresponding to two gag primers; each primer/probe assay was run in duplicate. A positive result was defined as repeat (2/2) detection of HIV DNA by at least one of the two primer/probe pairs. HIV-Ab testing was performed using ELISA and (if repeatedly reactive) IFA assays.
Results: PCR was negative for 101/102 (99%) HIV-Ab negative men. The one PCR-positive Ab-negative sample was PCR negative on repeat testing; a second specimen drawn from the same man 8 months later was also PCR and HIV-Ab negative, suggesting the first PCR result was a false positive. PCR was positive in 63/65 (97%) HIV-Ab positive men, including 7/7 persons with AIDS, 19/19 with AIDS-related conditions, 11/11 with asymptomatic generalized lymphadenopathy and 26/28 men without signs or symptoms of HIV-infection. Overall, the PCR and HIV-Ab were in agreement on 164/167 (98%) specimens.
Conclusions: The PCR assay, using this technique and in this population, has an excellent concordance with the HIV antibody test. Antibody-negative, PCR positive results for HIV were very uncommon.

Th.B.0.11

SIMULTANEOUS DETECTION OF HTLV-I OR HTLV-II IN AIDS PATIENTS BY PCR

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Objective: To identify the nature of human T-cell lymphotropic virus infection in AIDS patients which might be complicated by the presence of other opportunistic viruses viz. Herpes, Hepatitis, etc.
Methods: High molecular weight DNA was extracted from the cells derived from AIDS patients. Polymerase chain reaction was performed using the specific sets of primer pairs (for HTLV-I: pol primer pair at positions 3015-3034 sense strand and 3154-3134 antisense strand with probe at position 3050-3074; HTLV-II: pol primer pair at positions 2989-3010 sense strand and 3131-3110 antisense strand with probe at position 3026-3049; HIV-I: gag primer pair at positions 1551-1578 sense strand and 1665-1638 antisense strand with probe at position gag 1595-1635). The amplified products viz. 140, 143 and 115 base pairs corresponding to HTLV-I pol, HTLV-II pol and HIV-I gag genes were separated on a 3% polyacrylamide gel and then characterized by the Southern blot hybridization using specific viral probes.
Results: We have employed the polymerase chain reaction to distinguish HTLV-I and HTLV-II. Cells derived from an African AIDS patient had HTLV-I proviral sequences and cells from a hemophiliac from North America showed HTLV-II proviral sequences in addition to HIV sequences.
Conclusion: Multiprimers PCR provides a sensitive, accurate and quicker method to distinguish the related T-lymphotropic retroviruses.

Th.B.0.8

COMPARISON OF PCR ANALYSIS AND CULTURE IN THE DETECTION OF HIV-1 INFECTION IN HEMOPHILIACS

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Objective. To compare the sensitivity and specificity of an HIV-1 polymerase chain reaction (PCR) assay with an HIV-1 culture method in testing HIV-1 antibody-positive and antibody-negative hemophilia patients.
Methods. PCR analysis was performed on the PBMC DNA from 59 HIV-1 antibody-positive and 20 antibody-negative hemophilia patients. A gag primer pair [SK 38 (1551-1578), SK39 (1637-1665)] and Taq polymerase was used to amplify a 115 base fragment over 30 cycles. Cycle time and temperatures were as follows: denaturation 25s - 95°C, reannealing 25s - 55°C, chain elongation 60s - 72°C. The amplified HIV-1 sequence was then detected by autoradiography after liquid hybridization with a ^{32}P-labelled probe [SK19 (1596-1635)] and gel electrophoresis. HIV-1 cultures were performed by cocultivating 1 X 10^7 patient PBMC with 5 X 10^6 PHA stimulated donor PBMC in the presence of RPMI-1640, 20% fetal calf serum and 5% IL-2 at 37°C/5% CO_2 and assaying for the presence of HIV-1 p24 antigen every 3 days for up to 42 days.

Results.	HIV-1 Ab Positive	HIV-1 Ab Negative
HIV CULTURE +	57/59 (97%)	0/20 (0%)
HIV PCR +	57/59 (97%)	0/20 (0%)

The two culture negative antibody-positive subjects were PCR positive and the two PCR negative antibody-positive subjects were culture positive. Therefore, all 60 HIV-1 antibody-positive subjects had direct evidence of HIV-1 infection by either PCR or HIV-1 culture or both.
Conclusion. Both HIV-1 culture and PCR analysis have comparable sensitivities (97%) and excellent specificity (100%) in the detection of HIV-1 infection.

Th.B.0.10

DETECTION OF HIV-1 DNA IN PERIPHERAL BLOOD BY POLYMERASE CHAIN REACTION (PCR) AND NON-RADIOACTIVE OLIGONUCLEOTIDE PROBES.

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Objective. To detect HIV-1 DNA directly in peripheral blood mononuclear cells (PBL) by PCR and hybridization with a non-radioactive probe.
Methods. An oligonucleotide probe covalently linked to alkaline phosphatase has been used to detect HIV-1 sequences in DNA amplified by PCR. PBL (3-5 x 10^6) were isolated by Ficoll Hypaque sedimentation, lysed in a solution of 1.0% Triton-X-100, 10 mM Tris-HCl, pH 7.5, 1.0 mM EDTA and boiled for 10 minutes. Two oligonucleotides flanking a conserved region of the HIV-1 pol gene (BRU isolate;1934-2212) were used as primers. Samples were subjected to 30-50 cycles of amplification. Products were detected by slot blot hybridization using the enzyme-linked probe.
Results. HIV-1 DNA was detected in PBL from 20/23 (87%) seropositive individuals (CDC Groups II-IV). Samples from 8/8 individuals negative for serum p24 antigen but positive following coculture, were positive for HIV-1 DNA by this technique. DNA amplified from PBL of seronegative individuals was negative for HIV-1 as were samples from cells infected with HTLV-1, HSV-1 or CMV.
Conclusion. This sensitive non-radioactive method for detecting HIV-1 proviral DNA ,combined with improved sample processing, should be valuable in clinical and research settings.

Th.B.0.12

A MICROTITER BASED DNA SANDWICH ASSAY FOR THE DETECTION OF HIV-1 IN CLINICAL SAMPLES

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Objectives: A microtiter based DNA sandwich hybridization assay was used to detect HIV-1 sequences in clinical samples following amplification with Polymerase Chain Reaction (PCR).
Methods: DNA was extracted from peripheral blood lymphocytes from HIV-1 seropositive individuals and normal blood donors. It was then subjected to PCR amplification using specific primers in the HIV-1 gag region. The amplified product was hybridized in microtiter plates which contained covalently attached capture DNA sequences. A biotin labeled probe adjacent to the capture sequence was used to detect specific hybridization. Following incubation with a peroxidase-streptavidin conjugate and a colorimetric substrate, the amount of hybridization was quantitated spectrophotometrically. All samples were also analyzed by Southern blotting using ^{32}p labeled HIV-1 probes. Specific hybridization was quantitated by cutting out the hybridized bands and counting in a scintillation counter.
Results: Using serial dilutions of HIV-1 infected cells with uninfected cells, the Optical Density after hybridization was proportional to the amount of virus present in the sample. When the OD was off scale, dilutions of the amplified product could be performed to give a quantitative result. This test could detect 3-5 HIV-1 infected cells in 10^6 uninfected cells, or about 10-15 molecules of HIV-1 DNA. DNA from a total of 164 clinical samples was amplified by PCR and the amplified product tested by both the sandwich and the Southern Blot assays. Complete agreement between the DNA sandwich and the ^{32}p Southern Blot results was observed.
Conclusion: The sandwich hybridization format provides a convenient, rapid and sensitive analysis of the PCR product using a non-radioactive system. Using the microtiter wells, up to 96 samples can be tested at the same time. This format is compatible with existing plate handling equipment and will permit this assay to be automated for use in clinical laboratories.

Infections respiratoires chez les consommateurs de drogues par voie intraveineuse
Respiratory Infection in IV Drug Users

Th.B.0.13

PNEUMONIES BACTERIENNES ET VIRALES AU COURS DU SIDA CHEZ LES UTILISATEURS DE DROGUE PAR VOIE INTRAVEINEUSE (IVDU). MOUTON Yves. CHIDIAC C., SENNEVILLE E. Service Régional des Maladies Infectieuses, Centre Hospitalier. F-59208 TOURCOING, FRANCE.

Le poumon est l'organe le plus souvent atteint au cours du SIDA et les pneumonies bactériennes (PB) ont longtemps été occultées par les infections parasitaires et virales. Les pneumonies constituent une menace vitale nécessitant une prise en charge rapide par le clinicien. L'incidence, la morbidité et la mortalité des PB sont significativement augmentées chez les IVDU infectés par le VIH qui cumulent différents facteurs de risque : (I) Le déficit des fonctions lymphocytaires (T mais également B) et macrophagiques majorant le risque d'IPB à Mycobactéries, Nocardia, Legionella et germes encapsulés (S. pneumoniae, H. influenzae, B. catarrhalis). (II) Les endocardites et septicémies à point de départ thrombophlébitique exposant aux embolies pulmonaires septiques (S. aureus, isolé dans plus de 50% des cas, posant le problème de sa résistance en relation avec "l'écologie des shooting galleries"). (III) Les troubles de conscience et le mauvais état buccodentaire favorisant les pneumonies d'inhalation.

L'imagerie médicale, les explorations invasives selon des algorythmes et l'isolement de l'agent pathogène conduisent facilement au diagnostic de PB mais la responsabilité du Cytomégalovirus est plus difficile à établir.

Les PB, plus accessibles à la thérapeutique que les pneumonies virales, posent un problème de récidive dont la prévention n'est pas codifiée (vaccination anti-pneumococcique ?).

Th.B.0.14

FUNGAL PNEUMONIA

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Fungal pneumonias, although quite frequent, are seldom diagnosed intra-vitam as opportunistic infections. Among 306 consecutive autopsies, a fungal pneumonia was found in 20 cases (0,1%) but only in 15 patients (4,9%) this pulmonary disease had been clinically recognized.

In our country Cryptococcus neoformans, Aspergillus fumigatus and Candida spp are more frequently found as agents of opportunistic pneumonias in AIDS patients.

Given that a pulmonary localization is usually observed in patients with disseminated fungaemias, an haematogenous port of entry rather than the aerogenous one may be hypothesized for this complication.

The main clinical features of fungal pneumonias are described, and the possibility for an effective treatment for this complication -if early diagnosed- with fluconazole, amphothericin B and flucytosine is emphasized.

Th.B.0.15

MYCOBACTERIAL INFECTIONS IN HIV-POSITIVE IVDA
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Objective: To compare clinical pattern, course and frequency of active TB and MNT in HIV-positive (HIV+) iv drug addicts (IVDA) and pts not HIV-infected or from other risk groups.
Methods: At Frankfurt University Hospital (FUH), all TB/MNT pts have been retrospectively registered since 1973/1980. Since 1982, all HIV+ pts have been examined prospectively.
Results: Until 1984, 726 inpatients with TB (ca. 60/year) were treated. Of these, 2 homosexual pts had AIDS, and 2 pts were IVDA (HIV status unknown). None of the 78 pts with proof of MNT had AIDS or was IVDA. From 1982-88, 336 AIDS in- and outpatients (31 IVDA = 9.2%) were treated at FUH. Of 50 HIV+ TB pts, 11 were IVDA. TB was diagnosed before any other AIDS manifestation in 10 out of 11 IVDA, but only in 2 of 39 pts from other risk groups. In IVDA, clinical pattern and course of TB (4x disseminated, 2x lymph nodes, 5x lungs) were more severe than in pts from other risk groups. Of 75 pts with MNT infections, 7 (= 9.3%) were IVDA. Compared to pts from other risk groups, range of pathogens, frequency and clin. course in IVDA did not significantly differ.
Conclusion: Active TB and other MNT infections are significantly more frequent in HIV+ than in HIV-neg. IVDA. Compared to HIV+ pts from other risk groups, IVDA develop TB earlier, more frequently, and with more severe clinical course. MNT infections in IVDA do not differ from those in pts from other risk groups.

Th.B.0.16

PCP AND DRUG ABUSERS: THE BRONX LEBANON HOSPITAL EXPERIENCE
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Bronx Lebanon Hospital Center has been seeing AIDS patients since 1980. In 1988, over 6% of its patient population not admitted for infectious reasons tested HIV+ in a discarded blood survey conducted with the CDC. A sample of 364 males aged 25-44 showed that 68 (18.7%) with an admitting diagnosis not associated with HIV disease tested HIV positive.

A review of all available cases of drug abusers or their sexual partners that were bronchoscoped will be presented and features of those with PCP will be compared with those who were PCP negative.

Th.B.0.17

Th.B.0.18

Neurologie
Neurology

Th.B.0.19 AUTOANTIBODIES IN HIV-RELATED PERIPHERAL NEUROPATHY

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Objective: To determine whether or not autoimmunity is involved in the pathogenesis of HIV-related peripheral neuropathy. Peripheral neuropathy is a common complication of HIV infection; between 35% and 60% of adult AIDS patients demonstrate abnormalities of the peripheral nervous system (PNS), depending on the method and time of evaluation. The mechanisms of the neuropathies remain unknown.

Methods: We performed immunoblotting using homogenates of normal human peripheral nerve. The blots were incubated with serum from HIV-infected or control subjects. Results: Serum antibody from 23 of 25 patients with HIV-associated neuropathies bound to a 25 kd protein in the nerve homogenates. The same sera were negative when incubated with human brain, rather than peripheral nerve, on immunoblots. Controls from 25 HIV-negative patients with and without neuropathy, and from AIDS patients without neuropathy, were negative ($p<0.001$), except in case (a patient with mononeuropathy multiplex and a history of drug use; further serological studies on this patient are pending).

Sequencing of the N-terminal 7 amino acids of the 25 kd PNS protein revealed identity (6/7) with a stretch of 7 amino acids of the HIV-1 pol polyprotein. Since there are 1.28 x 10^9 (20^7) different ways in which a stretch of 7 amino acids may be arranged, and the HIV-1 genome is less than 10 kilobases, the probability of this identity occurring by chance is less than 1 in 1000. Conclusion: Thus, it is possible that autoimmunity due to "molecular mimicry" may play a role in the pathogenesis of HIV-related peripheral neuropathy.

Th.B.0.21 STUDY OF NERVE BIOPSIES IN 36 PATIENTS WITH HIV INFECTION

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Objective : To study the spectrum of changes on nerve biopsies in patients with peripheral neuropathy and HIV-1 infection.
Methods : Nerve and muscle biopsies were performed in 20 patients with distal symmetrical peripheral neuropathy (1 otherwise asymptomatic patient, 12 ARC and 7 AIDS), in 9 with acute or chronic inflammatory demyelinating polyneuropathy (3 otherwise asymptomatic patients, 4 ARC and 2 AIDS), in 5 with mononeuritis multiplex, (4 ARC and 1 AIDS), and in 2 with progressive polyradiculoneuropathy (2 AIDS).
Results. In inflammatory demyelinating polyneuropathies, segmental demyelination was, in most cases, associated with axonal degeneration as shown by quantitative study of teased nerve fibers. Conversely, in some cases of distal symmetrical polyneuropathy, segmental degeneration was associated with axonal degeneration. Mononuclear cell infiltrates composed mainly of Leu 2 (T8) positive cells involving frequently the walls of small vessels, especially venules (microvasculitis), were found nearly constantly in otherwise asymptomatic patients and ARC (20/24). They were very rare in AIDS patients (1/12) (Chi^2 : 18.51, $p < .00001$). They were not more frequent in inflammatory demyelinating polyneuropathy than in distal symmetrical peripheral neuropathy.
Conclusion. The presence of inflammatory infiltrates and of microvasculitis was more closely related to the stage of the HIV disease than to the type of neuropathy.

Th.B.0.23 MR IMAGING OF INTRACRANIAL MANIFESTATIONS OF AIDS: UNENHANCED AND GD-DTPA ENHANCED STUDIES

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Objective. To determine the diagnostic value of unenhanced and Gd-DTPA enhanced MR imaging in the diagnosis of intracranial manifestations of AIDS. The sensitivity and specificity of CT and MR, both unenhanced as well as contrast enhanced, was determined.

Methods. 107 patients with proved HIV-1 infection, all of whom had CNS symptoms underwent a total of 142 MR examinations. CT (Somatom DR, plain and contrast enhanced scans) and MR studies (0.5T Magnetom; T2-WI: SE, TR 1600ms, TE 70ms; T1-WI: FLASH, TR 315 ms, TE 14 ms, $\theta=90^\circ$, unenhanced and after i.v. application of 0.1 mmol Gd-DTPA/kg(BW) were performed within a time interval of 15 days or less. Criteria for sensitivity were: detection of lesion (-s), number of detected lesions and delineation of lesion/edema /parenchyma. Specificity was assessed with respect to etiology and acuity of lesions.

Results: In 31/107 patients, CT and MR were negative. In 3 of these patients, a severe CNS manifestation (e.g. multiple subcortical necroses) was found at autopsy. 62/107 patients had positive CT and MR examinations. MR had a greater sensitivity than CT in 41 of these patients. Unenhanced T2-WI had a higher sensitivity than Gd-DTPA enhanced T1-WI. specificity, however, was significantly increased by the use of Gd-DTPA. 14/107 patients had a normal CT while MR demonstrated meningeal and/or parenchymal lesion (-s). Diagnosis of toxoplasmosis was established on the basis of lesion pattern, enhancing characteristics and follow up studies in 32/39 confirmed cases.

Conclusion: The excellent sensitivity of T2-weighted MR is only in some cases increased by Gd-DTPA enhanced T1-WI. Assessment of etiology and acuity of AIDS related intracranial lesions however requires contrast enhanced CT as well as MR imaging. With respect to specificity, CT and MR are complementary imaging modalities.

Th.B.0.20 ELECTROPHYSIOLOGICAL INVESTIGATION OF CENTRAL AND PERIPHERAL NERVOUS SYSTEM IN HIV-INFECTED PATIENTS.

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Objective: Neurological disease often occurs in HIV-infected patients. Opportunistic infections and AIDS-dementia are major causes of CNS involvement; peripheral neuropaties, may also complicate this infection. Electrophysiological investigations offer the possibility to evidence early and/or subclinical involvement of both CNS and PNS.
Methods: 140 HIV infected patients (96/44=M/F), aged 18-50 yrs were studied:CDC Group II: n.62; Group III: n.38; Group IVA: n.13; Group IVB n.9; Group IVB-E n. 18. Motor and sensory conduction velocity (MCV/SCV), Sensory Evoked Potential (SEPs) and Central Conduction Time (CCT) were investigated.
Results: Abnormalities of MCV were observed ranging from 17% (group II) to 63% (IVB), while SCV and SEP were less frequently altered; CCTs were decreased from 47% (II) to 73% (IVB).
Conclusion: Our data demonstrate frequent involvement of CNS and PNS, particularly in AIDS and ARC patients, but also frequent in LAS and asymptomatic HIV positive groups; cortical stimulation seems to be the most sensitive method for an early detection of central motor pathways abnormalities.

Th.B.0.22 MORPHOLOGICAL FEATURES OF THE HIV-ENCEPHALITIS

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Objective. To describe the neuropathological findings of the HIV-Encephalitis since previous studies are no conclusive.
Methods. 60 brains of HIV-infected patients were extensively examined with conventional histology, immunhistochemistry and electron microscopy.
Results. In 18 cases (30%) we found a HIV-Encephalitis. A extensive invasion of macrophages, microglia cells and multinucleated cells is present in all subcortical structures of the brain, predominantly in the frontal and temporal white matter. In all cases we found p24 and gp 41 positive macrophages (2-5%), multinucleated cells (5-10%), microglia cells (1-6%) and pericytes. Vacuolar leukoencephalopathy was also constant. Occasionally, we found macrophages in contact with neurons that show signs of degeneration. A strong gliosis with hypertrophia and hyperplasia of astrocytes is present in the white matter and in the midbrain. Calcifications are frequently seen. Pallor of the white matter is also a frequent finding, but only in 15 cases out of 18 a progressive diffuse leukoencephalopathy was found in celloidine slices. Clinically the patients suffer alterations of the personality to severe dementia.
Conclusions. HIV-Encephalitis is characterized by invasion of macrophages in the subcortical structures, some of them carrying HIV-antigen. These cells in contact with neurons produces degeneration and cell death. Strong astrogliosis, vacuolar and diffuse leukoencephalopathy are also main features.

Th.B.0.24 THE INTERVAL BETWEEN EQUIVOCAL AND DEFINITE NEUROLOGICAL SIGNS AND SYMPTOMS IN THE AIDS DEMENTIA COMPLEX (ADC)

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Objective. To estimate the time period between detection of equivocal and definite neurological signs and symptoms in a group of HIV-1 seropositive patients being followed for ADC.
Methods. 132 patients who were ADC Stage 0.5 (equivocal/subclinical ADC) (J Infect Dis, 158: 1079-1083, 1988) who underwent serial evaluations on the Neuro-AIDS Study Group neurological history, examination, and neuropsychological battery served as subjects in this study. The time to progress to a Stage 1.0 or greater (definite neurological signs and symptoms) was determined using Kaplan-Meier estimates.
Results. There was an average of 3.3 follow-up exams after the detection of equivocal/subclinical signs and symptoms, and the average follow-up time was 33 weeks. By 37 weeks, 25% of the patients had progressed to a stage 1 or greater; by 59 weeks, 50% of the patients had progressed. A preliminary analysis of possible predictive variables revealed no differential progression rate as a function of the presence or absence of eye-movement abnormalities or limb-slowing.
Conclusions. These data provide a preliminary estimate of the high rate of progression from equivocal/subclinical to functionally significant ADC. Additional experience will be required to identify clinical and laboratory findings which more accurately predict neurological progression.

Les lymphokines
Lymphokines

Th.B.O.25 DIFFERENCES IN IMMUNE ACTIVATION PARAMETERS DURING AND AFTER HIV SEROCONVERSION: SERUM β_2MICROGLOBULIN, NEOPTERIN, AND SOLUBLE IL-2R.

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Objective. To describe cellular immune activation during and after HIV seroconversion.
Methods. Serum $\beta_2$microglobulin and neopterin are products and markers of cellular immune activation, whereas serum soluble interleukin-2 receptor (IL-2R) reflects only T cell activation.
Results. Fifty subjects investigated for $\beta_2$microglobulin before, during, and after HIV seroconversion showed an increase of this marker. The increase of $\beta_2$microglobulin appeared to reflect two distinct events in the immune activation since the primary increase correlated to the simultaneous increase in CD8 T cells, whereas the $\beta_2$microglobulin serum concentration during the second and third year correlated inversely to the decrease in CD4 T cells. An analysis of serum neopterin in 30 of these seroconverters showed similar changes. An analysis of three groups of HIV seropositive subjects with either stable high numbers of CD4 cells (>600x106/l), moderately decreasing CD4 numbers (100x106/l/year), or rapidly decreasing CD4 numbers (200x106/l/year) showed a strong inverse correlation between the rate of CD4 T cell fall and the serum concentration of neopterin and $\beta_2$microglobulin. The serum concentration of SIL-2R increased after HIV seroconversion, but in contrast to serum $\beta_2$microglobulin and neopterin, serum SIL-2R was only slightly increased in those with fast declining CD4 cells but was markedly increased in those with stable CD4 numbers.
Conclusion. Cells within the immune system, as reflected by serum $\beta_2$microglobulin, neopterin, and SIL-2R, differs in their response to HIV infection and represent different aspects of AIDS pathogenesis.

Th.B.O.27 POWER OF SERUM BETA-2-MICROGLOBULIN AND SERUM NEOPTERIN IN DETECTING ADVANCED HIV-DISEASE

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Objective: To evaluate the discriminating power of serum Beta-2-microglobulin (B2M) and serum Neopterin (NPT) between early and advanced disease.
Patients and Methods: In 497 HIV-positive patients (82% men, 18% women; 52% homo- or bisexuals, 41% drug addicts and 7% with other risks) were 54% asymptomatic (ASY), 30% had a persistent generalised lymphadenopathy (PGL), 9% ARC and 7% AIDS. The median age was 30 years (range 19-73). NPT in 1360 sera and B2M in 1366 were measured. After analysing the variances of NPT and B2M by ANOVA, the clinical stages were pooled in a group with early disease (ASY and PGL, 84%) and one with advanced disease (ARC and AIDS, 16%). For these two groups sensitivity (SENS), specificity (SPEC), predictive value positive (PVP) and negative (PVN) were calculated for different cut-off values using Bayes' formula.
Results: NPT and B2M were significantly higher in advanced than in early stages. In advanced disease the variances were very large, especially for NPT. For ascending cut-off levels (reported as factor to the upper normal limit) SENS, SPEC, PVP and PVN were rated as follows:

	cut-off	SENS	SPEC	PVP	PVN		SENS	SPEC	PVP	PVN
B2M:	1x	0.66	0.62	0.25	0.91	NPT:	0.70	0.60	0.25	0.91
	2x	0.19	0.96	0.48	0.86		0.25	0.94	0.43	0.87
	3x	0.05	0.99	0.74	0.85		0.15	0.97	0.51	0.86
	4x	0.03	1.00	1.00	0.84		0.10	0.99	0.63	0.85

Conclusions: High concentrations of B2M rather than NPT indicate advanced, low concentrations early disease. Due to a large variance, medium concentrations are not conclusive.

Th.B.O.29 HIGH INTERFERON LEVELS PREDICT SUBSEQUENT DEVELOPMENT OF AIDS

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Objective. To determine interferon levels in prevalent HIV seropositive men and examine the relationship of interferon to the subsequent progression to AIDS.
Methods. Interferon levels were measured in a blinded fashion by an alpha-2 specific RIA and the viral plaque reduction assay on sera collected in 1985 from 86 HIV seropositive men in the San Francisco Men's Health Study.
Results. Development of AIDS by 30 months

Interferon Level	All HIV+	AIDS	(%)
Undetectable	47	15	(31.9)
0.7 - 1.0 U/ml	16	6	(37.5)
1.1 - 2.6 U/ml	10	5	(50.0)
>2.7 U/ml	13	13	(100.0)

In a Cox proportional hazards model including CD-4 and CD-8 lymphocyte counts, p24 antigen, and beta-2 microglobulin, the interferon level is a significant predictor of AIDS by 30 months (relative hazard = 2.3, p=0.04).
Conclusion. Elevated interferon levels occur in 45.3 percent of prevalent HIV seropositive men and high levels are associated with a poor disease prognosis.

Th.B.O.26 2'-5'A Synthetase and Blastogenesis as Measures of Response to Azidothymidine (AZT)

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Objective: To determine whether AZT given to CDC II, III and IVc2 HIV-infected men will be reflected in changes in levels of 2'-5'A synthetase (2-5AS) and blastogenic response to mitogens.
Methods: We have previously shown, in a cohort of 22 men given escalating doses of AZT, that 600mg/d resulted in the greatest decrease in 2-5AS (n<30 pmoles) and increase in response to PHA. Further studies were done during a washout period of 13 weeks followed by 22 weeks at 1200mg.
Results: Persistent elevation of 2-5AS levels appears to be a bad prognostic sign in HIV infection. A significant drop in 2-5AS occurred on 600mg/d of AZT (85.7 to 49.8 pmoles). Also, a significant increase in response to PHA was observed. During the washout period the 2-5AS rose (45.3 to 65.5) and the PHA response dropped to below prestudy levels. 12 weeks after resuming AZT at 1200 mg, synthetase levels again dropped and PHA response increased. However, by week 84, synthetase levels had risen to 74.3. PHA response remained unchanged.
Conclusions: At 600 mg AZT, levels of 2-5AS and PHA responses normalize. Adverse changes in 2-5AS and PHA response occur with continued dose of 1200mg and when drug is discontinued.

Th.B.O.28 INTERFERON (IFN), BETA-2 MICROGLOBULIN (β_2-m) AND NEOPTERIN (Neo) IN AIDS-ASSOCIATED KAPOSI'S SARCOMA (KS).

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Objective. To study the relationship between endogenous IFN, β_2-m and Neo and their value in predicting treatment response in patients (pts) with KS.
Methods. Serum levels of IFN, β_2-m and Neo were determined prior to treatment in 43 pts entered into a phase I trial of IFN-α + AZT. Pearson product moment correlation was computed to quantify the relationship between β_2-m and Neo. Two-sample t-test was used to evaluate associations between endogenous IFN activity and levels of both β_2-m and Neo. Fischer's exact test was used to evaluate associations between IFN, β_2-m and Neo and KS regression.
Results. Median pretreatment β_2-m was 3.4 (range 2.2-6.2) mg/l (normal 1.1-2.4); median Neo was 18 (range 8-64) Nmol/l (normal $\leq$10); 38% of pts had detectable serum IFN (normal, undetectable). β_2-m and Neo were significantly correlated ($r=.82$, $p=.0000$). Pts with detectable serum IFN had significantly higher β_2-m levels (4.21±.27 vs. 3.14±.11, $p=.000$) and higher Neo levels (27.8±4.3 vs. 16.1±1.1, $p=.005$) than those without detectable IFN. Although individually, β_2-m and Neo were not predictive of response, the tumors of pts with "low" levels of both (β_2-m$\leq$3.4, Neo$\leq$18) were more likely to regress (77% CR+PR) than those with higher levels of β_2-m, Neo, or both (37% CR+PR, $p=.036$). Pts with undetectable IFN showed a significantly higher response rate than those with endogenous IFN activity (71% vs. 20%, $p=.018$).
Conclusion. The response of KS to IFN-containing regimens may be predicted by measurements of IFN, β_2-m and Neo. The strong associations noted are likely due to IFN induction of β_2-m and Neo. (Supported by NIAID-ACTG).

Th.B.O.30 TUMOR NECROSIS FACTOR (TNF) IN THE PLASMA OF AFRICANS INFECTED WITH HIV.

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Objective. To determine the association of plasma TNF and clinical signs and symptoms of HIV infection and AIDS in African patients.
Methods. Physical examination, demographic information, and a health questionnaire were obtained from 55 outpatients and 50 inpatients referred for HIV testing at the Mama Yemo Hospital, Kinshasa, Zaire, and 52 asymptomatic Zairian factory workers and their spouses. TNF levels (double monoclonal antibody ELISA, T Cell Sciences, Cambridge, MA), HIV ELISA, western blot, and p24 antigen level were determined for each patient.
Results. 63 (40%) of 157 cases were seropositive for HIV. Mean TNF levels were 25 ± 9.1 pg/ml for all HIV+ compared to 39 ± 12.7 pg/ml for all HIV- (NS). Among asymptomatic factory workers and their spouses, HIV+ subjects had lower TNF levels (< 10 pg/ml) than HIV- subjects (26.5 ± 10.5 pg/ml, $p< 0.05$). HIV+ patients with AIDS had significantly lower TNF levels (10.5 ± 7.5 pg/ml) than HIV- subjects (39 ± 12.7 pg/ml, $p< 0.05$). In afebrile subjects, mean TNF was lower in HIV+ (<10 pg/ml) than HIV- (29 ±13.7 pg/ml, $p< 0.05$). This same relationship was seen in patients with clinical tuberculosis (9.5 ± 5.4 pg/ml, HIV+ and 68 ± 29.6 pg/ml HIV-, $p <0.05$).
Conclusions. TNF levels in both symptomatic and asymptomatic HIV infected Zairians are depressed compared to uninfected controls. These findings are in contrast to studies of North American and European patients, in which elevated TNF levels have been associated with advanced HIV disease. These data suggest that HIV infected Zairians have impaired and depressed TNF responses.

Les problèmes associés au VIH en hémophilie : aujourd'hui et demain
HIV Related Issues in Hemophilia: Today and Tomorrow

Th.B.O.31 THE FIRST AND SECOND EPIDEMICS

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Objective. To determine the extent of AIDS in heterosexual partners of hemophilia patients.
Methods. Surveillance of heterosexual partners of hemophilia patients.
Results. By February 1989, more than 850 cases of hemophilia associated AIDS in the U.S. had been reported to the Centers for Disease Control. This represents an attack rate of about 5 to 7 per 100 of the 12,000-17,000 persons with hemophilia in the U.S. and approximately 18% of the HIV seropositive hemophilia patients. The accrural rate of AIDS in hemophilia patients has been constant for more than 3 years. Following the universal adoption of heat treated materials for therapy for hemophilia in 1984 and 1985, seroconversion of individuals receiving therapy essentially ceased. Recently an increase in transmission of HIV to heterosexual partners and to children born to women whose sexual partners are hemophilic have focused attention on this secondary epidemic. In 15 studies approximately 10% of heterosexual partners of hemophilic patients were seropositive but seroprevalence was as high as 21.4% in some studies. AIDS cases among these patients have been increasing and the epidemic curve of the heterosexual partner is similar to that of the primary epidemic that was recognized 4 years earlier in the hemophilia population. Risk reduction activities to date have had varying success at modifying behavior.
Conclusion. Risk reduction activities must be directed toward the hemophilia population and their sexual partners in order to stop this secondary epidemic.

Th.B.O.33 NATURAL HISTORY OF HIV INFECTION IN HEMOPHILIA

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Th.B.O.35 HAEMOPHILIA: Special Management Issues.

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The special management issues for haemophiliacs infected with HIV must reflect not only the underlying bleeding disorder but also the sex-linked inheritance of haemophilia. Almost all haemophiliacs infected with HIV have now been identified: education about treatment and discussion of dreaded isses can be started before the onset of symptoms. As a result the recruitment to, and compliance within, trials of treatment for asymptomatic haemophiliacs may be better than in other patient groups. The presence of an underlying bleeding disorder makes the investigative procedures required to diagnose many clinical problems more difficult. Operative procedures - for example, joint replacement - may encourage HIV-related complications. The double coagulopathy of clotting factor deficiency and HIV-related thrombocytopenia raises additional clinical problems. Many haemophiliacs have multiple chronic virus infections - hepatitis B, C and D - which may respond to interferon. As haemophiliacs must continue to receive clotting factor concentrates, vaccination against B virus is mandatory, but the antibody response is not predictable. Adolescents have to declare both haemophilia and HIV early in their relationships; counselling this group is a delicate management issue. Couples may want to have children and the facts should be presented sympathetically for informed decisions to be made. Haemophilia, by the nature of its sex-linked inheritance, is a disorder of the whole family; the management of the individual patient inevitably involves other family members. Finally, litigation is an emergent special management issue which threatens the relationship between the haemophiliac and his health care provider.

Th.B.O.32 VIRUCIDAL METHODS FOR CLOTTING FACTOR CONCENTRATES: ARE THEY EFFECTIVE?

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Although the widespread infection of hemophiliacs with the human immunodeficiency virus contaminating clotting factor concentrates is still a threatening and formidable shadow, the gloomy picture brought about by the AIDS epidemic is partially lightened by recent spectacular improvements in the safety of concentrates. An important step-forward towards the elimination of the risk of infections transmitted by large-pool concentrates is the development of virucidal methods that inactivate those blood-borne agents that have escaped the filter of donor screening. Since the human immunodeficiency virus appears very vulnerable to such methods, currently available concentrates can be considered substantially free from the risk of transmitting that virus. Even though transmission of hepatitis viruses is much reduced but not totally abolished, virucidal methods are continuously being improved, so that it can be foreseen that concentrates will became safer and safer.

Th.B.O.34 RATES, MARKERS AND COFACTORS OF HIV INFECTION AND AIDS IN HEMOPHILIACS

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Objective. To quantify the incidence of HIV (1977-89) and AIDS [after HIV seroconversion(+)] and to evaluate the effect of age on two phases: HIV+ to occurrence of an AIDS marker, then from marker to an AIDS diagnosis.
Methods. Annual hazard rates of HIV for a prospective multicenter cohort of 1219 subjects with hemophilia were modeled as piecewise constant with GAUSS. For 319 subjects with HIV mid-point seroconversion dates we compared 1) the incidence of drop in CD4 count, rise in interferon and p24 antigen (Abbott), and loss of p24 and gp120 antibodies (RIA) and 2) AIDS incidence overall and after each marker with actuarial methods and log-rank tests of significance.
Results. AIDS incidence following seroconversion was 2.00/100 person-years and was directly related to age (from 0.62 for ages 1-11 to 4.24 for ages 35-70, $p=0.00003$). Type/severity of hemophilia, race, and factor concentrate dose had little effect ($p=0.50$). Annual incidence ranged from zero during the first year following seroconversion to 7% during the eighth year, with cumulative rates of 13.3% (±5.3% SE) for ages 1-17, 26.8% (±6.4%) for ages 18-34, and 43.7% (±8.5%) for ages 35-70. CD4 loss was high in older adults ($p\leq0.005$); anti-p24 loss was low in adolescents ($p=0.005$); and AIDS after loss of anti-p24 was low in children aged 1-17 ($p=0.03$).
Conclusion. Because several laboratory markers appear and predict AIDS risk at various rates as a function of age: 1) there are likely to be more HIV-infected children and adolescents than currently estimated; 2) prediction of AIDS in youngsters with available markers will be more difficult; and 3) drug efficacy trials will need 3-fold more children than adults.

Th.B.O.36 CONCENTRATES: MEETING THE DEMAND

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The adequacy of a nation's blood supply can be measured by whether or not it can meet the needs of its hemophiliacs. Prior to HIV infection, bleeding was the leading cause of death; transfusion transmitted hepatitis sequelae was second. For the hemophiliac, survival and quality of life depend not only on safety and efficacy of product but on availability. The United States, because of technology and liberal plasmapheresis regulations, is able to meet its own needs and to export 50 percent of the factor produced as well as a third of its pheresed plasma. This is the result of a highly developed industry that has the capability for large scale production. Self-sufficiency as a country's policy is a laudable goal; however, we must ensure an adequate supply of product for those whose lives depend upon it. The European Community ("EC") is currently considering a directive that would ban importation of blood products derived from paid donors. In fact, most of the EC nations do not have adequate plasma supplies nor fractionation programs to meet their current needs. Indeed, these are the very countries importing 80% of the materials exported by the U.S. Sixty percent of all the product used in these nations is derived from paid donor plasma. In addition, few countries throughout the rest of the world can meet their current or future needs. Premature implementation of the EC directive could cause a devastating shortage for hemophiliacs. Because of limited resources, self-sufficiency may never be achieved. International interdependence has many advantages; economy of scale, rapid transfer of advanced technology, and potential cost savings for countries currently without fractionation programs. However, we need to go beyond the global issues to those of the individual patient. Many hemophiliacs are now HIV positive; they deserve an uninterrupted supply of affordable products.

SIDA et nutrition
Nutrition and AIDS

Th.B.0.37 EFFECT OF HOME TOTAL PARENTERAL NUTRITION UPON BODY CELL MASS IN AIDS.

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Objectives. To determine if parenteral nutritional therapy can successfully replete body cell mass in malnourished AIDS patients; to determine clinical features associated with successful body cell mass repletion.
Methods. A longitudinal study of body composition was performed in 12 AIDS patients receiving total parenteral nutrition at home (TPN). Measurements included body weight, total body potassium (TBK), a measure of body cell mass, which was determined in a whole body counter, and body fat content, which was determined anthropometrically.
Results. Two patterns of response were seen. Six patients gained weight and increased TBK and body fat content. The clinical responders included patients with eating disorders or severe small intestinal injury with nutrient malabsorption. The other 6 patients gained weight and fat, but not did not increase TBK. The nonresponding patients all had serious systemic infections with cytomegalovirus and/or mycobacterioses, among others. Clinical improvement mirrored changes in TBK but not body weight or fat.
Conclusions. Parenteral nutritional therapy in AIDS may result in body mass repletion. Favorable responses occur in patients who have problems with nutrient intake or absorption. Unfavorable responses occur in patients with serious systemic infections.

Th.B.0.38 INCREASED RESTING ENERGY EXPENDITURE IN HIV-INFECTED MEN.

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Objective. To investigate wether unexplained weight loss in clinically stable HIV-infected patients may be caused by increased rates of resting energy expenditure (REE).
Methods. REE was determined in the postabsorptive state by indirect calorimetry in 14 slowly weight-loosing HIV-seropositive men (6 AIDS patients, 8 patients with ARC, age: 28-56 yrs.). All patients were free of acute infectious illness and without evidence of malabsorption. A group of 11 healthy male volunteers (age: 25-51 yrs.) served as a control group. Body composition was measured with a body impedance analyser.

Results. (mean ± SD)		patients	controls	p-value*
fat free mass	%	80 ± 5	80 ± 6	ns
REE	kCal/kg.day	27 ± 3	23 ± 2	<0.01
energy intake	kCal/kg.day	33 ± 12	31 ± 9	ns

*Wilcoxon's rank sum test for unpaired data.
Catecholamines, cortisol, glucagon and triiodothyronine were not statistically different between patients and controls.
Conclusion. Even in the absence of acute illness patients with AIDS or ARC have increased rates of REE, which might be responsible for the unexplained wasting sometimes observed in these patients. This hypermetabolism is not explained by higher levels of catecholamines or triiodothyronine.

Th.B.0.39 HUMAN IMMUNODEFICINCY VIRUS INFECTION IN MALNOURISHED CHILDREN AT KENYATTA NATIONAL HOSPITAL, NAIROBI, KENYA

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Objective: To determine whether there is an association between protein-energy malnutrition and HIV infection in children.
Methods: In 1987 one hundred children, 6 to 24 months of age (mean 14 months), admitted to Kenyatta National Hospital, with protein-energy malnutrition, were screened for HIV infection by Elisa test. Positive results were confirmed by Western Blot. These were compared with results obtained from 100 normal children (mean age 8 months) (controls).
Results: Six per cent of the malnourished children and 1% of the normal children were seropositive (P<0.05). Seropositivity was associated with the presence of more than one clinical problem on admission: chronic cough and chest X-ray with evidence of infection. Mortality was 66% in the seropositive and 15% in the seronegative malnourished children (P<0.01). In addition, the WHO criteria for diagnosis of paediatric AIDS was not useful in this study as only 1 of 7 seropositive children satisfied these criteria. However, a significant number of seronegative malnourished children satisfied all these criteria. Seropositivity was not associated with previous transfusion.
Conclusions: Our findings suggest that, at the time of study, HIV seropositivity was significantly higher in malnourished children.

Th.B.0.40 NUTRITIONAL ABNORMALITIES IN EARLY HIV-1 INFECTION
I. PLASMA VITAMIN LEVELS

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Objective. To determine the nutritional status of participants by measuring plasma vitamin levels by standard methodology.
Methods. We have evaluated 50 HIV-1 seropositive homosexual males (western blot) who were asymptomatic other than lymphadenopathy (CDC stage III).
Results. No clinical signs and symptoms of malnutrition were found in the study subjects upon examination. However, while thiamin and riboflavin status as measured by activity coefficient assays,did not show deficiency, pyridoxine levels were found inadequate in 35% of subjects as compared with controls (p<0.01). In addition, levels of vitamin B_{12} were significantly lower than those of controls from a similar age group (p<0.01); 35% of the subjects had vitamin B_{12} levels considered to represent overt deficiency (<200pg/ml) as well as a further 12% could be described at high risk for cobalamin deficiency (200-400 pg/ml). In contrast, plasma and erythrocyte folate levels were significantly elevated in 67% and 72% of the subjects respectively. No ascorbic acid deficiency was found at the time of investigation; plasma vitamin A and tocopherol levels were found to fall within a range considered normal in young adult males.
Conclusion. HIV-1 infection even in the earlier relatively asymptomatic stages is associated with significant metabolic/biochemical abnormalities. These alterations may play a role in the development of HIV-related immune dysregulation as well as opportunistic infection, malignancies and encephalopathy.

Th.B.0.41 ILEAL ABSORPTIVE FUNCTION IN ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

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Objective. To investigate terminal ileal absorptive function in AIDS.
Background. Enteropathy affecting the jejunum has been described in AIDS but there is no such information concerning the ileum. We have concurrently assessed ileal function and fat absorption in a group of AIDS patients.
Methods. Terminal ileal absorptive function was investigated in 7 subjects using a previously validated test in which the loss of a radio-labelled synthetic bile acid ^{75}Seleno-23-homocholic acid-Taurine (^{75}SeHCAT) from the enterohepatic circulation is quantitated by abdominal γ-scanning. In addition ^{57}CoVitamin B12 (Vit B12) absorption was measured. Concurrently fat absorption was assessed using the ^{14}C Triolein breath test (CT) and indirect tests of small intestinal bacterial overgrowth, ^{14}C Glycocholate (GC) and breath Hydrogen (BH) were carried out. Stool microscopy for enteropathogens was performed in each subject.
Results. Normal bile acid and Vit B12 absorption were demonstrated in 5/7 patients (mean SeHCAT loss 20%/day; normal<30%/day: mean plasma Vit B12 at 10 hours 1.74%/L; normal>0.5%/L). All 5 subjects had reduced fat absorption (mean CT 87x10^{-4}%; normal>140x10^{-4}%). Enteropathogens and small intestinal bacterial overgrowth were not detected in any of these subjects.

2/7 subjects had reduced absorption of bile acid (SeHCAT loss 90%/day; 59%/day), Vit B12 (0.25%/L; 0.16%/L) and fat (CT 4x10^{-4}%; 133x10^{-4}%). Both patients had an enteropathogen (cryptosporidium and isospora) on stool and jejunal histological examination. None of the two subjects had evidence of small intestinal bacterial overgrowth.
Conclusion. AIDS patients may have normal ileal absorptive function in the presence of jejunal disease. Infection with cryptosporidia or isospora may however be associated with ileal dysfunction.

Th.B.0.42 IMBALANCE OF THE AMINO ACIDS PATTERN IN PATIENTS WITH AIDS - SPECIAL TREATMENT WITH ADAPTED AMINO ACID SOLUTION?

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More than 60 % of the patients with AIDS were underweight on admission and there are signs of diarrhea, malabsorption and development of malnutrition. Malnutrition and deficiencies of protein as well as of specific nutrients is a well-established cause of immunodeficiency.
In view of the importance of amino acids for metabolism and endocrinology (synthesis of neuro-transmitters and hormones) we report on measurements (intermediate pressure liquid chromatography; nmol/0,1 ml) of patterns of 21 amino acids (AA) in fasting plasma of 23 patients with AIDS (CDC IV; WR6; Frankfurt 3): Group A (n=10): body mass index (BMI < 19; group B (n=13): BMI >19, compared with AA patterns gained in group C (n=8): patients with ARC (AIDS-related complex) and group D: a large control group (n=121).
Compared with controls (gr D) and ARC (gr C) nearly all AA were significantly decreased in AIDS-patients of group B ((BMI>19) and more pronounced in AIDS-patients of group A (BMI<19). Especially: serine - 38,3% (gr D: 164,5±31,6; gr B: 123,0±30,6; gr A: 101,5±24,7). Glutamine -30%; alanine -43 %; valine -26,3%; methionine -48,6%; isoleucine -41,5%; leucine -33,7%; tyrosine -22,2%; histidine -45,7%; threonine -48,4% and tryptophan -50,2%.
Our data shows a rather uniform decrease of most AA, especially of branched chain and aromatic AA and, using another category, of essential AA. These findings do not simply resemble the pattern seen in starvation, anorexia nervosa or critical ill patients. The low tyrosine and tryptophan levels (neurotransmitter precursors) are inter-esting in view of behaviour (depression; lethargy, etc.), but also protein-(albumine)-synthesis (tryptophan). Special treatment with adapted amino acid solutions could be of benefit.

Immunomodulateurs
Immunomodulators

Th.B.O.43 A PLACEBO-CONTROLLED TRIAL OF INTERFERON ALFA-2B IN ASYMPTOMATIC HIV INFECTION

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Objective. To assess in asymptomatic men who were seropositive and culture positive for HIV the *in vivo* efficacy of interferon alfa-2b (IFN), as defined by changes in HIV isolation, CD4 counts, and development of an AIDS-defining opportunistic infection. Methods. Thirty-four asymptomatic HIV ELISA and Western Blot positive homosexual men with positive peripheral blood lymphocyte (PBL) cultures for HIV and CD4 counts of ≥ 400/mm³ were randomized to receive either 35 million units of daily subcutaneous IFN or placebo. Doses of IFN or placebo were modified according to pre-defined laboratory changes and subjective complaints. Duration of therapy was a minimum of 12 weeks. Results. Seventeen patients were randomized to receive IFN, and 17 to receive placebo. Age, past history of sexually transmitted diseases, and mean T4 counts were comparable between the two groups at entry. Sixteen of seventeen patients completed at least 12 weeks on placebo; 11/17 completed at least 12 weeks on drug. The average daily dose of drug for patients in the IFN group was 17.5 million units. All patients on IFN reported flu-like symptoms; other toxicities noted were granulocytopenia (55%), liver function test abnormalities (45%), and anemia (18%). Seven of eleven IFN patients (64%) became HIV culture negative (defined as 3 or more consecutive negative PBL cultures taken at least 2 weeks apart) while on drug; 2/16 (13%) placebo patients developed negative HIV cultures while on study (Fisher's p=.008). The average time to development of negative cultures was 11 weeks. One p24 antigenemic patient was randomized to IFN; his p24 antigen levels declined from > 20,000 pg/ml to < 200 pg/ml over 47 weeks. In follow-up of study patients ranging from 3 to 24 months, 0/11 IFN patients vs. 3/16 placebo patients have developed an AIDS-defining opportunistic infection (OI) (Fisher's p=.19). Absolute CD4 lymphocyte counts in placebo patients have declined from baseline by an average of 24% vs 4% for the IFN group (p=.11). Conclusion. Interferon alfa 2b has significant activity in patients with HIV infection as evidenced by a decrease in viral shedding, and its use may decrease the rate of development of first OI, and reduce the rate of CD4 decline. Thus, administration of IFN, while accompanied by dose-dependent toxicities, may have a role in slowing progression of HIV disease.

Th.B.O.45 INTRAMUSCULAR POLY-ICLC ADMINISTRATION IN AIDS: PRELIMINARY FINDINGS

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The synthetic double stranded RNA Poly-ICLC (PICLC) induces high levels of interferons α and β in man, along with increased Interleukin I and II, Colony Stimulating factor (CSF), and corticosteroids. Other effects include NK cell, macro-phage/monocyte, and B-cell activation, specific cytotoxic T-cell development, increased T_4/T_8 ratio, and expression of histocompatibility antigens. In some malignancies, there is also an antineoplastic effect.
Objective. To determine the safety and toxicity of intramuscular PICLC in AIDS patients.
Methods. Two to six mg PICLC was administered intramuscularly (IM) weekly with or without Zidovudine over a six to 12 month period to nine HIV infected patients with T_4 counts between 0 and 200.
Results. Low dose IM PICLC was well tolerated, with no significant clinical or laboratory toxicity. Side effects, as expected, consisted of a flu-like syndrome with low grade fever and malaise lasting 12-24 hours. Most patients report an initial weight gain and improvement in fatigue and other constitutional symptoms; there have been no deaths. T_4 counts have remained stable or risen in 8/9 patients. At present HIV cultures are negative in 8/9 patients. Preliminary clinical and laboratory results relevant to safety and toxicity at 10-18 months of administration will be presented.
Conclusions. IM PICLC can be safely administered to HIV infected patients, and randomized Phase II trials are indicated to explore potential efficacy.

Th.B.O.47 FOLLOW-UP MORBIDITY AMONG ARC PATIENTS ON POST-TRIAL IMREG®-1 TREATMENT

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Objective. To determine longer term benefits from IMREG®-1, an immunosupportive therapy in ARC patients. Methods. After 6 months of receiving either IMREG®-1 or placebo or experiencing an AIDS-defining or AIDS-related event while enrolled in a double-blind randomised clinical trial, patients could receive treatment with IMREG®-1 on a continuation protocol. There were 27 patients who had been assigned to placebo and 60 patients assigned to IMREG®-1 who elected to receive IMREG®-1. Patients differed in the number of post-Trial weeks of treatment they received. The probability of experiencing an AIDS-defining or AIDS-related event is considered for the number of weeks subjects continued in their Trial assignment. Results. During the trial 93 patients received IMREG®-1, 4 of whom developed an AIDS-defining or AIDS-related event in 2117 patient-weeks; among the 48 patients assigned to placebo and followed for 1021 patient-weeks, 12 developed an AIDS-defining or AIDS-related event. Kaplan-Meier (K-M) probability was 0.05 for the treated and 0.28 in the untreated groups (p=0.0004). Beyond the trial, patients maintaining trial treatment assignment had a K-M probability of an AIDS-defining or AIDS-related event of 0.15 in 3942 patient-weeks for IMREG®-1 treatment and 0.40 in 1503 patient-weeks for the placebo group (p=0.0004). Conclusion. Reduction in disease progression associated with IMREG®-1 treatment is observed for several months beyond the Trial.

Th.B.O.44 IMMUNIZATION WITH INACTIVATED, ENVELOPE-DEPLETED HIV IMMUNOGEN IN HIV INFECTED MEN WITH ARC: PRELIMINARY REPORT OF EXPLORATORY STUDIES IN PROGRESS.

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Objective: To study the feasibility of active immunization, with irradiated, envelope-depleted HIV immunogen, administered to HIV seropositive, viremic subjects in an attempt to prolong their asymptomatic state, or to prevent the progression to AIDS.
Methods: 20 ugm of HIV immunogen, emulsified in Freund's incomplete adjuvant, or in saline, was given IM or ID to 19 pts with biopsy-proven PGL. Median follow-up with PGL, prior to study entry was 31-45 mos. Serial measures of clinical status, p24 Ab and Ag, CD4, CD8 cells, skin tests, & HIV viral culture were performed monthly.
Results: Median follow-up is 48 wks (28-52) since inoculation. No significant toxicity has occurred. One subject, with initial p24 antigenemia developed AIDS at 5 mos. All others remain clinically well, without AIDS. CD4 cells, at last f/u reveal an increase over baseline values in 11/19 (58%), while 13/18 (p=.05) had an increase over the value projected from pre-inoculation trends. At entry, six were anergic and 22 skin tests were positive: at f/u, no pt is anergic, and 59 tests are positive. DCH confirmed by biopsy.
Conclusion: (1) The HIV immunogen is safe in these subjects (2) A controlled, randomised trial is in progress: results will be presented.

Th.B.O.46 ISOPRINOSINE REDUCED CLINICAL PROGRESSION IN HIV INFECTED PATIENTS IN A DOUBLE BLIND PLACEBO CONTROLLED STUDY.

The Scandinavian Isoprinosine Study Group, Hidovre, Denmark.

Objective. To determine the influence of isoprinosine (Imunovir) on the clinical course of HIV infection.
Methods. A total of 866 HIV infected patients from Sweden and Denmark were randomised and stratified according to CD_4-count to receive either isoprinosine 1 g t.i.d. (n=429) or matching placebo (n=437) for 6 months. At baseline the study population consisted of 765 asymptomatic patients and 101 symptomatic patients. Patients with AIDS were not included.
Results. Eighthundred and thirty-three patients were eligible for efficacy analysis. There were no significant differences between the two groups with respect to CD_4-count or clinical status at baseline.
Progression to AIDS according to CDC revised definition:

	AIDS (%)	no AIDS
Placebo	* 17 (4)	404
Isoprinosine	** 2 (0.5)	410

* 10 PCP, 3 KS, 1 oesophageal candidiasis, 1 encephalopathy, 1 HSV > 4 weeks, 1 wasting
** 2 PCP

$p < 0.001$ Odds ratio = 8.6, 95% confidence limits: 1.9 - 54.5

During treatment no significant differences in CD_4-count occurred. No serious side effects were observed. Minor adverse reactions occurred with equal frequencies in both groups.
Conclusion. Isoprinosine offers a potential treatment modality, particularly in the asymptomatic HIV infected patients. However, the mode of action remains to be clarified.

Th.B.O.48 THE ANTI-HIV DRUGS CASTANOSPERMINE (CSP) AND DEXTRAN SULFATE (DS) ALSO ALLOW THE GROWTH OF IN VIVO INFECTED CD4+ T CELLS

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We have reported that CSP and DS rapidly induce the regeneration of CD4+ T cells and T cell colony precursors in cultures from blood lymphocytes of HIV+ patients. Objective.- To describe the effect of both drugs on in vivo infected CD4+ T cells. Methods.- a) T cell colony assay, b) Lectin/IL2 stimulated lymphocyte cultures, c) Coculture assay for detection of HIV, d) Reverse transcriptase assay, and e) Immunofluorescence assay using a standard polyclonal human IgG anti-HIV and monoclonal antibodies. All cultures were done in the presence and absence of 25 µg/ml of CSP or DS. Results.- We found that CSP and DS induced the regeneration of T cell colonies from very low to normal levels: when the colonies were collected, pooled and stained with anti-HIV antibodies, from 3 to 40 % of the cells were HIV positive (10 experiments). In coculture experiments we found that CSP did not prevent or delay the production and release of virions as quantitated by high levels of reverse transcriptase in the supernatants (4 experiments). Conclusions.- The beneficial effect of CSP and DS on CD4+ T cells is counteracted by the observation that both drugs also permit the growth of in vivo HIV-infected CD4+ T cells. The expansion of the population of HIV-infected cells may cause un undesirable increase in the viral load in the host. Thus, both drugs may have to be used in combination with drugs that prevent virus replication.

Pharmacologie des médicaments anti-SIDA
Pharmacology of Anti-AIDS Drugs

Th.B.O.49

PHARMACOLOGICAL PRINCIPLES APPLIED TO ANTIVIRAL TREATMENT IN AIDS

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Pharmacological principles are based on an understanding of the molecular mechanism of action of a drug and of its dose-response characteristics and pharmacokinetics. Efficient antiviral drugs must be selectively toxic, preferentially affecting mechanisms shared by the virus and host cell or modifying processes unique to the virus. Several fundamental aspects of cancer chemotherapy may be applicable to antiviral treatment of AIDS including exploitation of a knowledge of cell-cycle kinetics (nucleoside analogues such as zidovudine have no effect on the latent virus), and of the fact that virus (cell) kill is a first order process (achieving total kill may involve combination or sequential treatment). Resistance can be expected and has been seen with other antiviral therapies. Effective dose regimens should be based upon the establishment of the minimum effective and maximum tolerated doses, the duration of effect and the pharmacokinetics of the drug. Some agents (e.g., zidovudine, ribavirin) are pro-drugs dependent upon intercellular activation. This necessitates a knowledge of intracellular kinetics for optimal therapy.

Th.B.O.50

PHARMACOKINETICS OF ZIDOVUDINE (ZDV) IN ADULTS AND CHILDREN

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The pharmacokinetics of ZDV has been evaluated in HIV-infected adults during intravenous (IV) and oral (PO) dosing. Dose-independent kinetics was observed over the ranges of 1 to 5 mg/kg and 2 to 10 mg/kg following IV and PO dosing, respectively. The major route of elimination is by formation of the inactive 5'-O-glucuronide. Mean half-lifes for drug and metabolite were about 1 hour. ZDV total body clearance (CL) and renal clearance were 27 ml/min/kg and 5 mg/min/kg, respectively. ZDV penetrated the blood brain barrier as indicated by a CSF/plasma ratio averaging 0.5 determined 2 to 4 hours following dosing. Although almost completely absorbed, the average oral bioavailability of ZDV was 65% because of first-pass metabolism. Oral doses of 200 mg every 4 hours produce mean peak and trough levels of 1.2 and 0.1 mcg/ml, respectively. Drug interaction studies have shown that concomitant administration of acyclovir has no effect on ZDV kinetics, while probenecid decreases CL by 50%. In general, the pharmacokinetics and bioavailability in children is very similar to adults. Preliminary data in neonates shows a reduced CL in newborns which approaches adult values by 1 month of age. Mean bioavailability in the neonates is 69%. Additional studies will address the relationship between pharmacokinetic parameters, viral replication times, and clinical efficacy.

Th.B.O.51

PHARMACOKINETICS OF OTHER ANTI-HIV AGENTS

Leitman Paul. John Hopkins University, Baltimore, MA, USA.

Th.B.O.52

PHARMACOLOGICAL INTERACTION OF DRUGS IN AIDS

Blasky, Terry. Stanford University, California USA.

Th.B.O.53

VIH-2 et autres rétrovirus
HIV-2 and Other Retroviruses

Th.B.O.54 DETECTION OF HIV2 ANTIBODIES WITH A NOVEL HIV2 TRANSMEMBRANE SYNTHETIC PEPTIDE IN A LINE-IMMUNOASSAY

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*** Hôpital Claude Bernard, Paris, France.

Objectives. The evaluation of a novel line-immunoassay (LIA) with recombinant HIV1 and HIV2 proteins for screening of known HIV2 antibody positive sera.
Methods. The LIA-HIV assay (INNOGENETICS N.V.) uses only high purified synthetic HIV proteins in a line-immunoassay technique for the detection of antibodies to HIV. This assay uses four purified synthetic HIV-1 antigens : the major core protein p24, an additional core protein p17, a polypeptide from the gp41 region of the envelope gene and p31, a polypeptide derived from the endocuclease region of the polymerase gene. In order to detect HIV2 infected individuals a synthetic transmembrane glycoprotein of this virus has been applied. A total of 55 known HIV2 antibody positive sera (presence of gp36 and/or gp205-140) were screened.
Results. All the 55 HIV2 antibody positive sera reacted with the HIV2 transmembrane protein in the LIA test. 61% of the sera reacted with the p24 and 33 protein, 15% reacted with the p24 only, 14% with p34 only, 4% with p17 and p24, and 2% with p17, 24, 34 and 7% of the sera did not react with any HIV1 peptide. Of the 55 HIV2 sera, none of them was reactive with the gp41 synthetic peptide. There was a good correlation between the results obtained with the LIA and the western blot patterns.
Conclusion. We have shown that the LIA system using synthetic HIV1 and HIV2 peptides allows the determination of HIV2 antibody positive sera.

Th.B.O.55 COMPARAISON DES PERFORMANCES D'UN REACTIF ELISA UTILISANT UN PEPTIDE RECOMBINANT POUR LA DETECTION DES INFECTIONS A HIV 2.

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** Service des Maladies Infectieuses - CHU de Treichville - Abidjan - Côte d'Ivoire.

Objectifs : Un nouveau test ELISA utilisant un peptide recombinant de HIV 2 (*Clonatec France*) fixé sur un support solide (plaque de polystyrène), a été appliqué à la détection des anticorps dirigés contre le virus de l'immunodéficience humaine (HIV 2) en milieu africain.

Méthodes : Une population Africaine de 541 sérums a été testée et la sensibilité a été comparée aux tests ELISA classiques (*Organon, Dupont de Nemours* pour HIV 1 et/ou *ELAVIA 2*) et à un test ELISA HIV 1 recombinant (*Immunocomb PBS Organics*) et s'est révélée de sensibilité identique pour les tests de dépistage (97,7 %). La spécificité est également très acceptable, comparée aux mêmes tests (98,5 %).

Résultats : Au cours de l'examen de dépistage, 5,54 % des sérums testés ont été trouvés faussement positifs par les techniques ELISA classiques, alors que seulement 2,9 % l'a été dans une première détermination pour *Clonatec*, mais les contrôles n'ont pas confirmé cette positivité. 22 sérums sur 30 ont paraissé positifs en ELISA (faux positifs) alors que cette positivité n'a pas été confirmée.

Par ailleurs, tous les sérums positifs ont été confirmés en Western blot HIV1 (24,6 %), HIV 1 + 2 (17,7 %) ou HIV 2 (11,3 %).

Conclusion : Dès lors, le test dont la facilité d'emploi est extrême (30 minutes), peut tout à fait être appliqué dans la sérologie de dépistage et peut être d'une grande utilité, en milieu africain, car il se réalise dans un minimum de temps.

Th.B.O.56 A NOVEL ENZYME IMMUNOASSAY TO DETECT ANTIBODIES TO BOTH HIV-1 AND HIV-2.

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Wellcome Diagnostics Research, Beckenham, Kent, BR3 3BS, U.K.

Objective. To develop an enzyme immunoassay capable of detecting antibodies to the known types of HIV with a sensitivity greater than commercially available at present.
Methods. Recombinant and peptide immunodominant epitopes constructed from HIV-1 and HIV-2 were labelled with alkaline phosphatase and used in an antigen-sandwich enzyme immunoassay. After the capture reaction, the enzyme was measured with an amplifying one-step substrate cycle.
Results. The assay had a sensitivity by end-point dilution up to 10-fold better than the anti-HIV-1 assays currently available in Europe, and had an excellent reactivity with sero-conversion samples. It detected all of the 289 anti-HIV-1 samples obtained world-wide, all of the 189 anti-HIV-2 samples obtained from West Africa and Europe, and had a low rate of false positivity. The assay was usable with serum, plasma or heat inactivated serum samples.
Conclusion. It is possible to improve on the sensitivity of the currently available commercial anti-HIV-1 assays and to detect anti-HIV-2 with an assay designed to be compatible with current blood bank procedures.

Th.B.O.57 COMPARISON OF SEROLOGIC ASSAYS FOR TRANSFORMING RETROVIRUSES

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Walter Reed Retrovirus Research Group, Walter Reed Army Inst. of Res. Washington, D.C.

Objectives. To compare different methodologies for the serologic diagnosis of human transforming retrovirus infection.
Methods. Sera were obtained from civilian applicants for the armed services of the United States and initially screened with a qualitative HTLV-1 enzyme-linked immunosorbent assay (ELISA). Reactive samples were then tested with a recombinant envelope based ELISA and by a Western blot method.
Results. Of 3,995 samples screened by the ELISA, 66 (1.65%) were scored as either repeat reactive (34=.85%) or as questionable reactives (32=.8%). Western blot analysis revealed that 3 (4.5%) showed banding patterns suggestive of HTLV-1 infection. No bands were apparent on 35(53%) of the original 66 samples. These samples were also analyzed by a recombinant envelope based ELISA resulting in 18 (27.3%) scored as positive including the 3 that were Western blot positive. Of the other sera scored as positive by the recombinant ELISA, 7 were negative by Western blot while 6 showed p19 bands, 1 showed p19 and p28 bands and 1 showed p19, p28, and p32 bands. 48 sera samples scored as negative by the recombinant ELISA were also scored as negative by Western blot. Of the original 3,995 samples tested, 3 (.075%) can be considered positive for a transforming retrovirus by two different ELISA methods and by a Western blot method.
Conclusions. A recombinant envelope based ELISA can be used as a second level test prior to Western blot analysis to reduce screening false positives.

Th.B.O.58 SEROLOGIC EVIDENCE OF RETROVIRAL INFECTION IN INTRAVENOUS DRUG ABUSERS (IVDAs)

Nichols, David*; Wiebel, W.**; Stevko, B.** and Landay, A.*. *Rush Medical Center, Chicago, Il. and **AIDS Project, University of Illinois at Chicago, School of Public Health, U.S.A.

Objective. To evaluate serologic evidence of HIV-1 and HTLV-I co-infection in IDVAs.
Methods. Sera collected in 1988 from 1200 asymptomatic IVDAs were screened for HIV antibody(HIV-Ab) by enzyme immunoassay (EIA) (Abbott) and confirmed by Western Blot (DuPont). A subgroup of 94 IVDAs were screened by EIA (Abbott) for HIV-1 antigen (HIV-Ag) and HTLV-I Ab. Initial HTLV-I reactives were repeated in duplicate. Reactive HIV-Ag samples were neutralized.
Results. The overall seroprevalence among the 1200 IVDAs was 17% (per DuPont criteria). A subgroup of individuals was stratified by HIV-Ab status. The HIV-Ag seroprevalence was similar between the HIV-Pos (2/40) and HIV-Neg (1/40) individuals. The HTLV-I Ab positive rate among the 80 individuals was 35% and was identical in both groups. An additional seven HIV-1 seroconvertors were identified during the 6-month study period. Two of these individuals were initially HIV-Ag positive; 3/7 were consistently HTLV-I Ab reactive.
Conclusions. (1) Among the HIV-Pos and HIV-Neg subgroups, no difference in HTLV-I seropositivity was found. (2) HIV-Ag has a low prevalence rate in this group. (3) Among the 7 HIV-1 seroconvertors, there appears to be no change in HTLV-I serostatus.

Th.B.O.59 RELATIVE SPECIFICITY OF TWO EIAs FOR ANTIBODIES TO HTLV-I

Fang, Chyang* ; Akins, R.*; Le, P.*; Porter, L.*; Leete, J.** Lee, H.** and 40 American Red Cross Blood Services Regions.
*American Red Cross, Rockville, MD, **Abbott Laboratories, Abbott Park, IL.

Objective. Using Western blot (WB) and radioimmunoprecipitation assay (RIPA) to compare the relative specificity of 2 EIAs for antibodies to HTLV-I.
Methods. Donor sera originally found repeatedly reactive (RR), 171 (Group I) by Abbott EIA and 25 (Group II) by Du Pont EIA,in 40 different laboratories were retested by 2 EIAs and by WB.
Results.

	WB Bands	No. Samples Tested	No. Abbott EIA Reactive	No. Du Pont EIA Reactive
Group I:	None	52	43	16
	p19 only	29	24	28
	p24 only	36	33	22
	p19/p24	36	33	33
	p19/p24/gp46	19	19	19
Group II:	None	16	0	5
	p19 only	6	0	5
	p24 only	3	0	1

Six of 19 randomly selected samples from Group I and none of the 9 with WB p19 or p24 from Group II showed gp68 reactivity by RIPA.
Conclusion. Abbott EIA was more specific: 70% of RR samples showed ≥1 band on WB and 32% showed a gp68 band on RIPA compared to 36% and 0% for samples by Du Pont EIA, respectively. Furthermore, Abbott EIA was more reproducible: 89% of originally RR samples were still reactive as compared to 44% of Du Pont EIA RR samples.

Grossesse et obstétrique
Pregnancy/Obstetrics

M.B.P.1

IN UTERO HIV1 TRANSMISSION IDENTIFIED THROUGH PCR.

Valérie, Courgnaud*; Laure, F.* ****; Barin, F.**; Goudeau, A.**; Brossard, A.***; Bréchot, C.* and The Paris-Tours Collaborative group on perinatal HIV transmission**.
*INSERM U.75 CHU Necker, Paris, **Laboratoire de Virologie Tours (CNRS UA.271), ***Centre d'Hémobiologie périnatale, Paris, ****Diagnostics Pasteur, Marnes la Coquette, France.

Objective. To investigate the possibility of in utero HIV transmission.
Materials. 33 fetuses obtained from HIV1 positive mothers at 16 to 24 weeks of gestation. 3 fetuses were obtained at 16-18 weeks by hysterotomie. Thymus and spleen were dissected and analyzed separately. PBL of 30 mothers were available.
Methods. PCR for HIV1 DNA detection with 40 cycles and 3 sets of primers (Pol and Env genes).
Results. HIV1 DNA sequences were detected in 19/31 thymus and 22/33 spleen fetuses samples. Positive results were obtained in fetuses from 16 to 22 weeks.HIV1 DNA unambiguously scored positive in 2/3 thymus and spleens obtained by hysterotomie at 16-18 weeks. By using primers specific for the highly polymorphic cystic fibrosis locus, we have concurrently identified informative mothers; comparaison of the results obtained with these primers between mothers PBL and fetal tissues DNA did not show evidence for contamination of fetal tissue samples by infected mother cells.
Conclusions. This study indicates in utero HIV1 transmission, occuring even at an early stage of gestation. The likely high rate of transmission must be taken in account for strategies aiming to prevent perinatal infection.

M.B.P.2

ANTIGENEMIA p24 AND CD4 CELLS COUNTS IN HIV PREGNANT WOMEN.

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HIV Pregnancy study group, Paris, France.

Objective : To investigate the effects of pregnancy on virological and immunological parameters in HIV pregnant women, we studied the evolution of antigemia (Ag p24), anti p24 antibodies (Ac anti p24) and CD4 cells count during and after pregnancy.
Methods : Our study concern 3 group : group 1 HIV pregnant women (n = 97), group 2 HIV aborted women (n = 114), group 3 : non HIV pregnant women.
Results : CD4 cells are initially (first trimester) lower in group 1 (435 ± 72) and group 2 (452 ± 63), in comparaison with group 3 (885 ± 72). A slight decrease is observed during the pregnancy (third trimester) in group 1 (401 ± 83) and group 3 (772 ± 64). The mainfact is the lack of increased of CD4 observed at the 3th month of post partum in group 1 (332 ± 66) and group 2 (338 ± 72) contrasting with group 3 (933 ± 65). In group 1 (HIV pregnant women) HIV antigenemia are found in 8/80 at the first trimester, 24/78 at the 2 nd trimester, 14/72 at the 3th trimester. In the group 2 (women with induced abortion) HIV antigenemia is positive in 12/113 during the first 3 months. After the pregnancy antigenemia is respectively positive in 6/67 in group 1 and 8/102 in group 2. No modification of antibodies anti p24 was observed.
Conclusion : In HIV pregnant women, CD4 decrease is longer persistant in post partum, HIV ag p24 appears frequently during the 2nd trimester but is reversible. The role of these immunological and virological abnormalities in materno-foetal HIV transmission, and in the subsequent evolution of HIV infection in pregnant women are under investigation.

M.B.P.3

DISEASE PROGRESSION FOLLOWING PREGNANCY IN HIV SEROPOSITIVE WOMEN.

*MacCallum LR, *Cowan FM, ¯Whitelaw J, +Burns SM, *Brettle RP. *IDU; +Virology; City Hospital; ¯Immunology, Royal Infirmary, EDINBURGH, Scotland.

OBJECTIVE: To assess disease progression following pregnancy in HIV seropositive women.
METHOD: Of 107 HIV seropositive women infected between 1983 and 1985, 31 have had a pregnancy post seroconversion. Follow up has included monitoring clinical status, T4 lymphocyte count, IgG, IgA and HIV antigen at 6 monthly intervals.
RESULTS: Patients have been followed-up from 6 to 54 months with 18 having been followed for longer than 24 months. One has progressed to AIDS at 3 years post delivery and one has developed persistant oral thrush 2 years after delivery, the rest remain asymptomatic. T4 lymphocyte depletion to less than 200 has occurred in 2(6%) patients, 1 with AIDS and one other who is currently asymptomatic. IgG and IgA levels show no significant trend. 2(6%) patients have become antigenaemic but remain asymptomatic. There is no evidence of increased disease progression in this group compared with the nulliparous women or those who had pregnancies prior to seroconversion. In fact the nulliparous group are clinically worse possibly as a consequence of continued injection drug use.
CONCLUSION: Unlike others we have not observed an excess of post pregnancy disease progression. However, these are first pregnancies and none of the children have developed AIDS.

M.B.P.4

PREGNANCY ARISING IN HIV INFECTED WOMEN WHILE BEING REPETITIVELY COUNSELED ABOUT "SAFE SEX".

Kaplan, Mark H., Farber B.,Hall W.H.,Mallow C, O'Keefe C, Harper RG. North Shore University Hospital, Cornell University Medical College,Manhasset , N.Y.

Objective: To study the epidemiologic features of women who became pregnant after learning their HIV+ status
Methods: 151 women who were of child bearing age have been followed after they were found to be antibody + to HIV-1. A registry has been maintained of women who become pregnant after knowledge of their antibody status and after discussions about "safe sex".
Results: Of 80 surviving women from 88 IVDU's, 6 became pregnant one time and 1 2x. Of 43 surviving women from 46 women who acquired disease heterosexually, 3 became pregnant 1 time. No women of 11 surviving women from 17 who acquired disease from other means (6 transfusional, 3 Caribbean, 8 unknown male) became pregnant. 4/11 of women became pregnant even though they were taking zidovudine and were counseled several times about "safe sex". One patient's pregnancy was ectopic , 2 delivered full term children, one is carrying the pregnancy to term. 7 had termination of pregnancy. Pregnancy occurred even with low helper cells (<200 cells/mm3) in 5.
Conclusion: Pregnancy continues to occur frequently (11/134) even after women learn about their HIV status. Improved techniques about "safe sex" must be developed.

M.B.P.5

Failure of Targeted Screening to Identify HIV+ Pregnant Women.

Barbacci, Marguerite; Quinn T; Kline, R; Repke, J; Chaisson, R. The Johns Hopkins University, Baltimore, Maryland U.S.A.

Objective. To assess a targeted HIV screening program for women attending an inner city prenatal clinic.
Methods. All women attending the Johns Hopkins Hospital prenatal clinic between 2/87 and 1/89 completed a questionnaire to assess HIV risk behaviors. HIV testing was offered to women with acknowledged risk factors. Testing was available to women without acknowledged risk factors, but was not encouraged. Sera from rubella specimens, were obtained from women not voluntarily tested for HIV, and tested anonymously for HIV antibodies.
Results. 1416 women were enrolled in the clinic and evaluated. The median age was 23 years (range 16-43), 86% were black and 80% single. HIV risk behaviors were reported by 241 (17%) women; 54% were partners of intravenous drug users(IVDU), 30% were IVDUs, 10% had received transfusions before 1985, 4% were partners of bisexual or known HIV+ men and 2% reported prostitution. 166/241 (69%) women with risk factors consented to HIV testing; 19 (14.3%) were HIV+. 185 women denying risk factors requested testing; 9 (4.9%) were HIV+. 473 specimens were available for anonymous testing; 136 (28.8%) from women with acknowledged risk factors. Six specimens from this sampling tested seropositive, all from women without risk factors. Overall, 34 (4.1%) of 824 pregnant women tested positive for HIV. 15 (44%) of the seropositive women had no acknowledged risk factors for HIV infection.
Conclusion. These data suggest that targeting HIV screening to pregnant women who acknowledge risk factors will fail to identify a substantial number of infected women in urban settings. HIV screening, counseling and education should be made available to all patients as part of routine prenatal care.

M.B.P.6

PREGNANCY AND ACCELERATION OF HIV-RELATED ILLNESS

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Objective To study the effect of pregnancy on the development of HIV-related illness among seropositive asymptomatic women in Port-au-Prince, Haiti.
Methods A prospective study of 178 HIV-seropositive asymptomatic women of child-bearing age (15-45 years) was undertaken from 1983 to 1988. During the study period, 34 women were pregnant — 15 at time of study entry and 19 conceived during the follow-up period. There were 31 live births.
Results The 34 pregnant women (PW) were compared with the 144 non-pregnant women (NPW) with regard to the development of HIV-related illness. For the entire cohort, mean age was 29 years, gravidity 2.4, parity 2.1 and follow-up a mean of 21.4 ± 14.3 mo. PW and NPW were comparable in these parameters and in their socioeconomic status. During the study period, 16/34 (47%) PW and 37/144 (26%) NPW developed AIDS or HIV-related illness (x^2=5.03, p=0.025) The illness rate for PW (280/1000 person-years) was not significantly higher than that of NPW (184/1000 person-years). Illness developed in 5/16 PW during pregnancy (mean, 5th month) and in 11/16 a mean of 6 months postpartum. The cumulative proportion of women becoming pregnant increased from 12% to 29% for years 1 to 5 (survival analysis). Similar analysis showed the cumulative annual percentages of NPW developing symptoms at years 1 through 5 of follow-up is 12,25,35,46, and 53% and for PW is 3,32,53,53, and 84%.
Conclusion Pregnancy in asymptomatic HIV-seropositive women is associated with an accelerated development of AIDS or HIV-related illness during pregnancy and in the postpartum period.

M.B.P.7

FACTORS INFLUENCING MATERNAL DECISION-MAKING REGARDING PREGNANCY OUTCOME IN HIV INFECTED WOMEN

Wisnia, Andrew; Buoti, C.; Douglas, C.; Cabat, T. and Rubinstein, A.
Albert Einstein College of Medicine, Bronx, N.Y. U.S.A.

Objective: To determine the factors which influence HIV infected pregnant women to complete or terminate their pregnancy.
Methods: Thirty three HIV infected pregnant women were evaluated for factors involved in decision making regarding their pregnancy outcome. An elective termination of pregnancy (TOP) was medically available for the 22 (67%) women who were identified prior to 24 weeks of gestation. All women were aware of their HIV status and received comprehensive obstetrical and medical care as well as family counseling.
Results: Six of 22 women (27%) who were eligible for TOP chose to terminate their pregnancy electively. Of 11 women who developed HIV associated symptoms before 24 weeks of gestation, 4 elected TOP (36%). Seven of 33 (21%) had previously mothered HIV infected children. Six of 7 (87%) of these women chose to complete the current pregnancy. There was no difference in the number of previous abortions, maternal health, socioeconomic conditions, marital status, education or previous history of sexually transmitted diseases between those women whose pregnancies resulted in an elective TOP or those who chose to continue their pregnancy.
Conclusion: Neither the presence of an HIV infected older child nor HIV associated symptoms in HIV infected pregnant women appear to influence decision making concerning termination of pregnancy.

M.B.P.8

THE EFFECT OF PREGNANCY ON PROGRESSION OF HIV-RELATED DISEASE

Schoenbaum EE, Davenny Katherine, Selwyn PA, Hartel D, Rogers M**, NYC HIV Perinatal Transmission Collaborative Study* et al.
Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, New York, *New York City Department of Health, New York, NY and **CDC, Atlanta, Georgia, USA.

Objective. To study the effect of pregnancy on progression of HIV infection.
Methods. Since 9/85 141 HIV infected childbearing-aged women from a methadone program enrolled in an HIV natural history study had serial T-cell subsets, physical exams and interviews about demography, sexual, medical/obstetric history since 1978. The number of pregnancies since 1978 ending in livebirths (LB), baseline CD4 and CD4/CD8, onset and duration with HIV-associated constitutional symptoms (Sx) prior to oral thrush (OT)/AIDS were examined relative to the development of OT/AIDS during follow-up (F/U).
Results. Of 141 (30% black, 56% Hispanic, 14% white) mean F/U was 2.6 yrs. None developed AIDS during pregnancy. Development of HIV related illness by LB is shown.

	No LB	1 LB	≥2 LB (range 2-4)
	n=56	n=36	n=49
Asymptomatic	25 (45%)	20 (56%)	20 (41%)
HIV assoc. Sx	13 (23%)	14 (39%)	17 (35%)
OT/AIDS	18 (32%)	2 (5%)	12 (24%)

There was no difference in the mean duration of Sx for women with no LB (1.8 yrs.) and those with LB (2.4 yrs) (p>.05). On regression analysis, OT/AIDS was predicted by earlier onset and longer duration of Sx (p=.0001) controlling on CD4 <400/mm3 and CD4/CD8 <1.0, and was not predicted by LB (p=.59).
Conclusion. These data suggest progression of HIV disease to oral thrush or AIDS is not associated with pregnancy.

M.B.P.9

PHARMACOKINETICS(PK) OF ZIDOVUDINE(ZDV) IN HIV+ PREGNANT WOMEN

Watts,Heather;Brown,Z.;Tartaglione,T.;Opheim,K.;Coombs,R.;
Burchett,S.;et al. University of Washington, Seattle, WA, USA.

Objective: To evaluate ZDV Pk in pregnancy and postpartum.
Methods. In an ongoing study, ZDV Pk were studied several times during the second and third trimester and postpartum in 3 women on oral ZDV, 200mg every four hours (10-15mg/kg/day). Multiple blood samples were obtained and ZDV conc. were measured by HPLC. Pk were analyzed using noncompartmental analysis. CBC with red cell indices, T-lymphocyte subsets, plasma and lymphocyte HIV cultures, and renal and liver function studies were done monthly.
Results.

	Gestational week			2 wk
	13-26(n=3)	27-36(n=5)	>36(n=3)	Post(n=1)
$T^{1/2}$(hr)	1.8 ± 1.0	1.1 ± 0.4	1.1 ± 0.1	0.9
C_{max}(mg/L)	0.6 ± 3.0	1.4 ± 1.0	1.5 ± 0.7	1.1
AUC(mg/Lxhr)	1.1 ± 0.06	1.3 ± 0.4	1.1 ± 0.3	1.89
FxTBC(L/kg/hr)	2.2 ± 0.2	2.4 ± 0.8	2.5 ± 0.5	1.2
$FxVd_{ss}$(L/kg)	4.5 ± 0.3	3.2 ± 0.8	3.3 ± 1.2	1.7

Cord serum ZDV levels ranged from 86 to 127% of the maternal levels. The $T^{1/2}$ of ZDV in the neonates ranged from 9 to 23.3 hours. No symptoms or lab abnormalities required a reduction of dosage. None of the babies manifested clinical or laboratory abnormalities in the neonatal period; although one baby was delivered at 36 weeks gestation by cesarean section for oligohydramnios and fetal distress.
Conclusions. ZDV Pk in pregnant women were similar to other adults except Vd_{ss} was increased. No unexpected toxicities were observed in mothers and neonates. Significant transplacental passage of ZDV was observed.

M.B.P.10

KNOWLEDGE OF HIV SEROSTATUS AND PREGNANCY DECISIONS.

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Objective: To describe pregnancy decisions among 89 HIV + women attending clinics at the Johns Hopkins Hospital.
Methods: Retrospective review of pregnancy decisions from records of 89 HIV+ women: 34 women seeking prenatal care and 55 women attending an HIV infection clinic for women.
Results: Mean age of women 24.5 years (range 19-38 years). 80% black, 18% white, 2% other. Risk factors for HIV infection: 40% intravenous drug use (IVDU), 23% IVDU sexual partner, 11% transfusion, 4% bisexual or HIV+ partner, 2% prostitution. 76/89 (89%) had previously been pregnant with 60% having ≥2 living children. Seropositivity was discovered in 36(40%) women during pregnancy, 10 of whom were identified ≤ 20 weeks gestation. Two women had elective abortions(14 and 18 weeks), one had a spontaneous abortion at 12 weeks gestation, and 7 women opted to continue their pregnancies, 6/7 delivering term infants. 14 women (16%) became pregnant after learning they were HIV+. None of these women was using contraception. One woman who delivered a term infant had an elective abortion at 10 weeks of a subsequent pregnancy. The remaining 13 women continued their pregnancies with 12/13 delivering term infants.
Conclusions: Knowledge of HIV infection was not associated with pregnancy termination or prevention of subsequent pregnancy. In light of risk of perinatal transmission and possible acceleration of HIV infection during pregnancy, education, counseling and specialized obstetrical and medical services for women with HIV infection are needed.

M.B.P.11

IMMUNOHISTOCHEMICAL DETECTION OF HIV-ASSOCIATED ANTIGENS IN FORMALIN-FIXED NEONATAL PLACENTAS

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Objective. Detection of intrauterine HIV-infection in birth placentas of HIV-exposed pregnancies.
Methods. 1. 51 formalin-fixed neonatal placentas (22 of them with additional frozen tissue) of HIV-positive mothers. 2. Application of
a: monoclonal anti-HIV antibodies (Du Pont Anti-HTLV-III p24, product 9283/7053; Niedrig anti-p24, anti-p17);
b: various macrophage markers for the typification of the antigen profile of Hofbauer cells (placental macrophages).
Results. 1. Detection of HIV antigens in Hofbauer cells of 23 formalin-fixed placentas. 2. Positive reaction of Hofbauer cells (HC) with anti-CD4, p150/95, MAC 387; a subgroup of HC reacting with anti-CD1 and anti-HLA-DR. No demonstration of CD8, Pan B and DRC.
Conclusions. 1. HIV antigens can be localized in Hofbauer cells of formalin-fixed placentas. The antigen profile of HC corresponds to that of epidermal Langerhans cells. 2. HIV-infection of HC correlates to clinical signs of infection in the child, but up to now placental infection is more frequent than the latter. 3. Therefore, placental infection indicates an increased state of risk of the newborn but does not prove infection.

M.B.P.12

HIV SEROPREVALENCE IN AN INNER CITY OBSTETRIC POPULATION.

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Objective. To determine the seroprevalence of HIV infection in an inner city maternity population.
Methods. All women presenting to obstetric clinic were provided a questionnaire regarding HIV risk factors. The type and duration of risk factor was recorded and HIV testing was performed after informed consent and counseling.
Results. Four percent of the population indicated either sexual and/or drug use risk factors. Of this 4%, 24% were seropositive. Women indicating drug use had a seroprevalence rate of 24%, those with sex partners who were drug users had a 7% seroprevalence rate, those women who admitted to both risk factors had a 33% seroprevalence rate. Women whose risk factor occurred strictly before pregnancy had a 9% seroprevalence rate. Those whose risk factor only during pregnancy had a 13% seroprevalence rate and those who had risk factors occurred both before and during pregnancy had a 40% seroprevalence rate.
Conclusion. A program of self-identification in inner city maternity population yielded an overall 1 % seroprevalence rate. A drug use history was greater risk for HIV infection than sexual history. Duration of risk behavior and recency of risk behavior appeared to increase risk for HIV infection. Screening for type and timing of risk factor may help to identify a particularly high risk population for HIV infection.

M.B.P.13 PHARMACOKINETICS OF ZIDOVUDINE IN THE NEWBORN MACAQUES

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Objective. The incidence of HIV infection in children is increasing. Administration of zidovudine (ZDV) to children (> 14mo. of age) with AIDS has already been shown to be of therapeutic benefit (1). Initiating ZDV therapy at an earlier age may increase these benefits further. In this regard, we have investigated the effect of age on the pharmacokinetics of ZDV in the newborn Macaca nemestrina.
Methods. ZDV was administered as a single IV bolus dose of 5mg/kg to newborn Macaca nemestrina during 1, 2, 4, 8, and 16 weeks of life. Blood samples were obtained frequently over the next 3h. Urine was collected over 24h. ZDV and ZDVG (the glucuronide metabolite of ZDV) in both plasma and urine were assayed by a modification of a previously published HPLC method (2).
Results. Pharmacokinetic parameters of ZDV were estimated as a function of age. The clearance of ZDV in two newborns, during week 1 of life, was found to be significantly smaller (4.85, 8.12 ml/min/kg) than that in adults (26.34 ± 2.56 ml/min/kg) but rapidly approached the latter within 6-8 weeks of life. The 24h urinary molar ratio, ZDVG/ZDV, was also smaller during week 1 of life (0.4, 0.57) than that in adults (0.86, 0.77).
Conclusions. Clearance of ZDV in the newborn is significantly smaller than that in the adults primarily due to deficiency in the ability of the newborns to metabolize ZDV to ZDVG. However, maturation of the enzyme mediating this metabolism appears to be rapid. If human newborns have a similar deficiency in the metabolism of ZDV, the dose of ZDV for this population will need to be adjusted. Similar experiments in further animals are in progress.

1. Pizzo P.A. *et al.*, NEJM 319: 889-896, 1988.
2. Good S. *et al.*, J Chromatog 431: 123-133, 1988.

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M.B.P.15 TRANSPLACENTAL TRANSFER OF ZIDOVUDINE

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Objective. Administration of zidovudine (ZDV) to HIV positive pregnant women may be beneficial to both the mother and her unborn baby. Based on this premise, experiments were conducted to ascertain if ZDV crosses the placenta in the near-term pregnant macaque, and, if it does, whether ZDV accumulates in the fetus.

Methods. ZDV was administered as a constant rate IV infusion, to two near-term pregnant macaques (155d and 165d), so as to obtain a steady-state plasma concentration of about 1 µg/ml. Blood samples were obtained simultaneously from the dam and the fetus (from the umbilical vein) to estimate the steady-state plasma concentration ratio (Cssr=Cssd/Cssf) between the dam (Cssd) and the fetus (Cssf). Plasma concentrations of ZDV and its major metabolite, the glucuronide (ZDVG), were determined by HPLC (1).

Results. The total plasma clearance, and the ratio, Cssr, for the two mother-fetus pairs studied were estimated as 29.0, 21.1 ml/min/kg, and 0.92, 0.74 respectively.

Conclusions. ZDV, when administered to near-term pregnant macaques, crosses the placenta readily and does not accumulate in the fetus. Similar experiments in further animals are in progress.

1. Good S. *et al.*, J Chromatog 431: 123-133, 1988.

Supported in part by March of Dimes Birth Defect Foundation (1-1135) and Burroughs Wellcome Inc.

M.B.P.17 ULTRASONOGRAPHIC ASSESSMENT OF FETAL GROWTH AND MORPHOLOGY IN HIV-1 POSITIVE PREGNANT WOMEN

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Objective.The evaluation of intrauterine growth and morphology of fetuses from HIV-1 + pregnant women in light of the suggested existence of a syndrome combining growth failure and craniofacial dysmorphism in infants with HIV-1 infection.
Methods.Ultrasonography(US) is a reliable method for diagnosis of growth failure and some cranial/facial anomalies in utero.Serial scans were done on prospective patients while regular scans were reviewed from retrospective patients (Siemens SL-1,3.5MHz linear array).In our ongoing study 10 HIV-1 + pregnant women (4 retrospective, 6 prospective) had a total of 24 scans.
Results.All measures (biparietal diameter:24/24, head circumference:13/13, abdominal circumference:18/18 and femur length:24/24) were within 2 standard deviations(SD) from the mean for gestational age for our population. Cerebellar transverse diameter was obtained 9 times from 4 fetuses and outer orbital diameter was measured on 6 fetuses on 13 occasions.All those measures fell within normal range (±2SD).No other anomalies were noted.
Conclusion.Our study suggests that US is a unique and readily available instrument for assessment of fetal growth/morphology in fetuses of HIV-1 + mothers.Our preliminary results suggest that in our population, growth retardation is not a prominent feature in fetuses from HIV-1 + mothers and that growth is harmonious in all aspects in those fetuses. Finally, dysmorphic growth of cranial structures does not seem to occur in utero.

M.B.P.14 A PROSPECTIVE STUDY OF HIV IN PREGNANT WOMEN.

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Objective. The aim of the study was to see whether pregnancy, in sero-positive women, could have adverse effects on the mother especially if it increased the risk of developing disease in the period following delivery.
Methods. Two groups of drug-addicted pregnant women - one group being sero-positive (28 cases) and the other sero-negative (16 cases) - were followed in a prospective fashion during pregnancy. The usual biochemical and biophysical workup and monitoring of pregnancy were carried out. Furthermore the following lab data were requested: T4/T8 and their ratio, immunoglobulins total and fractioned serum proteins, leucocite count.
Results. There has not been a significant increase in the number of pathologies of obstetrical pertinence in the sero-positive women. If, on the one hand, there was reduced and/or inverted T4/T8 ratio in 2/3 of the cases, the remaining parameters stayed within the normal range. The newborns were not significantly S.G.A. Trasmission of HIV occured in 30% of cases.
Conclusion. In the years following pregnancy our patients did not show a worsening of the disease; this was ascertained by our follow-up.

M.B.P.16 PREGNANCY AND HIV INFECTION: AN EXPERIENCE ABOUT 15 CASES

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Objective Recent reports have suggested that pregnancy may accelerate the progression of HIV infection when the baseline clinical status is severe, but in preclinical stages. To contribute in clarifying the matter, the present study focuses on 15 HIV seropositive women (14 IVDA, 1 sexual contact; mean age=26.3 yrs) who were prospectively monitored before, during and after one pregnancy (cases), as compared to 30 HIV seropositive women (23 IVDA, 7 sexual contacts, mean age = 26.5 yrs) without pregnancies and followed-up for a similar period (controls).
Results According to CDC staging (1987), 4/15 cases (27%) showed a progression from stages II to III, as compared to 6/30 control women (20%; 5 from stages II to III and 1 from stage II to IVc2). The median follow-up period resulted to be 9 (4-37) for cases and 13.5 (3-43) months for controls. A lyfe-table analysis of these data was then approached; by 12 months 20% of cases and 4% of controls would show a clinical progression; by 24 months, the corresponding figures would be 40% (cases) and 28% (controls)
Conclusion According to our preliminary data, the hypothesis that pregnancy may affect the progression rate of HIV infected women cannot be ruled out, even if no AIDS cases were observed. Progression to CDC stage III in cases seemed to be somehow faster (life-table analysis). A prolonged follow-up study on larger cohorts of women is needed to reach definitive conclusions.

M.B.P.18 HIV-ANTIGENS CAN BE DEMONSTRATED IMMUNOHISTOCHEMICALLY IN FORMALIN-FIXED MATERIAL FROM THERAPEUTIC ABORTIONS OF HIV-EXPOSED PREGNANCIES

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Objective. 1. Detection of HIV-associated antigens in formalin-fixed tissues. 2. Frequency and earliest period of morphological demonstration of HIV-infection in embryonal/fetal organs, predisposition of certain organs for infection.
Methods. 1. 10 embryonal placentas and 4 embryos (7^{th}-12^{th} week of gestation). 2. 12 fetal placentas and fetuses (15^{th}-27^{th} week of gestation). Demonstration of HIV-associated antigens by monoclonal antibodies (mab), one of them commercially available (Anti-HTLV-III p24, Du Pont 9283/7053), the others gifts of Dr. Niedrig, Robert Koch Institut/Berlin (anti-p24, anti-p17). Prior to the application in abortions the mabs were tested in formalin-fixed HIV-infected and non-infected H9 cell lines (Dr. Pauli, Robert Koch Institut) and in biopsy/autopsy material of lymph nodes.
Results and Conclusions. 1. HIV-associated antigens can be demonstrated in formalin-fixed abortion material (8/22). 2. Earliest demonstration of HIV antigens in the 16^{th} week of gestation. 3. The Hofbauer cell (fetal macrophage) plays a central role in the transplacental chain of infection from mother to fetus.

M.B.P.19

Seroprevalence of HIV-1 and HTLV-I among pregnant women in Newark, NJ.

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Objective. To determine the seroprevalence of HIV-1 and HTLV-I in pregnant women delivering at a University Hospital in Newark, NJ, which serves primarily a local, inner city minority population (80% black, 12% hispanic and 8% white).
Method. Between 9/87 and 9/88 samples of serum were obtained at the time of delivery from maternal, cord, or infant blood. Samples were anonymously tested for the presence of antibodies to HIV-1 and HTLV-I by using ELISA (Abbott) and Western Blot (Biotech/Dupont).
Results: A total of 2,619 deliveries occurred and 2,205 samples were available for HIV-1 (84%) and 2,067 (79%) for HTLV-I testing. HIV-1 ELISA was reactive in 6.2% (136) and Western blot was reactive in 98/136 (72%) yielding a confirmed seroprevalence of 4.4% for HIV-1. HTLV-I ELISA was reactive in 2.1% (44) and Western blot was reactive in 27/44 (61%) yielding a confirmed seroprevalence of 1.3% for HTLV-I. Of the HIV+, 10 (10.2%) were also HTLV-I+.
Conclusion. Women delivering at the institutions studied are at risk of 1/22 for HIV-1, 1/77 for HTLV-I and 1/220 for co-infection. These data suggest that vertical transmission to newborns of HIV-1 and HTLV-I are important risks in our communities.

M.B.P.20

PATHOLOGY AND HIV EXPRESSION IN TERM PLACENTAS FROM SEROPOSITIVE WOMEN.

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Objective. To compare the pathology of term placentas from seropositive HIV infected and seronegative women using routine histologic, immunohistocytochemical, and in situ nucleic acid hybridization techniques.
Methods. Term placentas of seropositive and seronegative women were evaluated by hematoxylin and eosin (H & E) staining for evidence of vasculitis (VA), villitis (VI), chorionitis (CH), and chorioamnionitis (CA). They were also examined by immunoperoxidase (IP) staining using monoclonal anti-p24 antibody. Decidua (DE), trophoblasts (TR), membranes (ME), and uterine glands (UG) were evaluated. Some of these were tested using IP and in situ nucleic acid hybridization (NAH) techniques using an RNA probe complementary to the 3'LTR and envelope region of HIV-1.
Results.

	Histology				Immunoperoxidase				IP+NAH
	VA	VI	CH	CA	DE	TR	ME	UG	TR
Seropositives	1/45	0/45	24/34	1/34	0/24	1/41	0/18	0/7	1/12
Seronegatives	0/21	0/21	9/17	0/17	0/10	0/19	0/7	0/4	0/8

Conclusion. HIV infection does not appear to cause significant pathologic abnormalities in the term placenta. HIV antigens can be identified rarely in trophoblastic tissue. HIV nucleic acid can be found in these trophoblastic cells also containing HIV antigen. Examination of the term placentas from HIV infected women has failed to clarify the mechanism of transmission of this virus from mother to fetus. Conceivably,tissue from earlier gestational placentas may be more informative.

M.B.P.21

DIFFERENCES IN IMMUNOSUPPRESSION DURING PREGNANCY IN HIV-INFECTED WOMEN

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Objective: To evaluate the natural course of HIV-infection during pregnancy
Methods: In a comparativ study 54 HIV-infected and 50 HIV-negative pregnant women were investigated every 2 - 4 weeks on clinical status and the following immunological parameters: T-cell counts: CD2, CD4, CD8; Immunoglobulines: IgG, IgM, IgA, IgE; Circulating-immunkomplexes: IgG, IgM.
Results (selection): On the basis of the immunological parameters the investigated collective of HIV-infected pregnant women was divided into 4 groups: Group 1: no abnormal immunological findings. Group 2: CD4/CD8 ratio < 0.8, CD4-cells > 400. Group 3: CD4-cells 250 - 400. Group 4: CD4-cells < 250.

	Controls n=50	Group 1 n=11	Group 2 n=25	Group 3 n=13	Group 4 n=5
CD4 decr.>10%	27	9	23	12	5
CD4 decr.>40%	0	3	12	9	2
CD2 decr.>40%	0	2	9	8	5

Discussion: The greatest extend of immunosuppression during prenancy in HIV-infected women was seen in group 2 and 3 (decrease of CD4-cells > 40%) and group 4 (decrease of CD2-cells > 40%). The majority of women showed a postpartal regeneration. 6 women had a continous loss of CD4-cells after delivery.

M.B.P.22

EFFECT OF PREGNANCY ON THE PHARMACOKINETICS OF ZIDOVUDINE

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Objective. The incidence of HIV infection in pregnant women is increasing. Thus, administration of zidovudine (ZDV) to pregnant women may be of benefit to them and to their unborn babies. To determine the effect of pregnancy on the pharmacokinetics of ZDV, experiments were conducted on macaques (Macaca nemestrina) at term and after delivery.

Methods. ZDV was administered as a single IV bolus dose (10mg/kg) to two macaques, at term and 1 week after delivery. Blood samples were collected frequently over the next 4h. Urine was collected over 24h. ZDV and ZDVG (the glucuronide metabolite of ZDV) in both plasma and urine were assayed by HPLC (1).

Results. The total plasma clearance (CL), steady-state volume of distribution (Vss) and the terminal half-life of ZDV were estimated. At term, these parameters, for the two animals studied, were estimated as 24.6, 27.6 ml/min/kg, 903, 1314 ml/kg, and 37.4, 45.5 min respectively. In the non-pregnant status, these parameters were 27.8, 30.1 ml/min/kg, 727, 1256 ml/kg, and 39.9, 34.8 min respectively.

Conclusions. The pharmacokinetics of ZDV do not appear to be altered by pregnancy. Similar experiments in further animals are in progress.

1. Good S. *et al.*, J Chromatog. 431: 123-133, 1988.

Supported in part by March of Dimes Birth Defect Foundation (1-1135) and Burroughs Wellcome Inc.

M.B.P.23

SEROPREVALENCE IN A PREGNANT MULTIETHNIC POPULATION

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Objective. To determine HIV-1 seroprevalence by antibody status in women delivered at a medical center serving the indigent, multi-ethnic population of Miami, Florida, Florida, U.S.A.
Methods: From 7/1/88 to 12/31/88, patients admitted to the labor suite had extra blood drawn and stored for 24 hours or less. They were interviewed, counselled, and offered HIV antibody testing after delivery. The samples of those who refused or were discharged before interview were blinded. Information obtained directly from patients included demographics and the following risk factors: drugs (cocaine, crack, IV), sexual partners, bisexuality, prostitution, blood/factor transfusions.
Results: Of the 7,400 offered testing, 92.7% gave consent, of whom 2.3% were seropositive. Of the 3.7% refusing testing, 4.5% were HIV-positive (chi square analysis p <.013), suggesting a bias. Of the remainder, 2.0% were positive. The age distribution of the seropositives matched the obstetrical population. Teens were 16.5% of the seropositives (2.3% - <16 years old). Seropositive Black Americans predominated (58%), 52.25% were ≤25 years of age, compared to Haitians (30.37%), 57.6% were >25 years old (p <.0005) Seropositivity also correlated with drug use, multiple partners, and risk status, p <.0005 each. However, 45.6% of the seropositives had no admitted currently accepted risk factors.
Conclusions: Screening should be offered to all pregnant women, certainly in our population. Sexually active teenagers are at risk of infection, especially the Black American. While accepted risk factors are associated with seropositivity, no apparent risk factors account for almost half these infected patients, implying heterosexual transmission as the largest identifiable factor. Education for prevention should begin before sexual maturation.

M.B.P.24

A PROSPECTIVE STUDY OF THE MENTAL AND MOTOR DEVELOPMENT OF INFANTS BORN TO HIV INFECTED INTRAVENOUS DRUG USING MOTHERS

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Objective. To describe prospectively the mental and motor development of infants born to IV drug-using mothers exposed in utero to HIV.
Methods. Quarterly assessment on the Bayley Scales of Infant Development which yield a standardized Mental Development Index (MDI) and a Psychomotor Development Index (PDI). Three groups of infants: CONTROL (HIV-negative mother, N=15), INFECTED (HIV-positive mother, HIV-positive child, N=10), and UNINFECTED (HIV-positive mother, HIV-negative child, N=10).
Analyses. Comparison of MDI and PDI scores of the three groups at ages 3,6, 9,12, and 15 months: a) groups means, and b) individual developmental curves.
Results. INFECTED infants showed lower MDI and PDI means with age between 3 and 12 months, with some improvement at 15 months, in contrast to both non-infected groups which did not continue to decline. However, while the CONTROL group performed around normal MDI and PDI, the UNINFECTED group hovered about 1 standard deviation lower.
Individual developmental curves showed that among the best developing infants were 53% of the CONTROL, 10% of the INFECTED, and 20% of the UNINFECTED. Among the poorest, 7% were CONTROL, 70% were INFECTED, and 40% were UNINFECTED.
Conclusion. The mental and motor development of HIV infected children declines over the first 15 months of life. The mental and motor development of infants exposed prenatally to HIV but not infected is poorer than that of CONTROL children not so exposed.

M.B.P.25 INFLUENCE OF GESTATION ON HIV INFECTION.

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Objective. In order to compare the influence of time alone to the influence of time plus pregnancy on infection with HIV, we report results of a three year follow-up of two groups of women. (A) : 60 HIV antibody positive, asymptomatic, pregnant patients (34 live births, 26 medically indicated abortions) (B) : 68 age and sex matched HIV antibody positive, asymptomatic patients without gestation.
METHOD. In these two populations, the following parameters were compared : clinical stage, sedimentation rate, white cell count, relative lymphocyte count, relative and absolute T4 lymphocyte count, the T4/T8 ratio, the serum level of IgA, and the presence of the P24 HIV antigene. These parameters were measured during pregnancy, at termination of pregnancy, and one, two, and three years thereafter.
RESULTS. No statisticly significant differences between the two groups were found. In 20 % of the pregnant population, we found a transient appearance of the HIV P24 antigene during pregnancy.
CONCLUSION. Over a period of three years, no difference in the progression of HIV disease was observed between a population with and one without pregnancy. The transient appearance of HIV P24 antigene during pregnancy, does not seem to be a poor prognostic marker for progression of HIV disease.

M.B.P.26 EFFECTS OF HIV INFECTION ON PREGNANCY.

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OBJECTIVE. We compared the complication-rate during pregnancy and the perinatal period among HIV antibody positive former drug addicts (group A), 68 HIV antibody negative present drug addicts (group B), and 3017 patients without a history of HIV infection or drug addiction (group C). The purpose of this study was to define the influence of HIV infection on pregnancy.
METHODS. We assessed the following parameters : fever during pregnancy, hydramnios, fetal malformations, fetal growth retardation, premature labor, the APGAR score, and postpartal complications.
RESULTS (in %).

	Fever	hydramn.	malform.	growth ret.	Prem. labor	Apgar < 7	postpart. complic.
A	16,2	5,4	5,4	10,8	16,2	10,8	2,7
B	7,4	1,5	5,9	25,0	14,7	8,8	2,9
C	2,3	1,4	2,6	8,7	4,2	6,0	3,2

CONCLUSION. HIV infection appears to have no influence on the course of pregnancy, and does not increase fetal mordidity. Complications such as fetal malformation, growth retardation, and premature labor seem to be more closely related to drug addiction and concomitant low socio-economic status, than to infection with HIV.

M.B.P.27 PREGNANCY OUTCOME IN WOMEN HIV INFECTION IN PUERTO RICO IN A POPULATION OF PREDOMINANT HETEROSEXUAL TRANSMISSION

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Findings. The prevalence rate was 1.47%, the most common risk factor was being a sexual partner to an IV drug user (65%) followed by IV drug use by the patient (27%). The mean age was 24 and the mean gravidy was 3.3 . Most had stable relationships by marriage or consensual union 71%. The mean number of lifetime sex partners was 2.6 (excluding patients who were prostitutes). The most common prenatal complication was diabetes mellitus (12%) followed by preterm labor 18%. Smoking was reported by 58% of patients. Mean weight gain during pregnancy was 20 lbs. Cesarean section rate was 15%. Perinatal mortality was 9.5% and post-neonatal mortality 4.2%.

Mean birth weight was 2,909 g, although 41% of the babies weighed 2,500 g. 9% of the patients elected pregnancy terminantion and 30% underwent post partum sterilization. 7% of cases progressed to ARC/AIDS. Maternal mortality was also high (2.5%) and exclusived due to AIDS.

Conclusion. Perinatal as well as post-neonatal mortality is increased in the offspring of seropositive pregnant women. Maternal mortality is also increased significantly in this group of young women. Since the two maternal deaths occurred within one year post partum in women whose neonates had congenital pneumonia, we may identify infection of the fetus as a risk factor for development of over desease in the mother.

M.B.P.28 COMPARISON OF LIFESTYLES AND HIGH RISK SEXUAL BEHAVIOR BETWEEN HIV-SERO-POSITIVE AND HIV-SERO-NEGATIVE PREGNANT WOMEN

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Objective. To compare the frequencies of different types of high risk sexual behavior and lifestyles during pregnancy in sero-positives vs sero-negatives to H.V.
Methods. Personal interviews obtaining sexual histories and risk factors were performed in 81 HIV positive and 67 sero-negative pregnant women.

Findings. Age, gravidity, marital status, weight gain during pregnancy and number of prenatal visits did not differ among groups.

Anal intercourse was significantly more common by sero-positive patients, while there were no differences in oral intercourse with or without ejaculation (22% vs 25%).

Cigarette smoking was significantly more frequent among the HIV positive women (56% vs 24%, as was the relative frequency of sexually transmitted diseases (25% vs 6%). Significantly more sero-positive pregnant women had risk factors for HIV transmission than sero-negatives (76% vs 9%). Of those with risk factors, more sero-positive women were sex partners of IV drug users (65% vs 3%).

M.B.P.29 Reproductive History (RH) of HIV Antibody Positive (HIV Ab+) Women Followed in a Prospective Study in Newark, NJ, USA

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Objective. To describe reproductive hx of a cohort of HIV Ab+ women followed in a prospective study.
Methods. Pregnancy information on 43 HIV Ab+ women whose children are enrolled in a prospective study was obtained by interviewing mothers directly (n=30) or the child's guardian (n=13). Mean follow-up was 12 mo (range 2-20mo).
Results. Seven women had one subsequent pregnancy and 2 were pregnant twice.

Pregnancy	Mother	Pregnancy Status	Index of Child's age time of pregnancy
1	A	Terminated	12 mo
2	B	Terminated	4 mo
3	B	Terminated	18 mo
4	C	Terminated	8 mo
5	C	Continued	13 mo
6	D	Continued	4 mo
7	E	Continued	4 mo
8	F	Terminated	2 mo
9	G	Terminated	5 mo

Conclusion. Despite counseling for risks associated with HIV, a high percent of HIV Ab+ women in this cohort became pregnant an average of 8mo after delivering an HIV Ab+ child. Future studies will need to address knowledge of HIV seropositivity and its impact on rate of pregnancy among women in a high risk area for HIV.

M.B.P.30 DRUG ABUSE AND PREGNANCY: CONCOMITANT RISK FACTORS FOR HIV INFECTION

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Women who are intravenous drug users or who are partners of intravenous drug users engage in behaviors that put them at high risk for developing human immuno deficiency virus infection. When the woman is pregnant, there is the additional problem of perinatal transmission to her unborn child. Data which included socioeconomic and psychological profiles as well as sexual and drug use habits was collected on 90 drug dependent pregnant women enrolled in a comprehensive treatment program in a study aimed at reducing HIV infection among IV drug abusing women and accordingly the perinatal transmission of AIDS. All the clients consented to confidential ELIZA tests on initial evaluation and every 3 months while pregnant. Psychosocial profiles revealed that 53% had been subjected to physical or sexual abuse; 11% were homeless; and 46% were adult children of alcoholics or children of substance abusers. Drug histories showed that these women were addicted an average of 10 years: 62.5% were polydrug abusers and 35% used cocaine alone; 39% of the women are current IV drug users. Of these 90 women enrolled, 4.5% came into the project HIV positive, but without symptoms of HIV infection. None of the other 95.5% who tested negative at the outset seroconverted while participating in the project. As a result of this project, it is apparent that counseling women with regard to these specific risk factors must continue to reduce the incidence of perinatal HIV infection.

M.B.P.31 EQUALLY POOR RESPONSE TO TETANUS VACCINE IN HIV SEROPOSITIVE AND SERONEGATIVE MOTHERS IN ZAIRE

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Objective. To determine if current WHO recommendations (one dose in the last trimester if the mother has been vaccinated in the previous 3 years otherwise 2 doses with the last one at least 15 days before delivery) for use of tetanus toxoid vaccine (TTV) in pregnant women are appropriate for HIV(+) women in Zaire.
Methods. Before and after(at the time of delivery) TTV samples were obtained from 111 HIV(+) women and 207 HIV(-) women at a Kinshasa antenatal clinic. Absolute T4 lymphocyte counts (HIV(+) women only) and anti-tetanus antibody titers (ATAT) measured by an ELISA capable of detecting 0.0008 IU/ml, were determined on the paired blood samples. ATAT were classified as non-protective ((0.01 IU/ml), borderline (0.01-0.04 IU/ml) or protective ()0.04 IU/ml).
Results. Maternal pre- and post-ATAT by serostatus

	Before TT vaccine		After TT vaccine	
ATAT	HIV(+)	HIV(-)	HIV(+)	HIV(-)
Non-Protective	45%	26	15	13
Borderline	20	21	14	8
Protective	35	53 (p(.05)	29	19 (P=NS)

(p values compare pre-vaccination ATAT in HIV(+) and HIV(-) mothers and post-vaccination ATAT in the same groups)
In HIV(+) women, HIV-induced immunosuppression (ABS T4 counts) did not correlate with ATAT in pre- and post-vaccination determinations.
Conclusion. A total of 24% of the pregnant women (29% of 111 HIV(+) women and 21% of 207 HIV(-) women (P=NS) with documented appropriate receipt of TTV at a Kinshasa antenatal clinic had less than protective levels of ATAT at the time of delivery. Inability to document a difference in TTV response between HIV(+) and HIV(-) mothers suggests that current TTV practices should be reviewed for both groups of women.

M.B.P.32 CARACTERES EPIDEMIOLOGIQUES ET EVOLUTION CLINIQUE DE 45 PATIENTES ENCEINTES SEROPOSITIVES POUR LE VIH.

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* Centre d'Hémobiologie Périnatale;
** Service des Maladies Infectieuses, Hôpital St-Antoine;
*** Service de gynéco-obstétrique, Hôpital St-Antoine, Paris, France.

Objectif. Etudier les caractères épidémiologiques et l'évolutivité clinique de deux populations de femmes enceintes séropositives (grossesse menée à terme (G) et interruption médicale de grossesse (I.M.G.)) de juin 1986 à décembre 88. Patientes. L'étude concerne 20 G, 22 IMG, 2 FCS et 1 GEU. Toutes les patientes ont au moins un facteur de risque et sont suivies à la maternité de l'hôpital St-Antoine qui fait partie de l'enquête épidémiologique multicentrique parisienne. Résultats. Il n'y a pas d'augmentation du nombre de patientes entre 1987 et 1988 (19 et 20). Les toxicomanes dominent (24/45) dont la plupart sont d'origine française (20/24). La décision d'interruption de grossesse ne parait être influencée ni par la toxicomanie (11/23 G, FCS et GEU, 12/22 IMG) ni par la parité (multipare : 9/23 G, 11/22 IMG), ni par l'annonce de la séropositivité (13/20 G, 11/21 IMG). Le suivi clinique est mauvais pour des raisons socio-économiques. Parmi les patientes asymptomatiques, sur 18 G, 4 (22,2%) évoluent vers le stade IV du CDC en fin de grossesse et sur 20 IMG,5 (25%) évoluent vers ce stade dont un décès, dans les 6 mois qui ont suivi.Parmi les 4 patientes au stade IV (2 G et 2 IMG), il n'y a pas d'évolutivité clinique dans ce délai. Conclusion. Le fait d'être enceinte parait augmenter le risque de passage au SIDA. Il ne semble pas que ce risque soit diminué avec une IMG.

M.B.P.33 HIV-1 SEROPREVALENCE AND RISK BEHAVIOR ARE INCREASED IN PREGNANT WOMEN RECEIVING NO PRENATAL CARE

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Objective: To assess HIV-1 seroprevalence and risk behavior in women receiving prenatal care (PNC) or delivering with no prenatal care (NC) at an urban county hospital in an area with a high prevalence of HIV-1.
Methods: Ongoing seroprevalence studies of pregnant women began in January 1988. All PNC and NC patients completed risk assessment/demographic questionnaires coded to sera anonymously tested for antibodies to HIV-1.
Results: As of January 1989, 178/1066 (16.7%) PNC and 31/65 (47.7%) NC patients reported ≥ 1 HIV-1 risk behavior.

Behavior (answered yes or maybe)	PNC: n = 1066	NC: n = 65
Self IVDU	30 (2.8%)	14 (21.5%)
Partner IVDU	98 (9.2%)	15 (23.1%)
Multiple Partners (≥ 5/yr)	72 (6.8%)	17 (26.2%)
Bisexual Partner(s)	68 (6.4%)	9(13.9%)
Hemophiliac/transfusion partner(s)	75 (7.1%)	8 (12.3%)
Self/Partner/Child AIDS or HIV +	47 (4.4%)	7 (10.8%)

HIV-1 seroprevalence was 0.7% in PNC and 1.5% in NC patients. All seropositives reported ≥ 1 risk behavior on the risk assessment questionnaire.
Conclusions: Women delivering with NC were more likely to report risk behavior for HIV-1 and had more than twice the HIV-1 seroprevalence as women with PNC (1.5% vs 0.7%). These data suggest that women with no prenatal care may be at increased risk for perinatal transmission of HIV-1.

M.B.P.34 DOES PREGNANCY INFLUENCE DISEASE PROGRESSION IN HIV POSITIVE WOMEN.

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HIV Pregnancy study group, Paris, France.

Objective : The pejorative role of pregnancy on the future prognosis of HIV infection in women is contreversial and difficult to assess in the absence of comparative groups.
Methods : Between october 1985 and october 1988, we conducted a follow up of cohort of 3 groups of women. Group 1 : Pregnant women with deliveries (n = 97), group 2 : Pregnant women with induced abortion, group 3 : non Pregnant women. The three groups were studied for risk factors CDC classification status, immunological and virological parameters.
Results : A few patients were last of follow up, althrough 55 % were drug addicts. None of the patients was initially in group IV of CDC.
1° The evolution through group IV of CDC was respectively 87 → 13 in group 1, 82 → 3 in group 2, 121 → 7 in group 3.
2° Active HIV infection was defined as CD4 ∠ 150/mm^3, Ag p24 positive and antibody anti p24. The evolution through "active state" was respectively with more than 18 months of surveillance : 5 → 18 in group 1, 8 → 11 in group 2, 11 → 15 in group 3.
3° Identical results were observed with the primipar a women.
Conclusion : These preliminary results suggest that pregnancy with delivery induces an adverse effect on clinical and immunological parameters in HIV women.

Infections opportunistes diverses
Miscellaneous Opportunistic Infections

M.B.P.35 Quantification of glomerular and tubular marker proteins in urine of hemophiliacs with positiv HIV antibody test

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Renal complications in acquired immuno deficiency syndrome (AIDS) are a common observation. It is however not clear whether the so called AIDS-related nephropathy is a primary event of viral infection or secondary due to opportunistic infections or other accompanying complications (malignancies, heroin use). We investigated 56 patients with Hemophilia A 42 were HIV antibody positive (Group B) between 2 and 7 years (average 4.75 years). According to the CDC classifications system 20, 16, and 6 patients belonged to group II, III and IV respectivel To detect glomerular and tubular renal dysfunction we applied a new automated program of 5 urinary parameters (total protein, IgG, albumin, alpha-1-microglobuline and N-acetyl-β-D-glucosaminidase (NAG) as well as creatini and alpha-1-microglobuline in serum. All urinary parameters were related to creatinine to correct for different excretion rates.
Serumcreatinine and alpha-1-microglobuline were normal in all patients of both groups. All urines but 2 were negative by test strip for albumin. These 2 patients (Group B) had manifest proteinuria of complete tubulo-glomerular type. Of the remaining 40 Group B patients 8 had slight elevations of urinary IgG excretion, of whic 3 had a simultaneous increase in urinary albumin and only one had signs of tubular proteinuria. The dysproteinurias were evenly distributed over Group II and III (CDC) patients. 4 of the Group IV patients were also normal A statistically significant difference between Group A and B was found only for urinary IgG.
Our results show that hemophilic patients without and years after infection with the HIV virus have no evidence of glomerular and tubular dysfunction. The assumption that AIDS-related nephropathy is not caused by direct viral invasion of the kidney is supported by our observation. Elevated levels for uinary IgG in absence of elevated urinary albumin are more likely of postrenal rather than of glomerular origin due to other illnesses such as opportunistic infections.

M.B.P.36 ISOLATION OF A BACTERIUM FROM EPITHELIOID ANGIOMATOSIS.

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Objective. To isolate a bacterial organism from lesions of Epithelioid Angiomatosis, a widespread eruption of reddish, vascular papules we have recently described, seen in patients with AIDS or AIDS-Related Complex. A bacterial etiology has been postulated for this condition, and organisms have been demonstrated within skin lesions using special silver stains as well as by electronmicroscopy. This bacterium closely resembles and may represent the same organism which causes cat scratch disease.
Methods. Lesions from a patient with epithelioid angiomatosis were placed in brain-heart infusion supplemented broth at room temperature and from this a pleomorphic gram negative short bacillus measuring approximately 0.3µl in diameter to 1-2µl in length was isolated. By light microscopy, the bacteria were noted to cluster in groups of variable sizes and bacilli formed buds at the ends of individual cells.
Results. Electronmicroscopy of a cutaneous lesion demonstrated a population of bacilli located extracellularly between collagen bundles of the dermis. The organisms (0.5µl to 1µl) possessed a trilaminar membrane but no well-defined cell wall. There was marked pleomorphism and buds of various sizes were noteworthy.
Conclusion. This organism is likely to be the causative agent in this cutaneous manifestation associated with AIDS and HIV infection.

M.B.P.37

AZT's EFFECT ON RESPONSES TO PNEUMOCOCCAL VACCINE (PV).

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Objective: To evaluate AZT's effect on PV-induced antibody (Ab) responses since they are suboptimal for untreated AIDS patients (pts).
Methods: PV was administered to 19 subjects receiving AZT and 4 AIDS pts not treated with AZT. Ab titers to 12 P capsular antigens were measured by RIA for all pts pre- and 30 days post-PV and for certain AZT pts prior to AZT institution (10 pts) and/or 8 mos post-PV (13 pts).
Results: Aggregate Geometric Mean Ab Titer ± Dev. (ng AbN/ml)

Group	Pre-PV	30-day Post-PV	8 month Post-PV
No AZT	700.7 ± 2.0	763.8 ± 2.1	---
AZT	564.1 ± 2.0	942.9 ± 2.3	594.9 ± 4.7

Pre-AZT Ab levels (477.2±1.8) were similar to pre-PV levels (533.3±3.5) for 10 pts treated with AZT for mean 13 wks (range 9-21) pre-PV. "Protective" levels (post/pre ratio ≥ 1.4 & Ab titer >300 ng AbN/ml) were achieved for AZT (ratio 1.7) but not the non-AZT group 30 days post-PV. For AZT pts, 30-day post-PV type specific levels were "protective" for types 4,6A,7F,8,9N,14,18C, 19F,23F but not 1,3 or 12F. "Protective" aggregate levels were present at 8 mos for 6/13 pts alive (765.8±2.8; ratio 1.5) but not for the 7 pts dead (564.3±4.9; ratio 1.0) 14 mos post-PV.
Conclusions: AZT has no effect on Ab levels prior to vaccination. Vaccinated AIDS/ARC pts receiving AZT develop "protective" levels at 30 days, whereas, those not receiving AZT do not. Patients with waning of aggregate Ab levels at 8 mos have poor short term survival.

M.B.P.38

Growth of the Cat Scratch Disease Bacillus from Skin lesions and blood in two HIV positive men.

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We report 2 patients who presented with fever and disseminated pustular and nodular skin lesions which on biopsy revealed epithelioid angiomatosis. One patient also had lymphadenopathy. Both biopsies showed pleomorphic organisms in the Warthin-Starry silver stain and electron microscopy of one biopsy was positive for coccobacillary forms consistent with the Cat Scratch Disease bacillus (CSB).

Histopathologically, the lesions presented a pattern which resembled that of a pyogenic granuloma with anastomosing vessels and an acute inflammatory infiltrate. On occasion, a dermal vascular component was also noted. No evidence of Kaposi's sarcoma was noted.
Culture of the skin lesions in both patients yielded gram negative pleomorphic bacilli in biphasic Brain Heart Infusion medium grown at 30ºC in 2 weeks. Blood culture from one patient yielded identical appearing organisms in Bactec blood culture 6A aerobic vial incubated at 30ºC which slowly reached a positive growth value of 30. The anaerobic vial showed a negative reading after 4 months. Erythromycin therapy led to improvement in one patient and clearing of all lesions in the second patient.

We recommend that the microbiological work-up of HIV positive patients with disseminated skin lesions should include special smears and cultures for the CSD bacillus.

M.B.P.39

EMPIRIC ANTIBIOTHERAPY OF FEBRILE EPISODES IN HIV CARRIERS

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Objective : to test the efficacy of an Empiric Antibiotherapy in HIV1 infected to cure bacterial infectious of febrile episodes before an opportunistic infection is documented.
Methods : in a serial of 40 febrile episodes (temperature ≥ 38°5 more of 48 hours) whitout any clinical sign of opportunistic infection and before bacteriological results is obtained we test 2 arms of therapy in a randomized study : Arm A : PEFLOXAXIN 400 mg IV/12h plus TOBRAMYCIN 3,5 mg/kg/12h IV. Arm B : CEFALOTIN 1g/IV/12 h plus TOBRAMYCIN 3,5mg/kg/12h. If an opportunistic infection occurs : the study is stopped. All patients were infected with HIV 1, group III and IV of CDC'S.
Results : At the moment, 36 episodes evaluable ; in 28 cases fever was sensible to antibiotics and a bacterial infection was documented in 9 cases bacterial infection was highly probable in 12 cases ; opportunistic fungal systemic infection was associated in 8 cases ;AMPHOTERICIN B is added to antibiotics to obtain apyrexia.Failure was observed in 8 cases ; in those cases an opportunistic infection was documented several days after therapy. No difference is observed between arm A ou B.
Conclusion : an empiric antibiotic combination therapy seems to be effective to treat febrile episodes in HIV carriers ; in most of our documented bacterial infections, such combination as PEFLOXAXINE or CEFALOTIN plus TOBRAMYCIN is in vitro and in vivo sensible. This empiric strategy can prevent the dissemination of co-infection with bacterial staine frequently isolated in immunocomprimised hosts especially in intra veinous drug addicts (32/40 in this serial).

M.B.P.40

COMPARATIVE STUDY OF CLINICAL AND PATHOLOGICAL DIAGNOSIS IN 35 PATIENTS WITH AIDS.

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Objective.Analysis of the clinical and laboratory diagnosis comparing to the pathological findings.
Methods.35 patients were studied:25(71,4%)homosexual men, 4 .bisexual,1haemophiliac,1 heterosexual,2 drug addicts,1 recipient of blood transfusion and 1 child of antibody positive mother (2,8%).All the patients had evidences of imunological deficiencies and sorologic tests positives (Elisa and Western Blott).
Results.The average days of permanence of these patients in the hospital were 39,3 days.Many opportunistics infetion were recognized clinically:M.Tuberculosis in 12 patients(34,2%),P.Carinii in 9(25,7%),T.gondii in 4(11,4%),Herpes simplex in 3(8,5%) and C.neoformans in 3(8,5%).In the pathological exams the M.Tuberculosis were found in 10 patients(28,5%),M.avium in 3(8,5%),T.gondii in 8(22,8%),C.neoformans in 3(8,5%) and CMV in 11(31,4%).
Conclusion.M.Tuberculosis is often found in these patients,determined by clinical laboratory and pathological findings.

M.B.P.41

APPORT DE LA TOMODENSITOMETRIE AU DIAGNOSTIC DES COMPLICATIONS PULMONAIRES DU SIDA DE L'ADULTE

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Objectifs: évaluer l'apport de la Tomodensitométrie (TDM) au diagnostic précoce et au suivi des atteintes pulmonaires au cours du SIDA de l'adulte.
Méthode: reprise des dossiers des 300 derniers patients hospitalisés. Parmi ceux qui présentaient des complications pulmonaires, détermination de l'apport de la TDM.
Résultats: dans les atteintes en foyer, la TDM n'est le plus souvent d'aucun apport supplémentaire par rapport au simple cliché pulmonaire.
Par contre dans les atteintes diffuses elle peut être déterminante en reconnaissant l'infiltrat alvéolaire sec de la pneumocystose et son évolution éventuelle vers l'emphysème centro-lobulaire parfois compliqué de pneumothorax, l'alvéolite oedémateuse allergique, la miliaire tuberculeuse interstitielle, ou les nodules disséminés du sarcome de kaposi.
Conclusion: le caractère atraumatique et la précision anatomique de la TDM millimétrique sans injection en font, avant le lavage alvéolaire, ou si celui-ci n'est pas possible, un élément essentiel du diagnostic et du suivi thérapeutique.

M.B.P.42

EVOLUTION OF LUNG HIV-SPECIFIC CTL ACTIVITY AND CLINICAL CORRELATIONS.

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OBJECTIVE : We previously described lung HIV-specific class-I-restricted CTL, essentially in patients at early stages of HIV disease. In this study,1) we prospectively evaluate the level of anti-HIV CTL activity during the course of the disease; 2) we analyse both its consequences on lung function and its clinical relevance.
METHODS : A cohort of 41 HIV-positive patients was evaluated with long-term follow-up studies for 17 of them. The specific cytolytic function of lung lymphocytes was tested on autologous alveolar macrophages and cell lines expressing HIV proteins. The lung function was simultaneously evaluated.
RESULTS : The intensity of alveolar CTL lysis specific for HIV was markedly reduced in ARC and AIDS patients when compared with healthy seropositive carriers and patients with the lymphadenopathy syndrome ($p<0.01$), although a weak activity could still be detected in a few AIDS patients. In sequentially studied patients, we observed a progressive decline in CTL activity as the clinical status deteriorated.In another hand, in those patients with significant CTL activity, some respiratory disorders could be defined including minor respiratory symptoms, interstitial pneumonitis and abnormalities of gas exchanges.An improvement of lung function was paradoxically observed in some patients several months before the onset of an opportunistic lung infection , as a parallel with the disappearence of CTL activity.
CONCLUSIONS :Our data strongly suggest a protective role for HIV-specific CTL although they can be deleterious to the function of the lungs.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

M.B.P.43

THE VALUE OF GALLIUM-67 SCAN IN THE DIAGNOSIS OF LYMPHADENOPATHY IN SYMPTOMATIC HIV-INFECTED PATIENTS.

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Objective. To study the utility of chest gallium-67 citrate scan (GCS) in the differential diagnosis of enlarged lymph nodes in HIV-infected pts with constitutional symptoms.

Patients and methods. Nineteen HIV-positive pts (15 drug addicts and 4 homosexuals) with fever and/or weight loss and localized or generalized lymphadenopathy were evaluated with chest GCS. A positive GCS was considered when an increased focal uptake in cervical, axillary and/or supraclavicular nodal areas was observed. Subsequently, a lymph node biopsy was done in all pts.

Results. In 9 pts GCS disclosed an increased uptake in one or more nodal areas. One of them had follicular hyperplasia while in the other 8,biopsies showed ganglionar mycobacteriosis (7 M. tuberculosis and 1 non-specified atipical mycobacteria). Five of them had also mediastinal uptake. Ten pts had negative GCS. Biopsies showed follicular hyperplasia in 9 and Kaposi's sarcoma in the remainder.

Conclusion. This preliminary study suggests that in HIV-infected pts with constitutional symptoms and lymphadenopathy, a negative GCS probably represents follicular hyperplasia. In this setting, a surgical approach may be avoided unless Kaposi's sarcoma is suspected. Conversely, a positive GCS strongly suggests a mycobacterial infection.

M.B.P.44

LYMPHADENOPATHY AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN SÃO PAULO, BRAZIL.

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Objective: To analyse the lymph node histopathologic changes in patients with HIV infection, and determine clinical and epidemiological characteristics of these patients in São Paulo.

Methods: The study group included all 70 patients with HIV infection (proved by serological and clinical data) in whom lymph node biopsy was performed at our hospital between 1985 and mid 1988. Epidemiological and histological findings were determined in order to group the patients. Within each group we determined the frequency of sex, age, risk factors for HIV infection and microbiological and clinical diagnosis.

Results: Sixty patients were male. The most important risk factors for HIV infection were male homosexual contact (40 patients) and intravenous drug abuse (20 patients). The histopathologic findings are showed on the following table.

Diagnosis	Number of Cases	Percentage
Mycobacterial infection	34	48.5
Follicular hyperplasia	21	30.0
Mycosis	7	10.0
Kaposi sarcoma**	4	5.7
Follicular atrophy	4	5.7
Lymphoma**	1	1.4

** In one case the diagnosis was Kaposi sarcoma and lymphoma

M. tuberculosis was identified in 24 (70.5%) of 34 cases of mycobacterial infection. Within the pattern of follicular hyperplasia, 11 patients (52.4%) were classified in group 3 (CDC classification for HIV infection), 8 (38.1%) in group 4,and 2 (9.5%) in group 2.

All patients that had the lymph node histological pattern of follicular atrophy were classified in group 4.

Fungi infections were represented by *Histoplasma capsulatum* (4 cases), *Cryptococcus neoformans* (2 cases) and *Paracoccidioides brasiliensis* (1 case).

The commonest histopathologic finding among homosexuals was mycobacterial infection (57.5%), whereas follicular hyperplasia represented 52.3% of intravenous drug abusers cases.

Conclusion: Tuberculosis is the most frequent lymph node infection in patients with HIV infection in São Paulo, besides occuring in early stages of HIV infection. Follicular hyperplasia is frequent in AIDS too. Further investigations must be done to compare lymph node histopathologic findings among homosexuals and intravenous drug abusers.

M.B.P.45

SERONEGATIVE DISSEMINATED COCCIDIOIDOMYCOSIS IN PATIENTS WITH HIV INFECTION.

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Objective: Serologic testing for compliment fixing (CF) antibodies to Coccidioides immitis is commonly employed to assist in the diagnosis and management of patients infected with this fungus. CF response in patients with concurrent HIV infection and disease due to disseminated C. immitis was examined in order to determine antibody response.

Methods: After noting a case of disseminated C. immitis with negative CF antibodies, we reviewed our experience in patients with both HIV and disseminated C. immitis infection. All mycologically or histologically proven cases of disseminated C. immitis infection since 1984 were reviewed for risk factors associated with HIV infection or for serologic evidence of HIV infection.

Results: Disseminated C. immitis and HIV infection were found in 11 patients; 8 had CF antibody titers performed. CF antibodies were detected in 6 of 8 serum samples (in a range of 1:16 to 1:256). Six patients also had cerebrospinal fluid CF antibody performed, 4 were positive (range 1:1 to 1:8). Two patients had persistently negative serum CF antibody tests.

Conclusion: Serologic testing for C. immitis CF antibodies may be negative in 25% of patients with disseminated disease when there is concurrent HIV infection. Histopathology and culture remain the most reliable method for the diagnosis of disseminated coccidioidomycosis.

M.B.P.46

COCCIDIOIDOMYCOSIS AMONG PATIENTS INFECTED WITH HIV. A PROSPECTIVE EPIDEMIOLOGIC STUDY.

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Objective. To prospectively follow HIV-infected individuals for the development of coccidioidomycosis in an area endemic for Coccidioides immitis in order to determine risk factors associated with acquisition of this fungal infection.

Methods. Patients infected with HIV and living in Tucson, Az have been followed since May 1988. Clinical evaluation and laboratory tests, including T4 lymphocyte count, coccidioidal skin-tests and lymphocyte transformation assays were performed on entry and every 4 months thereafter.

Results. A total of 58 individuals have been entered. 57 are men; 47 are white; mean age = 37 yr; mean T4 = 438. Since the study began, 3 patients have developed active coccidioidomycosis. Using clinical, epidemiological and immunological data, analysis of the 55 individuals without active coccidioidomycosis revealed that 8 have clear evidence of prior coccidioidal infection, 14 have no evidence of prior coccidioidomycosis, and 8 are too immunologically compromised to make that determination. For the remaining 25, data is incomplete. Hence, 11 of 33 individuals so far evaluated either have active coccidioidomycosis or evidence of prior infection.

Conclusion. These preliminary data from a prospective study indicate that coccidioidomycosis represents a major infection among HIV-infected individuals living in an area endemic for C. immitis. Further study will be required to determine whether active coccidioidomycosis in this cohort is due principally to reactivation or acute aquisition of infection.

M.B.P.47

SUCCESSFUL TREATMENT OF ACYCLOVIR-RESISTANT HERPES SIMPLEX VIRUS II WITH FOSCARNET IN A PERSON WITH AIDS

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Objective. Investigation of foscarnet as an alternate treatment of acyclovir-resistant herpes simplex virus II infection in AIDS.

Methods. A 28 y.o. black woman with HIV positivity for 2 months and 220 T4 cells presented with AIDS and severe vulvo-vaginal, perineal, and perirectal HSV II infection in November, 1988. The lesions extended from the mons veneris to the peri-anal area. There was no response to intravenous acyclovir 10 mg/kg TID and nafcillin for 14 days. The addition of zidovudine produced no additional benefit. A trial of ARA-A alone was discontinued after 5 days due to severe leukopenia and thrombocytopenia. AZT and acyclovir at 20 mg/kg/ml were resumed, with serum levels of 48 ugm/l (peak) and 22 ugm/l (trough), and no response was observed. HSV sensitivities to 3 drugs - acyclovir, ARA-A, & foscarnet - performed by automated colorimetric analysis are shown in table I:

TABLE I 10-50 ug/ml

	Acyclovir	ARA-A	Foscarnet
Patient	35.4	11.8	48.9
Controls	0.6	12.1	25.6

Foscarnet was begun at 30mg/kg q 8h; the serum creatinine was 2.0.mg/ml.

Results: Symptoms improved immediately, and there was complete healing after 3 weeks. No renal or calcium metabolism abnormalities were observed. The patient is currently stable on AZT.

Conclusions: Foscarnet is an effective alternate therapy for thymidine-kinase (TK) deficient or TK-altered acyclovir-resistant Herpes Simplex virus II in persons with AIDS. Early diagnosis by culture and sensitivity is essential. Further clinical trials of foscarnet are warranted.

M.B.P.48

FOSCARNET TREATMENT OF ACYCLOVIR (ACV)-RESISTANT HERPES SIMPLEX VIRUS (HSV) INFECTION IN 26 AIDS PATIENTS.

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Objective: To assess the efficacy of intravenous foscarnet for treatment of acyclovir-resistant mucocutaneous HSV in patients with AIDS.

Methods: Data was obtained prospectively and retrospectively from the charts of 26 patients in the U.S. receiving compassionate usage foscarnet for ACV-resistant HSV.

Results: Twenty-six patients had 34 episodes of mucocutaneous HSV (25 perirectal, 7 orofacial, 1 genital, 1 whitlow) that progressed despite therapy with intravenous (19 patients) or high-dose oral (7 patients) ACV, vidarabine (15 patients) or ganciclovir (3 patients). All initial isolates were susceptible *in vitro* to foscarnet and resistant to ACV. Patients received foscarnet for 10-43 days (mean 18.5). Twenty-two patients responded dramatically with re-epithelialization of lesions; one patient failed to demonstrate clinical improvement. All thirteen patients who were re-cultured during therapy with foscarnet had cessation of viral shedding, one as early as day 3. In three patients, therapy was discontinued due to adverse effects (2 leukopenia, 1 azotemia), and 1 patient died of unrelated causes after 2 days of therapy. Fourteen patients had recurrence of HSV at an interval ranging from 7 days to 6 months after therapy. Eight were re-treated successfully with foscarnet, 3 with ACV, and 3 have not yet been re-treated. Eight patients have received maintenance therapy with foscarnet.

Conclusions: Foscarnet is an effective and relatively non-toxic agent for therapy of acyclovir-resistant HSV in AIDS patients. Based on the limited experience in this series of patients, vidarabine is less effective than foscarnet in treating ACV-resistant HSV infection. Recurrence of herpetic lesions is common after discontinuation of antiviral therapy.

M.B.P.49 SUCCESSFUL THERAPY OF PROGRESSIVE ACYCLOVIR-RESISTANT ORO-FACIAL HERPES SIMPLEX WITH INTRAVENOUS FOSCARNET IN AN AIDS PATIENT

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Objective. To determine the clinical efficacy of intermittently administered intravenous foscarnet in the treatment of progressive acyclovir-resistant herpes simplex virus infection.
Method. A 31-year-old homosexual white male with a history of AIDS post pneumocystis pneumonia developed a type 2 herpetic lesion on his left upper lip. The lesion resolved initially with oral acyclovir but recurred several months later and progressed to involve the majority of the patient's face despite multiple courses of oral and intravenous acyclovir. Antiviral susceptibilities were obtained for this isolate.
Results. Using a VERO tissue culture and plaque reduction assay, the virus was shown to be resistant to acyclovir in-vitro, but susceptible to vidarabine and foscarnet. Despite two weeks of intravenous vidarabine the lesion failed to respond. Therapy was changed to intravenous foscarnet (40 mg/kg every eight hours). After a three week course of treatment the lesion had completely re-epithelialized except for a residual peripheral crust. However, the lesion recurred once foscarnet was discontinued and herpes simplex was again cultured.
Conclusion. Intravenous foscarnet has efficacy in the treatment of clinically significant acyclovir-resistant herpes simplex infection, but chronic suppressive therapy may be required.

M.B.P.50 ULCERATIVE HERPES SIMPLEX (UHS) IN AIDS PATIENTS.

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Objective. To define the diagnostic procedures, to evaluate the response to therapy and to assess the course and final outcome of 9 HIV positive patients with UHS of the anogenital area.
Methods. Tzanck's smears,histology,electron microscopy,cultures and immunocytochemical methods for HSV antigen were used to confirm the clinical diagnosis. ACV treatment was done. The patients were followed for herpetic recurrences,other AIDS manifestations and immunological parameters up to 20 months.
Results. At enrolment, Tzanck's smears were found positive in 8 patients,HSV type 2 was demonstrated in 7, a profound immunosuppression and concurrent opportunistic infections were present in 7. Acyclovir healed the lesions in all patients, but one or more recurrences were observed in 6. The new herpetic episodes were ACV sensitive in 5 patients, while an in vivo and in vitro resistant HSV type 2 strain was isolated in one patient. This patient was successfully treated by Foscarnet. During the follow up, 7 patients developed other major AIDS manifestations and 3 patients died.
Conclusion. Several methods are necessary to diagnose UHS. ACV therapy is usually effective. The survival time of patients with UHS seems longer than that of patients with other major opportunistic infections.

M.B.P.51 SUCCESSFUL TREATMENT OF SEVERE, ACYCLOVIR-RESISTANT HERPES SIMPLEX VIRUS TYPE 2 PROCTITIS IN TWO PATIENTS WITH AIDS: USE OF CONTINUOUS INFUSION ACYCLOVIR.

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Objective. To report on the efficacy and safety of continuous infusion acyclovir (ACV) for the treatment of severe, ulcerative proctitis caused by ACV-resistant herpes simplex virus (HSV) type 2 in two patients with AIDS.
Methods. Viral cultures were obtained on cotton tipped swabs, inoculated onto tissue culture, and observed for cytopathic effect typical for HSV. HSV isolates were typed with restriction endonuclease digestion. ACV plasma levels were measured by RIA. HSV sensitivities to ACV were determined by measuring viral growth by quantitating viral DNA with an HSV specific radiolabeled probe in the presence of varying concentrations of ACV. Results are expressed as an ID$_{50}$.
Results. Both patients developed severe ulcerative proctitis from HSV type 2 with progression despite prolonged courses of oral ACV followed by 3 weeks of intravenous ACV administered at 10mg/kg every 8 hours. Both patients' isolates developed ACV resistance with ID$_{50}$ values of >20 µmol/L (normal for HSV type 2 is <2 µmol/L). Continuous infusion ACV was administered at 1.5-2.0 mg/kg/hr via Hickman catheters to maintain ACV levels in plasma between 20 and 30 µmol/L. Within a week of this therapy, the patients noted improvement in their proctalgia and by the sixth week had total healing of their lesions. Serum creatinine levels remained normal. The continuous infusion was accomplished in an outpatient setting with weekly visits and ACV and creatinine determinations.
Conclusions. Continuous infusion ACV was efficacious and safe in treating severe HSV-induced proctitis in two patients with AIDS despite the development of high level resistance to ACV, and previous failure with ACV administered in divided doses.

M.B.P.52 ACICLOVIR THERAPY OF ACUTE RETINAL NECROSIS SYNDROME (ARN) IN AIDS PATIENTS

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Objective. To prove whether Aciclovir long term therapy is necessary to prevent relapses of Acute Retinal Necrosis Syndrome (ARN) caused by Herpes simplex Virus (HSV) or Varicella Zoster Virus (VZV) as opportunistic ocular infection.
Methods. Retrospective report on 4 patients with ARN. 3 had got Aciclovir therapy for extraocular herpetic infections over a limited period before, one received Aciclovir initially for treatment of ARN and HSV encephalitis (1500 mg/d intravenously), followed by long term therapy (800 mg/d per os) over a 7 months follow up period.
Results. In the 3 cases with extraocular diseases ARN occurred several weeks after suspension of Aciclovir therapy causing rapid visual damage. In one case initial Aciclovir therapy provided resolving of ARN and cerebral symptoms, maintenance therapy has prevented relapses for 7 months.
Conclusion. ARN should be an indication for long term therapy with Aciclovir to prevent blindness in AIDS patients.

M.B.P.53 HIV, HUMAN PAPILLOMAVIRUS, AND CERVICAL DYSPLASIA IN NAIROBI PROSTITUTES

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To determine whether HIV infection in women is associated with an increased frequency of human papilloma virus (HPV) infection or cervical dysplasia, we studied 145 Nairobi prostitutes. Cervical samples were obtained for cytology and HPV detection by dot filter hybridisation (Virapap).
Results. The mean age of the study population was 31 years. The average number of sex partners per week was 21. 69% of women were seropositive for HIV, of whom 76% had generalised lymphadenopathy: none had overt AIDS. Thirty-two (24%) of 136 women had cervical HPV infection, including 27% of HIV positive and 19% of HIV negative women. Five (16%) HPV types were 16/18, 14 (44%) were 31/33/35, and 13 (41%) were other. No association was noted between HPV infection and age, number of sex partners, use of spermicides or hormonal contraception, or lymphadenopathy. Of 125 cervical cytologic examinations, 2 (2%) showed cervical intraepithelial neoplasia (CIN), 15 (12%) showed atypia, and 108 (86%) were normal. Only 1 (4%) of the women with HPV had CIN.
Conclusion. Prostitutes in Nairobi have a high prevalence of HPV infection but no association between HIV and HPV was observed. Cervical dysplasia was present in only 2% of women. Prospective evaluation of this cohort will help to determine whether the natural history of HPV infection and the risk of HPV-associated cervical dysplasia is affected by concurrent HIV infection.

M.B.P.54 PREVALENCE AND RISK FACTORS FOR HIV-1 INFECTION IN PATIENTS WITH ACUTE PELVIC INFLAMMATORY DISEASE (PID)

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Objective: To examine temporal trends and risk factors for HIV-1 seropositivity in a population of women admitted with the diagnosis of acute PID.
Methods: This is an extension of our continuing retrospective analysis of stored sera from women admitted to an urban county hospital with acute PID. Sera from the years 1985-1988 were anonymously tested for antibody to HIV-1; demographic data and 15 separate risk factors were extracted by blinded chart review. In January 1989, we initiated a prospective study utilizing anonymous seroprevalence testing for HIV-1 and coded risk factor questionnaires; we will report on this data as well.
Results:

Year	#HIV seropositive/# tested	%HIV seropositive
1985	0/16	0
1986	2/103	1.9
1987	4/95	4.2
1988	8/119	6.7

Of the risk factors, intravenous drug use correlated significantly with HIV-1 seropositivity (OR = 23.2, 95% CI = 5.0 - 106.9). Among other risk factors, type of drug used, number of sexual partners, and previous history of sexually transmitted diseases did not correlate.
Conclusions: Overall seroprevalence of HIV-1 was 4.2% (95% CI = 2.4% - 6.4%) in women admitted for acute PID in 1985-1988, and increased from 0 to 6.7% during this time period. This is contrasted with a seroprevalence of 0.9% in 1148 obstetric patients at San Francisco General Hospital; risk factor analysis will attempt to discern differential risk factors in these populations.

M.B.P.55

DIAGNOSTIC ET TRAITEMENT DES LESIONS CERVICO-VAGINALES ET VULVAIRES A PAPILLOMAVIRUS CHEZ LES FEMMES SERO-POSITIVES POUR LE VIRUS VIH.

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Objectif. Dégager, à partir de l'observation de 20 patientes (âge moyen = 27,4 ans) séro-positives pour le virus VIH (75,0 % de contamination par toxicomanie intra-veineuse), les principaux caractères épidémiologiques, diagnostiques et pronostiques des lésions cervico-vaginales et vulvaires dues à une infection à papillomavirus (HPV).
Méthodes. Les lésions dépistées par l'examen colposcopique ou cytologique et confirmées histologiquement fûrent ensuite détruites par vaporisation au laser CO_2.
Résultats. 58,6 % des frottis cervico-vaginaux révélaient une infection à HPV, et chez 6 patientes l'histologie cervicale a retrouvé des anomalies allant de la dysplasie légère (2 cas) ou modérée (3 cas) au carcinome invasif (1 cas). 30 % des patientes présentaient des lésions vulvaires à HPV associées. Après destruction au laser (13 patientes) le taux de récidives est de 23 % (recul moyen de 11,2 mois).
Conclusion. La fréquence élevée des lésions génitales à papillomavirus chez les patientes infectées par le VIH rend nécessaire leur dépistage colposcopique et cytologique afin d'assurer leur éradication avant ou au début de leur évolution vers la dysplasie.

M.B.P.56

Human immunodeficiency virus and Human papilloma virus in the cervical intraepithelial neoplasia (CIN) in development of past intravenous drug abusers (PIVDA)women.

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Objective To investigate a possible association between HIV and HPV infections in the development of CIN.
Methods 209 PIVDA (101 HIV pos,mean age 25.2 yrs,S.D.±3.9;108 HIV-,mean Age 25.8 yrs.,S.D.±4.6)women,residenting in a rehabilitation community where investigated by cervical citology,colposcopy and by colposcopically directed biopsy.Statistical significance was evaluated by chi square analysis and by Fischer's exact test.
Results CIN was found in 18 HIV pos (17.8%), and in 7 HIV neg(6.5%).
CIN + HPV (Pap smear + histological examination) were found in 13 HIV pos. (12.9%) and in 4 HIV neg (3.7%).
HPV (Pap smear + histological examination) was found in 25 HIV pos(24.7%)and in 7 HIV neg (6.5%).
CIN is more frequently observed in HIV pos than HIV- women (P<.05) and control group (1534 university students,CIN 1.1%,*P <.0001). Association between HPV and CIN is significantly greater in HIV pos.(P<.05). Citological and histological evidence of HPV infection are more frequent in HIV pos (P <.01).

M.B.P.57

GENITAL ULCERS (GU) AND HIV INFECTION IN AN URBAN SEXUALLY TRANSMITTED DISEASE (STD) CLINIC

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Objective: To investigate the association of genital ulcers (GU) and HIV infection in persons attending an STD clinic in Brooklyn.
Methods: Beginning 10/88, our STD clinic pts were routinely offered HIV testing. HIV risk factors were assessed by interview at the time of testing. Clinic records were available for 73 pts who underwent HIV testing and were retrospectively reviewed to determine STD diagnoses.
Results: 16/73 (22%) of STD clinic pts tested were HIV+. GU were present in 8/16 (50%) HIV+ pts compared with 12/57 (21%) HIV- pts (OR=3.75, p<.03). This trend increased when those with admitted HIV risk factors (N=5) (IVDU, homosexual, sexual partner with AIDS) were excluded (OR=5.6, p<.02). 7/8 HIV+ pts with GU were women and 5/7 of these women had no admitted HIV risk factors. The etiologies of GU in HIV+ pts were: 3 herpes simplex, 1 syphilis; the remaining 4 were not diagnosed definitively. Only one HIV+ pt admitted a history of previous GU. 5/16 (31%) HIV+ pts had >1 concurrent STD's diagnosed at presentation compared with 7/57 (12%) HIV- pts (NS).
Conclusion: We have noted an increasing incidence of GU disease in our STD clinic during the last 2 years. These data suggest that GU may be associated with HIV infection. As these pts were HIV seropositive at presentation, it is likely that acquisition of HIV infection either antedated or was coincident with their GU disease. The former possibility suggests an increased risk of GU disease in persons already HIV+, the latter suggests an increased rate of HIV transmission from sexual partners with GU disease.

M.B.P.58

THE RISK OF PROGRESSION OF CERVICAL DYSPLASIA IN WOMEN WITH HIV

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Objective. To assess the prevalence and the risk of progression of cervical dysplasia (CIN) in women with HIV.

Methods. Ten unselected women with HIV were prospectively investigated for CIN over a mean of 26 months (range 50-6).

Results. Seven have shown evidence of progression or development of CIN over the study period, no spontaneous regression was noted. Of the five who required ablative therapy, three developed recurrence of CIN after treatment. A high incidence of infection with the genital wart virus was also noted. Results for a larger number of subjects will be presented.

Conclusion. These results have implications for the provision of colposcopic services and treatment facilities as part of the management of HIV in women.

M.B.P.59

CERVICAL INTRAEPITHELIAL NEOPLASIA IN HIV INFECTED WOMEN

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Objective: We have previously described a high incidence of genital infection, cervical intraepithelial neoplasia (CIN) and in situ carcinoma of the cervix in HIV infected women. The aim of this paper is to compare the incidence of genital infection and CIN in three different groups, to clarify the relationship between HIV infection and CIN.
Methods: Three groups were compared: Group I, HIV infected women (IVDU and women infected by heterosexual transmission); Group II, control group (seronegative women with similar characteristics to group I) and Group III, prostitutes (prostitutes who were not IVDU and were seronegative).
Vaginal smear, colposcopy and microbiologial study were done in all the cases. In cases of abnormal smear or colposcopy, cervical biopsy was done.
Results: Five out of ten women in group I, one out of ten women in group II and two of 23 women in group III were found to have a CIN.

	I HIV (N=10)	II CONTROL (N = 10)	III PROSTITUTES(N=23)
CIN	5	1	2
Normal findings	5	9	21

Conclusions: No statistical differences $\bar{X}^2 = 2.14$ p 0.5) could be demonstrated between the HIV infected group and the control group. Significant differences between group I and group III were found ($\bar{X}^2 = 4.85$ P 0.05).
No differences were found in the infection rate of the three groups.
More cases and controls are now being enrolled, to clarify the lack of differences in these groups.

M.B.P.60

HIGH RATES OF CERVICAL DYSPLASIAS, CERVICAL INTRAEPITHELIAL NEOPLASIAS (CIN) AND HUMAN PAPILLOMA VIRUS INFECTION IN HIV INFECTED FEMALE PATIENTS

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Objective. To show the important role HIV infection plays in the development of dysplasias of the cervix uteri, cervical intraepithelial neoplasias (CIN), and the close relation to high rates of human papilloma virus infections observed in HIV-infected female patients.
Methods. 58 female patients were examined in regard to their immunologic status. Lymphocyte stimulation tests were performed, cytology of the cervix uteri, colposcopy, human papilloma virus DNA-hybridization by Southern Blot and Viratype testing (GIBCO Ltd.) and "open reading frame" protein detection tests were performed. In some cases histological evaluations of CINs are available.
Results. More than 15% of female patients in an age group of 20-30 yrs. show cytological signs of cervical dysplasia, approx. 8% show cervical intraepithelial neoplasias (CIN). In more than one-third of all patients we found clinical aspects, cytology or laboratory testing positive for human papilloma virus infection of various types. However, in two-thirds of patients with signs of dysplasia we found evidence for the presence of human papilloma virus infection. Percentages are even higher in patients during pregnancy (approx. 25% of patients with dysplasia). First results of "open reading frame" protein testing will be presented.
Conclusion. The synergism of HIV infection, subsequent immunosuppression and human papilloma virus infection lead to high rates of dysplasias and cervical intraepithelial neoplasias particularly in pregnancy.

M.B.P.61 INFECTION IN HIV-SEROPOSITIVE INDIVIDUALS WITH THE EBNA 2B EPSTEIN-BARR VIRUS SUBTYPE : CORRELATION WITH T4 LYMPHOCYTE NUMBERS

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Objective. EBV is associated with B cell lymphomas in HIV-infected individuals.

It is now a well established fact that, in the general population, 2 subtypes of EBV exist, referred to as EBNA 2A and EBNA 2B. The aim of this study was to determine the prevalence of infection by the rarer subtype, EBNA 2B, in HIV-positive subjects, as well as the intensity of the antibody response, according to the number of circulating T4 lymphocytes.

Methods. EBNA 2B gene was transfected in Rat 1 epithelial cells. Test sera were titrated by anticomplement immunofluorescence on monolayers of mock-transfected Rat 1 cells (R1), R1-EBNA 1, R1-EBNA 2A, and R1-EBNA 2B transfected cells. A total of 209 HIV-seropositive caucasian individuals were studied, including 107 subjects with more than 600 T4 cells/mm³ and 102 patients with less than 300.

Results. Data of prevalence and Geometric Mean Titers are summarized in the following table :

	VCA	EA	EBNA Raji	EBNA 1	EBNA 2A	EBNA 2B	
> 600 T4	100	65	99	91	82	83	prevalence
	533	41	67	77	26	25	GMT
< 300 T4	100	71	96	91	74	71	prevalence
	780	46	41	42	26	36	GMT

Conclusion. Our results suggest that 1) prevalence of, and response to, EBNA 2B subtype of EBV increases as the number of T4 cells falls, as opposed to those with EBNA 1, and 2) dual infections with both EBNA 2A and EBNA 2B subtypes might exist.

M.B.P.62 ASSOCIATION OF EPSTEIN-BARR VIRUS IN EPITHELIOID ANGIOMATOSIS OF AIDS PATIENTS

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Objective. Epithelioid hemangioma-like vascular proliferations, recently described in AIDS patients, have been associated with bacilli similar to those found in cat-scratch disease. Since other vascular lesions present in AIDS patients, in particular Kaposi's sarcoma, have been associated with CMV, we investigated the possibility of viral associations with epithelioid angiomatosis.

Method. In-situ hybridization was performed on formalin fixed, paraffin embedded tissue from 2 cases using cloned biotinylated probes for CMV, herpes simplex (HSV), HIV and EBV.

Results. None of the 2 patients had evidence of opportunistic infection at the time the biopsy was obtained and the lesions regressed spontaneously. Hybridizations with CMV, HSV and HIV were negative, those for EBV were positive in both lesions. Hybridization signal for EBV was present in the nuclei of endothelial cells and in occasional histiocytes. Bacilli were demonstrated within only one of the lesions by silver stain.

Conclusions. This is the first report of EBV associated with this entity and the first time that EBV viral genome has been seen in endothelial cells. Our data suggest that EBV may be involved in the pathogenesis of these lesions but further studies are necessary.

M.B.P.63 EFFECTS OF rhG-CSF ON SECONDARY INFECTIONS IN AIDS

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Objective. The effects of recombinant human granulocyte-colony stimulating factor (rhG-CSF) on secondary infections in AIDS patients were evaluated. Patients and Methods. Four consecutive AIDS patients (hemophiliacs) with various infections and leukocytopenia were treated with intravenous rhG-CSF. Patients' profiles are summarized in Table 1. The rhG-CSF was donated by KIRIN Brewery Co., Ltd. (Tokyo, Japan). Results. In case 1, 2, and 4, the numbers of WBC increased three to seven folds, and current infections were controlled by the administration of 0.1 mg/m² rhG-CSF. In case 3, however, rhG-CSF (0.1 ~ 0.2 mg/m²) showed only a little effect. This may be due to simultaneous administration of acyclovir and ara-A. No adverse effect was observed in any of these patients. The numbers of CD4⁺ cells and the levels of p24 antigen did not change during the course of the treatment.

Table 1. Background of Patients in This Study

Case	Age	Sex	Indicator disease	Current infection	Pathogens
1	33	M	Cryp.meningitis(CM)	recurrence of CM	C.neoformans
2	30	M	PC pneumonia	TEN, septisemia	St.epider., Klebsiella
3	41	M	Candida esophagitis	HZ, Mycobac.infec.	VZV, M.avium
4	21	M	PC pneumonia	abscess	St.aureus

Conclusion. In AIDS patients, rhG-CSF was very effective in the treatment of bacterial and fungal infections unless other agents suppressing the bone marrow are not used simultaneously with it.

M.B.P.64 PREVALENCE AND CLINICAL SIGNIFICANCE OF COOMB'S TEST AND COLD AGGLUTININS IN AIDS-PATIENTS

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OBJECTIVE: To determine the prevalence and pathogenetic/ diagnostic relevance of positive direct antiglobulin tests (DAT) in AIDS patients (PTS).

METHOD: 34 (23%) out of 145 consecutive AIDS PTS (CDC criteria) attending our clinic presented with anemia requiring transfusion. Antibody screening was performed including C3,C3d,C4, antiI/JK/Le^{a}, IgG and cold agglutinins (CA). Retrospectively diagnoses, hematologic parameters and therapy were studied.

RESULTS: 47% (16/34) showed a positive agglutination in at least one test. C3d, ant I, CA and IgG ocurred most frequently (n=9/8/7/6 out of 16). 75% (12/16) had leukopenia (<4000/µl). 50% (8/16) had thrombocytopenia (<150000/µl) and 38% (6/16) showed both. Hypergammaglobulinemia (>16 g/l) was present in 81% (13/16). Only 2 out of 16 DAT+ PTS showed hemolysis. 63% (10/16) of the DAT+ had proven mycobacteriosis (8 atypical) in contrast to only 17% (3/18) of the DAT- PTS ($p<0.01$). Other diagnoses and therapy of the DAT+/- PTS showed no significant difference in prevalence (PcP, CMV, NHL, toxoplasmosis).

CONCLUSION: Autoimmune versus infectious pathogenesis of DAT in AIDS has been discussed in the literature. Our results show a correlation of mycobacteriosis with DAT suggesting rather infectious than autoimmune pathogenesis.

M.B.P.65 INCREASE OF FACTOR VIII ACTIVITY IN HIV INFECTED PATIENTS.

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Objective. To demonstrate an abnormal coagulation profile associated with HIV.

Methods. We have evaluated haemostatic function in 20 patients with HIV-infection. All the patients included in the study were treated with AZT. We measured APTT, Fibrinogen, FVIIa, FVIIIa and FXa: Factor VII, VIII and X activity were carried out, using plasma from General Diagnostic, a pool plasma from 20 donors used as control.

Results. These results show not significant difference in APTT, Fibrinogen, Factor VII and X activity, however there is an increase in Factor VIII activity.

	Fibrinogen mg/dl	APTT sec	FVIIa %	FXa %	FVIIIa %
HIV infected patients	283±70	35±13	98±17	98±10	180±34
Controls	285±65	32±9	95±15	94±12	105±20

Conclusion. These preliminary dates should be supported with further investigation to determinate if the changing in Factor VIII activity is related to a FVIII antigen modification and this situation is an epiphenomena to an acute serologic response or it is associated with an hypercoagulability.

M.B.P.66 THERAPY OF SALMONELLA INFECTIONS IN AIDS PATIENTS.

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Objective - To evaluate the efficacy and toxicity of newer agents - ceftriaxone (CTX) and ciprofloxacin (CPF) compared to ampicillin (AMP) and trimethoprim/sulfamethoxazole (TMP/SMX) for Salmonella infections.

Methods - Ten AIDS patients with severe Salmonella gastroenteritis were treated with standard or newer agents. Patients were monitored for response, toxicity and recurrence (minimum follow up - 6 months).

Results - All 5 patients treated with AMP or TMP/SMX responded initially but all relapsed - one with bacteremia. Two responded to a 5 day course of I.V. CTX (no relapse). One received only 2 doses of CTX before therapy was stopped for a skin rash. He responded but relapsed 1 month later. Two patients responded to oral CPF. CTX & CPF were well tolerated.

Drug	# of Pts.	Outcome	Follow-up
ampicillin	2	response	relapse
TMP/SMX	3	response	relapse (bacteremia-1 pt.)
ceftriaxone	3	response	relapse-1 pt.
ciprofloxacin	2	response	no relapse

Conclusion - Aggressive therapy of Salmonella gastroenteritis in AIDS patients may prevent bacteremia and dissemination. Agents such as CTX and CPF may be superior to, less toxic, and have fewer resistant Salmonella isolates than standard drugs. These agents have high biliary concentration and may eliminate the chronic carrier state. Oral agents (CPF) may also increase compliance. They need wider clinical evaluation to establish efficacy and optimal length of therapy.

M.B.P.67 SALMONELLA BACTEREMIA AND HIV INFECTION

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OBJECTIVES: to establish the incidence, causative microorganisms and clinical course of salmonella bacteremia (SB) in patients with infection by the human immunodeficiency virus (HIV+).
MATERIAL AND METHODS: analysis of all SB episodes in HIV-positive patients during a period of 3 years and 8 months (April,1985 to December,1988). Study sample with 145 patients with AIDS and 200 HIV-positive patients in other stages.
RESULTS: we found 28 SB episodes in 21 patients, 15 fulfilling the diagnostic criteria for AIDS (CDC,1987) and 6 with generalized persistent lymphadenopathy. There were 16 males and 5 femalesand the mean age was 30 years with a range of 16 to 64 years. Twelve patients were intravenous drug addicts, 6 homosexual, 2 multitransfused and one had hemophilia. The incidence of SB in patients with AIDS was 10.3% (15/145) and in HIV positive without AIDS 3%. The salmonella infection was coincidental with the diagnosis of AIDS in 8 cases, posterior in 5 and previous in 2. Six patients had a total of 7 SB recurrences (SBR) within an average of four months and in all of them SBR was the opportunistic infection that led to the diagnosis of AIDS. Salmonella enteritidis was the causative species in 27 episodes (96.4%). The clinical picture consisted of a simple febrile episode lasting 2 to 45 days in 19 SB (67.8%), pneumonia in 5 cases, gastroenteritis 2 cases, endocarditis one case and fever and a gluteal abcess one case. A favourable response with negative blood cultures was observed in 26 episodes (92.8%), and two patients died 3 and 11 days after the diagnosis, of unrelated causes. Each case was treated with active antimicrobials after in vitro susceptibility testing.
CONCLUSIONS: of note: 1- The high incidence (10.3%) of SB in AIDS patients in our area, almost exclusively (96%) produced by Enteritidis organisms, as a reflection of the high prevalence of this microorganism in our surroundings. 2- A high response rate (93%) with conventional treatment and a relatively lower incidence of recurrences (25%) compared with other series. 3- A close relationship between SB and diagnosis of AIDS.

M.B.P.68 SHIGELLA ENTERITIS AMONG AIDS CASES IN LOS ANGELES

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Objective. To determine the frequency and distribution of reported shigellosis among AIDS cases in Los Angeles County (LAC).
Methods. The cumulative AIDS and shigellosis surveillance registries in LAC, for 1979 through 1988, were compared to identify cases common to both registries.
Results. Of 5,631 AIDS cases reported in LAC through December 31, 1988, 220 (4%) also had shigellosis; 172 (78%) had *S. flexneri*, 27 (12%) *S. sonnei*, 3 (1%) *S. dysenteriae*, 3 (1%) *S. boydii*, and 15 (7%) were of unknown serotype. Three were female; 121 were white, 61 black, 36 Hispanic, and 2 were among other racial groups. AIDS cases with shigellosis were twice as likely to be black than other racial groups (p<.001) and adult males were four times more likely to be homosexual or bisexual (p<.01) when compared to AIDS cases without shigellosis. The AIDS-defining opportunistic infections cryptosporidiosis, isosporiasis, and herpes simplex were more common among AIDS cases with shigellosis and *pneumocystis carinii* pneumonia was less common compared to AIDS cases without shigellosis. Seven percent of AIDS cases diagnosed prior to 1985 also had shigellosis, compared to 4% of AIDS cases diagnosed in subsequent years (p<.001). AIDS cases with and without shigellosis did not differ with respect to mean age, intravenous drug use, or country of origin. Shigellosis was diagnosed more than 1 month prior to AIDS for 146 (66%) cases, concurrently for 59 (27%) cases, and more than one month following the diagnosis of AIDS for 15 (7%) cases. Blacks and Hispanics were more likely than whites to have concurrent shigellosis and AIDS. *S. sonnei* was diagnosed only among homosexual or bisexual males and *S. flexneri* was more common among blacks (<.05).
Conclusion. Shigellosis is more common among AIDS cases than campylobacteriosis or salmonellosis. Although the proportion of AIDS cases with shigellosis began decreasing in 1985, continued concurrent shigellosis and AIDS, predominantly among homosexual and bisexual men, suggests ongoing high-risk sexual behavior after infection with HIV, particularly among blacks and Hispanics.

M.B.P.69 CLINICAL PRESENTATION AND QUINOLONE (Q) THERAPY OF SALMONELLA IN HIV INFECTION.

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Objective: To review the clinical features and efficacy of Q therapy in HIV+ patients with salmonellosis.
Methods: We treated 17 HIV+ prisoners (10 AIDS, 6 ARC, 1 Sero-positive) with 26 episodes of salmonella infections between 12/85 and 12/88. Sites of isolation included blood (67%), stool (20%), and urine (13%). Intravenous drug abuse prevalence was 94%. For patients who survived 3 months or longer after salmonella infection, treatment was evaluated by dividing patient episodes into 2 groups. Group 1 (G1) was treated with Q antibiotics (14) and Group 2 (G2) was treated with non- Q antibiotics (9). Both groups received initial ampicillin and/or ceftriaxone parenterally for 10-12 days. All isolates were sensitive to these drugs. G1 subsequently received oral ciprofloxacin (11) or norfloxacin (3) for a mean of 28 days. G2 received oral amoxicillin or ampicillin for a mean of 28.7 days.
Results: Clinical and microbiologic follow-up was available in all patients. Interesting clinical features on presentation included pulse-temperature dissociation in 30%, reversible acute renal failure in 11.5%, and concurrent opportunistic infections in 38% of episodes. Relapse rates were (14.3%) in G1 and (77%) in G2 (p=0.004). One out of two failures in G1 was related to non-compliance. The mean follow up period was 4.6 months in G1 and 3.0 months in G2.
Conclusion: In HIV+ patients with salmonellosis, Quinolone therapy appears more effective than conventional therapy in preventing relapses and warrants further study.

M.B.P.70 NOSOCOMIAL INFECTION (NI) IN PATIENTS WITH HIV INFECTION.

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Objective. To compare NI for AIDS patients (AIDS) and those without evidence of HIV infection (NONHIV).
Methods. We matched infection control and HIV census data, collected by active concurrent surveillance programs at Bellevue Hospital. Patients with suspected HIV infection but without AIDS were excluded. Infection rates are expressed as infections per 10^3 patient-days of care. Relative risks are expressed as rate ratios; ratios that differ from 1.0 with $P < 0.05$ are underlined.
Results. During the year 7/87–6/88, there were a total of 27,868 discharges, including 595 with AIDS. NI rates were 3.46 for AIDS, and 1.49 for NONHIV. For adults, AIDS were significantly younger (medians 37 vs 50 years) and more likely to be male (78% vs 59%). Median time to acquisition of first NI was 40 days for AIDS and 16 for NONHIV (P<0.05). 50% of NONHIV NI, but only 17% of AIDS NI were associated with intensive care units. By service, the NI rate ratios were 4.69 (AIDS/NONHIV=10.2/2.18) for pediatrics, 1.55 (3.54/2.28) for medicine, & 3.93 (9.13/2.32) for other acute services. For an intermediate care service, dealing with less acutely ill patients, the rate was 2.91 (2.40/0.82). By site, the rate ratios were 4.51 (1.94/0.34) for bacteremias, 3.41 (0.14/0.04) for gastrointestinal, 2.27 (0.18/0.08) for skin & soft tissue, 2.24 (0.60/0.27) for pneumonia, & 0.97 (0.41/0.43) for urinary infections. Compared to NONHIV, AIDS had more bacteremias due to enteric rods (P<0.01) and enterococci (P<0.05), and more enterococcal urinary infections (P<0.005). Fungi were not more common in AIDS NI.
Conclusion. AIDS are at increased risk for some but not all NI. This results in part from differences in the types of treatment afforded them (e.g. increased IV catheter use) and in part from increased length of stay.

M.B.P.71 BACTEREMIC PNEUMOCOCCAL DISEASE AS THE FIRST MANIFESTATION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN ADULTS

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Disease due to Streptococcus pneumoniae(SP) has been associated with HIV-infected children and adults with symptomatic AIDS/ARC(A/A). We previously reported a steep rise in cases of bacteremic SP disease(BSPD) during the 1980's in patients(pts) at risk (R) for HIV infection but without A/A. From 10/1/87-5/15/88 we prospectively evaluated 103 consecutive episodes(EP) of adult BSPD in 101 pts. Forty-eight of 92 pts(52%) tested were HIV+. Only 8/48 (17%) had A/A. 74%(44/59) of pts with any HIV R were HIV+. Control parenteral drug user(PDU) pts admitted for trauma/surgery were less likely to be HIV+ than SPBD PDU pts [7/18(39%)vs(35/45(78%); p<.005].

Clinical Features in 94 Episodes# of Bacteremic Pneumococcal Disease

Feature	HIV Positive(n=50)	HIV Negative (n=44)
Mortality	7/50 (14%)	11/44 (25%)
Meningitis	3/50 (6%)	4/44 (9%)
Normal CXR	5/50 (10%)	2/44 (4%)
Total WBC	13,072	15,850
T4;T8; T4/T8 Ratio	280*; 621; 0.61*	804; 526; 1.59
Anergy	11/18 (61%)	13/23 (56%)

[#=2 HIV+ pts had 2 eps; CXR=chest xray; T4,T8=lymphocyte subsets/cumm; Anergy=<3mm reaction to 4 antigens; *= p<.001 vs HIV Negative pts]

HIV+ pts with and without A/A had very similar T4 counts and T4/8 ratios.
Conclusion: BSPD occurs more frequently in HIV+ pts without symptoms than in those with A/A. T cell studies suggest advanced immune damage in the non-A/A pts. BSPD may be an important first indication of HIV infection.

M.B.P.72 STAPHYLOCOCCUS AUREUS NASAL CARRIAGE RATE IN PATIENTS WITH AIDS OR ARC.

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Introduction: A high frequency of infections (especially of intravenous catheters) caused by Staphylococcus aureus (SA) has been observed in patients with AIDS or ARC.
Objective: To assess the frequency of SA nasal carriage among patients with AIDS or ARC.
Methods: The nasal carriage rate of SA was determined in 64 consecutively hospitalized patients with AIDS or ARC within 24 hours from admission. Narcotic addicts were excluded. A group of 64 patients with other diseases was used as a control.
Results: Of 64 patients with AIDS or ARC, 35 (55%) were nasal carriers of SA, as compared to 18 (28%) of 64 control patients (CI 10–42). Recent hospitalization (less than 1 year) did not influence carriage rate, nor did the recent use of antibiotics or zidovudine, although patients on agents active against SA and patients not taking zidovudine showed a lower carriage rate.
Conclusions: The significant SA nasal carriage rate in AIDS or ARC patients may explain the reported high incidence of intravenous catheter-related SA infections in this population.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

M.B.P.73

PREVALENCE OF SIGNIFICANT LOWER RESPIRATORY BACTERIAL INFECTIONS IN HIV POSITIVE PERSONS UNDERGOING BRONCHOSCOPY WITH SEMI-QUANTITATIVE BAL CULTURE.

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OBJECTIVE. To document the prevalence of significant lower respiratory infections in Human Immunodeficiency Virus (HIV) positive persons with pulmonary symptoms undergoing bronchoscopy. METHODS. All HIV positive persons with pulmonary symptoms referred to our medical center in 1985-1988 underwent bronchoscopy and bronchoalveolar lavage (BAL) semi-quantitative bacterial cultures. RESULTS. Significant lower respiratory bacterial infections (LRBI) were found in 27 of 234 bronchoscopies (11.5% prevalence) defined as > 10,000 CFU's on semi-quantitative culture of BAL fluid. Of the 36 bacterial isolates, the predominant organisms were Strep species (13), H. influenza (9), S. aureus (5), gram negatives (6). Gram stains were positive in 7 of 26 BAL samples. Compared to other HIV positive persons undergoing bronchoscopy, individuals with LRBI's were more likely to have localized disease on chest x-ray (Chi square = 11.5, $p<0.01$) and a higher percentage of neutrophils [16.9±16.7% (mean ±S.D.) vs. 7.3±12.5%, $p<0.001$] on BAL. Differences were not seen between the two groups in regards to age, sex, total white blood cell count, hypoxemia ($PO_2 < 80$), AZT administration, or coinfection with Pneumocystis carinii (Pc) or cytomegalovirus. CONCLUSION. Significant lower respiratory bacterial infections are commonly found in HIV positive persons at bronchoscopy. The fact that they can also co-exist with other pulmonary infections, including Pc, may have important implications for therapy.

M.B.P.74

AIDS-ASSOCIATED URINARY TRACT INFECTION (UTI)

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Objectives. To determine if HIV infection leads to predisposition to UTI, caused by non-opportunistic bacteria.
Methods. 303 HIV-infected patients, 280 men and 23 women, were studied during the average period of 6 months. All were screened with urinalysis and nitrite tests. In those with positive tests, urine culture was done. Diagnosis of UTI required more than 100,000 colonies in urine culture.
Results. UTI was found in 19 (6,3%): 17 (6,1%) men and 2 (8,7%) women. Nine patients (8 men and 1 woman) presented previous predisposing factors to UTI (7 submitted to long urinary catheterization, one to renal lithiasis and advanced pregnancy in one), one patient was a woman in reproductive age and only nine men (3,2%), 8 homosexuals and 1 hemophiliac, did not show any other known predisposing factor. In 18 patients enterobacteria were found (mainly E. coli, 12 cases, 63,1%) and in the other (5,3%) Acinetobacter was found.
Conclusion. In our study, HIV infection was not an isolated predisposing factor to UTI caused by non-opportunist bacteria.

M.B.P.75

SEVERE BACTERIAL INFECTIONS IN AIDS PATIENTS

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Objective.To determine the incidence and type of severe bacterial infections in AIDS patients.
Methods.One hundred and forty-three patients (pts) were analysed retrospectively with respect to sex, age, risk factors and microbiologically proven severe bacterial infections.
Results.Fifty-four episodes of severe bacterial infections were identified in 44 pts (30.7%). There were 36 men and 8 women; ages ranged between 3 and 59 with a mean of 31. HIV infection risk groups: 27 IVDA, 11 omosexuals,2 IVDA-omosexuals, 2 eterosexuals, 1 bisexual and 1 child of HIV-infected women. Twenty-six bacteremias were observed in 24 pts: Salmonella nontyphoid (10), Staph. epidermidis (7), Pseudomonas sp. (2), Clostridium septicum (1), Propionibacterium acnes (1), Streptococcus mitis (1), Serratia mar. (1), Klebsiella ox. (1), Escherichia coli (1) corynebacterium J-K (1). The source of staphilococcal and corynebacterium J-K bacteremias was a central venous catheter (CVC) in 7 pts (7/8). Eighteen pts had mycobacterial infections: tuberculosis (11), non-tuberculous mycobacterial infections (7). Other infections included six episodes of pneumonia and four abscesses. Most pts responded to appropriate antimicrobial therapy.
Conclusion. The incidence of severe bacterial infections in our series is about 30%. Empiric antibiotic therapy may be necessary in these pts before a specific diagnosis is made. Appropriate and prompt therapy is usually effective.

M.B.P.76

BACTERIAL INFECTIONS IN AIDS

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From 1-1-1982 till 30-6-1988, 267 patients with AIDS have been treated at our center. Eighty percent were male homosexuals or bisexuals. The second largest group were intravenous drug abusers. Nine hundred and twenty pairs of blood cultures were inoculated in 197 patients. In 35 samples a relevant bacterial pathogen could be isolated. Twenty-four episodes of septicemia (blood culture positive) were diagnosed in 19 patients. The mean laboratory values were: leukocyte count 6800 (range 600-20200), 1 hour sedimentation rate 73.6 mm (23-127), CD4 90 µl (6-359), and CD8 512 µl (99-1082). All but one patient (St. III) were in stadium IV (CDC classification). Staphylococcus aureus (n=8) was the most frequent pathogen, followed by Salmonella spp. (n=5), Streptococcus pneumoniae (n=3), Pseudomonas aeruginosa (n=3), Escherichia coli (n=3), Strep. Group A (n=1), and Staph., coagulase-negative (n=1). Drugs used in treatment were: cefotaxime, ciprofloxacin, clindamycin, co-trimoxazole, imipenem, gentamicin, amikacin, ofloxacin. Seven out of 19 patients died during the septicemia episode. Most of the patients had a variety of other complicating factors.

M.B.P.77

LISTERIOSIS IN PATIENTS WITH HIV INFECTION.

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OBJECTIVE. To identify the clinical manifestations of listeriosis in HIV-infected patients and determine their responses to therapy.
METHODS. The medical records of all patients admitted to 2 medical centers in NYC from 1981 to 1988 with bacteremias or meningitis due to L. monocytogenes were reviewed. Patients were grouped as either having evidence of AIDS or risk for HIV infection (AIDSorRISK+) or lacking such evidence (AIDSandRISK-).
RESULTS. 30 patients with listeriosis were identified and reviewed. 19 were AIDSandRISK-. 6 patients had AIDS, 1 was seropositive but asymptomatic and 4 were at high risk for HIV infection. While the annual number of cases of listeriosis in AIDSandRISK- was constant, 9 of the 11 AIDSorRISK+ cases occurred between 1985 and 1988, the last half of the survey period. All AIDSorRISK+ patients were male homosexuals or intravenous drug abusers, and all but one were black or hispanic. The clinical syndromes included bacteremia without apparent source in 7 (64%) AIDSorRISK+ and 8 (42%) AIDSandRISK-, meningitis in 3 (27%) AIDSorRISK+ and 5 (26%) AIDSandRISK-, and a single case of endocarditis in each group. 10/11 AIDSorRISK+ were treated with penicillin or ampicillin; 7 were also given an aminoglycoside. All 11 survived; most became afebrile by the fifth hospital day. No relapses were observed. All 19 AIDSandRISK- patients responded, but 2 died of underlying malignancy.
CONCLUSION. From 1981 to 1988, the frequency of listeriosis increased in AIDSorRISK+ but not AIDSandRISK- patients. AIDSorRISK+ patients with listeriosis responded well to standard therapies. Physicians should consider L. monocytogenes when empirically treating AIDSorRISK+ patients with sepsis and meningitis.

M.B.P.78

AIDS RELATED HISTOPLASMOSIS.

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Histoplasmosis was diagnosed in 30 (4%) of 752 AIDS patients seen prior to 12/31/88 at Parkland Memorial Hospital, which serves a region where histoplasmosis is endemic. Histoplasmosis was the initial opportunistic infection except oral thrush in 26 (87%) of these patients. Thirteen patients had positive blood cultures, 9 had positive peripheral smears, 7 had positive bone marrow cultures, 3 had positive bronchoscopies, and 2 had positive skin biopsies. Three were first diagnosed postmortem. Mean survival was 170 days after the procedure that established the diagnosis was performed.

Ten died within 10 days of that procedure. All who survived long enough to receive at least 100 mg amphotericin B survived to complete a full course of amphotericin therapy. Five of the patients were receiving ketoconazole for thrush at the time histoplasmosis developed; 3 of these died before 50 mg amphotericin B could be administered.

These observations suggest that early diagnosis of AIDS-related histoplasmosis (e.g., by peripheral smear or routine surveillance blood cultures) may improve at least its short-term prognosis.

M.B.P.79 DISSEMINATED HISTOPLASMOSIS IN A DANISH AIDS PATIENT.

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Objective: To present the first case of disseminated histoplasmosis (DH) in an European AIDS pt.
Methods and Results: A 33-year old HIV-seropositive Danish homosexual with 2 weeks of fever, chills, a slight cough and a weight loss over the last 3 months. Examination showed a Kaposi's sarcoma in the mouth, oral thrush and a temperature of 38.4°C. No lymph node swelling or organomegaly. White blood cell count was 2.700/mm^3 and CD_4 cell count was zero. X-ray of the chest showed diffuse bilateral infiltrates and from the bronchial lavage pneumococcer and candida were cultivated. Therapy was started with penicillin and ketoconazole 200 mg daily. A liver biopsy showed granulomata and a biopsy of the bone marrow was normal. A CAT-scan of the abdomen showed a slight hepatosplenomegaly and several lymph nodes in the retroperitoneum. Six weeks after admission he still had the fever and was loosing weight. Zidovudine 1200 mg daily was started and an explorative laparotomy was done with the excision of a mesenterial lymph node. Histologic examination showed typical H.capsulatum in EM. A histoplasmin skin test and histoplasma serologic test of the urine and blood were all negative. He was treated with i.v. Amphotericin B 25 mg/day for 2 weeks to a total of 4.5 mg/kg. Then the treatment was changed to oral fluconazol 200 mg/day. The patient lived in Venezuela from 1983-1986 but otherwise in Europe. A CAT-scan 2 months later showed regression of the lymph nodes and no organomegaly. Eleven months after the diagnosis of DH he is feeling well on oral fluconazole 200 mg/day without any sign of relapse or other opportunistic infections. CD_4 cell count is 250/mm^3.
Conclusion: DH should be suspected in HIV-positive patients also from non-endemic areas. A detailed travel history is essential. This patient got a much lower i.v. Amphotericin B dose than recommended but it seems to be sufficient when followed by oral fluconazole.

M.B.P.80 CHRONIC SUPPRESSION OF DISSEMINATED HISTOPLASMOSIS IN HIV DISEASE WITH ORAL KETOCONAZOLE

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Objective. To review the course of ten consecutive patients with disseminated histoplasmosis and HIV disease treated with intravenous amphotericin B (AMB) followed by chronic suppressive oral ketoconazole.
Methods. Clinical and laboratory data was reviewed retrospectively on all patients we have seen with histoplasmosis and HIV (N=11). One case, in which death occurred shortly in AMB treatment, is not included.
Results. Diagnosis was made by smear and culture of bone marrow (N=4), blood (N=2), lung tissue (N=2), colon (N=1), and bronchoalveolar lavage (N=1) Each patient received 1050 to 2400 mg of AMB followed by 400-600 mg ketoconazole orally per day. Patients have been followed from one to 24 months on ketoconazole. Average months of disease free follow-up = 11.5. Two patients relapsed, but remain alive, having been retreated with AMB. One relapse, at 6 months on ketoconazole, was associated with ranitidine treatment. The other relapse, at 21 months, was associated with rifabutin treatment. Two of the 10 patients died. Both died of other HIV related conditions. Both had negative bone marrow exams for histoplasmosis shortly before death.
Conclusions. Chronic suppressive oral ketoconazole may be a reasonable alternative to chronic suppressive AMB in selected patients with histoplasmosis and HIV disease.

M.B.P.81 HISTOPLASMOSIS IN AN AIDS PATIENT TREATED WITH ITRACONAZOLE

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Objective Histoplasmosis has been described in AIDS cases in endemic areas. We report a case which developed in a severely immunocompromised patient resident in the U.K.
Methods A 34 year old HIV antibody positive patient with a previous AIDS diagnosis of cerebral toxoplasmosis and Mycobacterium tuberculosis in the lung and neck nodes, presented with a two month history of skin lesions on the face and back and painful, swollen left foot. Biopsy of the fifth metatarsal and also of a heaped granulomatous skin lesion showed the large tuberculate macroconidia of Histoplasmosis capsulatum. The patient was Argentinian but had not been in that country for ten years.
Results He was already being treated with ketoconazole 200mg twice daily for oesophageal candidiasis but has since been switched to the triazole itraconazole 200mg daily in an attempt to eradicate the fungus. His lesions have healed completely and feels much better since commencing therapy, he remains well at six months follow up. Treatment in the past has been with intravenous amphotericin B and flucytosine or oral ketoconazole. It is interesting that this patient was already on ketoconazole when he developed the skin and bone lesions suggesting poor drug absorption or a resistant strain.
Conclusions We believe this to be the first AIDS patient to develop this infection in the United Kingdom and to be successfully treated with itraconazole.

M.B.P.82 DERMATOLOGICAL MANIFESTATIONS AND HIV INFECTION

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Objective: To analyse all dermatological manifestations among 409 HIV infected patients.
Methods: We made a retrospective study of all mucocutaneous findings among patients attending our "AIDS" Clinic from November 1983 to August 1988. HIV infection was confirmed by ELISA, Indirect Immunofluorescence and/or Western blot techniques. All mucocutaneous lesions were confirmed by biopsy and/or culture when needed. Patients were evaluated for age, sex, risk group, stage of infection and types of lesions. We did not evaluate treatment or response to treatment.
Results: We found mucocutaneous manifestations in 227 patients (55,5%), 212 male (93,39%), 182 homo/bisexuals (80.17%). Most of the patients presented more than one type of lesion.

TYPE OF LESION	PATIENTS	
	N	%
Kaposi's sarcoma	48	21.15
Oral candidiasis	91	40.10
Other fungal	28	12.33
Viral	65	28.63
Bacterial	31	13.66
Seborrheic dermatitis	56	24.67
Others	64	28.19

Conclusions:
1) Dermatological manifestations are common among our HIV infected patients.
2) It is possible to make a suspicious diagnosis of HIV infection observing the skin.
3) Seborrheic dermatitis,Kaposi's sarcoma and oral Candidiasis were the most common mucocutaneous manifestations.

M.B.P.83 RHODOTORULA RUBRA SEPTICEMIA IN AN AIDS PATIENT WITH AN IN-DWELLING HICKMAN CATHETER.

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Objective. To describe a septicemia in an AIDS patient caused by Rhodotorula Rubra. This organism has not been previously decribed as a cause of fungemia in AIDS patients.
Methods. A 42 year old Caucasian male diagnosed with chronic Cryptosporidium diarrhea and receiving central hyperalimentation developed fevers. Blood was obtained from the in-dwelling Hickman catheter for culture on 6 occasions over a 48 hour period. Blood was inoculated into BACTEC NR6A bottles and processed in a BACTEC NR730 system and then plated onto Sabouraud agar. Blood for culture was also obtained using the Dupont Isolator Lysis Centrifugation method and innoculated onto Sabouraud agar. The Hickman catheter was removed. Follow-up blood cultures were obtained.
Results. Blood cultures drawn from the Hickman catheter grew R. rubrum using both culture systems. R. Rubrum has a distinct pink coral color. Following removal of the catheter, peripheral blood cultures yielded no growth and the patient defervesced.
Conclusion. R. Rubrum has been rarely reported to cause septicemia. R. Rubrum may cause septicemia in AIDS patients with Hickman catheters. Catheter removal alone may result in cure without specific anti-fungal therapy.

M.B.P.84 SEPSIS FROM IMPLANTED CATHETERS IN PATIENTS WITH AIDS

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Objective. To assess the frequency of catheter-related sepsis (CRS) in AIDS.
Methods. Review of records of all patients with AIDS (PWA) seen at University Hospitals of Cleveland. CRS was defined as 2 or more positive blood cultures in a febrile patient without other apparent focus of infection.
Results. Thirty-four of 130 PWA had catheters (C) placed; 33 C were evaluable. Indications for C included treatment with amphotericin B, hyperalimentation (HAL), or Ganciclovir (25/33) or need for venous access (8/33). Fifteen episodes of CRS occurred in 12/33 C, with 0.4 CRS/100 C-days. Mean (±SD) time to CRS was 143±92 days. Organisms recovered were S. epidermidis (8), S. aureus (4), Corynebacterium JK (1), P. aeruginosa (1) and C albicans (1). There were no deaths related to CRS and no instances of endocarditis. Mean C life was 147±91 days in infected catheters (IC) and 94±92 days in uninfected catheters (UC) (p=0.1). Dementia was present in 58% of IC and 38% of UC (p=.067). Sixty-seven percent of Mediport®-C and 30% of Broviac®/Hickman®-C became infected (p=.013). Age, sex, race and HIV risk factors were similar in IC and UC. The 2 groups did not differ in duration of AIDS, number of opportunistic infections, Karnofsky status, surgeon, or HAL use.
Conclusions. We found a high overall frequency (36%) of CRS in our PWA. CRS occurred up to 20 times more often than in comparable non-AIDS patients, as reported in the literature. Mediport-C were more frequently associated with CRS than Broviac/Hickman-C. Possible explanations for our high infection rate include presence of dementia, prolonged catheter use at home, and host response factors.

M.B.P.85 EXPERIENCE WITH CENTRAL VENOUS CATHETERS (CVCs) IN PATIENTS WITH AIDS.

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Objective. To describe the indications, complications, and benefits of CVCs in patients with AIDS.
Methods. A retrospective chart review of patients with AIDS who had CVCs surgically placed at our institutions was performed. CVC infections were identified according to Centers for Disease Control (Atlanta) criteria.
Results. From 9/1/83 to 12/1/88, 45 patients with AIDS had 51 CVCs placed. Data was available for 40 patients with 44 CVCs (including 22 Hickmans and a variety of other CVCs). Most (36) were homosexual/bisexual males, one was a heterosexual female, and the mean age was 35.8 yrs (range 22-65). Indications for CVCs (not mutually exclusive) included: weight loss/diarrhea (24), antiviral therapy (15), antifungal therapy (12), antibacterial therapy (9), chemotherapy (3), and pain control (2). Hyperalimentation and blood products were received by 28 and 20 patients, respectively. CVCs were in place for a mean of 87.9 days (range 1-317) with 11 CVC-related infections in 9 patients (with 10 CVCs). The overall infection rate was .28/100 CVC days. Infectious complications seen included 7 bacteremias (due to *S. aureus* (3), coagulase negative staphylococci (2), *C. albicans* (1) enterococcus (1)), and 4 exit-site infections. There was no significant relation observed between CVC infection and the number of CVC lumens, administration of hyperalimentation, or person caring for the CVC (patient/relative versus nurse). Noninfectious complications included; pneumothorax (2), severed CVC (2; 1 deliberately in a suicide attempt), CVC thrombosis (2), and one placement into a mammary vein. No CVC-related deaths occurred and conditions for which CVCs were placed improved in 26 patients.
Conclusion. CVCs in AIDS patients may be placed for a number of indications, are generally well tolerated and, when compared to historical controls involving other immunosuppressed patients, have an acceptable level of infectious and other complications.

M.B.P.86 INDWELLING RIGHT ATRIAL CATHETER(IAC) INFECTIONS IN AIDS PATIENTS.

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Objective: Evaluate the risk of infection from IAC in AIDS patients(pts).
Methods. Medical records of AIDS pts who had Hickman or Portacath catheters from 9/1/85 to 8/31/88 were reviewed. Pts with a diagnosis of solid tumor, lymphomas, acute and chronic leukemias served as control group. Catheter related infections (CI) were defined as bacteremia(B), exit infection (E), tunnel infection (T) or any combination of the above. All catheters were inserted by the same group of surgeons and all pts were instructed in their care by the same specialists.
Results. 48 AIDS pts had 14 CI(1E, 1T, 4B, 5BE, 3BT). 130 control pts had 14 CI(2E 1T, 7B, 3BE, 1BT). The results are tabulated below:

	Infections/1000 catheter days	% infections	Mean catheter days
AIDS	1.99	29.2	146
Control	0.47	10.8	229
p value	0.0001	0.0002	

The organisms isolated were(study/control): S.epidermidis, predominantly slime positive, (3/7), S.aureus (7/4), P.aeruginosa (3/0), Xanthomonas maltophila (2/0); other gram negative (0/1), fungi (1/2). 70% of the infected AIDS pts had a CD4 cell count less than 20/mm^3. All infected pts were p^{24} antigen positive versus 20/30 non-infected AIDS pts.
Conclusion. CI are more frequent in AIDS pts when compared to other immunocompromised populations despite fewer catheter days.

M.B.P.87 INFECTIONS AND COMPLICATIONS OF INDWELLING CENTRAL VENOUS CATHETERS (CVC): COMPARISONS BETWEEN PATIENTS (PTS) WITH AIDS VS. OTHER ILLNESSES (NON-AIDS)

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Objective: There is concern about placing CVC in AIDS pts, especially intravenous drug users (IVDU). This study was performed to determine the rates of infections and other complications of CVC in pts followed by the Beth Israel Home Care Department, identify factors associated with CVC complications, and compare rates of complications in pts with AIDS vs. non-AIDS.
Methods: Retrospective chart review of pts followed during 1986 using a detailed standardized data collection form.
Results: To date, charts of 48 pts have been reviewed. 15 were not evaluable. 33 pts were analyzed; 19 (58%) AIDS, 14 non-AIDS (carcinoma, 6; congestive heart failure, 3; Crohn's disease, 2; other, 3). There were 22 Hickman CVC in 19 AIDS pts, and 16 CVC in non-AIDS pts (12 Hickmans, 3 Infusaports, 1 triple lumen CVC). CVC were placed for antibiotics (Abx), 16; Abx and total parenteral nutrition (TPN), 3; TPN, 6; other, 5.

		Median # of Catheter Days (CD) [Range]		Septic Episodes	
	N	In and Outpatient	Outpatient	#	(#/100 CD)
AIDS	22	86 [13-344]	54 [0-322]	5	(0.20)
non-AIDS	16	41 [24-407]	39 [4-345]	5	(0.38)

Organisms isolated in AIDS pts were: S.aureus (1), S.epidermidis (1), gram negative bacilli (3), yeast (1). Organisms isolated from non-AIDS pts were: S.epidermidis (2), S.viridans (1), Salmonella sp. (1), yeast (1). One pt in each group had an exit site infection. There were 5 mechanical complications; 3 in AIDS pts, 2 in non-AIDS. Sepsis was not associated with: frequency of accessing the CVC, or care of CVC by nurse vs. pt or family, either overall or within groups. There were no episodes of sepsis among IVDU with AIDS.
Conclusions: 1. Observed infection rates were comparable to those previously reported in non-AIDS pts. 2. We identified no increased risk of infectious or mechanical complications of CVC in AIDS pts vs. non-AIDS. 3. These data suggest that home infusion therapy in AIDS pts carries an acceptable risk.

M.B.P.88 PHARMACOCINETIQUE (SANG-LIQUIDE RACHIDIEN) DE FORTES DOSES D ACYCLOVIR IV CHEZ LES PATIENTS HIV.

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Le but de cette etude etait d etudier la possibilite d obtenir de fortes concentrations d ACV administre par voie veineuse sachant que les infections du groupe herpes sont frequentes au cours de l'infection HIV et que des souches de moindre sensibilite a l acyclovir ACV ont ete isolees (Tka. Tkd)
Méthodes: 33 patients 24-36 ans dont 10 HIV-(5 meningites) ayant des fonctions renale et hepatique normales ont reçu ACV 50 mg/kg en perfusion iv de 3h associe a probénecid 1 g po Les dosages dans le sang et le liquide cephalorachidien (LCR) ont ete realises par radioimmunologie (umol/l)
Résultats la tolérance a ete bonne cephalees, lombalgies, fievre, augmentation de la créatinémie et des transaminases sont survenus en cas de perfusion trop rapide 47 prelevements sanguins et 17 LCR ont ete realises apres la fin de la perfusion (tableau) aucune accumulation n a ete observee la decroissance des concentrations sanguines etait lineaire.

concentr ACV (umol/l)	5min	3h	6h	12h	15	24h	48h
sérum m (n)	197(20)	88(5)	32(10)	3.7(6)	1.64(1)	0.36(3)	0.024(2)
LCR m (n)	5.25(5)	11(5)	10(4)	9(3)			

Les parametres déduits sont les suivants

	AUC umol.h /l	t1/2 h	VD l/kg	Cl Tot l/h	R AUCsang/LCR
sang m±ds	647 ± 92	2.12±0.1	0.97±0.1	0.33±0.06	0.82
LCR m±ds	536 ± 77	28±12			

Conclusions ACV 50 mg/kg en perfusion de 3h permet d obtenir rapidement des concentrations sanguines et rachidiennes prolongees superieures a la plupart des ID50% de HSV1 et 2 Tkd et Tka. de VZV HHV6. EBV et CMV

M.B.P.89 HICKMAN CATHETER INFECTIONS IN AIDS

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Objective: To determine the incidence of Hickman catheter (HC)-related infections in patients with AIDS compared to patients with other diseases.

Methods: We reviewed the medical records of 69 patients who underwent 71 HC insertions during a one-year study period.

Results: 46 HCs were placed in 44 patients with AIDS and 25 in 25 patients with other diseases. Eighteen infections occurred: 16 in AIDS patients, 2 in the control group (p<0.05). Among patients with AIDS there were 5 exit site infections (3 bacteremic), 5 septicemias, 2 tunnel infections (bacteremic), 1 septic phlebitis; and 3 probable HC infections. Staphylococcus aureus was the only pathogen in 12 cases, and was present in 2 mixed infections (87%). S. epidermidis was isolated alone in 2 patients and as part of mixed infections in 2 other cases (25%). Mean onset of HC infection was 32 days, but 7 patients developed infection in the first 8 days after insertion; in all of them fever was present while leucopenia occurred only in 3. Two patients died. The rate of HC infection was 0.47 per 100 catheter days in AIDS and 0.09 in the control group.

Conclusions: The high rate of HC infections in AIDS underscores the need of using HC only when absolutely necessary. Antistaphylococcal agents should be evaluated for prophylaxis of early HC infections.

M.B.P.90 INVASIVE ASPERGILLOSIS (IA) IN AIDS: CLINICAL MANIFESTATIONS AND PREDISPOSING FACTORS

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Objective: Describe clinical manifestations of IA in patients (pts) with AIDS; evaluate the presence of predisposing factors.
Methods: Identification of AIDS pts with IA by discharge diagnoses during the period 1984-8. Charts reviewed retrospectively.
Results: Six cases of IA in AIDS pts were diagnosed during the study period. Over 2000 pts with AIDS were admitted to the medical center during that period; a minimal relative frequency of 0.3%. All pts were male; 4 White, 2 Black; 5 homo/bisexual, 1 intravenous drug user. All cases were confirmed histologically. Four of 6 pts had necropsies. 5 cases were diagnosed antemortem [transbronchial biopsy (2), transthoracic needle aspirate (1), open lung biopsy (1), renal biopsy (1)], 4 of which were confirmed at necropsy; 1 case was initially diagnosed at necropsy. Sites of involvement included: lungs, 5; trachea, 2; mediastinal lymph nodes, 2; kidney, 1; brain, 1; thyroid, 1; myocardium, 1. Initial presentations were pulmonary in 5, and renal in 1. All pts with pulmonary IA had fever, cough and wheezing; 3/5 had chest pain. Chest x-rays showed diffuse infiltrates in 3, and focal cavitary infiltrates in 2. The pt with renal IA presented with fever, flank pain, pyuria, and renal insufficiency. All 6 had recognised predisposing factors: high dose corticosteroids (CS) for 2-3 weeks during the month prior to the diagnosis of IA in 3 (2 for PCP, 1 CNS toxoplasmosis); CS (for PCP) and granulocytes < 1000 in 1; granulocytes < 1000 in 1; intravenous drug use and CS (for adrenal insufficiency) 4 months prior to the diagnosis of IA in 1.
Conclusion: 1. In this series, IA in pts with AIDS was uncommon. 2. IA in pts with AIDS was only seen in association with known predisposing factors.
3. Therapeutic use of corticosteroids may increase the likelihood of invasive aspergillosis in pts with AIDS.

M.B.P.91

CRYPTOCOCCOSE, HISTOPLASMOSE AFRICAINE ET SIDA AU CONGO

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OBJECTIF. Rapporter la forte fréquence actuelle de la cryptococcose contrairement à l'histoplasmose africaine jamais diagnostiquée au cours du SIDA au Congo.
METHODES. Il s'agit d'une enquête rétrospective sur dossiers couvrant la période 1981-1988 menée en milieu hospitalier à Brazzaville.
RESULTATS. Cryptococcose. Cette mycose, pratiquement inconnue localement avant 1984 (3 cas rapportés), est diagnostiquée de plus en plus souvent. Associée à l'infection à VIH dans la quasi-totalité des cas, elle touche surtout l'adulte jeune avec une nette prédominance masculine (sexe ratio 3,3 pour 38 cas) contrairement au SIDA local (sexe ratio 1,1).

L'histoplasmose africaine (H.duboisii) ne semble pas constituer, pour l'instant, une complication mycosique du SIDA alors que c'est le cas pour l'histoplasmose américaine (H.capsulatum), en particulier aux USA. Non exceptionnelle en Afrique Noire où elle sévit surtout chez des sujets vivants, ou ayant vécu en milieu rural, l'histoplasmose africaine n'a jamais été diagnostiquée dans notre enquête chez un sujet atteint de SIDA. Son incidence, faible, reste stable depuis une dizaine d'années.

	1981	1982	1983	1984	1985	1986	1987	1988	Total
Cryptococcose	1	0	1	0	3	7	9	18	39
Histoplasmose africaine	1	2	3	1	1	1	1	1	11

CONCLUSION. La fréquence élevée de la cryptococcose constatée depuis l'avènement du SIDA contraste avec le nombre faible et constant des cas d'histoplasmose africaine jamais diagnostiquée dans un contexte d'immunodépression.

M.B.P.92

A MULTICENTER TRIAL ON THE EFFICACY AND SAFETY OF FLUCONAZOLE IN THE TREATMENT OF OPPORTUNISTIC FUNGAL INFECTIONS, SPONSORED BY THE ITALIAN NATIONAL INSTITUTE OF HEALTH.

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Infectious complications are the most frequent cause of death in patients with HIV infections. In Italy, AIDS patients, who are mainly drug addicts, present a high incidence of fungal infections; a 62% incidence has been estimated for oropharyngeal candidiasis, 35% for esophageal and disseminated candidiasis (the incidence of infections caused by candida thus appears to be higher than that for Pneumocystis carinii pneumonia), and 2.6% for cryptococcosis. In ARC patients, a 46% incidence of oropharyngeal infections caused by candida has been calculated. Treatment of these infections appears to be difficult owing to the toxicity of the main antifungal agents available. Fluconazole, a new bis-triazole antifungal agent, proves to be well absorbed by the gastrointestinal tract after per os administration and moreover may also be administered by intravenous route. It reaches high concentrations in the CSF and in experience to date presents an excellent safety profile. Within the framework of a program coordinating national clinical trials for the treatment of HIV infections and for the prophylaxis and treatment of opportunistic infections, the Italian NIH sponsored a multicenter research project in order to assess the efficacy and safety of fluconazole in the treatment of patients with severe systemic fungal infections. Within the framwork of this project, a study on candida isolates will also be done in order to correlate the individual biotypes with the different patterns of virulence and resistance to the various antifungal agents.

M.B.P.93

PARACOCCIDIOIDOMYCOSIS AND HIV INFECTION

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We report the occurrence of paracoccidioidomycosis in 2 HIV infected patients. During follow-up for AIDS, the first patient presented high fever and enlarged liver and spleen. Plain files of the abdomen, abdominal ultrassound and CT scan showed solid nodules with calcifications in the spleen. Both the direct smear and the culture of a bone marrow aspirate yielded Paracoccidioides brasiliensis. The patient died of acute disseminated Paracoccidioidomycosis. The second patient was an homosexual man wich presented a mass on the right lower abdomen and inguinal region. He was seropositive for anti-HIV and a biopsy of the mass showed the association of Hodgkin's disease (mixed cellularity type) and Paracoccidioidomycosis. With the expanding AIDS epidemic we believe this report emphasizes the need to consider Paracoccidioidomycosis in HIV infected persons in countries where this mycosis is endemic. We also suggest the inclusion of Paracoccidioidomycosis as a potential opportunistic infection in these areas.

M.B.P.94

DISSEMINATED INFECTION DUE TO PENICILLIUM MARNEFFEI IN A HIV POSITIVE PATIENT

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A disseminated infection due to P.marneffei is described as the first case observed in Italy. The infection was diagnosed in a 33 yrs old patient, a IV drug abuser infected with HIV, who visited Thailand several times during the last two years.
The patient was admitted to the hospital because of fever, productive cough, skin papules and pustules spread on the face and two skin nodules at both hands. The immunity of the patient was severely compromised(WBC 2100/mm^3, lymphocytes 12%, T4 5%). P.marneffei was isolated from several blood cultures, sputa, scraping of the skin lesions of the face and from the biopsied nodule. The yeast-like tissue cells were observed in the histological sections of the nodule and in the sputum smears.
The patient was treated for 6 weeks with IV Amphotericin B(total dose 1400mg) associated with Flucytosine(150 mg/Kg/die)for the first 3 weeks. Prompt clinical improvement and sterilisation of biological samples were obtained within 10 and 20 days of treatment respectively. Itraconazole was then administred as maintenance therapy(400 mg/die during the first month, 200 mg afterward). No relapse was observed during the first 2 months follow up.

M.B.P.95

INVASIVE ASPERGILLOSIS - AN AIDS TYPICAL OPPORTUNISTIC INFECTION?

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Objective. Among 50 autopsies of deceased AIDS patients of the AVH 3 cases of an invasive Aspergillus infection were found. Repeated mycological examination of 10 AIDS patients with a Cryptococcosis had shown that there is no equivalent readiness for an aerogenic infection with Aspergillus spp. and Cryptococcus neoformans. The uniform immunodeficiency is the only disposition for the Cryptococcosis, but an Aspergillosis develops only under other additional disposition factors.
Methods. The histological examinations of the organs of the 3 autopsy cases included Grocott's methamine silver staining and immunohistochemical examinations with monoclonal antbodies against Cytomegalovirus (CMV)-antigen. The cultural fungus diagnosis was carried out with tissue particles put in the agar.
Results. In the 3 autopsy cases we found an invasive infection with Aspergillus fumigatus. In all these cases there was a terminal phase of AIDS with a double infection of the lungs with Pneumocystis carinii (Pc) and CMV. In the case 1 a leucopenia was mainly responsible for the Aspergillus infection, in the case 2 a corticoid therapy of 5 months, and in the case 3 a preciding chronic lung disease, a severe emphysema.
Conclusions. The definite criteria of the disposition for the invasive Aspergillosis of the 3 AIDS patients were independent of the HIV infection. The invasive Aspergillosis is not a typical opportunistic infection of AIDS.

M.B.P.96

FLUCONAZOLE TREATMENT FOR FUNGAL INFECTIONS IN ARC AND AIDS

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Objective. To evaluate prospectively efficacy and safety of single daily dose Fluconazole (F) in the treatment of fungal infections in ARC and AIDS.
Method. 1) F, 400 mg on day 1 and 200 mg thereafter p.o. or i.v., was given in an open controlled trial to: a) 1 bronchial and 14 esophageal candidiasis (BC and EC); b) 3 disseminated Cryptococcosis (DC) as first-line therapy and 2 cryptococcal meningitis (CM) as maintenance therapy after a 30 day course of Amphotericin B+Flucytosine. 2) Tretment of oral candidiasis (OC) was evaluated in 16 patients (pts), 8 ARC and 8 AIDS, randomly assigned to F, 200 mg on day 1 and 100 mg thereafter p.o., or to Ketoconazole (Kc), 200 mg bid p.o., 8 ARC and 10 AIDS. Controls wre performed before, during and after therapy.
Results. Cure rates were: 1) 1/1 for BC, 11/13 (84.6%) for EC, with a mean dose of 235 mg F given for a mean of 31 days, with 2 drop-outs; 2) 1/3 DC cured with a 42 day F course, 1 dead on day 6 and 1 discontinued on day 10 because of inefficacy; 3) no recurrencies of CM in 2/2 after 6 months maintenance therapy on F; 4) 81.2% cure of OC with F at a mean dose of 108 mg x 15.9 days versus 77.8% with Kc at a mean dose of 375 mg x 15.9 days. F was discontinued in 2 pts because of cutaneous rash (5.5%). An overall 19.4% of F-treated pts had moderate elevation of liver function tests, mostly in individuals with preexistent liver disease and no differences were noted between F versus Kc.
Conclusion: F is effective and safe in the treatment of AIDS' fungal infections.

M.B.P.97 VISCERAL LEISHMANIASIS AS HIV-ASSOCIATED INFECTION. REPORT OF 6 CASES.

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Objective. To report visceral leishmaniasis (VL) cases observed among HIV infected adult patients in two hospitals from Mediterranean islands known as Leishmania donovani endemic area.
Methods. We retrospectively review all cases of VL diagnosed among adult (>14 years old) patients seen in our hospitals from 1985 to the end of 1988. We report all cases in which HIV infection was also detected, with special reference to the clinical and immunological status, and treatment outcome.
Results. From 1985 to 1988, 9 cases of adult VL have been diagnosed in our two hospitals. In 6 of the 9 cases HIV infection was also detected. Three patients had history of intravenous drug abuse, 1 patient acquired HIV infection through infusion of commercial coagulation factors to reverse coumarin effect, and 1 patient denied any previous risk behaviour. Four patients are men. Age ranged from 18 to 70 years. Two patients refered close contact with dogs. Fever and leukopenia were initially present in all cases. VL was the first severe infection in all patients, and in 3 cases Salmonella (nontyphoid) was recovered from blood cultures during the course of VL. CD4 lymphocytes were < 500/mm3 in all cases. Diagnosis of VL was made by Giemsa stain of bone marrow aspirates. High titers of Leishmania antibodies were found in all cases in which they were tested. Meglumine antimoniate (Glucantime) therapy was used in all cases. Two patients showed clinical improvement, without apparent relapse. Three patients didn't show clinical response to treatment, and two of them died from VL. Three patients met AIDS case definition criteria (1 wasting syndrome, 1 recurrent Salmonella septicemia, 1 candidiasis of esophagus).
Conclusion. Visceral leishmaniasis may be the first severe infection in HIV-infected patients. In these cases often runs an unfavourable course despite appropiate therapy. Like others, we propose that adult VL should be considered as opportunistic infection in HIV infection, and included in surveillance AIDS case definition. All adult patients with VL should be studied to rule out HIV infection, even in endemic areas.

M.B.P.98 Unusual diagnosis of leishmaniasis in AIDS

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Visceral leishmaniasis is an endemic disease in Spain with a distinctive clinical picture. We report two patients with AIDS in whom the diagnosis of leishmaniasis was established from unusual pathologic materials.
Case report Nº 1 29-year-old male, bisexual, HIV-positive, with history of recurrent salmonellosis and cerebral toxoplasmosis. In January 1988, he was admitted with severe granulocytopenia , Pseudomonas aeruginosa septicemia and disseminated intravascular coagulation. He was again readmitted in March 1988, with an upper gastrointestinal bleeding. An endoscopy revealed gastric Kaposi's sarcoma lesions and the biopsy of such lesions showed infestation by leishmanias. There was improvement of the patient general condition after treatment with sodium stibogluconate at a daily dose of 600 mg. In spite of this adequate treatment, a subsequent bone marrow aspirate still showed the presence of leishmanias.
Case report Nº 2 36-year-old patient with hemophilia type A, multitransfused, with chronic liver disease and HIV positive serology since October 1986. In October 87, he was diagnosed of intestinal cryptosporidium infection. One month later he is admitted with cough, expectoration and fever of three week duration and a diffuse reticulo-nodular pattern on the chest x-ray. Pneumocystis Carinii infection was demonstrated on the bronchoalveolar lavage (BAL) specimens, and there was clinical improvement after three weeks of cotrimoxazole. The cytologic analysis of the BAL specimens revealed the presence of abundant macrophages replete with parasites with the characteristic features of Leishmania Donovani. A treatment with 800 mg a day of sodium stibogluconate was administered during 10 days, but the patient expired 15 days later.
Conclusions: 1- We would like to draw attention to the presence of atypical clinical forms, with limited clinical expression and a poor treatment response. 2- It is likely that some of these infections may pass unnoticed since many of their clinical features may be ascribed to other coexisting circumstances such as drugs, liver insufficiency or to the HIV infection itself. 3- The finding, thus far unreported, of protozoa in BAL or gastric biopsies of Kaposi's sarcoma, should encourage the search for this organism, even in the absence of clinical clues to suspect this infection.

M.B.P.99 HIV SEROLOGY AND VISCERAL LEISHMANIASIS IN CAMEROON

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Objective. To do a study on the seroprevalence of HIV1 and HIV2 antibodies among patients with visceral leishmaniasis (V.L.) in the region of Kousseri (Far North of Cameroon).

Methods. Of 46 patients (22 males, 24 females) with clinical suspicious signs of V.L. (deteriorating general state, prolong fever, anemia, liver and/on spleen enlargement) specific tests were done (full blood count, leishmaniasis serology, May Gründwald Giemsa Stein on bone marrow smears), then HIV1 and HIV2 serology.

Results. The diagnosis of V.L. was confirmed on 9 patients. Out of these 9 patients 1 was found HIV1 positive. None was found HIV2 positive.

Conclusion. V.L. should be considered as an opportunistic infection of AIDS.

M.B.P.100 Tropical diseases of HIV patients in non-endemic countries: A case of viscerale Leishmaniosis and a case of tropical Pyomyositis

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Tropical diseases such as viscerale Leishmaniosis are often reported in HIV patients from tropic, subtropic and mediterranian countries. We report 2 cases. Among 220 HIV patients seen at the Department of Medicine, University of Düsseldorf, in 1988, we found 2 patients (1%) with a tropical disease. Case 1: A 31 year old male i. v. drug abuser presented with hepatosplenomegaly, pancytopenia, hypergammaglobuliamia and peripheral lymphomas. Bone marrow aspiration and biopsy showed visceral Leishmaniosis. He was successfully treated with sodium stibogluconate. Case 2: A 29 year old female HIV patient, infected by heterosexual contact, was admitted to the hospital for persistent fever and abdominall pain. CT-scan showed pyomyositis and abscesses of left psoas muscel. Operative drainage and microbiological evaluation excluded Mycobacterium tuberculosis but revealed hemolytic Streptococcus group A as the etiologic agent. Pyomyositis was previously thought to be limited to the tropics, but this patient had never left W.-Germany.
Conclusion: Tropical diseases can be found in HIV patients even outside endemic areas.

M.B.P.101 DETECTION OF HIV-1 IN CEREBROSPINAL FLUID (CSF): CORRELATION WITH PRESENCE AND SEVERITY OF THE AIDS DEMENTIA COMPLEX

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Objective: To assess the presence of HIV-1 in CSF by antigen capture and virus isolation in relation to severity of the AIDS dementia complex (ADC).
Methods: P24 was assessed by antigen capture (Abbott) and by virus isolation (using PHA-stimulated PBL's as indicators) in CSF and serum/blood samples from HIV-1-infected patients at various stages of ADC at the time of clinically-indicated lumbar puncture. Results were correlated with clinical ADC stage.
Results:

ADC Stage	Number of Samples	p24 Antigen		HIV-1 Isolation	
		CSF	Serum	CSF	Blood
		(% Positive)			
0-0.5 (normal-equivocal)	34	0	44	21	90
1 (mild)	28	7	44	25	86
2 (moderate)	18	22	67	50	100
3 (severe)	8	43	100	25	100

Correlations: ADC Stage vs CSF & Serum Ag (p<.0001) vs CSF & Serum Culture (NS).
Conclusion: While p24 in both CSF and blood correlate with ADC Stage, its detection in CSF is insensitive to mild-moderate disease and in blood is relatively nonspecific. Likewise, isolation of HIV-1 from both fluids is nonspecific, and thus, neither method is highly useful for clinical diagnosis. The increase in CSF antigen with falling isolation rate remains unexplained. These results suggest that brain dysfunction may not relate to virus replication within the brain in a simple fashion.

M.B.P.102 CEREBRAL ABCESS CAUSED BY TRYPANOSOMA CRUZI IN A PATIENT WITH AIDS

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Objective. To report a cerebral abcess caused by Trypanosoma cruzi.
Case Report. An 18 year-old white woman with factor VII deficiency arrived at hospital with fever, focal neurological signs and a history of convulsions. She came from the southwest region of Rio Grande do Sul state. A cerebral TC showed multiple cerebral lesions. The liquor had a lymphomonocyte predominance (91%) and low glucose level. Bacteriologial, fungal and immunological exams were negative. Amphotericin B, anti-tuberculous and anti-toxoplasmosis drugs were empirically started in a sequential form, without any improvement. A new lumbar puncture showed Trypanosoma cruzi; unfortunately, it was too late, and the patient died before any treatment could be started.
Conclusion. This is the first case we have noticed of a cerebral abcess caused by Trypanosoma cruzi. It is important to remember that HIV-associated opportunistic infections depend on pathogen prevalence in a certain region and the knowledge of the place of origin of the patient will aid in the search of a diagnosis (the southwest of RS is an endemic region of Chagas' disease, which is caused by Trypanosoma cruzi).

M.B.P.103 ROLE OF PULMONARY FUNCTION TESTS(PFT) AND CD4 LYMPHOCYTE COUNT FOR DIAGNOSING LUNG COMPLICATIONS IN AIDS

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Objective: To assess the value of PFT and CD4 lymphocyte count for an early diagnosis of pulmonary diseases in HIV seropositive homosexual patients. Material: 33 HIV-seropositive homosexual asymptomatic patients.All denied drug abuse;22 out of 33 were included in stage III and 12 in stage IV-C2 Methods : We determined:Forced Expiratory Volume in one second(FEV1),Forced Vital Capacity(FVC) and Carbon Monoxide transfer Factor(TLCO).Simultaneously CD4 lymphocyte count were also evaluated.Ten out of 33 have had a previous TLCO determination.According to the TLCO obtained we divided patients in 3 groups that were submitted to diferent procedures.Results: Group A(normal PFT): 27 patients,CD4 X:678 x mm3;Group B(normal FEV1 and FVC, TLCO:65-80%):6 patients,CD4 X:618 x mm3(bronchoscopic and histologic abnormalities but without opportunistic infections nor Kaposi´s Sarcoma);Group C(mild restrictive disease,TLCO below 65%):4 patients, CD4 X:191 x mm3, all had Pneumocystis carinii pneumonia (PCP).A table showing all methods and results would be presented. Conclusions: 1-TLCO between 65-80% is seen in HIV-seropositive patients in whom PCP is ruled out,although histopathologycal findings have demonstrated inespecific interstitial pneumonitis.2-TLCO below 65% even in asymptomatic patients with normal chest x-ray must encourage to further explorations since PCP is very probable.3-CD4 cell count below 250 x mm3 argues for a necessary primary PCP prophylaxis in HIV seropositive patients.PCP occurs only in patients with CD4 count below 250 x mm3 and total lymphocyte count below 900 x mm3.(95.5% of cases in our series)

M.B.P.105

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"Elevation of lactate dehydrogenase in asymptomatic AIDS patients"

Plasma of 115 anti-HIV positive patients without clinical symptoms was analyzed for lactate dehydrogenase (LD), its isoenzymes (LDI) and beta-glucuronidase. Total LD was elevated in 73% of these patients, the median value was 233 U/l (normal population: median 154 U/l, 97.5 percentile at 200 U/l). The underlying isoenzyme pattern most frequently showed elevation of LDI II (in 78%) and LDI III (in 82%). As pneumocystis-pneumonia could be excluded as cause, this pattern is highly suspicious for origin of the elevated LD in the lymphatic system. Patients were further subgrouped according to T 4 cell counts. Despite no correlation was found, it might be speculated that LDI II and III levels reflect the destruction rate of lymphocytes. This is supported by our observation, that total LD and LDI II and III are more frequently elevated in patients with positive HIV-antigen test. Roughly 40% of the patients show elevation of LDI V and IV and beta-glucuronidase as consequence of liver affection as verified by elevated transaminases.

In contrast to other reports it can be stated, that elevation of plasma lactate dehydrogenase with prominent isoenzymes II and III is a frequent phenomenon in anti-HIV positive patients without pneumocystis-pneumonia. This might reflect the disease activity in the lymphatic system.

M.B.P.107 ADENOSINE DEAMINASE (ADA) LEVELS IN SERA OF PATIENTS WITH HIV-1 INFECTION.

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Objective. To assess the value of serum ADA quantification as a predictor of active M.tuberculosis (Tb.) infection and degree of immunosuppression in HIV-1 seropositive patients.
Methods. We quantified serum ADA levels in 38 HIV-1 seropositive (HIV+) patients: 9 with proven Tb. infection (Gr.I), and 29 without Tb. infection (Gr.II). Control groups consisted of 11 HIV-1 seronegative (HIV-) patients with proven Tb. infection (Gr.III) and 40 healthy HIV- volunteers (Gr.IV).
Results. ANOVA analysis showed that serum ADA levels were significantly elevated ($p < 0.01$) in Gr.I (48.39 ± 22.26 U/L), Gr.II (35.74 ± 16.4 U/L),and Gr.III (24.54 ± 11.82 U/L) when compared to Gr.IV (8.6 ± 4.6 U/L). ADA levels were statistically different ($p < 0.01$) in HIV+ (Gr.I & Gr.II) compared to HIV-(Gr.III & Gr. IV) patients.No statistical difference in ADA levels could be demonstrated between Gr.I and Gr.II. In the HIV+ patients we were unable to demonstrate any correlation between ADA levels and CD4+ cell count, active Tb infection or opportunistic infections.Of HIV+ patients, those belonging to WR5 stage showed the significantly higher levels of ADA. Using a backward logistic regression analysis we found that ADA serum levels were correlated with peripheral leucocyte counts ($p=0.0001$), peripheral monocytes counts ($p=0.0001$), IgM levels ($p=0.0019$) HIV-1 antigenemia ($p= 0.05$) (MR=0.82, ADJR=0.79, P=0.001).
Conclusion. Quantification of ADA serum levels in HIV- were useful for the presumptive diagnosis of Tb.infection, however in HIV+, ADA levels were not useful predictors of degree of immunosuppression or of active Tb infection.

M.B.P.104 THE EFFICACY OF SCREENING TESTS FOR INFECTIOUS DISEASES IN PERSONS WITH SYMPTOMATIC ARC

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Objective. To evaluate the efficacy of screening tests for secondary infections in patients entered in a multi-center study of zidovudine for ARC.
Method. Entry criteria for this study required patients to have T4 counts between 200-500, and symptoms of ARC such as fever, sweats, weight loss, fatigue, lymphadenopathy, or thrush. Baseline screening to identify active infections included a chest x-ray (CXR), serologies for syphilis, hepatitis B (HB), cryptococcus, a urine culture for cytomegalovirus (CMV), and blood cultures for CMV, fungus, and mycobacteria.
Results. Of 205 patients enrolled, 99% are male, 69% white, and the mean age is 40. HIV risk factors include 61% homosexual, 18% IV drugs, 9% mixed, and 12% other. Mean baseline T4 cell count was 340. Significant lymphadenopathy is present in 36%. ARC has been present over 6 months in 58%; systemic symptoms at screening in 55%. Tests completed to date: CXR abnormal in 19/191 (10%). Reactive serologies for syphilis 29/187 (16%), HB surface antigen 19/169 (11%), and cryptococcus 0/156. CMV urine positive in 3/86. Blood cultures complete to date for CMV (88), fungus (92), and mycobacteria (87) have all been negative.
Conclusion. In a population of symptomatic ARC patients with depressed T4 cells, routine screening for infectious agents may be of limited value. CXR, and syphilis and HB serologies appear warranted, however more expensive tests should await specific indications.

M.B.P.106 67 GALLIUM SCINTIGRAPHY OF CHEST IN AIDS PATIENTS. ANALYSIS OF 152 CASES.

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OBJECTIVE.To evaluate the importance of chest 67 Ga scintigraphy in diagnosis of pulmonary diseases in AIDS patients, with negative or dubious XR findings.
METHODS. In the last two years 152 AIDS patients showing symptoms of lung diseases were studied with Ga scan; in 95 subjects diagnosis was performed after sputum culture, BAL, bacteriological and histological examination. An imaging of transmission scan obtained with planar source of 57 Co (10 mli, 370 MBQ) was used. Scan was classified as negative if lung/background ratio was 1,5; as positive + if 1,5 2; ++ if 2 2,5; +++ if 2,5 3; ++++ if 3.

RESULTS.	CASES N.	SCAN GRADE	0	+	++	+++	++++
P C P	34		2	7	2	16	7
C M V	11		-	5	3	2	1
C M V and other...	6		-	3	1	2	-
FUNGI.............	5		-	-	3	-	-
MILIARY TB........	6		-	1	1	3	1
OTHER.............	7		-	4	3	-	-

CONCLUSION. 1) High diffuse pulmonary concentrations of 67 Ga in AIDS patients seems to be related to an increased probability of PCP above all in chest X ray negative or dubious cases;2)low or negative Ga uptake in localized or extended pulmonary diseases indicates an increased probability of KS;3)In pulmonary TB 67 Ga scintigraphy allows a more accurate diagnosis of illness extent and activity.

M.B.P.108 CLINICAL MANIFESTATIONS OF AIDS IN WOMEN FROM SAO PAULO, BRAZIL

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Objetive. To detect the most common clinical presentation, mortality rate and"cause mortis" of women with Aids.
Methods. We studied a sample of 55 women that had clinical manifestations of Aids and were treated in those two institution above,during the period of january 85 to january 89.
Results. Those 55 women with Aids correspond 22% of the Aids case in women from Sao Paulo State.The mortality rate was 22%.
Table 1. Most common Clinical Presentation

	Pneumonia(indet.)	Candidiase	Tuberc.	Sifilis	Oth
number Ocurr	25	19	5	3	6
%	44	33	8	5	10

Conclusion. The clinical presentation of Aids in women will be discussed in this study.

M.B.P.109 OPPORTUNISTIC INFECTIONS IN AIDS PATIENTS - A COMPARISON OF CLINICAL AND POSTMORTEM FINDINGS IN RIO DE JANEIRO, BRAZIL.

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Objective: To study the clinical diagnosis of opportunistic infections in our AIDS patients and compare to autopsy findings.
Methods: The study comprised 235 AIDS patients according to CDC criteria from Dec 1984 to Dec 1988. Clinical diagnosis of opportunistic infections was based on microscopic identification, gross appearance, serology, cultures, radiologic studies, physical examination and response to treatment. 27 autopsies were performed from this group of AIDS patients.
Results: Opportunistic infections were observed as follows:

INFECTOUS AGENTS	CLINICAL DIAGNOSIS (N=235)	%	POSTMORTEM DIAGNOSIS (N=27)	%
Candida albicans	156	66,4	5	18,5
Mycobacterium tuberculosis	84	35,7	10	37
Toxoplasma gondii	55	23,4	9	33,3
Pneumocystis carinii	43	18,2	1	3,7
Cryptosporidium sp	38	16,1	6	22,2
Cytomegalovirus	14	5,9	10	40,7
HBV	9	3,8	8	29,6

Conclusions: 1) Cerebral toxoplasmosis and tuberculosis are frequent findings both clinically and at necropsy studies, being a common cause of death. 2) Candidiasis is a frequent clinical diagnosis but not as common as a postmortem finding, probably due to a good response to anti-fungal drugs. 3) Disseminated cytomegalovirus with visceral involvement was the most common necropsy finding but was not so obviousclinically. 4) Pneumocystis carinii and Cryptosporidium were more frequently identified on clinical diagnosis whereas HBV was more frequently identified in postmortem findings.

M.B.P.110 A SEROLOGIC STUDY OF CRYPTOSPORIDIUM INFECTION IN HIV POSITIVE MEN AND THE RELATIONSHIP TO T-CELL SUBSETS

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Objective. To determine the prevalence of antibody to Cryptosporidium (Crypto Ab) in HIV infected men and investigate its association with T-cell subsets.
Methods. As part of the Multicenter AIDS Cohort Study (MACS) in Los Angeles blood was collected from 237 asymptomatic HIV seropositive homosexual men. Crypto Ab was measured by an ELISA technique using purified sonicated oocysts from a bovine source.
Results. The prevalence of Crypto Ab was 83% in the study cohort whereas the prevalence was 50-60% in adult controls. Antibody concentrations varied between 1 and 66 ELISA units/ml(EU) with a mean + SD of 17.6 + 11.5 EU. Neither the presence of Crypto Ab nor its concentration was associated with CD-4, or CD-8 counts or CD-4/CD-8 ratios.
Conclusion. Asymptomatic HIV infected men have a high prevalence of Cryptosporidium antibody. Using cross-sectional data only, there is no evidence that Crypto Ab positivity or concentration is related to T-cell subset values. Analysis of prospective data is underway.

M.B.P.111 CD4+-T-LYMPHOCYTES AND THE MANIFESTATION OF OPPORTUNISTIC MUCOCUTANEOUS INFECTIONS IN HIV-INFECTION

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Objective. Evaluation of opportunistic mucocutaneous infections (OI_{MC}) as diagnostic parameters for HIV-infection.
Methods. In a 4 years clinical trial 267 HIV-infected patients were investigated for infectious dermatological diseases by viral, bacterial and fungal agents. 84% were male homosexuals, 8,6% IVDA and 1% patients with hemophilia. Dermatological investigations were repeated 1-18x (mean: 4x) and T-lymphocyte subsets were drawn at the time of OI_{MC} diagnosis.
Results.

Patients	total	AIDS	ARC	LAS	SLS	CD4+/µl	clas-
(n=)	267	87	76	86	18	(mean	sifi-
	%	%	%	%	%	value)	cation
1.oral candidiasis	44	61	43	34	11	249	II
2.folliculitis	31	18	37	41	17	414	III
3.herpes-exulc.	21	33	17	15	-	319	I
4.genital warts	18	13	22	20	17	408	III
5.herpes zoster	16	18	20	13	-	352	II
6.warts	16	9	24	17	6	380	III
7.hairy leukopl.	10	11	13	8	-	315	I
8.mollusca cont.	8	16	7	2	-	346	II
9.bact. abscesses	7	6	9	8	-	312	III

Conclusions. OI_{MC} are frequent and of diagnostic value in HIV-infection: Class I OI_{MC} (almost pathognomonic for immunodeficiency;id.): Herpes exulcerans and hairy leukoplakia. Class II OI_{MC} (important indicators of id.): oral candidiasis, herpes zoster and mollusca contagiosa. Class III OI_{MC} (less important indicators of id.): all other mentioned OI_{MC}.

M.B.P.112 PREVALENCE OF HEPATITIS B AND DELTA VIRUS INFECTION IN HEMOPHILIACS WITH AIDS

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The evaluation of the prevalence of HBV and HDV infection in hemophiliacs with AIDS and in asymptomatic patients(control) was the aim of this work.
Methods: We have evaluated the prevalence of HBV and HDV infection in 2 distinct groups: 1)immunodeficient hemophiliacs(hem.): AIDS (n=14);ARC(n=34);2)asymptomatic hem.(n=41). All these patients were severe hem.,being 41 A and 7 B in the first and 37 A and 4 B in the second group, respectively.They were exclusively transfused with local factor VIII or IX concentrates supplied by voluntary donors. We studied HBV serum markers by commercial RIA kits for the detection of HBsAg,Anti-HBs,Anti-HBc,HBeAg & Anti-HBe. Anti-Delta was studied by blocking enzime-immunoassay(Elisa).
Results: The cumulative HBV infection index(HBsAg,Anti-HBs and Anti-HBc) was 100% in the first group and 86,8% in the second one. There was no statistically significant diference. HBsAg was a little more positive in the first(16.6%) in comparison with the second group (8.4%).Anti-Delta was found in none .
Conclusions: 1.The small difference in the prevalence of HBV infection in the first and the second group confirms that hemophiliacs are high risk group for HBV infection, most of them displaying Anti-HBs & Anti-HBc.
2. The frequent finding of HBsAg in the immunodeficient group in comparison with the control group can be probably explained by the fact that the former is at increased risk of developing the chronic HBsAg carrier state.

M.B.P.113 CHRONIC ACTIVE HEPATITIS (CAH) IN TWO GROUPS OF IVDAs (HBcAb positive) WITH AND WITHOUT HIV INFECTION.

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Objective:a purpose of this study is the clinical-pathological evaluation of two IVDA groups (HBcAb positive) with and without HIV infection.
Methods: liver biopsy of 13 IVDA patients with HIV infection belonging to the IInd and IIIth group of CDC classification was studied and HBcAg was researched in paraffin section with PAP method. These datas were comparated with liver biopsy of other 9 IVDA patients without HIV infection.
All the patients were admitted hospital for CAH and they were positive for HBcAb in sera.
Results: morphological and immunohistochemical studies showed no difference between the two groups. HBcAg was detected only in one patient in each group. We suppose that the lack of difference between the two groups is due to the mild immunodeficiency of HIV infected patients belonging the IInd and IIIth group of CDC classification.
Conclusion: In IVDA patients of two groups of ours HBcAb positive, we suspect that Chronic Active Hepatitis is supported by other viruses than HBV.

CMV
CMV

M.B.P.114 HUMAN CYTOMEGALOVIRUS ANTIGENEMIA FOR MONITORING SISTEMIC INFECTIONS AND GANCICLOVIR TREATMENT IN AIDS PATIENTS

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Objective. To correlate human cytomegalovirus (HCMV) antigenemia and viremia as parameters for monitoring sistemic HCMV infections and the antiviral effect of ganciclovir treatment in AIDS patients.
Methods. Virological follow-up of HCMV infections included monitoring of: i) antigenemia in peripheral blood polymorphonuclear (PMN) cells by immunofluorescence (IFA) using a MAb to immediate early antigens (1-2 h assay); ii) viremia, following inoculation of PMN cells onto fibroblasts and IFA staining of cell cultures 24-48 h p.i. with a MAb to early antigens.
Results. So far, results obtained on sequential blood samples collected from 9 AIDS patients with sistemic HCMV infections showed 83% (19/23) correlation between antigenemia and viremia. In 4 cases a dissociation between positive antigenemia and negative viremia was observed. Discrepant results were found in blood samples collected during ganciclovir treatment. Discontinuation of antiviral chemotherapy was followed by reappearance of viremia, while antigenemia was persisting.
Conclusion. HCMV antigenemia and viremia are highly correlated; however, both should be determined during ganciclovir therapy to establish virus clearance from blood. (Partially supported by Min. Sanità, Progetto AIDS 1987/88).

M.B.P.115 THE SIGNIFICANCE OF DETECTING CYTOMEGALOVIRUS IN BRONCHOALVEOLAR LAVAGE SAMPLES FROM AIDS PATIENTS WITH RESPIRATORY DISEASE

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Objective. To assess the prognostic significance of the detection of early antigen fluorescent foci (DEAFF) of cytaregalovirus (CMV) in the bronchoalveolar lavage (BAL) fluid of AIDS patients with acute respiratory illnesses.
Mehtods. All AIDS patients with pneumonia who underwent diagnostic bronchoscopy were reviewed. Patients were divided into three groups; those with CMV infection, those with PCP and those with dual pulmonary infection. The subsequent morbidity and mortality of these patients and the effects of using phosphonoformate or ganciclovir as anti-CMV therapy were examined. A study of the significance of detecting CMV by DEAFF testing in urine, blood and throat washings was performed.
Results. This study found that the administration of anti-CMV therapy to AIDS patients with or without concurrent PCP had no significant effect on their immediate or long term survival rates. Moreover, treatment of the index CMV infection had no effect on the low rates of subsequent episodes of CMV colitis or retinitis. A significant ($p<0.05$) association was detected between the finding of positive DEAFF tests for CMV in additional non-pulmonary sites and a worse prognosis in those patients.
Conclusion. The results demonstrate that therapy for CMV infected BAL specimens does not improve the survival nor reduce the recurrent CMV infection rates. The detection of CMV at multiple sites is a poor prognostic indicator of survival in AIDS patients.

M.B.P.116 CYTOMEGALOVIRUS COLITIS IN AIDS: PRESENTATION IN 33 PATIENTS.

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OBJECTIVE. To describe the clinical characteristics of CMV colitis at presentation. METHODS. A double blind placebo controlled study of the treatment of CMV colitis with ganciclovir in AIDS patients is ongoing. A report of the characteristics of the first 33 cases is presented. A scale of grading colitis, CMV inclusion bodies and inflammatory response from 0-3 was developed to quantitatively assess CMV colitis. RESULTS. All patients were homosexual men with a median age at AIDS diagnosis of 43.4 yrs. (mean 41.5), had CMV on colonic biopsy and no other enteric pathogen. 9/33 (27%) had CMV colitis as their index diagnosis for AIDS. 24/33 (73%) had persistent diarrhea, 8/33 (24%) had intermittent diarrhea, and 1/33 presented with a lower GI bleed. 28/33 (85%) were febrile, median 102° (mean 101.9°). 29/33 (88%) reported weight loss, median 15 lbs. (mean 20 lbs.). Patients with diarrhea averaged 7.2 liquid stools per day. 13/33 (39%) reported hematochezia. 22/33 (67%) had cramping abdominal pain. The median duration of AIDS diagnosis in patients without CMV as an index diagnosis was 11.18 mos. (mean 11.34). The median time between onset of diarrhea and CMV diagnosis was 1.63 mos. (mean 2.17). 16/33 (48%) patients received AZT prior to diagnosis. There was a trend of prolonged time to CMV colitis in patients receiving AZT. 28/33 (85%) had other opportunistic infections. 15/33 (45%) had other CMV disease concurrently. 9/33 (21%) had bronchoscopy with TBB and BAL, 4/9 (44%) was + CMV; 7/33 (21%) had a liver biopsy, 0/7 (0%) was + CMV; 10/33 (30%) had upper endoscopy, 1/10 (10%) was + CMV. Median survival after enrollment is 8.06 mos. (mean 11.01). LABS: Hgb median 10.9 (mean 10.75). WBC median 3.2 (mean 3.78). Ca^{++} median 8.4 (mean 8.0). Total Protein median 6.3 (mean 6.36). Albumin median 3.3 (mean 3.3). 17/33 (52%) had Alkaline Phosphatase > 100 (nl 30-100). 22/33 (67%) had a + CMV urine culture. 11/33 (33%) had a + CMV blood culture. 27/33 (82%) had either urine or blood cultures + CMV. Colonoscopic grade of colitis (0-3) was median 2.0 (mean 2.1). Inflammation grade of biopsy specimen (0-3) was median 1.8 (mean 1.7). CMV grade of biopsy specimen (0-3) was median 1.0 (mean 1.68). CONCLUSIONS. 1) CMV colitis presents relatively early in AIDS and is a significant index diagnosis. 2) Non-specific signs such as fever, diarrhea, weight loss, hematochezia, and anemia in the absence of other GI pathogens should lead to colonoscopy and biopsy for early diagnosis of CMV. 3) AZT therapy may delay the onset of CMV colitis. 4) Patients with CMV colitis are likely to have multiple opportunistic infections in multiple organ systems. 5) Colonoscopic findings of CMV colitis did not correlate with the number of CMV inclusions seen. 6) When 60 patients are enrolled the code will be broken and the data will be analyzed for the effect of ganciclovir on CMV colitis.

M.B.P.117 PROPHYLAXIS OF CMV RETINITIS RELAPSE : EVALUATION OF FOSCARNET IN MAINTENANCE THERAPY

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Objetive. Evaluation of efficacy and tolerance of Foscarnet (PFA) in preventing relapses of CMV retinitis.
Methods. 48 courses were given in maintenance therapy (MT) to 22 AIDS patients who successfully completed PFA induction therapy with residual scarring lesions. They were started with 60mg/kg/d-5days/week (MT1) in 11 cases and with 100mg/kg/d-6d/week in 10 cases (MT2) ; subsequent courses were given successively through 130mg/kg/d in one infusion (MT3) in 19 cases then, if needed, in 60 mgx2/d infusions (MT4) 7 days/week.
Results. Prevention of relapse was obtained : in 9% (1/11) with MT1 - follow up (FU): 40 weeks ; in 50% (5/10) with MT2 - mean FU:24 weeks; in 30% (6/19) with MT3 - mean FU: 22 weeks and 9% (1/8) with MT4 - FU: 15 weeks. Relapses occured in 90% (10/11) in MT1- mean delay (md):28 days; in 50% with MT2 - md:41 days ; in 70% (14/20) in MT3 - md:42 days and in 87% (7/8) in MT4 - md:24 days. Side effects were : mild renal insufficiency in 2/48 (4%), digestive intolerance in 6/22 (27%).
Conclusion. Foscarnet appears to be effective on preventing CMV retinitis relapse with high and frequent administration. Because of its excellent tolerance, particularly hematologic, Foscarnet is a promising drug to be investigated further on for an adequate prophylaxis of CMV retinitis.

M.B.P.118 CMV MENINGOENCEPHALOMYELITIS A.I.D.S.: A CASE REPORT

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Objective. We report on a case of a sudden onset of CMV meningoencephalomyelitis with rapid fatal outcome in an A.I.D.S. patient.
Case report. A PCP diagnosed A.I.D.S. patient was admitted to hospital on account to onset of fever, diarrhea, paraesthesia and hyposthenia to inferior limbs. During the admission abdominal pains, paralytic ileus and incontinence suddenly occurred. Clouding, sopor and convulsions followed but no signs of meningism were seen. CAT scanning of the brain showed only mild atrophy of frontal and parietal lobes. Liquor examination didn't denote any mark of bacterial or viral infection, and cultures (for viruses and bacteria) were negative. Coma ad exitus occurred 48 hours after the onset of neurological symptoms. Postmortem examination didn't reveal macroscopic alterations to the brain, but spinal cord appeared to be intumescent in its thoracic and lumbar tracts. On section the gray seemed to be disappeared in these tracts and the parenchyma looked homogeneous and whitish. Histological examination showed a great spread of CMV infection judged by the presence of cells with characteristic intranuclear and cytoplasmic inclusions in both hemispheres and cerebellum. Necrosis zones appeared in thoracic and lumbar tracts of spinal cord; they were found instead of gray as cells with viral inclusions. A conspicuous demyelinization of roots of lumbar spinal nerves was also seen.
Conclusion. We underline the possibility that fatal CMV infection of CNS and PNS may occur in A.I.D.S. patients in absence of foreshowing clinical signs.

M.B.P.119 TREATMENT OF CMV RETINITIS IN AIDS : EXPERIENCE WITH 59 COURSES OF FOSCARNET (PFA).

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Objective. Evaluation of efficacy and tolerance of Foscarnet in induction therapy (IT) of acute CMV retinitis.
Methods. 59 courses of PFA were administered to 26 AIDS patients with newly diagnosed CMV retinitis (n=26) or relapse (n=33) ; PFA (200 mg/kg/day) had been given intraveinously through continuous infusion in 29 cases and as an intermittent 2-hour infusion repeated q-8 hours in 30 cases, for 3 of 4 weeks ; hydratation with 1 500cc serum saline isotonic was associated.
Results. The overall rate of successful therapy was 57/59 (96%) with a complete resolution of lesions in 26/26 during the first IT and 31/33 in subsequent ones. Mean duration of therapy was 27 days (14d → 43d). 2/59 had progression of lesions while on a third IT.16/38 CMV viremia were positive (CMV ⊕) at study entry ; 13 became negative, 3 remained positive, and 1 became positive. In all 4 courses with CMV ⊕ at end of IT, delay of relapse was very short (7 days to 21 days). PFA side effects were minor and unfrequent : renal insufficiencyin 9/59 (15%)(maximum creatininemia 252 µmol/l) ; no hematologic and digestive intolerance was noted.
Conclusion. Foscarnet appears highly effective on acute CMV retinitis with complete resolution and residual scarring in 96% of cases ; tolerance was good with mild reversible renal insufficiency in 15%. The absence of transcient hematoxicity appears helpful in AIDS patients especially when zidovudine is associated.

M.B.P.120 GANCICLOVIR-THERAPY IN GASTROINTESTINAL CYTOMEGALOVIRUS LESIONS IN AIDS

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Objective: Gastrointestinal (GI) Cytomegalovirus (CMV) lesions were found in one third(54/158) of all AIDS patients with GI symptoms.25/54 patients were treated with Ganciclovir, 5 mg/kg twice daily,three weeks. Clinical, virological and histological response,healing of the mucosal lesions and possible side effects were monitored.
Methods: A diagnose of GI manifestation due to CMV was based on endoscopic examination,CMV inclusions in tissue obtained by biopsy,immunhistological studies and positive cultures.Side effects were checked by laboratory data and clinical symptoms.
Results: 2o/25 (8o%) patients had severe tissue lesions.Complications like penetration or bleeding occured in 5/25 cases.A good clinical response was observed in 21/25 patients,healing of the ulcerations in 19/25 and histological response in 18/25. CMV-cultures turned negative just in 9/25 patients indicating persistence of the infection.Severe side effects were not observed.Mild leucopenia occured in 9/25 patients which was not considered to interrupt therapy.
Conclusions: Ganciclovir had good clinical and histological efficacy in CMV lesions in GI tract in 2o/25(8o%) of symptomatic patients with an impressing healing of endoscopically documented and controlled GI lesions. Side effects and laboratory abnormalities were reported in few cases. Hematological side effects could be a problem of maintenance therapy.

M.B.P.121 GANCICLOVIR THERAPY FOR CYTOMEGALOVIRUS RELATED POLYRADICULO(MYELO)PATHY IN PATIENTS WITH AIDS.

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Objective. To assess the efficacy of ganciclovir therapy in AIDS patients with cytomegalovirus (CMV) related polyradiculo(myelo)pathy.
Methods. Four adult homosexual HIV-1 seropositive patients with CMV related polyradiculo(myelo)pathy and severe flaccid paraparesis were studied. All patients had disseminated CMV infection. The following diagnostic studies were performed: 1. myelography; 2. CSF examination with viral cultures; 3. electromyography and nerve conduction studies in three patients; 4. immunohistochemistry and in situ hybridization on CSF and autopsy specimens. Three patients received induction treatment with ganciclovir, 2.5-5 mg/kg intravenously every 12 hours for two or three weeks. This was followed by maintenance therapy, 5 mg/kg/day, five days per week in two patients. One patient already received ganciclovir therapy for CMV retinitis and colitis, which was continued and later replaced by foscarnet. Autopsy was performed in two patients.
Results. Myelography showed arachnoiditis of the lumbar nerve roots in two patients and was normal in the other two. CSF VDRL was negative and bacterial, fungal and mycobacterial cultures were sterile. CMV was cultured from CSF in two patients. CSF cytology showed large cells containing basophilic intranuclear inclusions and a huge amount of fine granular basophilic cytoplasm. CMV nucleic acids were detected in all CSF and autopsy specimens. Three patients who were initially treated with ganciclovir showed no evident neurological improvement. One patient who developed polyradiculo-(myelo)pathy while receiving ganciclovir did not improve after ganciclovir was replaced by foscarnet.
Conclusion. Ganciclovir therapy was unsuccessful in four AIDS patients with CMV polyradiculo(myelo)pathy. Perhaps early ganciclovir therapy, possibly higher dosed or combined with other antiviral agents can prevent progression of CMV polyradiculo(myelo)pathy.

M.B.P.122 AN OPEN COMPARITIVE STUDY OF FOSCARNET AND GANCICLOVIR IN THE TREATMENT OF CMV RETINITIS

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Objective To compare the efficacy and safety of foscarnet (F.) and ganciclovir (G.) in the treatment of CMV retinitis.
Methods Fourteen patients over 6 months with CMV retinitis were given either a 3 week induction course of G. (5mg/kg/b.d. I.V.-6 patients) or F. (approx 200mg/kg/d. I.V.-8 patients) followed by maintenance therapy 5 days a week (F. 130mg/kg/d., G. 5mg/kg/d. I.V.). Ophthalmological response and any adverse reactions were monitored.
Results A. Acute treatment All 6 patients on G. completed the course uninterrupted without adverse effect and showed some visual improvement. Five out of 8 patients on F. also completed the course uninterrupted but in 2 a rise in serum creatinine resulted in a dose reduction or interruption. Five patients showed some visual improvement but 3 had continuing active disease one of which was switched to G. B. Maintenance Six patients on each drug, average duration for F. 11 weeks (range 2 - 19 weeks), for G. 14 weeks (range 4 - 26 weeks). Five patients on F. developed a raised creatinine resulting in dose cessation(1), reduction(1) or interruption(2). In only 1 has disease remained quiescent and 4 patients have died. Three of 6 patients on maintenance G. required dose reduction(1), interruption(1) and change to F.(1) due to neutropenia. Four patients had stable disease, one had a retinal detachment and one relapse requiring dose increase.
Conclusion F. and G. have similar efficacy in the treatment of CMV retinitis but F. showed greater toxicity and may be less effective for maintenance.

M.B.P.123 TOLERANCE AND EFFICACY OF DAILY INTRAVENOUS (IV) MAINTENANCE FOSCARNET (PFA) THERAPY FOR CYTOMEGALOVIRUS (CMV) RETINITIS IN AIDS PATIENTS (ACTG PROTOCOL 015).

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Objective. Determine tolerance and efficacy of escalating doses of daily IV maintenance PFA therapy (Rx).
Methods. We treated 29 patients (pts) with AIDS and newly diagnosed CMV retinitis with induction IV PFA, 60 mg/kg q 8 hr. 24/25 pts who completed 14 day induction Rx had retinitis stabilize (no new retinal lesions and stable old lesions). After PFA induction, 16 pts continued maintenance PFA therapy (Rx), 60 mg/kg/day. 10 pts had new retinal lesions or old lesions increase in size after 2-24 wks of maintenance Rx, and 6 pts remained stable after 8-28 wks. Median time to retinitis progression on maintenance Rx was in the range of 6-20 wks. During maintenance PFA Rx, 3/16 (19%) pts had PFA discontinued because of probable drug toxicity (azotemia [2], fever [1]). No pts developed severe neutropenia with PFA Rx. We will also present preliminary tolerance and efficacy data from a continuation of this trial in which 28 new CMV retinitis patients are being randomized to receive maintenance PFA Rx at either 90 mg/kg/day or 120 mg/kg/day following induction PFA Rx.
Conclusion. Efficacy of long-term PFA maintenance Rx, 60 mg/kg/d, for CMV retinitis appears similar to that reported for long-term ganciclovir Rx. Dose-limiting neutropenia was not observed with chronic PFA Rx.

M.B.P.124 CYTOMEGALOVIRUS CULTURES DURING MAINTENANCE DHPG THERAPY FOR CMV RETINITIS IN AIDS.

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Objective. To determine the effect of high and low dose DHPG maintenance therapy on the prevalence of CMV isolation in patients with stable or progressive CMV retinitis.
Methods. Blood, urine and saliva samples were collected 1-2 weekly and cultured for CMV from 9 male homosexual AIDS patients who received >1 month (range 1.5-12) of maintenance DHPG for CMV retinitis. Patients were assessed by indirect fundoscopy as having stable or progressive CMV retinitis.
Results. CMV isolation according to site of sample and dose of DHPG:

	Pre treatment	Maintenance DHPG (mg/kg/wk)	
		Low dose (15-25)	High dose (27-32)
Leucocytes	*11/70 (65%)	37/70 (53%)	9/98 (9%)
Urine	17/22 (77%)	20/71 (28%)	8/93 (8%)
Saliva	20/20 (100%)	33/70 (47%)	23/99 (23%)
Total	48/59 (81%)	#90/211 (43%)	#40/290 (14%)

*No. of samples positive/number tests (%) (# x^2 test, $p<0.001$).
Three patients with progressive retinitis had viremia more frequently than did 6 patients with stable retinitis, CMV being isolated from 29/47 (62%) and 17/121 (14%) of blood samples respectively (x^2, $p<0.001$).
Conclusion. Reduction in CMV viremia and viral shedding was greater using high dose than low dose maintenance therapy. Viremia on maintenance DHPG therapy may be useful in predicting patients at risk of progressive retinitis.

M.B.P.125 PULMONARY CMV INFECTION IN AIDS PATIENTS. A CLINICOPATHOLOGIC STUDY

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Objective. The clinical relevance of demonstration of CMV infection by culture or by serology is often uncertain. Clinical data and pulmonary autopsy findings from 58 AIDS patients were compared with regard to CMV infection.

Methods. Routine staining procedures, immunohistochemistry (APAAP) and culture. The results were compared with clinical data (serology, virus culture).

Results. CMV was detected in lung tissue in a total of 32 patients (55 %), in 17 cases both by culture and immunohistochemistry. In 10 cases only culture was positive, in five cases CMV was detected only by immunohistochemical examination. Only in 4/32 cases cells with inclusion bodies were found (HE stain); both additional methods (culture, APAAP) were positive for CMV. In 22/32 patients (69 %) anti-CMV serum antibodies (IgG) were found. In 11/32 cases (34 %) CMV was recoverd from clinical material. According to the typical histopathological patterns no evidence for CMV pneumonitis was found.

Conclusion. The majority of patients with AIDS have pneumonia, but CMV is rarely the causative agent.

M.B.P.126 POSSIBLE USEFULNESS OF HIGH DOSE ACYCLOVIR AS PROPHYLAXIS FOR CMV

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Objective. An open study of the efficacy of high dose acyclovir in the prevention of invasive CMV.
Methods. We studied 60 patients (pts) who were at high risk for CMV, from 12/87 to 1/30/89. All pts had <150 T4+ cells/mm^3.
Results. The mean T4+ cells at the time of treatment initiation was 75 (range, 4 to 146). 30 pts also received AZT and dapsone, 16 pts received AZT and bactrim, 9 pts received AZT and aerosolized pentamidine, 3 pts received aerosolized pentamidine, and 2 pts received dapsone alone. The mean duration of follow-up was 6.25 mos (range up to 13 mos). During this time no pts receiving 800 mg of acyclovir q4h developed clinical, histological, or virological evidence of CMV. In contrast 3 of 9 pts who refused treatment developed evidence of invasive CMV. 3 pts treated with acyclovir died during the period of observation; none of these with evidence of CMV.
Conclusion. This study raises the possibility that acyclovir may be useful as prophylaxis for CMV. Further longitudinal studies will be necessary to determine the efficacy of this treatment.

M.B.P.127 DIAGNOSIS AND GRADING OF CMV COLITIS: COMPARISON OF H&E STAINS, DNA IN-SITU HYBRIDIZATION, AND IMMUNOPEROXIDASE STAINS FOR EARLY AND LATE ANTIGENS.

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The diagnosis (dx) of CMV colitis and grading of its severity have become important issues since specific treatment has become available. We compared the results of H&E stains, in-situ hybridization (isH), and immunoperoxidase stains for early and late CMV antigens (IPS) in order to determine the most accurate method for dx and grading. We examined 38 colon biopsies (bx) of 30 AIDS patients suspected of having CMV colitis. In 10 bx no CMV inclusion bodies (IB) were seen on H&E stains and both isH and IPS were negative. In 28 bx CMV IB were seen on H&E stains and all were positive either by both isH and IPS (21), only isH (2), or only IPS (6). The numbers of infected cells in a single bx varied from 1 to 221, IPS yielding the highest counts and H&E the lowest. The severity of infection was graded by relating the total number of infected cells to the number of bx pieces. Grade I was defined as 1-4, grade II as 5-9, and grade III as 10 or more infected cells per bx piece. Grades remained the same by all 3 techniques in 11 bx and varied in 17. Grades based on IPS were higher than those based on H&E or isH in 6 bx. Lowering of grades based on IPS or isH occurred in 11 cases, and was accompanied by a marked decrease of tissue left for these special procedures. We conclude that (1) a dx of CMV colitis based on the identification of CMV IB on H&E stained sections is accurate, (2) although IPS identifies the greatest numbers of infected cells, this gain in sensitivity is outweighed in endoscopic bx by the loss of tissue after cutting of levels, and therefore (3) grading is best performed on H&E stains.

M.B.P.129 THERAPY OF CYTOMEGALOVIRUS (CMV) INFECTIONS WITH GANCICLOVIR.

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Objective - To evaluate the efficacy and safety of ganciclovir for the therapy of CMV infections in AIDS patients.
Methods - HIV infected patients with various CMV infections received ganciclovir (10 mg/kg/day x 14d). Response and toxicity were monitored.
Results - Forty-eight patients, 46 men, 2 women (median age 34) were treated. Sites of infection were retinitis - 34; colitis - 14; esophagogastritis - 2 (multiple sites in 2 pts.). Response rates were:

Response	Retinitis	Colitis	Esophagogastritis
Improved	9 (26%)	13 (93%)	2 (100%)
Stabilized	17 (50%)	-	
No change/worse	8 (24%)	1 (7%)	

Patients with retinitis who failed to respond (including 2 with retinal detachment) generally had a greater than 10 day delay in initiation of therapy. Two patients with colitis improved despite developing colonic perforation. One patient developed disseminated disease including adrenalitis. More than 50% of patients who responded received maintenance therapy with ganciclovir. Therapy was generally well tolerated, however 23% of patients developed neutropenia (PMN <1000/mm^3). Nausea and confusion were seen infrequently.
Conclusion - Ganciclovir is safe and effective in initial and maintenance therapy of CMV retinitis and gastroenteritis.

M.B.P.131 IN VITRO SECRETION OF CMV SPECIFIC ANTIBODIES BY PERIPHERAL BLOOD CELLS FROM HIV1 INFECTED SUBJECTS.

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INTRODUCTION. A permanent capacity for in vitro secretion of HIV1 antibodies by the circulating B cells of HIV1 infected subjects has been evidenced. Since CMV infection is very often associated with AIDS disease we wondered whether CMV specific B cells could also be evidenced in the blood stream of HIV1 seropositive subjects.
METHODS. Supernatants of overnight cultures of the PBMC from 57 HIV1 seropositive and 24 HIV1 seronegative subjects were incubated in wells from Behring or Pasteur CMV ELISA kits. In vitro antibody secretion was detected using a low noise amplifying enzymatic complex.
RESULTS. a) 50 positive, 5 negative and 2 intermediate CMV in vitro antibody production tests (IVAP) were observed with HIV1 positive PBMC and 2 positive, 20 negative and 2 intermediate with the 24 HIV1 negative controls. b) While all HIV1 seropositive were also HIV1-IVAP positive, all CMV seropositive subjects were not ipso facto CMV-IVAP positive. c) Preincubation of PBMC with CMV infected MCR5 cells specifically inhibits CMV and not HIV-IVAP. d) CMV-IVAP positivity was shown to be a transitory phenomenon in HIV negative and a persistant phenomenon in HIV1 positive subjects.
CONCLUSIONS. The detection of CMV antibody secreting cells in the blood stream could provide a marker of active CMV infection and thus constitute of tool for the diagnosis and the early treatment of CMV opportunistic infection in AIDS disease and in other cases of immune deficiency.

M.B.P.128 A RANDOMIZED CONTROLLED CLINICAL TRIAL OF FOSCARNET FOR THE TREATMENT OF CYTOMEGALOVIRUS RETINITIS IN PATIENTS WITH ACQUIRED IMMUNODEFICIENCY SYNDROME

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Objective. To evaluate foscarnet (trisodium phosphonoformate) for the treatment of cytomegalovirus (CMV) retinitis in persons with AIDS.
Methods. Foscarnet has been shown anecdotally to be effective for the treatment of CMV retinitis, a sight-threatening infection for which there is no approved therapy in the US. To evaluate it critically, a randomized controlled clinical trial was designed to compare foscarnet, with and without AZT, to AZT alone in the treatment of non-sight threatening CMV retinitis. Patients on the AZT arm are eligible for open label foscarnet once progression is documented. Foscarnet is given at a dose of 60 mg/kg intravenously q8h for a 3 week induction period followed by 90 mg/kg daily maintenance, both adjusted for renal function, until progression of retinitis is noted. Evaluation of retinitis and progression is performed by a masked reading center from retinal photographs. A total enrollment of 48 subjects is planned.
Results. Eleven patients have been seen for ophthalmologic and medical screening in the first 2 months. One did not have CMV retinitis and 1 had a sight-threatening lesion. Three who had eligible eye lesions were initially medically ineligible; 1 required treatment for *Pneumocystis carinii* pneumonia (PCP), 1 was intolerant to AZT, and 1 had HIV encephalopathy. Of the 6 patients enrolled thus far, 2 were randomized to each of the 3 arms. Initial leukocyte counts ranged from 1.6K to 3.0K/mm^3 (median 1.9K), total granulocytes ranged from 1058 to 2520/mm^3 (median 1168), and T4+ counts ranged from 6 to 31/mm^3, (median 10). Five subjects had PCP and 1 had CMV retinitis as their first AIDS-defining infections.
Conclusions. Many persons screened for this study have been ineligible due to inadequate ophthalmologic and medical evaluation prior to presentation. Baseline and interim data and retinal photos showing progression of retinitis and response to foscarnet will be presented.

M.B.P.130 TREATMENT WITH GANICICLOVIR (D.H.P.G.) IN H.I.V. CARRIERS WITH CMV IN THE BRONCHOALVEOLAR LAVAGE :

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Objective : Describe the effects and long term follow up of treatment with Ganciclovir (DHPG) in HIV carriers when CMV is isolated from bronchoalveolar lavage.
Methods : in a serial of 21 patients with wild symptoms of pneumonitis (caugh, fever, dyspnea, interstitial abnormalities)or without pulmonary symptoms but fever ; We had treated with Ganciclovir 5 mg/kg twice daily for 14 days CMV was systematically cultured from the bronchoalveolar lavage; this serial concern all HIV carriers group II, III and IV of CDC'S all positive for CMV but without any other opportunistic infection.
Results : 16 patients received Ganciclovir ; 5 received no treatment.
2 patients had a disease free survival period characterized by no relapse and no opportunistic infections for 36 months ; 1 for 24 months ; 7 for 18 months, 4 for 12 months and 2 for 6 months. Of the five who did not receive treatment ; one died at 3 months of CMV pneumonitis ; 3 developped others opportunistic infections after 6 months and 1 after 12 months.
No serious side effects were observed.
Conclusion : Ganciclovir when CMV is isolated from bronchoalveolar lavage is safe and could protect the immune system of cytopathic effects of CMV in HIV carriers and could delay the apparition of opportunistic infections.

M.B.P.132 EFFICACY AND TOXICITY OF GANCICLOVIR MAINTENANCE TREATMENT IN AIDS-RELATED CMV RETINITIS.

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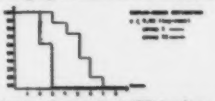
Objective. To evaluate the efficacy and toxicity of Ganciclovir (G) maintenance treatment for CMV retinitis in AIDS patients, as compared to the absence of such therapy.
Methods. Patients with CMV-retinitis were randomized in two groups: I) with maintenance treatment 5 mg/kg/d 5 days/weeks; II) without maintenance treatment; and were followed-up for 3 months. In both groups the CMV-retinitis was first treated for at least 20 days with 10mg/kg/d of G. 7days/week. Patients had weekly complete ophtalmologic examinations, and hematologic toxicity was evaluated.
Results. 20 patients were enrolled in the study. Results concern 14 patients (13 m., 1 f.) mean age: 40 years (r: 28-63), mean Karnofsky index: 75% (r: 50-100%), randomized in two groups (I:8 pts, II:6pts), comparable for clinical status, Zidovudine treatment, as well as initial treatment (mean duration: 24.7 days, r: 20-35). Patients in group I relapsed after a mean 4.6 weeks, 1.25 times whereas those in group II relapsed after a mean 2.6 weeks, 1.8 times (Figure 1). 3 patients died in group I. There was no difference in parameters studied for toxicity (table 1).



	[illegible]		T-test	[illegible]		T-test
	[illegible]	[illegible]		[illegible]	[illegible]	
[illegible]	[illegible]	1700	NS	1000	[illegible]	NS
[illegible]	1000	[illegible]	NS	[illegible]	[illegible]	NS
[illegible]	10.30	10.10	NS	10.50	[illegible]	NS
[illegible]	[illegible]	176	NS	210	[illegible]	NS

Conclusion. Treatment of AIDS involves use of multiple toxic drugs. Although drug toxicity was comparable in the groups, patients on maintenance relapsed less frequently and later than the group II patients. These results have pratical implications as far as drug association and patients confort are concerned.

M.B.P.133 FOSCARNET CONTINUOUS INFUSION IN HSV INFECTION WITH AIDS.

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Objective. Foscarnet treatment of Acyclovir resistant Herpes simplex (HSV) recurrent genital infection in AIDS.
Methods. A 33 years old man with HIV infection and HSV chronic recurrent infections developed clinical resistence to Acyclovir. Massive localisations in the penis, scrotus and pubic area were subsequently treated with Foscarnet, 50 mg/Kg daily in continuous infusion for several therapeutic cycles. Viral isolation from lesions was obtained. Therapy was administered from July 13, 1988 to August 18, 1988; from September 23 to October 8; from December 27 1988 to as of now. Discontinuation was due to renal impairment.
Results. After 30 days of therapy, the massive lesions were almost completely healed, HSV was not isolated from them. Mild anemia developed. Progressive renal impairment, with elevation of serum creatinine up to a maximum of 2,4 mg/dl suggested drug-dosage reduction and subsequent discontinuation of therapy. Relapse of lesions occurred after 8 weeks, and retreatment with Acyclovir was ineffective. Again, treatment of HSV with Foscarnet yelded response, and therapy is now ongoing with dosage-reduction due to creatinine elevation. No clinically relevant calcium elevation was noticed, even if serum calcium decrease was noticed.
Conclusions. Foscarnet is an active drug on HSV infections in AIDS patients. Continuous administration was a safe modality due to predictability of progression of serum creatinine elevation. Its use in Acyclovir-resistant HSV infections is warranted.

M.B.P.135 INTESTINAL HIV EXPRESSION IN AIDS PATIENTS WITH CYTOMEGALOVIRUS COLITIS

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Objective To determine if intestinal HIV expression is augmented by the development of cytomegalovirus colitis (CMV).
Methods Rectal biopsies from 57 AIDS patients with (25) or without (33) CMV colitis were assayed for HIV p24 content by antigen capture ELISA (Coulter). Immunoperoxidase stains of tissue sections, using monoclonal anti-p24 (Dupont), were performed on selected specimens to localize cellular HIV.
Results HIV p24 was detected in 60% of rectal biopsies from patients with CMV colitis and 64% of patients without CMV colitis. Tissue p24 content was lower in patients with CMV colitis than in those without this complication (63±21 v 135±38 pg/mg prot, NS). Immunoperoxidase stains demonstrated p24 antigen in lamina propria mononuclear cells, intraepithelial lymphocytes and crypt epithelial cells. In contrast, the vast majority of CMV inclusions were found in vascular endothelial cells. Localization of p24 in CMV inclusions was seen only in a few cases.
Conclusions The occurence of CMV colitis does not appear to stimulate HIV production in the intestine, though such interaction may be demonstrated in vitro. The lack of stimulation of HIV by CMV may be related to reactivation in different cellular reservoirs.

Transfusions
Transfusions

M.B.P.137 DEMOGRAPHIC AND EPIDEMIOLOGICAL CHARACTERISTICS OF HIV POSITIVE BLOOD DONORS IN CATALONIA

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Objectives: 1.- To estimate the evolution of HIV infection prevalence among blood donations. 2.- To estimate the prevalence of hepatitis and luetic infection among HIV positive blood donors. 3.- To describe the demographic and behavioral characteristics of HIV positive donors.
Methods: The total number of performed blood donations is collected in a monthly basis from all the 25 existing blood banks in Catalonia (6 million inhabitants). HIV testing (including confirmatory test) is mandatory since october 1986. Sociodemographic and behavioral information is collected sistematically with a standarized form for all detected HIV + donors and entered in a centralized database. Data on HBsAg and lues serology has been retrospectively assessed.
Results: From 1985 to 1988, 153 donations were found HIV +. The period prevalence of HIV + donations computed per thousand, in 1986 was 0.27, in 1987 0.36 and during the first nine months of 1988 it was 0.33. Among the identified HIV + donors, 2 (1.96%) were HBsAg positive and 10 (6.53%) were RPR and confirmatory test positive. Table 1 shows their transmission group distribution by sex.
TABLE 1 :

TRANSMISSION GROUP	MALE	FEMALE	TOTAL	AVERAGE AGE
IVDA	45	10	55 (40.7%)	36
Homosexual men	23	-	23 (17.0%)	32
Bisexual	10	-	10 (7.4%)	40
Heterosexual	13	17	30 (22.2%)	32
Unknown	22	3	25 (18.5%)	34
Not yet reported	13	5	18 -	29

Conclusions: Although the prevalence increases it does not reflect the important increment of AIDS cases reported during the same period. While among AIDS cases of our community and selected series of HIV infected patients, IVDA account for more than 60% of them, and heterosexual transmission range between 2 and 10%, among HIV + blood donors the proportion of IVDA is lower and heterosexually acquired HIV infection is much higher. Blood donors have probably special features that jeopardize any comparison with other groups, nevertheless we suggest that patients infected through an heterosexual contact are less sensitive to selfexclusion.

M.B.P.134 PREDOMINANCE OF POLYMORPHONUCLEAR LEUKOCYTES IN CEREBRO-SPINAL FLUID OF AIDS PATIENTS WITH CYTOMEGALOVIRUS RELATED POLYRADICULO(MYELO)PATHY.

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Objective. A spectrum of cytomegalovirus (CMV) related neurological complications has been identified in patients with AIDS including encephalitis, myelitis and polyradiculopathy. Proving CMV is the etiological agent in these cases is very difficult. Cerebrospinal fluid (CSF) cultures are often negative in CMV infection and immunohistochemistry and in situ hybridization of specific specimens are not done routinely. Availability of antiviral therapy makes early diagnosis of CMV related neurological complications important. At least seven cases of CMV polyradiculopathy have been described. Five of these patients had a predominance of polymorphonuclear leukocytes in CSF. Aim of the study was to assess the significance of this phenomenon in CMV related neurological disease.
Methods. Clinical records and diagnostic studies of 241 neurologically assessed HIV-1 seropositive patients (28 CDC II/III, 13 ARC and 200 AIDS) were reviewed and results of CSF examination were evaluated.
Results. CMV encephalitis was diagnosed in one patient at autopsy. Four patients showed subacute progressive flaccid paraparesis and CMV polyradiculo(myelo)pathy was diagnosed by immunohistochemistry and in situ hybridization of specific specimens. In 143 patients CSF examination was performed. CSF pleocytosis was found in 58 patients showing predominance of polymorphonuclear leukocytes in seven: CMV polyradiculo(myelo)pathy (4), Listeria meningitis (1), Cryptococcal meningitis (1) and Pneumococcal meningitis (1). In CMV encephalitis no pleocytosis was seen. CMV was cultured from CSF in two cases of CMV polyradiculo(myelo)pathy.
Conclusion. Predominance of polymorphonuclear leukocytes in CSF of AIDS patients with subacute progressive flaccid paraparesis is indicative for CMV polyradiculo(myelo)pathy.

M.B.P.136 ELECTRON MICROSCOPY OF AIDS RELATED CYTOMEGALOVIRUS (CMV) INFECTION OF THE LUNG.

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Objective. To analyse ultrastructural features of CMV infections of AIDS lung autopsies.
Methods. Specimens of AIDS lung autopsy with CMV infection and Kaposi sarcoma were prepared for light and electron microscopy. Paraffin blocks of histological material were reprocessed for ultrastructural investigations.
Results. The main CMV infected cell in the present study was the pneumocyte, with indications of infection of both types. It contained a characteristic, ramificated nuclear inclusion and numerous cytoplasmic vacuoles full of viruses, visible as granules in semithin sections. All evolution steps from viral capsids in the nucleus to the mature virions in cytoplasmic vacuoles could be observed. Strange vesicle and tubule formation in the nucleus and cytoplasm suggested some aberrant virus production. Some cells revealed dense round bodies characteristic of CMV infections. Hyaline membranes were present in CMV infected regions of the lung. Ultrastructural features, known from tumor cells, like strong convoluted heterochromatic nuclei, nuclear pockets, perinuclear filament bundles and nuclear inclusions remaining monoclonal gammopathies were observed in different cell types. The application of electron microscopy to histological material revealed many of the mentioned CMV characteristics in spite of the poor fixation.
Conclusions. Ultrastructural studies furnished usefull new data about CMV infection, evolution and related pathologies, also in retrospective analysis.

M.B.P.138 A SAFER TEST TUBE FOR HIV AND OTHER VIRAL MARKER TESTS

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Objective. To test a modified evacuated test tube with an HIV neutralizing agent (HMA-2) to reduce and/or possibly eliminate the risk of contracting HIV by healthcare providers.
Method. Serum from 9 HIV positive (+) and 2 HIV negative (-) blood samples, by EIA and Immunoblot assay, were divided into two equal aliquots. To the 1st aliquot HMA-2 was added to give a final concentration of 0.1%, an equal volume of 0.9% NaCl was added to the 2nd aliquot (control). Samples were blindly assayed for the following viral markers: HIV by either EIA or Immunoblot assay, HBsAg, HBsAb, Anti-HBc, ALT and CMV. Other samples with/without HMA-2 were assayed for the routine chemistry tests i.e. Blood Sugar, BUN, Creatinine, Calcium and Electrolytes.
Results. 0.1% HMA-2 did not interfere with the above mentioned viral marker tests, all (+) samples were (+) and all (-) samples were (-) with/without HMA-2. All the chemistry tests with/without HMA-2 were within ±5%. The preliminary study has shown that 0.1% HMA-2 reduced, by at least 2 logs, a viral particle concentration of 500,000 TICD50 in 1 ml of whole blood.
Conclusion. A modified evacuated test tube with HMA-2 can provide an additional safety tool to reduce the risk of contracting HIV by healthcare workers handling patient specimens without compromising HIV and other viral marker tests. The technology will be expanded to include other test tubes.

M.B.P.139 HIV SCREENING OF COMMERCIALLY AVAILABLE BLOOD PRODUCTS IN INDIA.

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Objective To describe the result of HIV screening of commercially available blood products in India.

Methods 105 samples of blood products (viz-immunoglobulin preparations, Factor VIII cryoprecipitate and a variety of blood products) of 1 American and 5 Indian companies were tested for the presence of HIV antibodies using the Wellcozyme competetive ELISA kit. Presence of HIV antibodies was confirmed by Western Blot (Dupont).

Result Of these 105 samples, 31 were found to contain HIV antibodies by the ELISA method. They were subsequently confirmed by the Western Blot test. Their results and their medical, social and legal implications have generated a lot of controversy in the country.

M.B.P.140 DETECTION OF HIV MARKERS PRIOR TO IgG ANTIBODY SEROPOSITIVITY IN PLASMA DONORS.

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Objective. Determine the sequence of occurrence of HIV markers presero conversion. Assess the utility of HIV antigen (HIV Ag) detection in plasma donors.
Methods. Preseroconversion serial samples at 3 to 7 day interval were obtained from 7 healthy plasma donors who seroconverted (US licensed HIV antibody screen positive; licensed western blot positive). HIV plasma culture, HIV antigen, IgM anti-HIV, anti gp41 antibody, and radio immunoprecipitation were performed on 36 samples available.
Results. In 5 donors, HIV antigen was detected prior to or simultaneously with IgG anti HIV. All HIV Ag positive samples were infectious for cultured normal peripheral blood mononuclear cells; most were also IgM anti HIV positive. The disappearance of HIV Ag and, to a lesser extent, of plasma infectivity was concurrent with the development of the IgG immune response. Although the improved sensitivity of recombinant antigen derived screening or anti gp41 assays shortened the window period preceeding seroconversion, HIV antigenemia and plasma viremia were the only markers of HIV infection for several days in 2 cases.
Conclusion. HIV infectious units from plasma donors can be eliminated from the plasma supply by HIV Ag screening.

M.B.P.141 RISK FACTORS FOR HIV AMONG NEW YORK BLOOD DONORS IN 1988.

Gaynor, Suzanne; Kessler, D.; Berge, P.; Andrews, S.; DelValle, C.; New York Blood Center, New York, NY, USA.

Objective: To evaluate current trends in risk factors for HIV Ab+ blood donors in order to update educational efforts to protect the blood supply.
Methods: We compared blood donor risk factor patterns identified from Feb.-Dec. 1988 with April 1985-May 1986 data as reported by Rabkin, et al.

Results:	Feb-Dec 1988	April 1985-May 1986
Units Collected	415,000 (Jan-Dec)	470,000
Anti-HIV positive	178(.04%)	470(.1%)
Donors interviewed	113(64%)	214(46%)
Risk Factors		
Homo-Bisexual	31%	65%
IVDU	11%	4%
Blood Recipient	1.7%	1.4%
Het. High Risk Partner	29%	15%
Het. Multiple Partner	5%)	
Heterosexual Unk. Risk	17%)	7%
Other Risk	8%)	

Donor interviews indicate that, of heterosexuals with high risk partners, 68% have a greater perception of risk and ability to transmit HIV by transfusion than do heterosexuals with 1 or more partners of unknown risk (38%).
Conclusion: There has been a clear shift in risk factors among blood donors from homosexual/bisexual activities toward the IVDU and heterosexual donor population. As education has been effective in decreasing the donating homo-bisexual population, renewed educational efforts should target sexually active heterosexuals.

M.B.P.142 SELF-EXCLUSION BY HIV ANTIBODY POSITIVE BLOOD DONORS

Gaynor, Suzanne; Kessler, D.; Andrews, S.; DelValle, C.; New York Blood Center, New York, NY, USA.

Objective: To assess the self-exclusion (SE) behavior of HIV antibody seropositive blood donors as related to knowledge of well-defined risk factors.

Methods: 113 HIV Ab+ blood donors were interviewed and counseled in 1988. SE status and risk for HIV infection noted during the counseling sessions were retrospectively quantified.

Results: Eighteen (15.9%) self-excluded, while, overall only 1% of blood program donors self-exclude. Criteria for donor deferral(*) were met by 81 (71.7%); 28 others were either heterosexual or transfusion recipients. Three donors had multiple risks; no information was available for the rest. Donor interviews indicate those who do self-exclude have a higher level of AIDS education, perceive themselves at higher risk, and are aware of the risk of HIV transmission by transfusion. (87.5% vs. 10.3% non self-exclusion)

	Total	%Total	Self-Exclusion	
Results:			# Yes	% Yes
*Homosexually active males	35	31.0%	11	31.4%
*Heterosexual/High Risk Partner	33	29.2%	3	9.1%
*Intravenous Drug User	12	10.6%	1	8.3%
*Haitian	1	0.9%	0	
Heterosexual/Unknown Other Risk	20	17.7%	2	10.0%
Heterosexual/Multiple Partners	6	5.3%	0	
Transfusion Recipient	2	1.8%	0	
Others	8	7.1%	1	12.5%

Conclusion: As individuals not in identified risk groups for self-exclusion become infected, additional efforts are essential to better educate donors of risks of HIV transmission and to increase the use of self exclusion.

M.B.P.143 CHANGING PROFILE OF HIV-SEROPOSITIVE BLOOD DONORS.

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Testing for the HIV virus was instituted in October 1985 in B.C. In the 3 years since, 453,000 units have been tested and 25 donors identified as HIV positive (.005%). 8 donors were also identified in the investigation of 14 cases of transfusion associated AIDS (TAA). 32 of the 33 seropositive donors were in self-identified high risk groups: 31 homosexual or bisexual males and 1 former partner of a bisexual male. All 8 donors implicated in TAA had self deferred an average of 26 mo. (range 6-34 mo.) prior to commencement of screening for anti-HIV in B.C. All 8 had been regular blood donors donating q3-6 mo. up to the time of their self deferral. In contrast, of 25 donors identified during the first 3 years of screening: 3 (bisexual males) were regular donors (q3 mo.) and were picked up in the first few months of testing; none felt at risk for HIV infection. 5 were q3-6 mo. donors up to an average of 22 mo. prior to screening (range 16-40 mo.) and then self-deferred. However, 4 returned as donors within 5 mo. and 1 at 36 mo. post testing. Another 4 donors are sero-converters; of these, 3 had never donated blood prior to testing, 1 donated on 1 prior occasion. Of the remaining 13 donors, 3 had donated once prior to testing (2 within 1 mo. of testing); 10 were new donors. Although donors implicated in TAA had voluntarily self-deferred well before testing for HIV and did not return, there remain self-admitted high risk people who have enrolled as new donors since the advent of screening, presumably to be tested. Furthermore, some previously self-deferred donors in high risk groups are now returning to donate. This underlines the need for continued efforts to discourage such behavior and for creative screening methods which will identify such donors on the clinic.

M.B.P.144 IMMUNOPHENOTYPES OF ANTI-HTLV-I POSITIVE (+) BLOOD DONORS

Transfusion Safety Study Group* represented by Fletcher, Mary A.** *Participating institutions in New York City, Miami, Detroit, Seattle, San Francisco, and Los Angeles, USA, **University of Miami, Miami, Florida, USA.

Objective To define the lymphocyte subsets of anti-HTLV-I (+) blood donors.
Methods The South Florida component of the TSS/NHLBI Donor Repository contains sera from 29,931 blood donations in late 1984 and early 1985. EIA screening with RIA, immunoblot, and RIPA confirmation, showed confirmed 23 donors as anti-HTLV-I (+). The 11 donors enrolled in 1988 were still EIA and RIA (+); 6 were HTLV-I culture (+), 5 were (-); 7 were male, ages 39-70; 4 were female, ages 51-63. None were IV drug abusers. Each subject was compared with sex- and age-matched controls. Lymphocyte immunophenotyping has been carried out by 2-color flow cytometry using 11 pairs of antibodies.
Results One anti-HTLV-I (+) donor, who was also anti-HIV-1 (+), had immunophenotypic changes expected for the latter. The 10 anti-HTLV-I (+), anti-HIV-1 (-) donors did not differ from controls in CD2 and subsets CD2+Tal+ or CD2+MO1+, CD4 and subset CD4+CDw29+, CD8 and subset CD8+Tal+, CD20 and subset CD20+CD21+. However, 9 of the 10 had values for CD4+CD45r+ and CD14+ cells above the median for controls ($p <.05$), and all 10 had NKH.1+ cell counts above the median ($p <.01$).
Conclusion HTLV-I infection for at least 4 years did not affect lymphocyte subsets to suggest immunosuppression in these donors. The statistically significant elevations in the CD45r subset of CD4 cells (the subset thought to induce activation of suppressor/cycotoxic T cells) and in monocytes (CD14) and natural killer cells (NKH.1) may result from infection with a lymphoproliferative virus, or represent a usual response to a chronic viral infection in subjects who had no obvious HTLV-I related diseases. (Sponsored by Contract No. NO1-HB-4-7003 of the National Heart, Lung, and Blood Institute.)

M.B.P.145 CLOTTING FACTOR TREATMENT AND CD4 COUNTS IN ANTI-HIV+ HEMOPHILIACS.

The Transfusion Safety Study Groups represented by Gjerset, George F.** *Participating institutions in New York City, Miami, Detroit, Seattle, San Francisco, and Los Angeles, USA, **Puget Sound Blood Center, Seattle, Washington, USA.

Objective. To determine whether reductions in CD4 counts among anti-HIV-1(+) hemophiliacs are related to type or intensity of treatment.
Methods. Data for anti-HIV-1(+) patients with factor VIII (FVIII) or IX deficiency were analyzed by type and amount of treatment received from 1981-1985, defined as FVIII units, FIX units or FVIII units from cryoprecipitate (cryo). Analysis was limited to 344 patients treated with FVIII concentrate, FIX concentrate or cryo only. Statistical inference was based on the rank correlation coefficient between amount of treatment and CD4 count.
Results. Median CD4 counts shown by quartile of treatment. Units = annual mean/patient.

Quartile	FVIII (n=262) units	CD4	correlation r	p	FIX (n=56) units	CD4	correlation r	p	cryo (n=14) units	CD4	correlation r	p
1	to 20,663	522			to 17,880	322			to 2,200	784		
2	to 53,606	491	-.22	.001	to 46,700	449	-.06	.67	to 14,200	478	-.63	.017
3	to 110,706	282			to 83,000	444			to 157,600	644		
4	to 686,983	338			to 356,287	352			to 290,600	330		

Conclusion. Increasing treatment was correlated with lower CD4 counts in those receiving FVIII or cryo, but not FIX. Heterologous proteins could be responsible for the observations in FVIII-treated patients. Relatively little of the variability in CD4 (r^2), however, is related to treatment intensity, which may itself simply be an index of increasing duration of HIV infection. (Sponsored by Contract No. NO1-HB-4-7003 of the National Heart, Lung and Blood Institute.)

M.B.P.146 SEROLOGICAL EVIDENCE OF PRIOR SEXUALLY TRANSMITTED DISEASES IN HIV-1 SEROPOSITIVE BLOOD DONORS

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OBJECTIVE To serologically characterize HIV-1 seropositive blood donors who deny prior AIDS risk behavior.
METHODS AIDS risk behaviors were defined as: a)IV drug use or sexual contact with an IV drug user, or b)direct or primary partner contact with a gay or bi-sexual male. These data were collected by in-person interview following test result notification from 156 HIV seropositive former blood donors and 155 age, sex and race-matched controls. All subjects were tested for anti-HBc, anti-CMV, anti-chlamydia, and anti-HSV.
RESULTS Prior behaviors likely to have resulted in increased AIDS risk were identified by in-person interview for 131/156 HIV+ former donors (RISK). Twenty five donors were classified as having no identifiable risk (NIR). The proportion of both RISK and NIR HIV+ donors having additional STD markers was significantly higher than controls for all markers. In contrast, the proportions of NIR and the RISK HIV+ individuals reactive for all STD markers except anti-HBc did not differ significantly.
CONCLUSIONS HIV+ donors as a group are significantly more likely to have serological evidence of prior exposure to other STDs. This exposure is also evident for donors who deny traditional AIDS risk activities. While none of the STD-related assays studied would have sufficient predictive accuracy to be used for blood screening purposes, they may serve as a mechanism for further characterization of these individuals.

M.B.P.147 PHOTOINACTIVATION OF HIV-1 WITH MEROCYANINE 540

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Objective. Merocyanine 540 (MC 540),a lipophilic dye,inactivates enveloped viruses following exposure to white light.We conducted an experiment to determine if MC 540 with light inactivates HIV-1,since phototherapy may be useful for inactivating viruses transmitted by blood transfusion.
Methods. Cell-free supernatant from H9/HTLV-III$_B$ cells was mixed with MC 540 (30 ug/ml),then exposed to white light for 60 minutes.Uninfected V8 cells were added to treated viral supernatant and virus adsorbed eighteen hours at 37°C in 5% CO_2 incubator.V8 cells were washed in PBS X 2,resuspended,and incubated at 37°C in 5% CO_2 for 10 days.Supernatant p24 antigen (Abbott) was measured at 7 and 10 days post-infection.
Results.

Specimen	p24 optical density Day 7	Day 10
HIV (no light, no MC 540)	0.237 (+)	0.818 (+)
HIV (no light, with MC 540)	0.450 (+)	1.673 (+)
HIV (with light, no MC 540)	0.139 (+)	0.301 (+)
HIV (with light, with MC 540)	0.044 (-)	0.056 (-)

Conclusion. MC 540 with white light inhibited HIV replication as determined by p24 antigen immunoassay.Studies are in progress to determine if MC 540 has similar activity against cell-associated virus.

M.B.P.148 p24 HIV ANTIGEN SCREENING OF BLOOD DONORS

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Objective. Screening blood donations only for HIV-1 antibody (anti-HIV) leaves open the possibility that a donor was in the period (4 -12 weeks after infection) of beeing anti-HIV negative but infected and possibly positive for HIV-antigen (HIV-Ag). So several blood centers have evaluated the advantage of HIV-Ag screening in populations with different HIV prevalences.
Method. HIV antigen capture immunoassays (Abbott, N. Chicago, Il.) were used.
Results.

	number of donations	Anti-HIV+ /HIV-Ag+	Anti-HIV+ /HIV-Ag-	Anti-HIV- /HIV-Ag+
Bavaria	229,879	0	7	0
Berlin	65,481	0	15	0
Saar	24,117	0	1	0
Vienna	215,783	1	9	0
Linz	52,577	0	2	0
Innsbruck	32,180	0	3	0

It is particularly important that 6 donors became Anti-HIV positive 2 to 8 weeks after having been tested HIV-Ag negative.
Conclusion. In these 620,017 blood donors HIV-Ag testing failed to detect

M.B.P.149 HIV SEROPREVALANCES AMONGST HEALTH BLOOD DONORS IN 31 HOSPITALS IN ZAMBIA

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OBJECTIVE. To screen blood for HIV infections in all the Blood Transfusal in Zambia with a view to limiting Transmission. Secondly to provide information on the seroprevalance of HIV among health blood donors in Zambia.
METHOD. Using a National Blood Transfusion record book all donors were interviewed in 31 hospitals in Zambia, Sex, Marital Status, Address, Age, Social behaviour and Travel was recorded. HIV abs was screened using Welcozyme ELISA.
RESULTS. HIV seroprevalances varied from place to place. The rural areas had 0%. The urban rural had 0-3% while the urban areas had 6-10%. The big cities recorded up to 11%.
CONCLUSION. HIV is a new disease in Zambia and is currently confined mostly to big cities and any part of zambia with urban influence.

M.B.P.150 RISK OF HIV-1 TRANSMISSION BY BLOOD TRANSFUSIONS IN SAN FRANCISCO PRIOR TO ANTI-HIV-1 SCREENING

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[*]Irwin Memorial Blood Centers, San Francisco, California, and [**]Centers for Disease Control, Atlanta, Georgia, USA.

Objective. To estimate the proportion of blood transfusions that were infectious for HIV-1 during each of the seven years preceding introduction of routine anti-HIV-1 screening.
Methods. 1,554 previous donations by 309 former blood donors now known to have AIDS or HIV-1 antibody were plotted according to donation date. Using the observed seropositivity of late 1984 donors (0.24%), and assuming a parallel seroprevalence with that reported for other high-risk persons in San Francisco between 1978 and 1985, the proportion of all donors who were high-risk and HIV(+) was extrapolated for each earlier time point. The likelihood of recipient infection per unit exposure was then calculated by multiplying by the known infectivity rate (0.90) of a seropositive transfusion.
Results. The risk of infected transfusions rose exponentially from 1978 (<.01%) through 1982 (1.2%). The risk plateaued in 1983 and then declined precipitously in mid-1984, despite continued spread of the virus in the local community.
Conclusion. The derived risk/time estimate is validated by an alternate risk estimate based on reported dates of transfusion of known infected recipients, and has been of value in designing recipient counselling, notification and testing strategies.

M.B.P.151 TRANSMISSION DU VIH1 PAR TRANSFUSION: DECROISSANCE DU RISQUE.

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Objectifs : Evaluer l'infectivité des dons de sang séronégatif de donneurs ultérieurement séroconvertis et le risque annuel de transmission du VIH1.
Méthodes : Une procédure d'enquête a été appliquée lors de la découverte d'une séropositivité VIH1 chez un donneur régulier. Les receveurs des produits issus du don précédant cette découverte d'un an maximum ont été identifiés et testés. Le risque a été calculé selon la même approche que S.KLEINMAN et al. (Transfusion 1988, 28 : 499-501).
Résultats : Du 1/07/85 au 31/12/88, 805.118 dons ont été testés : 430 donneurs ont été confirmés VIH1 positif. Parmi eux 58 avaient fait au moins un don séronégatif avant le dépistage de la séropositivité dont 48 dans un délai de moins d'un an. Parmi les 50 receveurs de ces 48 dons, 23 étaient décédés (46 %) et 12 (24 %) ont été testés. Le taux d'infectivité était de 25 % (3/12). Le suivi annuel de l'estimation du risque montre :

Année	Total dons	VIH+ °/..	VIH- suspects	Risque 1:
1985	110.683	0,92	10	36.000
1986	236.897	0,74	19	40.000
1987	237.348	0,43	12	65.000
1988	220.190	0,23	7	110.000

Conclusion : La diminution du risque de transmission VIH1 par transfusion est parallèle à la diminution de la prévalence des donneurs séropositifs. Cette surveillance annuelle mesure globalement l'efficacité du dépistage et de l'exclusion des sujets à risque. Elle permet la comparaison avec les résultats d'autres régions à risque.

M.B.P.152 EXPERIENCE WITH NOTIFICATION AND FOLLOW-UP OF WESTERN BLOT INDETERMINATE DONORS

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Objective: Notification, risk assessment and retesting of indeterminate blood donors.
Methods: Donors with ENI ELISA R.R. indeterminate W.B. results on 1985/86 donations were recalled for retesting and interviewing. Donors were originally sent a non-specific letter (A) similar to the one used for anti-HIV positive notification. These donors as a group were more distressed by this correspondence due, in part, to the time interval since the donation.
Results: Based on this adverse response, a more detailed and specific, informational letter (B) was developed, stressing the probability that this finding is not cause for concern. Interviews with 17 donors yielded no risk factor for exposure to HIV.

	Totals	Response Rate	Fear/Anxiety	Curiosity	Other
Letter A	(30)	13 (43%)	4 (30%)	8 (61%)	1 (8%)
Letter B	(20)	4 (20%)	0 (0%)	4 (100%)	0 (0%)

14/17 donors were retested. Seven (50%) of the donors retested were negative on DuPont and Genetic Systems EIA, as well as Biotech W.B. Seven donors retained the same W.B. indeterminate results on retesting.
Conclusion: Based on this preliminary sample, there is no evidence of seroconversion three years after the indeterminate W.B. result. Donors can be notified of their status using an appropriately worded written communication, without undue anxiety.

M.B.P.153 DONORS SHOWING ONLY CORE POSITIVE HIV ANTIBODY: A 3 YEAR FOLLOW UP.

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Since antibodies to the core of HIV could herald the early signs of AIDS we have studied 8/17 (7F + 1M) initially reactive donors detected by the first generation test in 1985; they were selected for 6 monthly follow ups. At that time Western blot pattern showed P55 in 5, P55 & P24 in 2 and P55 with another non specific band in 1 subject; all were healthy and there were no 'risk factors' involved. 18 Months later 5/8 were available, remained healthy and capture ELISA tests were negative but in Western blotting 2 donors persisted with positivity, one with P55. In 1988, 6/8 donors were available for follow up. They were apparently in good health and serologically they were entirely negative. Their deep frozen 1985 sera, when retested for HIV antibody by synthetic peptide (Abbott, DuPont), competitive ELISA (Wellcome) or gelatin particle agglutination tests, were entirely negative. It seems therefore that these serological reactions found in 1985 for HIV are a false positive phenomenon most probably due to the presence of contaminants in the reagent and/or cross reactivity by antibodies to other virus.

M.B.P.154 ANTIGENEMIE HIV : DEPISTAGE SYSTEMATIQUE DES DONNEURS DE SANG DE LA REGION PARISIENNE .

VIGNON Dominique TRANSFUSION, Hôpital FOCH, SURESNES, FRANCE

OBJECTIF : La recherche des antigènes HIV1 permettrait,selon des articles récents, de déceler les sujets récemment contaminés, avant séroconversion.
MATERIEL : Le dépistage systématique de l'antigénémie HIV1 fut institué, à chaque don de sang, en octobre 1987. La recherche des anticorps anti-HIV étant par ailleurs réalisée par 2 techniques depuis 1985. 6372 prélèvements furent ainsi examinés, correspondant à 4000 donneurs, dont 756 nouveaux venus dans notre Centre.
METHODES : Pour la recherche des Ag HIV, la méthode fut une technique enzymo-immunométrique de type Sandwich (Organon Lab.); chaque échantillon positif fut repris dans une 2° série de réactifs, puis testé en Western Blot (Epiblot: Organon Lab.) et enfin soumis à neutralisation (Confirmatory/Innotest Organon Lab.° .
RESULTATS : • durant la période considérée, 3 donneurs furent dépistés anti-HIV positifs (2nouveaux, 1 connu) soit une fréquence de 0,08% des donneurs.
• 2 antigénémies furent dépistées de façon reproductible chez un donneur connu et la réaction ne fut pas neutralisable; 6mois plus tard la fausse positivité persistait, avec un WB négatif; et chez un donneur nouveau avec réaction neutralisable et WB négatif; ce donneur fut aussitôt perdu de vue. La fréquence de l'antigénémie fut donc de 1/3997 donneurs séronégatifs en anticorps anti-HIV1, soit 0,023% .
CONCLUSION : Il serait primordial en transfusion, de pouvoir réduire la fenêtre existant entre contamination et apparition des anticorps, alors que plusieurs observations notent que la contamination des receveurs est possible. La faible fréquence d'AgHIV1 dans notre population de donneurs de sang (en majorité fidélisés et connus) était attendue : cette étude ne fournit donc pas d'argument pour cesser le dépistage, au contraire.

M.B.P.155 THE VALUE OF HIV COUNSELLING CONSULTATION MEETINGS AT THE NORTH LONDON BLOOD TRANSFUSION CENTRE (1986 - 1989)

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Objective. To describe how counselling consultation sessions enable the review, modification and evolution of counselling strategies related to HIV in a regional blood transfusion centre (R.T.C.).
Method. A district AIDS Counselling Co-ordinator consults with an R.T.C. team of doctors, nurse and microbiologist on a planned regular basis. The approach is to identify potential problems, rehearse possible solutions and discuss hypothetical and actual sequelae. Topics include strategies for notification and counselling of seropositive donors; donors implicated in transfusion-associated HIV; the impact of assay technology.
Results. Consultation sessions enable R.T.C. staff to define areas of concern, explore solutions, and influence policy structure particularly with regard to other areas of donor counselling e.g. hepatitis B infection. R.T.C. staff also gain insight into otherwise unfamiliar psychosocial concepts.
Conclusion. Transfusion staff have time to plan approaches in advance thus minimising ad hoc decision making. A more open approach to problems has also resulted which enhances information exchange between staff and donors while maintaining complete confidentiality.

M.B.P.156 CHANGES IN THE PREVALENCE OF HIVs AMONG NIGERIAN BLOOD DONORS IN IBADAN, NIGERIA.

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Objective. To determine the trend in HIV sero-prevalence rate among blood donors in Ibadan.
Methods. Both indirectly remunerative (relative) and non-remunerative (voluntary, panel) blood donor systems have operated in the Blood Bank of this hospital since its inception in 1958. The ratio of one to the other varies depending on several factors. Remunerative donors have been in the majority in recent years. Each prospective donor was questioned on past medical history. Only those not previously jaundiced or on regular drugs were tested by the $CuSO_4$ method. Suitable candidates donated blood and serum samples from pilot bottles were saved and screened by the Wellcozyme and Elavia HIV systems
Results. Between July and December 1986, of 2000 samples tested, 0.01 was positive by Elisa but was not confirmed on Western blot (WB). By contrast between 1.05 & 30.09.88 when 1464 samples were tested, 12 (0.8%) were Elisa positive and 9 (0.1%) were confirmed by WB.
Conclusion. This result indicates that blood transfusion may likely be an important route of HIV transmission in Ibadan. It further emphasizes the need to ensure, as directed by Government, that every unit of blood is HIV-free before it is transfused.

M.B.P.157 ANTI-HIV SCREENING OF BLOOD DONORS IN CANADA (NOVEMBER 1985 TO DECEMBER 1988)

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BETWEEN NOVEMBER 1985 AND DECEMBER 1988, THE CANADIAN RED CROSS SOCIETY SCREENED OVER 3,7 MILLION UNITS OF BLOOD FOR ANTI-HIV USING ENZYME IMMUNO ASSAYS (EIA). THE UNITS FOUND TO BE REPEATEDLY REACTIVE BY EIA WERE DISCARDED AND THE ANTIBODY STATUS CONFIRMED BY WESTERN BLOT (WB). DURING THIS PERIOD, 14,313 (0.38%) UNITS WERE FOUND TO BE EIA REPEATEDLY REACTIVE AND WERE DISCARDED. ONLY 395 (0.011%) OF THE UNITS TESTED WERE FOUND TO BE WESTERN BLOT POSITIVE AND THE DONORS WERE INFORMED OF THEIR ANTIBODY STATUS.

ALTHOUGH THE REPEATEDLY REACTIVE RATES WERE NOT SIGNIFICANTLY DIFFERENT WITHIN THE CATEGORIES STUDIED, WB POSITIVE RATES DIFFERED SIGNIFICANTLY. THE ANTI-HIV SEROPREVALENCE WAS TWO TO FOUR TIMES HIGHER IN THE URBAN POPULATION THAN IN THE RURAL POPULATION. THE SEROPREVALENCE IN THE PROVINCE OF QUEBEC REMAINED CONSISTENTLY TWO TO FOUR TIMES HIGHER THAN THE REST OF THE COUNTRY. THE WB POSITIVE RATE WAS SLIGHTLY HIGHER AMONG THE FIRST TIME DONORS THAN IN THE REPEAT DONORS. THE WB POSITIVE RATE WAS FOUR TIMES HIGHER AMONG THE MALE DONORS THAN IN THE FEMALE DONORS. THE HIGHEST SEROPREVALENCE WAS OBSERVED IN THE MALE DONORS OF 17 TO 29 YEARS OF AGE.

DURING THE STUDY PERIOD, THE WB POSITIVE RATE HAS DECREASED CONSIDERABLY, FROM 0.034% IN THE FIRST QUARTER OF 1986 TO 0.005% IN THE LAST QUARTER OF 1988, WHICH MAY BE MAINLY BECAUSE THE DONOR POOL HAS NOT CHANGED DRASTICALLY AND THE WB POSITIVE DONORS ARE PERMANENTLY DEFERRED FROM DONATING.

M.B.P.158 HIV-2 SEROPREVALENCE IN DIFFERENT GROUPS TESTED IN UNIVERSITY COLLEGE HOSPITAL, IBADAN, NIGERIA

Etim Essien & Idris Saliu
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Objective. To determine the relative frequency of HIV-2 among different groups tested in U.C.H. Ibadan
Methods. U.C.H. is the apex Hospital in South Western Nigeria and is located in Ibadan, the largest city in Africa South of the Sahara desert with an estimated population of about 6 million. A total of 6,385 blood samples have been screened in this centre since July 1987.
Results.

Category	No.screened	Elisa +ve	WB +ve
Blood donors	5720	4	2
Haematology & other patients	337	3	3
Volunteers etc.	324	1	1
Total	6385	8 (0.13%)	6(0.09%)

Two of those who tested positive among patients probably acquired the infection through blood transfusion.
Conclusion. It is concluded that HIV-2 is present among different categories of persons in Ibadan. Transmission in some cases was probably via infected blood transfusion. A study of its effect(s) on the course of other diseases in this environment is being undertaken.

M.B.P.159 TRANSFUSION AND HIV, FINNISH NATIONAL LOOK BACK PROGRAM.

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HIV situation in Finland by Dec. 31, 1988: 241 positive, of them 26 with a history of blood donation since Jan. 1, 1982, seven diagnosed at blood donation. The 26 donors gave blood 88 times for 99 products, of which 44 were used and 55 discarded. In addition some parts of 77 units were separated for F VIII, cryoprecipitate, interferon or plasma for albumin.

Results of the blood components used:

	No. of units to hospitals	Patients HIV pos.	HIV neg.	D	NK	No. inform.
Whole blood	9	0	3	4	2	0
Red cell conc. (RBC)	23	3	5	11	1	3
Platelets	10	2*	1	4	0	2
Leukocytes	2	0	1	1	0	0
TOTAL	44	5	10	20	3	5

NK=HIV results of the patient are not known; D=patient has died of reasons not due to HIV; *=one patient received two HIV pos. platelet concentrates.

Two patients died of AIDS after receiving RBC in 1983 (died 1986) and 1984 (died 1987). One received HIV pos. platelets in 1984, started having opportunistic infections in 1988. One received RBC in 1985, got LAS in 1987. The one, who got 2 units of HIV pos. platelets died a year later of leukemia without symptoms of AIDS. Two hemophiliacs are HIV pos. since 1984 due to cryoprecipitate. Of the donors 11 were first time donors, but their donations occurred equally between years 1982-88 suggesting that blood donation was not used for HIV testing.

M.B.P.160 ABSENCE OF HIV SEROPOSITIVITY IN CHILDREN WITH SICKLE CELL ANAEMIA AT KENYATTA NATIONAL HOSPITAL, NAIROBI, KENYA.

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Objective: To find out whether frequent blood transfusions increase the risk of transfusion-related HIV infection in children with Sickle cell anaemia.
Methods: One hundred and ninety-eight children with Sickle cell anaemia were transfused 1-13 times (mean 2,4) between 1982 and 1987. In Kenya routine screening of blood banks for HIV infection began in 1987. The HIV status of these children was compared with 231 non-transfused children: 106 with Sickle cell anaemia and 125 children with haemoglobin AA. In both transfused and non-transfused children age ranges were similar and were 1-12 years. All children were tested with Wellcozyme Elisa test in duplicate. All tests were performed at least 6 months after the last transfusion. Sixty five transfused sicklers were rechecked one year later.

Results: All 429 children were HIV negative.

Conclusions: Out findings suggest that HIV seropositivity is low in Kenyan children. Furthermore, even though blood was unscreened in 1982 - 1987 transfusion did not increase the risk of HIV infection in our study children.

M.B.P.161 RISK OF TRANSMISSION OF HTLV-I BY TRANSFUSION

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Objective: A prospective seroepidemiologic study was conducted to determine the incidence (risk) of seroconversion to HTLV-I in a cohort receiving multiple transfusions of blood/blood components screened for antibody to HIV-1.
Methods: Preoperative and postoperative serum samples were collected from 2,749 adult cardiac surgery patients who received 20,963 transfusions of blood components (17,623 cellular components). Preoperative and postoperative samples were serologically compared for evidence of human T-cell leukemia virus type I (HTLV-I) infection.
Results: Five incident and two prevalent infections were detected in the study population. The observed risk of HTLV-I transmission by transfusion was 0.024% (5/20,963) per unit with 95% upper bounds of 0.050%. The risk per cellular component was 0.028% (5/17,623) with 95% upper bounds of 0.060%. Comparison of the five seroconvertors with sets of controls who received an equivalent number of blood components suggested that transfusion of platelets is particularly associated with HTLV-I transmission.
Conclusions: These data suggest that despite similar modes of transmission and some overlap in risk groups, HIV-1 screening is not a satisfactory surrogate for HTLV-I. These results also provide important information about the risk of HTLV-I transmission by transfusion of blood components prior to specific screening of donor units for HTLV-I.

M.B.P.162 PREVALENCE OF HTLV-1 ANTIBODIES IN BLOOD DONORS IN THE NETHERLANDS

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Objective. To establish the prevalence of HTLV-1 antibodies in blood donors in the Netherlands.

Methods. Serum samples from regular blood donors (n=20,037) were tested with a commercially available ELISA for HTLV-1 antibodies. Repeatedly ELISA reactive samples were tested for confirmation with commercially available WB strips and ^{125}J-RIPA developed in our institute.

Results.

	n	ELISA reactive initially	repeatedly	Western Blot pos	indet.	^{125}J-RIPA pos	indet.
donors	20,037	49 (0.24%)	26 (0.13%)	1	14	1	10

Only 1 donor was found confirmed positive for HTLV-1 antibodies with p19, p24, p28, p36, gp46 in WB and p24, p28, p40x/gp46 in ^{125}J-RIPA.

Conclusions. The prevalence of HTLV-1 antibodies in blood donors in The Netherlands is low and in the order of 0.005 % .

Transfusions/Dépistage
Transfusions/Tests

M.B.P.163 COMPARISON OF IMMUNOASSAYS FOR EARLY DETECTION OF HIV-1 SEROCONVERTERS

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Objective. To evaluate various immunoassays for their ability to detect early seroconverters to human immunodeficiency virus (HIV) type 1 infection.
Methods. Pre- and post-plasma panels for 12 individuals identified by various immunoassays as having seroconverted (positive Western blots) to HIV-1 were tested by 7 immunoassays employing 5 different technologies. Tests used were Organon Teknika Vironostika enzyme immunoassay (EIA); Serodia Particle Agglutination Test (PA); Chiron Recombinant Immunoassay (RIBA); DuPont Western blot (WB); and three immunofluorescence assays (IFA), Electro-Nucleonics (ENI), Cellular Products (CP), and Fluoronost (FL). Western blots were judged positive, indeterminant or negative by the criteria of the Assoc. of State and Terr. Pub. Health Lab. Directors (ASTPHLD).
Results. Listed are the number of times each method was first or tied with other methods to give a positive result: PA (11/12), EIA (7/12), RIBA (8/12), WB (3/12), CP (3/12), ENI (9/12), FL (6/12).
Conclusions. The PA test was found to be the most sensitive test. The PA test became positive 3-5 days before other methods. Sensitivity of the IFA tests varied among the three kits compared, ENI was the second most sensitive test overall, while CPI was the least sensitive. Western blot detected antibodies to gag proteins at about the same time as the PA became positive but did not meet the ASTPHLD positive criteria in one panel until 20 days after the PA became positive. EIA, RIBA, and FL were similar in their sensitivities.

M.B.P.165 PROGRESSIVE CHANGES WITH TIME IN EXPRESSION OF CARBOHYDRATES ANTIGEN IN PBL OF HIV INFECTED PATIENTS.

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We have found in vitro that HIV infection of TALL lymphocytes causes significant expression on the lymphocytes of a carbohydrate determined by the BM-1 monoclonal antibody (J Exp Med, 1988; 167: 323). Patients with AIDS have high levels of BM-1 expression and asymptomatic patients have low level of expression. Over 200 HIV positive patients have been followed prospectively to determine if BM-1 expression correlates with clinical state or prognosis. BM-1 expression above 15% on lymphocytes was associated with a poor clinical state or evolving infection and a low absolute T4 lymphocyte count. Continued high level of BM-1 expression and low T4 counts persisted in patients receiving Zidovudine. BM-1 expression may have some value as a marker of progressive disease and could also be involved in the pathogenesis of cell destruction. A continued evaluation of this cohort would appear merited

M.B.P.167 SCREENING OF BLOOD DONATION WITH EIA COMBINED TEST (COMBI IgG EIA) BY USING SYNTHETIC PEPTIDES TO DETECT ANTI-HIV 1 / ANTI-HIV 2.

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Objective: to evaluate the behaviour of the EIA test containing synthetic peptides (Pharmacia Combi IgG EIA) for screening blood donation.
Methods: 2503 random samples and 25 anti-HIV + Combi IgG EIA were performed in comparison to ENI EIA test. Western Blot was the confirming test.
Results: 9 random samples (0,36%) out of 2503 ENI + and confirmed by WB were stongly + with Combi IgG EIA; 26 samples (1%) ENI false + were - with Combi IgG EIA; 19 samples ENI true + were in accordance with Combi test while 1 out of 6 false + samples was + with the Combi test.
Conclusion: the Combi IgG EIA proved to be sensible and agreeing when compaired to ENI test.

M.B.P.164 COMPARISON OF NINE HIV-1 SEROCONVERSION DONORS ON SIX HIV-1 ANTIBODY ASSAYS

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Objective. An evaluation of six detection systems for HIV-1 antibody was performed on a total of 49 early seroconversion samples from nine donors.
Methods. Viral and recombinant enzyme immunoassays (Abbott Labs and Cambridge BioScience), and rapid detection assays (Abbott and Cambridge) were evaluated on a panel of 49 HIV-1 seroconversion samples originating from nine donors.
Results. Of the 49 seroconversion samples tested, both recombinant EIAs detected 42 (86%) samples as positive. Abbott Test Pack (recombinant) also detected 42 samples as positive, which was followed by the Abbott modified viral EIA that detected 41 samples as positive. All assays of seroconversion samples progressed from negative to moderately reactive with the exception of the latex agglutination assay. With the latex agglutination assay, samples from one of the nine donors progressed from negative to positive; however, there were no samples detected as positive for two donors and the majority of donors (six) were positive for only the earliest bleeds with subsequent bleeds becoming negative. The samples that were detected as negative in the latex agglutination test for these six donors were positive by all other assays. The results for these six donors on the latex agglutination assay most closely correspond to their anti-HIV IgM reactivities.
Conclusion. Results suggest that the latex agglutination assay appears to have reduced sensitivity compared to the other assays in this evaluation on samples having low levels of IgG typically contained within seroconversion series.

M.B.P.166 PACKED RED BLOOD CELL (PRBC) TRANSFUSION (TX) THERAPY FOR ANEMIA IN PATIENTS WITH AIDS AND ARC: INCIDENCE, ASSOCIATED FACTORS, AND OUTCOME

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Objective. Determine the incidence, associated probable etiologic factors and clinical outcome of PRBC Tx therapy (Rx) in patients with HIV disease.
Methods. We reviewed records of the San Francisco General Hospital (SFGH) Blood Bank and identified 263 likely AIDS and ARC patients (pts) who received 1545 units of PRBC between July 1, 1987, and June 30, 1988. A probability sample of 80 of these pts were randomly selected for detailed chart review. Of this sample, 78/80 (98%) were confirmed to have AIDS (84%) or ARC (14%).
Results. Based on the yearly census of the SFGH AIDS clinic, we estimated a Tx incidence of 0.36 (0.89 PRBC units)/pt/year for pts with AIDS and 0.11 (0.27 PRBC units)/pt/year for those with ARC. Of the 177 Tx's studied in detail, antimicrobial drug therapy, zidovudine therapy, and disseminated M. avium complex (MAC) infection were the sole likely etiologic factors in 20%, 14%, and 12% of the Tx's, respectively. To assess the role of MAC, the 263 Tx'd pts were compared with the 574 pts who had blood submitted to the SFGH Mycobacteriology Laboratory during the same time period. Pts whose blood yielded MAC had a relative risk of 5.2 for Tx-requiring anemia. After 80% of Tx's, the pt returned to home.
Conclusion. Most PRBC Tx's administered to AIDS or ARC pts were clinically appropriate Rx. Applying our incidence data to the US PHS estimates of future AIDS cases, we estimate that in 1992 the expected Tx needs of pts with AIDS and ARC will represent 1-2% of the total PRBC supply in the US.

M.B.P.168 DETECTION OF ANTIBODIES TO HUMAN IMMUNODEFICIENCY VIRUS IN VENOUS AND CAPILLARY WHOLE BLOOD BY LATEX AGGLUTINATION

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Objective. The ability of rapid agglutination test to detect antibodies to human immunodeficiency virus (HIV-1) in capillary and venous whole blood samples was evaluated.
Methods. Recombigen -HIV-1 LA is a five minute latex agglutination (LA) test which uses polystyrene beads coated with recombinant env antigen to detect antibodies to HIV-1. Capillary blood, anticoagulated venous whole blood, and serum samples were collected from 137 high risk patients in a Boston clinic. Pairs of anticoagulated whole blood and serum samples were collected from 57 patients at a hemophilia clinic and 96 donors at a transfusion center. These samples were tested by latex agglutination and the results were compared to those obtained by a licensed enzyme immunoassay with serum. All positive samples were confirmed by Western blot analysis and, in some cases, by radioimmunoprecipitation.
Results. Using whole blood samples at the recommended 1:10 dilution, all 77 confirmed HIV seropositive samples tested were detected by the Recombigen HIV-LA test, (sensitivity=100%). With 213 seronegative samples specificity was 98.1% with whole blood. Agreement between anticoagulated venous whole blood and capillary blood was 100%.
Conclusion. These data show that the 5 minute LA test can be used to detect HIV antibodies in venous and capillary whole blood.

M.B.P.169 IMPACT OF LEUKOCYTE FILTRATION OF DONOR BLOOD ON REDUCTION OF HUMAN IMMUNODEFICIENCY VIRUS-INFECTED CELLS

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Objective. To test the hypothesis that removal of leukocytes by filtration of donor blood reduces the load of HIV-infected cells.
Methods. Units of blood from 4 seronegative donors were inoculated in vitro with cell-associated HIV using chronically infected HIV-SF2-HUT78 lymphocytes (2×10^3 - 1.8×10^4 TCIU/ml). Three additional units collected from seropositive donors contained HIV infected cells at 0.041-7.75 TCIU/ml. Units were filtered through 3 different brands of leukocyte removal filters. Lymphocytes were counted by hemocytometer following ficoll-hypaque concentration of blood before and after filtration. HIV infectivity was titrated by determining tissue coculture infective units/ml(TCIU) and/or polymerase chain reaction (PCR) for HIV-DNA.
Results. Filtration resulted in a 99.51% - 99.97% reduction in donor lymphocytes. HIV infectivity in the post-filtered blood from the experimentally inoculated units varied between 0.0 and 1.086 TCIU/ml, representing a reduction from 99.96% to 100%. HIV infectivity was no longer demonstrable by tissue culture methods in post-filtered blood from 2 of the 3 units from seropositive donors; the filtered blood from the third donor contained HIV at 0.053 TCIU/ml. PCR was positive in the 2 filtrates tested indicating a low level of residual cell-associated HIV DNA.
Conclusions. Leukocyte filtration significantly reduced the HIV infectivity of units of infected donor blood. Leukocyte removal by filtration should further minimize the risk of transfusion transmitted infections, especially when used in conjunction with the current donor screening programs.
(Supported by NHLBI grant N01-HL-41631-01).

M.B.P.170 THE ADAPTATION AND EVALUATION OF HIGH PERFORMANCE ELISA ASSAYS FOR DETECTION OF HIV ANTIBODIES IN DRY BLOOD SPOTS.

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Objective. To demonstrate that a high performance ELISA test, i.e., 100% sensitivity and >99.9% specificity, can be used to detect antibody in whole blood specimens collected in the dry blood spot (DBS) format.
Methods and Results. Sensitivity and specificity panels were prepared in the DBS format. Conditions were developed to elute the specimens from the DBS and test them in a microelisa system such that the system sensitivity and specificity were equivalent to that obtained from the respective plasmas.
The DBS protocol was then field tested with dry blood spots from low risk populations of 2000 normal blood donors. The repeat reactive rate of 0.1% was comparable to the plasma rate on these specimens. The protocol was used with a high risk population of 200 individuals. The repeat reactive rate was 44%. Neonatal blood spots (n=2985) were evaluated from a west coast USA site and gave an initial reactive rate of 0.7% and a repeat reactive rate of 0.1%. Two of the three repeat reactives were verified by immunoblot while the third was classified as indeterminate having detectable reactivity to p66, gp120 and gp160 proteins. In addition, 500 neonatal dry blood spots were evaluated from a midwest USA site and gave initial and repeat reactive rates of 0.0%.
Conclusion. The development of high sensitivity/specificity ELISA systems for detection of antibody in serum and plasma has been essential to the protection of blood supplies. These results indicate that it is possible to adapt high performance ELISA tests to provide comparable antibody detection even if using specimens collected in the dry blood spot format. Such an ELISA test application may be essential for future testing of blood and a most preferable option to get consistency of sample collection for worldwide epidemiological studies.

M.B.P.171 DO REALLY EXIST AUTOANTIBODIES TO RED BLOOD CELLS IN PATIENTS WITH POSITIVE ANTI-HIV SEROLOGY?

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Objective.Autoantibodies against platelets,granulocytes,lymphocytes have been cleary demonstrated in HIV + patients but not all the authors have found auto antibodies to red blood cells(RBC).We have studied 90 patients with HIV infection for the presence of athypical RBC antibodies.
Methods.Ninety blood samples from 15 AIDS patients,20 with ARC,25 with PGL, 30 symptom-free individuals(SF),were tested for the presence of auto and allo antibodies to RBC by direct antiglobulin test(DAT) and by irregular antibodies screening test.We have also tested 100 hospitalized patients with diseases other than AIDS and 100 healthy blood donors.
Results.No autoantibodies against RBC were found,in fact all DAT were negative.We have found cold agglutinins(CA)in 20 of 90 patients(22%);in 3 of 15 with AIDS(20%);in 7 of 20 with ARC(35%);in 5 of 25 with PGL(20%) and in 5 of SF(16%);all other patients and blood donors were negative.None of these CA reacted at 37°C and none patient has evidence of hemolysis.Serological specificities of CA were 14 anti I; 5 anti i and one anti Pr.
Conclusion.RBC bound immunoglobulins were detected in none of our patients. We think that the presence of CA could be due to HIV or others viruses that act as direct inducers of autoimmunity.

M.B.P.172 EVALUATION OF SERODIA PARTICLE AGGLUTINATION ASSAY FOR ANTIBODY TO HIV

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Objective. To compare the specificity and sensitivity of the Serodia passive particle agglutination anti-HIV assay (PA) with USA-licensed viral-lysate enzyme immunoassays (EIA) and Western blot (WB).
Methods. Specificity was assessed by testing 2,031 random blood donor specimens, 70 specimens from persons with diseases other than HIV infection, as well as 66 EIA(+)/WB(-) and 51 EIA(+)/WB-indeterminate specimens collected from donors shown by followup not to be infected with HIV. Sensitivity was evaluated by testing 51 previously identified WB(+) blood donor specimens, as well as by comparative end-point titration of 9 WB(+) donor specimens.
Results. Only 3/2031 (0.14%) routine donor specimens were initially reactive (non-repeatable) by PA, yielding a sensitivity of 99.86%. None of the 70 specimens containing potential cross reactive antibodies was PA(+). Of the previously detected EIA(+) donor specimens, 0/66 WB(-) and 2/51 WB-indeterminate were PA (+). All 51 WB(+) donor specimens were PA(+) (100% sensitivity); the PA assay was 4 to 16,384-fold more sensitive by titration.
Conclusion. The Serodia PA assay appears to be more sensitive and is clearly more specific than currently avaliable viral-lysate EIAs.

M.B.P.173 SENSITIVITY AND SELECTIVITY OF HTLV-I IMMUNOASSAYS.

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Objective. Determine the sensitivity and selectivity of Abbott, Cellular Products (CPI) and DuPont HTLV-I antibody screening ELISAs.
Methods. A panel of 73 HTLV-I/II positive sera was used to determine the sensitivity of FDA approved ELISAs. Selectivity was measured in a blood donor population, with a cutoff adequate to obtain 100% sensitivity.
Conclusions. The CPI assay is 100% sensitive, while the Abbott and DuPont ELISAs cutoffs must be redefined. The redefined Abbott test demonstrates substantially better selectivity than either the CPI or DuPont tests.
Results. The positive sera panel included 52 IVDAs, 1 ATL, 1 TSP, 9 blood donors, 3 clinical (symptoms unknown) and 7 Japanese samples. Seropositive is defined as p19 and p24 or p24, p36 and gp46 by Western blot or p24 Western blot and gp68 by RIPA. C.O.r = signal/C.O. of the weakest positive:

	RR	False Negative	C.O.r
Abbott	67/69	2/69 (2.9%)	0.856
CPI	73/73	0/73 (0.0%)	1.055
DuPont	61/69	8/69 (11.6%)	0.786

Random blood donors were tested and evaluated with both the manufacturers' recommended cutoff (C.O.) and a redefined cutoff (C.O.r). Selectivities:

		C.O.		C.O.r	
	N	RR	False Pos.	RR	False Pos.
Abbott	2,618	2	1 (0.04%)	2	1 (0.04%)
CPI	289	6	6 (2.0 %)	6	6 (2.0 %)
DuPont	2,523	20	19 (0.75)	36	35 (1.39%)

M.B.P.174 USE OF THREE RECOMBINANT ASSAYS TO TEST BLOOD DONOR SAMPLES WITH WESTERN BLOT (WB) INDETERMINATE PATTERNS

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Objective - To further attempt to clarify the significance of WB indeterminate blood donor samples by testing with recombinant assays.
Methods - All donor samples were screened initially for the presence of anti-HIV by Abbott, Genetic Systems or DuPont EIA. Any sample found to be reactive was subjected to the DuPont WB. Donor samples with a WB indeterminate result (Nov. 1985 to Nov. 1988) were tested with three EIA recombinant assays: Recombigen® (p24 / gp41 and 120), [illegible]™ (p24) and [illegible]™ (p24 / gp160).
Results - A total of 6592 WB indeterminate donor samples were tested which included approximately 45% from returning donors. Of these, 60% retained a WB indeterminate pattern and none seroconverted to WB positive. All samples (n=6592) were tested by Recombigen®. Of these, 1120 were tested by [illegible]™ (p24) and 1487 by [illegible]™ (p24 / gp160). Results of the samples tested were as follows:

[illegible]	[illegible]		[illegible]		[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Conclusion - The Recombigen assay (the more sensitive and specific of the three recombinant protein assays used in this study) helps clarify the negative status of the majority of WB indeterminate donors with respect to HIV in this low risk population. Conversely, a reactive Recombigen result indicates the need for follow-up of a donor who is potentially in the process of seroconverting.

La peau
Skin

M.B.P.175 RECURRENCE RATE FOR BUCCAL CANDIDOSIS AND ITS RELATIONSHIP TO T4 COUNT AND P24 ANTIGEN.

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OBJECTIVE: To assess time to recurrence of buccal candidosis after successful treatment and its relationship to T4 count and HIV P24 Antigen.
METHODS: 100 HIV positive patients with confirmed buccal or buccal and oesophageal candidosis received a 4 week course of either Itraconazole 200mgs O.D. or Ketoconazole 200mgs B.D. Successful treatment was assessed as clinical and mycological clearance. Patients were followed for a further 3 months with regular clinical and mycological assessments in conjunction with T4 counts and P24 Antigen levels monitored each visit.

RESULTS:

	RELAPSE			
	WITHIN 1 MTH.	WITHIN 2 MTHS.	WITHIN 3 MTHS.	CLEAR AT 3 MTHS.
ITRACONAZOLE:	19 (56%)	25 (74%)	27 (80%)	6 (18%)
KETOCONAZOLE:	22 (63%)	27 (77%)	28 (80%)	7 (20%)
TOTAL :	41 (60%)	52 (76%)	55 (80%)	13 (20%)

T4 (mm^3);	NO.	MEAN.
AT ENTRY:	43	153
RELAPSE:	21	104
NON-RELAPSE:	30	124

P24 Ag(u/ml);	NO.	NEG.	POS.	MEAN.
AT ENTRY:		58	37	111
RELAPSE:		38	27	124
NON-RELAPSE:		42	21	53

CONCLUSION: 80% of HIV patients with oral candida have a clinical and mycological relapse within 3 months of a successfully treated episode. T4 levels and P24 Antigen levels are not useful in predicting relapse.

M.B.P.176 PROBABILITY OF DEVELOPING AIDS IN HIV-INFECTED PATIENTS WITH MUCOCUTANEOUS LESIONS.

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Objective. To study the role of mucocutaneous lesions (MCL) as a predictor of AIDS in HIV-infected pts.
Patients and methods. Two hundred thirty nine HIV-positive pts without AIDS were followed during a mean of 11 months (1-41). The follow up period began when HIV antibodies were detected in non MCL-group or when MCL were observed in MCL-group, and finished with last visit made before December 88 or with the development of AIDS. MCL were diagnosed using clinical, histological and /or microbiological criteria.
Results. Eighty nine pts (37%) had one or more MCL: 64/190 (34%) drug addicts 16/26 (61%) homosexuals, 4/15 (27%) heterosexuals, 3 addicts and homosexuals and 2 of unknown risk groups. Three of 150 (2%) pts without MCL and 13 of 89 with MCL developed AIDS. MCL were oral thrush(4 pts), hairy leukoplakia(4), seborrheic dermatitis(3), herpes zoster(3) and simplex(3), folliculitis(1) and oral ulcers(1).
The Kaplan Meier survival method shows a percentage of free-AIDS pts at 20 months of 45%(95% confidence interval 36 to 54) in those with MCL comparing with 98%(95% confidence interval 82 to 114) in those without MCL.($p < 0.0001$).
Conclusion. Our findings show that the presence of MCL in HIV-positive pts may indicate an increased risk of developing AIDS in the following months, although some of these lesions may have a different role as a predictor of AIDS. These pts may be considered for antiretroviral therapy.

M.B.P.177 MYCOBACTERIAL SKIN INFECTION IN AIDS

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Cutaneous mycobacterial infection is a rare complication of AIDS. We describe two young intravenous drug addicts with oral candidiasis and mycobacterial ulcers and abscesses.

Case 1. A 33 year old black woman presented with fever, chills, diffuse lymphadenopathy and abscesses in the axilla and adjacent chest wall which required repeated drainage and debridement. PPD and HIV antibody tests were refused. The patient developed marked respiratory distress and chest Xray suggested septic emboli. Dermis and subcutaneous tissue showed coagulative necrosis, and numerous acid-fast bacilli consistent with M. tuberculosis (Mtb) but no granulomata or multinucleated giant cells. The organism was grown in urine but not in sputum or blood.
Case 2. A 33 year old Hispanic man with history of hemoptysis required drainage of a large abscess of the forearm and debridement of a 4x3cm ulcer of the anterior chest wall. Necrotizing granulomata in the dermis and in subcutaneous fat of chest wall contained few acid fast bacilli resembling Mtb. Chest Xray did not suggest tuberculosis but pneumonic infiltrates were seen. Mtb was recovered in sputum culture. The patient developed respiratory distress and coma, and died on the ninth day.

Conclusion. Mycobacterial infection must be considered in the differential diagnosis of skin ulcers and abscesses in intravenous drug addicts, especially in the presence of other manifestations of AIDS, and appropriate bacteriologic studies must be performed.

M.B.P.178 HYPERKERATOTIC DISSEMINATED HERPES ZOSTER IN PRETERMINAL AIDS

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Unusual infectious diseases as well as unusual presentations of common infectious diseases have frequently been reported in patients with AIDS.

We report two cases of an unusual presentation of a verrucous hyperkeratotic type of disseminated Herpes zoster in adult males with AIDS. We feel that this presentation represents an extreme of the V-Z infection not previously reported.

These hyperkeratotic, crusted skin nodules developed after the generalization of typical herpes zoster and progressed despite oral and intravenous acyclovir. Both patients had secondary Candida albicans infections of the crusted lesions and evidence of atypical Mycobacterial infection. One patient had cultures of blood and skin positive for Mycobacterium avium-intracellulare. Of interest, both patients ultimately developed a vacuolar myelopathy (confirmed by clinical presentation and EMG).

We believe that our patients represent a presentation of disseminated Herpes zoster unique to the AIDS patient that will be encountered more frequently in the future. The unrelenting, disfiguring nature of this disease as well as its apparent unresponsiveness to Acyclovir is of particular concern. One of the patients succumbed to his myelopathy while the other developed it during a worsening of his skin lesions. This clinical picture may be a harbinger of a rapidly fatal outcome.

M.B.P.179 VARICELLE ET INFECTION A HIV.

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Objectif : Etude rétrospective de la varicelle chez 15 malades infectés par le HIV (HIV+) entre 1981 et 1988.
Méthodes : Parmi 421 malades HIV+ hospitalisés, 15 (3,5%) ont fait une varicelle. Le diagnostic a été clinique. Une culture du virus varicelle-zona (VZV) ou une biopsie cutanée a été réalisée chez 3 malades ayant une éruption atypique.
Résultats : Il y avait 12 adultes d'âge moyen 32 ans (18 à 70 ans) et 3 enfants d'âge moyen 3 ans, 5 dans les groupes II ou III des CDC, 2 dans le groupe IV-C2, et 8 SIDA. Un malade a eu une 1ère varicelle 31 mois et un zona 9 mois auparavant. Un contage varicelleux a été retrouvé chez 6 malades. Un malade, HIV+ asymptomatique, a fait une varicelle fulminante et est décédé d'une coagulation intravasculaire disséminée malgré l'aciclovir. Trois SIDA ont fait une éruption atypique avec une dizaine d'ulcérations chroniques contenant le VZV. Un malade a été traité par vidarabine et 11 par aciclovir i.v. Un SIDA a fait 3 rechutes de varicelle avec des lésions atypiques malgré l'aciclovir.
Conclusion : La varicelle des sujets HIV+ peut être récurrente et se manifester par des lésions atypiques. Le risque de formes mortelles justifie l'aciclovir i.v.

M.B.P.180 "NON-INFECTIOUS" DERMATOSES: CORRELATION WITH CD 4^+ - T-LYMPHOCYTES AND STAGE OF HIV-INFECTION

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Objective. To investigate whether cutaneous diseases, regarded as "non-infectious" up to now, allow a clinical evaluation of the stage of HIV-infection.-
Methods. Over a 4-years-period, 267 HIV-infected patients (254 male, 13 female) were examined 4 times on an average. At first manifestation of a skin disorder, stage of HIV-infection and CD 4-counts were recorded.-
Results. On entry of the study the mean CD 4-count was 407/µl.

	SLS	LAS	ARC	AIDS	all	CD4/µl
	%(n=18)	%(n=86)	%(n=76)	%(n=87)	%(n=267)	mean
Seb.dermatit.	17 (3)	21 (18)	30 (23)	40 (34)	29 (78)	345
Pruritus	6 (1)	20 (17)	34 (26)	32 (28)	27 (72)	372
Xerodermia	11 (2)	13 (11)	26 (20)	34 (30)	24 (63)	316
Kaposi-Sarkoma	- -	- -	- -	52 (45)	17 (45)	224

(SLS=asymptomatic stage; Seb.dermatit.=Seborrheic dermatitis)
13 patients (4,9%) had lesions typical of psoriasis vulgaris. On progression of the disease in 6/9 cases CD-4 counts were lower than 200/µl.
Conclusion. "Non-opportunistic" dermatoses were more frequent and severe in advanced stages of HIV-infection and increased with decreasing CD 4-counts. So they were a reliable clinical marker of cellular immunodeficiency indicating the risk of the individual for severe opportunistic infections.

M.B.P.181 MANIFESTATIONS CUTANEES ET VENEREOLOGIQUES CHEZ LES MALADES INFECTES PAR LE VIH EN GUYANE FRANCAISE

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130 cas de S.I.D.A. ont été répertoriés de 1982 à 1988 dans une population de moins de 100.000 habitants incluant 20.000 immigrants haïtiens et un petit nombre de prostituées de Santo-Domingo.

Les principaux modes de transmission du VIH sont de type hétérosexuel (87,69%), et maternofoetal (10,75%).

Un seul cas a été constaté chez un homosexuel (0,75%) et il était porteur d'un sarcome de Kaposi. Un autre cas a été constaté chez un homme hétérosexuel : 2 cas sur 130 est un taux très bas pour le SARCOME DE KAPOSI.

L'infection muqueuse la plus fréquemment rencontrée est la CANDIDOSE et l'infection cutanée le PRURIGO : cette manifestation cutanée est le meilleur signe d'orientation vers le test sérologique et ne doit pas être confondue avec la gâle chez l'enfant.

L'HERPES SIMPLEX, le ZONA et les infections à PAPILLOMA VIRUS ont une incidence élevée, une évolution sévère, mais l'herpès et le zona peuvent être traités par l'Acyclovir.

La TRICHOMONASE est fréquemment observée et son rôle pour la transmission du VIH de la femme à l'homme nous apparait très important, le parasite ouvrant la muqueuse vaginale et la partie prépuciale du pénis.

3 cas de DONOVANOSE doivent être mentionnés en raison de l'épidémiologie par contacts sexuels anaux ; la faible agressivité de *Calymmatobacterium granulomatis* nécessite un défaut immunologique cutané pour être réellement pathogène. Une LEPRE LEPROMATEUSE récurrente a aussi été observée.

M.B.P.182 DERMATOLOGICAL MANIFESTATIONS AND HIV INFECTION

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Objective: To analyse all dermatological manifestations among 409 HIV infected patients.

Methods: We made a retrospective study of all mucocutaneous findings among patients attending our "AIDS" Clinic from November 1983 to August 1988. HIV infection was confirmed by ELISA, Indirect Immunofluorescence and/or Western blot techniques. All mucocutaneous lesions were confirmed by biopsy and/or culture when needed. Patients were evaluated for age, sex, risk group, stage of infection and types of lesions. We did not evaluate treatment or response to treatment.

Results: We found mucocutaneous manifestations in 227 patients (55,5%), 212 male (93,39%), 182 homo/bisexuals (80.17%). Most of the patients presented more than one type of lesion.

TYPE OF LESION	PATIENTS	
	N	%
Kaposi's sarcoma	48	21.15
Oral candidiasis	91	40.10
Other fungal	28	12.33
Viral	65	28.63
Bacterial	31	13.66
Seborrheic dermatitis	56	24.67
Others	64	28.19

Conclusions:

1) Dermatological manifestations are common among our HIV infected patients.
2) It is possible to make a suspicious diagnosis of HIV infection observing the skin.
3) Seborrheic dermatitis, Kaposi's sarcoma and oral Candidiasis were the most common mucocutaneous manifestations.

M.B.P.183 MANIFESTATIONS CUTANEO-MUQUEUSES DU SIDA AFRICAIN

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Objectifs. Décrire les manifestations cutanéo-muqueuses observées chez le Noir africain atteint de SIDA (HIV1 - HIV2).

Méthodes. Etude rétrospective des dossiers de malades hospitalisés dans le Service de Pathologie Infectieuse. Leur suivi a été fait en collaboration avec un dermatologue du C.H.U. Une iconographie a été établie.

Résultats. Sur 73 malades atteints de SIDA, 61 ont présenté des manifestations cutanéo-muqueuses dont 19,6% cutanées, 16,4% muqueuses et 70% associées. Les candidoses bucco-pharyngées sont les plus fréquemment observées (70,49%). Le sarcome de Kaposi est rare (4,9%). Les autres manifestations sont retrouvées à des taux variables.

Conclusion. Dans notre étude, nous confirmons la rareté du Kaposi SIDA en Afrique mais retrouvons les manifestations classiquement décrites.

M.B.P.184 PRIMARY HIV-1 INFECTION WITH VIRUS DEMONSTRATED IN HISTOCYTES OF SKIN RASH

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Objective. To describe a severe case of primary HIV-1 infection.

Methods. The patient is a 22 year old homosexual male who came to New York City from Detroit, Michigan in late June 1988. Upon arriving, he had "unsafe" sex with an older homosexual male for several weeks. Approximately 2 weeks later, he had onset of symptoms including headache, neck pain, profound weakness, and aversion to light and sound, with subsequent development of a bright red skin rash on the thighs and volar surfaces of the arms, demonstrating Koebner's phenomenon. Sera were collected within 2 days of onset of symptoms, and repeat sera and biopsy of the skin rash taken 2 and 3 weeks later.

Results. The headache persisted 9 days, while the skin rash faded gradually over 5 weeks. The initial sera tested negative for antibodies by both ELISA and Western Blot. The repeat sera taken 16 days later was positive for antibidies by both ELISA and Western Blot. Both the initial and repeat sera were negative by the HIV p24 core antigen ELISA test. The H&E skin biopsy showed a leukocytoclastic vasculitis. Electron micrograph showed HIV-like virus particles within the cytoplasm of the histiocyte. White blood counts were as low as 3,000, and at the time of the biopsy, T_4 cell count was 656, and T_8 count was 815.

Conclusion. Primary HIV-1 infection may be severe with symptoms lasting a month. Presence of a skin rash with a mono-like illness should indicate the need for HIV testing in order to make an early diagnosis, creating the opportunity of beginning antiviral therapy to possibly delay progression of the disease.

M.B.P.185 DERMATOLOGICAL MANIFESTATIONS RELATED TO AIDS IN CENTRAL AFRICA.

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Pasteur Institute, BP 923, Bangui, Central African Republic.

Objective. To describe and evaluate the frequency of dermatological manifestations in African patients with AIDS.

Methods. One hundred and ten African patients at the National Hospital Center, Bangui, were chosen according to the WHO/Bangui clinical definition of AIDS and were confirmed to be HIV1 positive by Western blot. Patients were given dermatological examination. Kaposi's sarcomas were confirmed by biopsy, and mycosis by fungal culture.

Results. Pruritic lesions were the most frequent symptom in 57/110 patients, associated in 26/57 cases with specific dermatosis. Generalized pruritic eruption with prurigo was seen in 25/57 cases. Kaposi's sarcomas (nodular and papular varieties mainly) in 14/110 patients. The leading viral infection was Herpes zoster (9%) with atypical course (herpes zoster duplex or generalized herpes zoster). Six patients showed mucocutaneous *Herpes simplex* infection. Oral candidiasis was found in 26/110 AIDS patients while 25/110 showed dermatophytic dermatosis.

Conclusions. In this series, dermatological manifestations were detected in the half (52%) of African patients with AIDS. These patients are more likely to present with various cutaneous and/or mucous lesions than AIDS patients in Western countries.

M.B.P.186 BASAL CELL CARCINOMA IN HIV DISEASE

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Objective. To describe an unusually high incidence and atypical presentation of basal cell carcinoma (BCC) in HIV infected men.

Methods. Cases of BCC in HIV infected patients (pts) were collected from a local practice and from 2 dermatologic referral practices.

Results. 6 pts with 14 BCC were seen, all gay white males (1 AIDS, 3 ARC, 1 pre-AIDS, 1 high risk), mean age 40 (range 28-46). 4/6 pts were from a group of 111 HIV infected males followed for 0.1-9.3 years (mean 1.4); 12/14 BCC in this group. 3 facial/11 truncal BCC (F/T ratio=0.3, expected for age and latitude=0.2). One pt developed 8 truncal lesions over 3 years. 57% presented as multiple synchronous BCC (13% expected). 2 pts had small surface lesions but deep tissue invasion. 3 pts had HPV lesions (oral condylomata, perianal condylomata, facial wart) and 2 had molluscum. All were treated by primary excision; 3 also had Mohs chemosurgery. No metastatic or locally destructive lesions have occurred. 8% annual incidence of BCC among white males in the HIV infected group is 100x expected for age and latitude, 6% annual incidence of truncal lesions is 500x expected.

Conclusion. BCC may occur frequently in some HIV infected groups, may present atypically, and should be looked for and treated aggressively. Cofactors such as HPV may be involved.

M.B.P.187 PSORIASIS IN HIV INFECTION: CLINIC, HISTOLOGY AND HLA TISSUE TYPING

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Objectives: To determine differences between psoriasis manifesting before HIV infection (group I) and psoriasis occurring after HIV infection (group II). Methods: In a study 4.9 % (16/328) of patients suffering from psoriasis vulgaris were divided into two groups and clinic, therapy, histology and human lymphocyte antigen (HLA) tissue typing were evaluated. Results: Parents were affected in 3/5 of group I patients and in none belonging to group II. All patients - except one group II - showed typical clinical psoriasis. Nail defor-mities were seen in 60 % of group I and 37.5 % of group II. In three patients treated with zidovudine quick improvement of cutaneous lesions could be seen. Histology was typical for psoriasis vulgaris in 2/3 biopsies of group I and 9/12 of group II. HLA tissue typing showed that HLA-Cw6, a sign of hereditary psoriasis with early onset, was present in 3/3 patients group I but only 2/4 group II. Conclusion: Psoriasis in HIV infection even without family history shows typical clinical and histological criteries. HLA-typing seems to be different in the two groups. HIV infection may be an endogenous stimulant leading to provocation or exacerbation of psoriasis vulgaris.

M.B.P.189 NAIL DYSCHROMIA IN ZIDOVUDINE TREATED AIDS/ARC PATIENTS

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Objective: Define the frequency and parameters of nail dyschromia in AIDS/ARC patients on Zidovudine.
Methods: 38 patients with AIDS or ARC on Zidovudine therapy (AZT) for a mean of 8 months (1-22 month range) volunteered to be evaluated for the development of nail dyschromia. A group of 38 AIDS patients not on AZT and a group of 38 normal patients served as controls.
Results: Sixteen of these 38 (42%) developed progressive nail dyschromia starting on average between 4-8 weeks after initiation of AZT therapy. Most developed longitudinal bands but transverse bands and generalized nail dyschromia were also seen. Color varied from shades of blue to brown-black. The thumbnail was the first nail to develop dyschromia in 11/16 (69%) of patients. Pigment initially appeared at the base of the nail and moved distally. Toenail dyschromia also occurred and followed after fingernail dyschromia. No other area of abnormal pigmentation nor hyperpigmentation was noted. Dyschromia was not associated with sex, having AIDS or ARC, other medications used, nor risk factors for AIDS. Black patients were twice as likely to develop dyschromia 9/12 (75%) vs 8/26 (31%) (p< 0.001 Fisher's exact test) Hispanics ((5/18 (28%)) or Caucasians (3/8 (38%)). Some dark skinned control patients had faint longitudinal brown nail streaks of long duration consistent with normal pigmentation variance in these individuals. This contrasted greatly with the unusual colors and patterns seen in AZT treated patients.
Conclusion: Physicians treating patients with AZT need to be aware of this high frequency of nail dyschromia especially in dark skinned individuals and inform their patients of its possible occurrence in order to facilitate compliance.

M.B.P.191 HUMAN PAPILLOMA VIRUS (HPV) IN ANAL BOWEN'S DISEASE OF HOMOSEXUAL MEN.

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The incidence of anal carcinoma and lymphomas, uncommon tumors in the general population, are increased in homosexual men. A 5-year review of male patients, revealed 25 cases of anal condyloma (I), 38 cases of squamous cell carcinoma in situ (Bowen's disease)(II) and 15 cases of invasive squamous cell carcinoma (III), between 1980 and 1985.

Confirmed homosexuality was 84%, 65% and 57% and the average age of patients was 32, 37.5 and 49.5 years in groups I, II and III, respectively. AIDS was associated in 14%, 8% and 37.5% of cases. Condyloma was coexistent with 32% of the carcinoma in situ and with 12.5% of the invasive carcinomas. Koilocytotic atypia was present in 72% of carcinoma in situ. HPV antigens were detected by immunoperoxidase staining in 3 of 13 and by in situ hybridization in 6 of 13 cases of anal Bowen's disease in homosexual men.

DNA of HPV type 6/11 was detected in 3 cases and HPV type 16 in 4 cases, one lesion harboring both types 6/11 and 16. HIV antibodies and reversed Th/Ts cell ratios were present in most patients tested. Squamous cell carcinoma in situ generally showed the features of Bowen's disease. The occurrence of anal Bowen's disease in young homosexual males, some HIV positive, and the frequent detection of HPV, suggest an etiologic relationship between HPV and HIV.

M.B.P.188 LES MANIFESTATIONS CUTANEES DE L'INFECTION AU HIV AU RWANDA.

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Plusieurs manifestations dermatologiques sont actuellement associées à l'infection au HIV.

Nous rapportons les résultats de la séropositivité à l'ELISA/HIV parmi les patients adultes consultant le service de Dermatologie-Vénérologie de l'Hôpital Universitaire de Butare-Rwanda de 1986 à 1988.

Sur 543 patients testés, 79% ont été séropositifs à l'Elisa. Un taux de séropositivité relativement élevé a été observé parmi les patients souffrant des dermatoses suivantes : Zona (88%,n=208), prurigo (86%;n=107), dermatite séborrhéique (89%; n=37), dermatose papuleuse prurigineuse généralisée (91%; n=23), "molluscum contagiosum" (87%; n=24), sarcome de Kaposi agressif (100%; n=15), herpès circiné (90%; n=10), herpès génital(86%;n=30), condylomes acuminés (71%; n=78), furonculose (71%; n=31), prurit généralisé (73%; n= 19), urticaire chronique (53%; n=30).

Toutes ces dermatoses bénignes pour la plupart deviennent plus sévères quand elles sont associées à l'infection au HIV. 2 ou 3 de ces dermatoses sont associées chez 120 (28%) malades.
63,6% (n=429) de nos patients séropositifs présentent des manifestations cliniques uniquement dermatologiques et seuls 60 (14%) malades répondent à la définition clinique de l'OMS du cas de SIDA. Ces manifestations cutanées constituent donc des manifestations précoces du SIDA.

Manifestations cliniques
Clinical Manifestations

M.B.P.190 LIPOSOME ENCAPSULATION FACILITATES ENHANCED KILLING EFFECT OF AMIKACIN ON MYCOBACTERIUM AVIUM COMPLEX (MAC) IN BEIGE MICE AND MACROPHAGES

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We demonstrated that amikacin is effective in eliminating Mycobacterium avium complex (MAC) from beige mice, challenged intravenously with virulent MAC. However, high dose (50 mg/kg) given daily 5 days a week for 8 weeks is needed for this action. When encapsulated in liposomes consisting of phosphatidyl glycerol-phosphatidyl choline-cholesterol (1:1:1 molar ratio), one-tenth of the dose, given in 3 or 4 injections, amikacin effected dramatic reduction in mortality and the number of colony forming units (CFU) of MAC from visceral organs. The amount of drug given via liposome formulation is a fraction of that given by the standard conventional treatment given for the entire period. Thus the antimycobacterial effect per unit dose of drug seen in each tissue is several times more with liposome encapsulation than with the free form. Liposome encapsulated amikacin caused high antimycobacterial activity against MAC inside macrophages and J-774A cell lines, while the free compound showed negligible activity.

M.B.P.192 THREE YEARS OF EVALUATION OF THE CLINICAL CASE DEFINITION OF AIDS IN CENTRAL AFRICA.

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Objective : To evaluate and try to improve the WHO clinical case definition of AIDS proposed at Bangui in 1985, through a 3 year period (01.86 to 01.89)
Methods : We have applied the criteria of both the clinical case definition of Bangui and CDC's one to 389 inpatients seen at the National Hospital and distributed into two cohorts of people fitting with each definition.
Results: Using 3 different "scoring" systems for that evaluation there is not a big difference between the results. Among a population of full blown AIDS defined on the basis of the WHO workshop, the empirical scoring system one of us previously proposed in 1985 has, a predictive value of 50% for affirming AIDS.
The usefulness of simple serologic tests such as ELISA is demonstrated : among patients fitting with clinical case definition, the presence of anti HIV antibodies (ELISA) increases the positive predictive value (90.5%).
We were also able to emphasize that neurologic involvement (e.g. Peripheral Facial Palsy, comas, ocular symptoms) poorly taken into account by the Bangui definition, is very common and oftenly serious.
Conclusion : Developing simple serologic tests deeply facilitates the diagnosis in presence of patients recruited on the basis of clinical symptoms only, and in front of atypical clinical symptoms particularly in patients with neurologic disorders.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

M.B.P.193 A HIGH INCIDENCE OF ALLERGIC DISORDERS IN PATIENTS WITH HIV INFECTION

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Forty seven randomly selected patients with HIV infection were evaluated for allergic disorders. Twenty nine/47 patients (62%) had AIDS-defining opportunistic infections (group 1), 10/47 patients (21%) had AIDS-associated malignancies (group 2), and 8/47 patients (17%) were asymptomatic or had ARC. Of the total group, 41% had a past history of allergic symptoms and 67% reported new or increased allergic reactions. The history of rhinitis and/or conjunctivitis ranged from 75-93% and there was a very high incidence of drug reactions, sinusitis, bronchospasm and radiographic evidence of sinus disease in all clinical groups. Patients in group 1 had significant elevations in serum IgE which did not correlate with the polyclonal elevation of IgG in all groups. In group 1, more patients had positive RAST tests than in groups 2 and 3. The high incidence of allergic disorders in HIV-infected patients suggests that IgE-dependent mechanisms account for their unique susceptibility to other hypersensitivity reactions.

M.B.P.194 ACUTE HIV INFECTION: CLINICAL AND BIOLOGICAL STUDY OF TWELVE PATIENTS.

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Twelve acute HIV infection (6 gays, 2 IVDA, 3 heterosex, 1 nurse with an hospital infection) were directly observed. Mean time between infection and acute illness (8 cases) was 17.7 days ± 3.6 (R. 13-25). All the patients showed a mononucleosis like-syndrome. Symptoms and signs: fever (12/12), polyadenomegaly (11/12), arthralgia/myalgia (9/12), sore throat (9/12), pharingeal enanthema (4/12), rash (7/12), splenomegali (6/12), diarrhoea (2/12), oral candidiasis (2/12), monoarthritis (2/12), polyneuropathy (2/12), meningopolyradiculoneuritis (1/12). Associated pathology: 3 NANB hepatitis, 1 primary syphilis chancre. At admission all the patients were AbHIV- (ELISA). Average time ELISA seroconversion was 56.1 days ±29.3 (R. 24-131). HIVAg was positive in 9/12 (mean persistance: 32.2 days ±12; R. 18-60). The sera of 3 patients without HIVAg, retested after Griswold's method, showed HIVAg. IgM W.B. was positive in 9/12, IgG W.B. in 9/12. CD4+/CD8+ ratio was low for a remarkably increased of CD8+, while CD4+ were slightly decreased. 4 lymphonodal biopsies were performed during acute onset. Histologic and immunohistologic patterns were characteristic. After acute stage (mean duration: 14 days ±8.5; R. 5-30), 10 patients developed PGL, 2 became asymptomatic. After a mean time of 17.2 months ±10 (R. 6-30), 5 patients showed ARC and one of these developed full-blown AIDS and died after 22 months. The follow up suggests a quickly evolution in subjects showing an acute symptomatic HIV infection.

Acknowledgment: this work was supported by the "C. Danagri Foundation".

M.B.P.195 ASPECTS CLINIQUES HIV1 ET HIV2 ET CLASSIFICATION DE BANGUI

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Objectifs. Evaluer la sensibilité et la spécificité des critères de diagnostic clinique du SIDA HIV1 définis à Bangui et proposer leur élargissement éventuel au SIDA HIV2.

Méthodes. Etude rétrospective de 73 cas de SIDA HIV1-HIV2 hospitalisés de janvier 1986 à décembre 1988 au Service des Maladies Infectieuses du C.H.U. de Dakar. Une cohorte de témoins (patients suspects mais séronégatifs) a été étudiée. Les critères de la classification de Bangui ont été recherchés pour chaque cas et une étude comparative statistique a été effectuée.

Résultats. Sur 73 cas de SIDA :
49 HIV1
21 HIV2
3 double profil

Le sex-ratio est de 2.4. La grande majorité des malades HIV1 comme HIV2 présentent les signes majeurs de la classification de Bangui : amaigrissement > 10%, diarrhée > 1 mois et fièvre > 1 mois. Les manifestations cliniques HIV1 et HIV2 sont comparables dans notre série. Un pourcentage non négligeable de suspects ont eu une sérologie négative (sensibilité ?).

Conclusion. L'élargissement à HIV2 de la classification de Bangui est proposé mais une amélioration est possible.

M.B.P.196 SUIVI PAR IRM DEPUIS OCTOBRE 1986 D'UNE COHORTE DE 50 PATIENTS HIV + INITIALEMENT ASYMPTOMATIQUES

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Objectifs: étudier l'histoire naturelle des atteintes encéphaliques au cours de l'infection par le Virus VIH.

Méthode: suivi tous les 6 mois de 50 patients séropositifs, initialement asymptomatiques, par examens cliniques, biologiques et IRM.

Résultats: à l'issue du premier examen, 35 examens IRM normaux, 2 atrophies cérébrales, 13 présentant des zônes de haut signal(ZHS) ponctuées unique ou multiples, contrairement à un groupe témoin. On concluait donc qu'il s'agissait de stigmates d'atteinte précoce du SNC par le VIH (cicatrice ou première atteinte encéphalitique?).

Evolution des images par RM depuis près de 3 ans: ceux qui étaient normaux le sont restés, un des porteurs d'atrophie est décédé de toxoplasmose, l'autre reste inchangé; 12 des porteurs de zones ponctuées sont inchangés, un a vu sa lésion grossir, puis se stabiliser sous AZT et a présenté récemment une toxoplasmose qui a guéri sous traitement.

Conclusion: la cohorte reste constituée, 45 des 50 patients initiaux ont subi le dernier controle. L'évolution clinique se diversifie: 1 décès, 2 toxoplasmoses, 1 pneumocystose, 1 paralysie faciale, une méningite lymphocytaire, un Guillain Barré. Sept sont sous AZT. La surveillance est maintenue, au même rythme.

M.B.P.197 ETUDE DE LA PROTEINE S AU COURS DE L'INFECTION PAR LE VIH.

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Objectif. Etudier la protéine S (PS) au cours de l'infection VIH en raison de sa synthèse partielle par la cellule endothéliale.

Méthodes. Dosages : des facteurs II, V, VII + X par méthode chronométrique en un temps (plasma déficitaire Stago, standard Behring) ; de la PS totale, de la PS libre (après précipitation par PEG, concentration finale 3,75 %), de la C4BP, en Laurell unidimensionnel. Le taux de PS totale est exprimé en % d'un pool référencé Stago. Le taux de PS libre est exprimé en % de la PS libre d'un pool de 11 plasmas normaux techniqués dans les mêmes conditions. Technique de contrôle en bidimensionnel (1è migration en tampon véronal EDTA à pH 9.2, 2è migration identique à la technique unidimensionnelle).

Résultats. 10 patients (5 hommes, 5 femmes), dont 4 toxicomanes, 3 homosexuels, 4 hétérosexuels sont étudiés, âge moyen 29 (21-41) ans. 2 patients ont un SIDA, 4 un ARC, 3 un syndrôme lymphadénopathique, 1 asymptomatique. 5 patients sont sous AZT. Aucun n'a eu d'hémorragie ; 1 patient a eu 4 épisodes de thromboses veineuses profondes avec migration pulmonaire. La PS totale est normale 94.86 % (71-116) de même que la C4BP 102.4 % (80-123), et le rapport C4BP/PS totale 1.079 (0.94-1.28). Par contre la PS libre est basse 32.3 % (0-60). Le II, le V, le VII + X sont normaux (84.8, 81.6, 83.2 %). Chez 2/2 patients le déficit en PS libre est confirmé en bidimensionnel.

Conclusion. Il existe un déficit en PS libre chez 9/10 patients testés. Il n'est pas dû à un déplacement sous forme liée comme en atteste le taux normal de C4BP et du rapport C4BP/PS totale. Il pourrait être en rapport avec une anomalie de synthèse par la cellule endothéliale altérée au cours de l'infection VIH (Kaposi, augmentation du VIII antigène).

M.B.P.198 THE IMPLICATIONS OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION AND ACCIDENTAL FALLS (AF) AMONG YOUNG PATIENTS IN A CITY HOSPITAL.

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Objective. To investigate the relationship between AF and HIV infection among young patients.

Methods. Queens Hospital Center is a 600-bed hospital serving patients from disadvantaged backgrounds. The charts of all patients aged 18 to 55 with an accidental fall were reviewed.

Results. Between 1/87 and 6/87, there were 36 AF reported among 29 such patients. Sixteen patients (55.2%) had risk factors related to HIV infection:13 (44.8%) were reported to have been intravenous drug abusers, one came from Haiti, one was homosexual and one frequented prostitutes. HIV antibody were performed on 13 patients; all were positive. Eleven(30.6%) presented with first clinical manifestation of AIDS. The opportunistic infections included Pneumocystis carinii pneumonia(7),esophageal candidiasis(4), CNS toxoplasmosis(1), extrapulmonary tuberculosis (1),cryptococcal meningitis and pneumonia(1). Fourteen (87.5%) of these patients were initially noted to have a normal neurological examination. Neurological deficits were noted later in 5 patients around the time of the falls. Twelve events were related to either febrile and septic episodes. Patients with AIDS were noted usually to have more than one fall. Eight patients (28%) died within one month of the fall.

Conclusion. There is a high incidence of HIV infection among young adults with AF. An accidental fall may be an early sign of an ominous event and may suggest a poor prognosis in these patients.

M.B.P.199 HIV INFECTION NATURAL HISTORY. "PERSISTENT" AND "ACTIVE" FORMS DO EXIST AND THEY ARE CLINICALLY DISTINGUISHABLE.

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Objective. To describe natural history of HIV infection and classify HIV seropositive patients with clinical reliability.

Methods. We included in our trial all HIV-seropositive patients who completed at least one year of follow-up. We considered the occurrence, in the first year, of various clinical and laboratory findings (Weight loss; Fever; Herpes Zoster; Hairy Leukoplakia; Seborrheic Dermatitis; Neurological involvement; Oral Candidiasis; Diarrhoea; CD4+< 400/mm3; CD4+/CD8+ ratio< 0.6; IgG> 2500 mg%; Hb< 11 mg%; Thrombocytopenia; WBC< 3000/mm3). For each finding we gave the patient a "Score" of 1. At the end of the first year of follow-up we calculated, for each patient, a "Total Score". Following the model of HBV infection we classified the patients as having "Persistent Chronic Infection" (Score< 4) or "Active" Chronic Infection" (Score> 3).

Results. 140 patients (103 IVDA, 23 Homosex. and 14 Heterosex.) were evaluated. 108 patients reached a Score ranging from 0 to 3 ("Persistent" infection) and 32 reached a Score ranging from 4 to 8 ("Active" infection). Only 5/108 patients having "Persistent" infection (mean follow-up period: 21 months) evolved from LAS to ARC. 27/32 patients having "Active" infection (mean follow-up period: 18 months) evolved from LAS to ARC (in 17 cases) or to full-blown AIDS (in 10 cases)

Conclusions. Our data show an overt clustering of HIV-infected patients in two groups. Some patients progress very slowly or don't progress at all. Others run very quickly through various stages of the illness and reach full-blown AIDS in a short period of time. Clinical manifestations occurring in the first year of the follow-up are helpful to classify the patients in "Persistent" or "Active" form. These findings bear great prognostic and therapeutic implications.

M.B.P.200 HIV-2 IN NEW ENGLAND

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Objective: To survey selected populations in New England for exposure to HIV-2

Methods: Individuals at risk for HIV-1 infection (N=850 IVDAs), individuals of West African descent (N=126); individual sera showing indeterminate Western blot testing for HIV-1 (N=111), and individuals suffering from AIDS-like syndromes without definite HIV-1 serology (N=8) were surveyed for HIV-2-specific antibodies.

Results: One individual was seropositive for HIV-2-specific antibodies. This one individual was a 39 year old male originally from the West African region with several years of extensive travel history prior to residing in the United States for the past 7 years. He presented in early 1988 with a 4 month history of anorexia, nausea, vomiting, and watery diarrhea. On physical exam, he was afebrile, had no lymphadenopathy, abdominal tenderness nor occult blood in his stool. Microscopic examination of his stool revealed Isospora belli oocysts. The patient's symptoms resolved on oral trimethoprim/sulfamethoxazole therapy, but returned 5 months later again with Isospora in his stool. This was successfully treated with pyrimethamine. Laboratory examination revealed a persistently low absolute T4 cell count. Serologic evaluation included a negative or indeterminate Western blot and RIPA for HIV-1 and the same assays showing strong reactivity for HIV-2 envelope and transmembrane antigens. His PBMC culture revealed reverse transcriptase activity at 4 weeks and subsequent passage of the isolated virus into continuous T-cell lines has revealed viral proteins consistent with other HIV-2 isolates by Western blot and RIPA.

Conclusions: 1) Evaluation of blood samples from selected individuals in New England has identified one patient with an apparent immunodeficiency associated with HIV-2 exposure, representing the second such case report in the United States. 2) If one assumes the patient was exposed to HIV-2 in West Africa, the case reveals a fairly long latency period prior to his present health problems. 3) Our selected survey, as seen with other broader surveys, has shown that HIV-2 is extremely rare in the United States.

M.B.P.201 CLINICAL AND AUTOPSY FINDINGS IN HIV-1 SEROPOSITIVE PATIENTS.

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Objective. To determine the usefulness of the autopsy in HIV-1 seropositive patients by comparison of discrepancies between the premortem clinical impressions, the clinical cause of death and the autopsy findings.

Methods. Cases for review were obtained from the files of the pathology department of Howard University Medical School. From 1985 through 1988, fifty cases were identified as being seropositive by ELISA and Western blot assays. Clinical histories including premortem diagnoses were available as abstracts from the medical record in the autopsy protocols.

Results. Of the 50 cases reviewed, 41 met the CDC criteria of AIDS; 25 premortem and 16 at autopsy. There were 37 males and 13 females. Mean age was 35.6 years. Risk factors included homosexuality in 22 cases, intravenous drug use (IVDU) in 15, IVDU and homosexuality in 4, blood transfusion in 4 and unknown risk factors in 1 case. The lung was involved in diseases in 37/41 (90.2%) AIDS and 7/9 (77.8%) non-AIDS cases. Diseases diagnosed only at autopsy included PCP (12/22), CMV (9/9), KS (5/7), disseminated MAI (9/13) and bacteremia (7/21). Pathological cause of death correlated with cause of death on the death certificate in 58.5% and 44.4% of AIDS and non-AIDS cases respectively.

Conclusions. The lung was found to be the organ most frequently involved in disease at autopsy. The autopsy diagnosed a significant number (67.2%) of unsuspected and undiagnosed AIDS diseases. Autopsy findings modified the clinical impression of the cause of death in 44.0% of all cases. These findings suggest that the autopsy plays a significant role in quality assurance of diagnoses in HIV-infected patients, both AIDS and non-AIDS.

M.B.P.202 PAIN IN PATIENTS WITH AIDS

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The alarming increase in the transmission of AIDS, as well as its poor prognosis, leaves a critical need to evaluate the prevalence of pain and its current management. A chart review study was therefore undertaken to evaluate these issues in a hospitalized AIDS population.

Ninety-six randomly selected charts of AIDS patients were reviewed in a systematic manner for the prescription of analgesic or psychotropic medication, as well as the location and type of pain. Eighty-two patients were male (85%); mean age was 33.4 years; 44 patients (46%) were diagnosed with AIDS during the admission that was evaluated. The most common AIDS syndrome was Pneumocystis carinii pneumonia (57%). The second most common presenting symptom for this hospitalization was pain (30%).

Fifty-two of the 96 charts reviewed (54%) had at least one note of non-procedural pain or analgesic prescription. The most prevalent location of pain was chest (22%). There were no significant relationships between intravenous drug abuse, specific AIDS syndromes, duration of illness, and the incidence of pain or pain medication prescription. Nearly one-third of patients with pain received codeine (31%), followed by acetaminophen (Tylenol) (27%) and acetaminophen with oxycodone HCl (Percocet). In every instance but one, the scheduling was on an as-needed basis, rather than a fixed schedule.

This study suggests that pain is a major issue in AIDS patients that may be largely overlooked and not managed optimally. A methodology for the prospective evaluation of pain in AIDS patients as well as alternate pain management techniques are recommended.

M.B.P.203 RECURRENT MAXILLARY SINUSITIS IN AIDS PATIENTS.

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Objective. The treatment of recurrent maxillary sinusitis in AIDSpatients.

Methods. From 1983 uptil now 311 AIDS-patients have been treated in our hospital. Of this population 35 (12%) had maxillary sinusitis one or more times. The diagnosis was made by clinical examination, radiography, and bacteriological culture. Remarkable was the high incidence of Staphylococcus aureus as cause of the infection. When a patient had a maxillary sinusitis for the first time he was treated with amoxicillin, xylometazoline and steambaths. Despite this conventional therapy the recurrence rate was high: in 28 (9%) of the total population. To avoid repeated treatment with antibiotics we decided to operate patients when they had a maxillary sinusitis for the third time. We made a rhinoantrostoma on both sides, using the technique as has been described by Dr.Buiter. The operationmicroscope was used to have a good view of the operation-field. The stomas were made below the inferior turbinate. Owing to this a good ventilation of the maxillary sinus has been achieved.

Results. Uptil now we have operated 14 patients. The follow up period was 4 to 24 months. We have not seen a recurrence. The patient has to stay only 3 days in hospital, the postoperative recovery is fast, with only less discomfort for the patient.

Conclusion. Surgery seems to be superior to antibiotics in the treatment of recurrent maxillary sinusitis in AIDS-patients.

Manifestations pulmonaires
Pulmonary Manifestations

M.B.P.204 NOCARDIA ASTEROIDES INFECTIONS IN PATIENTS WITH THE ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS).

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Aerobic actinomycetes such as mycobacteria, rhodococcus, and nocardia frequently cause disease in immunocompromised hosts including patients with AIDS. Although only a half dozen individuals with nocardiasis and AIDS have been detailed in the literature, we have recently treated 4 patients with pulmonary nocardiasis, 2 of whom had brain involvement. In 3 the diagnosis was only established by invasive techniques (bronchoscopy, closed and open lung biopsy). Chest x-rays revealed lobar infiltrates which showed intense uptake with gallium^{67}, although simultaneous brain abscesses in 2 went undetected by the same isotope study. Three of 4 individuals could not be treated with sulfonamides due to allergy or severe pancytopenia. All received multi-drug therapy with minocycline, netilmicin and imipenem to which the organism showed excellent in vitro sensitivity. Two patients recovered fully on this regimen and 1 improved. We conclude that invasive studies are often needed to establish a diagnosis of nocardiasis in patients with AIDS, and alternative multi-drug regimens are effective treatment in individuals unable to tolerate sulfonamides.

M.B.P.205 PROLONGED HEALING OF SPONTANEOUS PNEUMOTHORAX AND SCLEROTHERAPY IN AIDS PATIENTS

Jacobson SJ[*], McGowan K[* **], Scheib R[**], Schwaitzberg S[* **], and Quinn C[*]; [*]Tufts-New England Medical Center, and [**]Lemuel Shattuck Hospital, Boston, MA, USA.

Objective: Review the outcome of spontaneous pneumothorax in AIDS patients. Methods: Retrospective review of known PTX cases in 2 institutions in 1988. Results: Spontaneous pneumothorax is a recently recognized occurrence in patients with AIDS, having been noted during episodes of pneumocystis carinii pneumonia (PCP). Pleurectomy for persistent air leaks has been performed successfully. We report the successful outcome of sclerotherapy (with tetracycline or talc) for persistent air leaks. Brief case outlines:

	Lung Disease					
Pt	Prior	Active	Length PTX	ScleroRx	Complications	Outcome
1	PCP x 3	no	30 d.	TCN	wound infec'n	resolut'n
2	bronchitis	PCP, crypto	16 d.	TCN	wound, sepsis	death
3	PCP, hx PTX	prob. PCP	25 d.	TCN, talc	none	resolut'n
4	PCP, bact. pneumonia	pleural PCP bact. pneum.	#1:43 d. #2:>38 d.	no no	multiple chest tubes	alive with chest tube

Conclusion: All PTX were significant and required CT placement. PTX, sometimes recurrent, have been seen in AIDS patients with previous underlying lung disease, frequently prior episodes of PCP. Active lung disease was usually present. Aerosolized pentamidine prophylaxis was used in 3 of 4 patients. Healing of the PTX was prolonged. Tetracycline or talc pleural sclerotherapy was frequently successful and avoided pleurectomy. Complications included chest tube site infections and consequent sepsis. Agressive therapy of PTX with sclerotherapy is recommended.

M.B.P.206 ROLE OF HIV INFECTION IN ALTERATION OF PULMONARY FUNCTION IN INTRAVENOUS HEROIN ADDICTS (IHA).

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Objective. IHA and patients (pts) with AIDS frequently develop interstitial lung disease. In IHA HIV infection could represent a cause of further pulmonary damage. We studied a group of IHA, to evaluate the role of HIV infection in alteration of respiratory function (RF). Methods. RF tests, blood gas analysis and CD4 lymphocytes counts were performed in 33 IHA, with no pulmonary symptoms and normal chest x-rays, 23 male and 10 female, 12 HIV- and 21 HIV+. 6 belonging to group II of CDC classification system, 11 to group III and 4 to group IV. Results. Only DLCO expressed as percent of the predicted (74.6 ± 14.1 % vs 86.9 ± 6.6 %, $p<0.01$) and CD4 lymphocytes ($785 \pm 428/mm^3$ vs $1236 \pm 464/mm^3$, $p<0.01$) were significantly lower in HIV+ pts than HIV- pts. DLCO was <80% in 15/19 (79%) HIV+ pts and in 1/11 (9%) HIV- pts. The 4 HIV+ pts with normal DLCO (>80%) were in group III and IV of the CDC classification. Conclusions. These data show that HIV+ IHA had significant reduction in DLCO in comparison to HIV- IHA. The absence of clinical symptoms and/or radiological abnormalities of pulmonary disease suggests a subclinical pulmonary infection or alveolitis caused by HIV. Since DLCO abnormalities, that we mostly find in HIV+ IHA, are present in the asymptomatic stages of the infection and are not related to CD4 lymphocytes reduction, we suggest that interstitial lung involvement can be due to a direct action of the virus rather than to a subclinical opportunistic infection.

M.B.P.207 PNEUMOTHORACES IN PATIENTS WITH AIDS

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Memorial Sloan-Kettering Cancer Center (MSKCC), New York, New York, USA.

Objective: To describe the natural history and risk factors for a poor outcome in patients with AIDS who develop pneumothoraces.
Methods: Cases of pneumothorax (PTX) in patients with AIDS were reviewed and their medical histories were abstracted onto standardized forms. To maximize case finding, all patients with a discharge diagnosis of "PTX" from 1980 - 1988 at MSKCC were crossmatched with a hospital-based AIDS registry.
Results: Of 1130 patients with AIDS, at least 11 (1%) have had a PTX and, of these, 7 have had pneumothoraces in both lungs. Ten were male and 9 had concurrent *Pneumocystis carinii* pneumonia (PCP). Eight (73%) patients had a good outcome (left the hospital); however, of these, 3 required sclerosis and one required a thoracotomy. Three (27%) patients died. Those who died were more likely to have a history of previous non-infectious pulmonary disease (3/3 vs. 1/8; p=.02), to have > =3 pathogens isolated from their lung and appearing to cause infection during their PTX (3/3 vs. 0/8; p=.006) or to be smokers (3/3 vs. 3/8; p=NS).
Conclusions: PTX in patients with AIDS appears associated with PCP. It has a high morbidity and is associated with a high mortality. Risk factors for death include a history of non-infectious pulmonary disease and multiple pathogens isolated from and appearing to cause infection in the involved lung.

M.B.P.208 SPONTANEOUS PNEUMOTHORAX IN AIDS PATIENTS ON PROPHYLACTIC AEROSOLIZED PENTAMIDINE.

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Pneumocystis carinii pneumonia (PCP) is the most frequent pulmonary complication in AIDS. The development of spontaneous pneumothorax is a complication of PCP. In order to assess the risk of pentamidine prophylaxis, two groups were retrospectively examined. Group I consisted of 327 patients who received aerosolized pentamidine prophylaxis (pentamidine 100 mg via "Respigard II" nebuliser system every other week). Group II was 35 patients who received parenteral (4 mg/kg monthly) prophylaxis. Both groups had similar demographic characteristics. In Group I there were 8 pneumothoraces while there were no pneumothoraces in Group II (Fisher's p=0.48). The duration of aerosolized prophylaxis ranged between 3 to 13 months. Bilateral pneumothoraces were present in 50%. The majority of the patients with pneumothoraces had evidence of active PCP (75%) and cystic lung disease (62%). Chest tube evacuation was required in 75% and 38% of patients died of progressive respiratory failure.

In conclusion, our retrospective review show no statistically significant increase in number of pneumothoraces in AIDS patients receiving aerosolized pentamidine. The occurrence of pneumothorax in these patients represents poorly controlled infection rather than a direct result of aerosolized pentamidine.

M.B.P.209 FATAL ADVERSE REACTION WITH INDUCED SPUTUM IN PATIENTS WITH PLEURAL EFFUSIONS.

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OBJECTIVE: To report possible life threatening adverse reactions with sputum induction and /or bronchoscopy in HIV patients with suspected Pneumocystis Carinii Pneumonia (PCP) and concurrent pleural effusions.
METHOD: All patients investigated by induced sputum and /or bronchoscopy for PCP over a six month period had a chest x-ray prior to and post investigation.
RESULTS: Of 83 investigated patients, 28 had documented Kaposi's Sarcoma (KS) or lymphoma. 4 of these 28 had a pleural effusion. These 4 patients underwent sputum induction, followed by 2 who had bronchoscopy. All 4 patients had marked worsening of their pleural effusion with increasing dysnoea. Two of the patients died within 24 hours (4 and 16). Necroscopy showed pulmonary KS with pleural involvement in one and pulmonary lymphoma in the other. The others responded initially to insertion of intercostal drain but died at 28 and 31 days from respiratory complications. No other patient with or without KS or lymphoma developed a pleural effusion following investigation. In none of the 4 patients was pneumocystis documented on sputum induction or BAL, or were KS seen.
CONCLUSION: Induced sputum may give rise to potentially life threatening pleural effusion in patients with minor effusion resulting from KS or lymphoma.

M.B.P.210 CELL DIFFERENTIALS IN BRONCHOALVEOLAR LAVAGE (BAL) AND TRANSBRONCHIAL LUNG BIOPSY (TBLB) FROM PATIENTS WITH ADVANCED HIV INFECTION AND DIFFUSE PULMONARY INFILTRATES.

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Objective of the study: To compare cell differentials in BAL with histologic findings we performed TBLB and BAL with 300 ml NaCl concurrently in 90 HIV patients with P. carinii pneumonia (PCP) and 60 HIV patients with other diffuse pulmonary infiltrates (144 male, 6 female, age: 38±10 years). Methods: Cell differentials (Lymph-BAL [%] and PMN-BAL [%]) were performed on cytocentrifuge slides (Wright Giemsa stain) of BAL. We counted 1000 cells. Biopsies were taken using fluoroscopic guidance. The specimens were graded as showing accumulation of mononuclear cells (MON-C), widened alveolar walls (WAW), alveolar exudate (EXU), signs of CMV infection (CMV).
Results:

	N	MON-C	WAW	EXU	Lymph-BAL	PMN-BAL
PCP	90	36%	49%	84%	17±15%	9±14%
Non-PCP	60	47%	36%	7%	14±11%	5±11%

Neutrophilia in BAL was related to alveolar exudate on TBLB and presence of P. carinii (ANOVA, p<0.01). No other relations between BAL and TBLB were found. We conclude that accumulation of mononuclear cells and widening of alveolar walls not related to PCP are frequent in TBLB of patients with advanced HIV infection and diffuse pulmonary infiltrates. We suggest that they may reflect a "non-specific interstitial pneumonitis".

M.B.P.211 SPECTRUM OF PULMONARY DISEASES ASSOCIATED WITH THE ACQUIRED IMMUNO DEFICIENCY SYNDROME

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Objective. Pulmonary abnormalities are a major source of morbidity and mortality in AIDS patients. Therefore, we evaluated 184 AIDS patients to assess the incidence and spectrum of pulmonary disease associated with AIDS.
Methods. By means of a prospective protocol all 184 patients with full-blown AIDS underwent chest radiography and a careful clinical examination; if indicated sputum analysis and bronchoscopy with bronchoalveolar-lavage were performed. Lavage fluid was processed for bacterial, fungal, mycobacterial and parasitic stains and cultures. Similarly post-mortem biopsies of the lung were handled.
Results. In 127 out of 184 (69.0 %) AIDS patients pulmonary manifestations could be detected. These manifestations had an infectious cause in 111 individuals (87,4 %), an infectious and neoplastic cause in 9 (7,1 %) and a neoplastic cause in 7 patients (5,5 %). More than one pulmonary manifestation could be detected in 47 patients (37,0 %).
The frequency of the various infections and neoplastic pulmonary manifestations is listed up: Pneumocystis carinii 79 (62,2 %), CMV 35 (27,6 %), MAI-complex 33 (26,0 %), Kaposi's sarcoma 14 (11,0 %), M. tuberculosis 14 (11,0 %), Cryptococcus neoformans 9 (7,1 %), bacterial pneumonia 5 (3,9 %), Non-Hodgkin lymphoma 4 (3,1 %), Strongyloides stercoralis 1 (0,8 %).
Conclusion. Pneumocystis carinii is the most frequent and dangerous pathogen which effects the lung. Significant pulmonary disease was present in most patients but varied markedly with the etiologic agent. A differentiation between colonization and disease is especially important in infections with CMV and atypical mycobacteria. Other less frequent causes of pulmonary disease must be kept in mind.

M.B.P.212 FIBEROPTIC BRONCHOSCOPIC DIAGNOSIS OF PULMONARY DISEASE IN 171 HIV-INFECTED PATIENTS

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We prospectively analyzed 171 episodies of pneumonitis in 153 patients anti-HIV (+). The pneumonitis was defined by clinical and radiografic criteries. We have obtained 168 bronchoscopy aspiration (BA), 164 bronchoalveolar lavage (BAL), 117 bronchoscopic-protected catheter brush (CB) and 82 transbronchial biopsies (TB). The samples were procesed for microbiological and anatomopathological studies by standard methods. The bacterial growth was considered significative according to these criteries: BA > 10-5 CFU/ml.; CB > 10-3 CFU/ml.; BAL > 10-5 CFU/ml. and <1% squamous epithelial cells. Any orophoringeal bacterial growth was considered as contamination. The results were as follows:

	BA	CB	BAL	TB	DIAGNOSIS
-H.influenzae	8/9(*)	3/4	8/9	1/1	9
-S.pneumoniae	2/4	0/3	3/4	-	4
-Legionella sp.	2/8	2/7	7/8	-	8
-Others bacteria	5/8	6/7	5/7	-	8
-Mycobacteria(**)	12/23	6/18	18/22	5/11	19
-H.capsulatum/C.neoformans	1/3	1/3	3/3	2/2	3
-P.carinii	-	-	71/71	28/37	72
-Cytomegalovirus(***)	-	-	17	-	
-Pulmonary Kaposi's sarcoma	-	-	-	3	3
-Contamination	63%	11	18%	-	

(*)Number of positives by the method/ number of positives by any other method.
(**)16 M.tuberculosis and 3 M.avium-intracellulare.
(***)14 by cellular culture and 3 by inclusion bodies in BAL.
More than one diagnosis: 18 episodies.

31 episodies (18%) were not diagnosed. Out of 31 episodies, 8 have normal chest X-Rays, 48% of the 31 episodies had received antimicrobial agents previously, 90% of the 31 episodies were intravenous drug abusers. CONCLUSIONS: 1.- The fiberoptic bronchoscopy methods are accurate procedures for the diagnosis of pulmonary disease in HIV-infected patients. 2.- The BAL, as having been previously described, can diagnose bacterial respiratory infection in these patients.

M.B.P.213 EARLY DETECTION OF PUMONARY COMPLICATIONS IN AIDS-PATIENTS: VALUE OF LUNG FUNCTIONTESTS (LFT) AND NUCLEAR MEDICINE PROCEDURES (NMP).

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Aim of the study was the evaluation of LFT and NMP in early detection of pulmonary complications in AIDS-patients.
38 HIV-AB pos. patients were examined every six weeks by LFT (PO$_2$, PCO$_2$, AaPO$_2$-difference, CO-diffusion capacity (DLCO), bodyplethysmography) and by NMP (67-Gallium-scan, 99 mTc DTPA-lung clearance) during a 14 months period. Pulmonary complications occured in 21 patients (14 PCP, 8 CMV, 5 TB, 1 LIP, 2 KS), 17 patients had no pulmonary disease.
The results showed a high sensitivity and specificity for DLCO, 99 mTc-DTPA lung clearance and 67-Gallium-scan.

Table:

Procedure	sensitivity	specificity
PO$_2$/aaPO$_2$/DLCO	71%/71%/93%	100%/71%/75%
99m-Tc-DTPA/Galliumscan	93%/86%	62%/69%

Comparing the two groups of patients every parameter differed significantly ($p < 0,005$) except PCO$_2$, TLC and FEV 1.
We conclude, that DLCO, 67-Gallium-scan and 99 mTc-DTPA lung clearance are the most effective means in early detection of pulmonary complications in AIDS.

M.B.P.214 VALUATION OF THE CELLULAR POPULATIONS IN THE BRONCHOALVEOLAR LAVAGE (BAL) FROM HIV-INFECTED PATIENTS WITH PNEUMONITIS BY VARIOUS ETHIOLOGY.

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We prospectively analized a control group of twenty-three HIV (-)-normal patients without infection pulmonary disease and seventy-one HIV-infected patients with pneumonitis. Both groups are homogeneous as to the habit of smoking. The infection ethiology, by groups, were as follows

-Group 1.- Controls (n=23).
-Group 2.- P. carinii pneumonia (n=43).
-Group 3.- Bacterial pneumonia (n=12).
-Group 4.- Bacterial and P.carinii pneumonias (n=7).
-Group 5.- P.carinii pneumonia with cytomegalovirus isolation in the BAL (n=7).
-Group 6.- Patients with P.carinii pneumonia that have died during the following month of the diagnosis (n=8).
-Group 7.- Patients with P.carinii pneumonia that have not died during the following month of the diagnosis (n=36).

We have only valued the differential cell counts by means of the Wright-Giemsa stain on 400 cells. The signification of the differences between groups have been made by unpaired Student t test .

The results statistically significances were as follows:
1.- The groups 2, 3 and 4 as to the control group have decreased the number of macrophages and have increased the number of lymphocytes and polymorphonuclears. 2.- Group 5 as to group 1 have decreased the number of macrophages and have increased the number of lymphocytes. 3.- Group 5 as to group 2 have increased the number of macrophages, it suggest that there is a modulation of the inflammatory response, due to the presence of the cytomegalovirus. 4.- Our findings show, in the group of patients with P.carinii pneumonia who died in the followings four weeks at the time of diagnosis, an increase of the polymorphonuclears percent versus the group of patients with the same diagnosis that did not die at this time.

G.I., foie/Hépatite et autres manifestations
G.I., Liver/Hepatitis and Other Manifestations

M.B.P.215 CHRONIC HBeAg POSITIVE HEPATITIS IN HIV INFECTION.

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Objective: To evaluate the role of HIV infection on the evolution of HBV chronic hepatitis. Methods: Clinical, biohumoral and histologic features of 20 HIV Ab+ pts. with CH HBeAg +, without opportunistic infections,were compared with an analogous group of HIV Ab negative ones. Results: No significant clinical and biochemical differences appeared at the comparison between the two groups. The serologic and immunohistochemical markers are shown in the table.

HIVAb	pts	HBeAg(serum)		HDVAbIgM(serum)		HDVAg(serum)		HBcAg(liver)		HDVAg(liver)	
	n	n	%	n	%	n	%	n	%	n	%
pos.	20	9	45*	9	56.3	2	12.5	13	81	8	40*
neg.	20	2	10	6	60	1	10	9	90	1	5

Conclusions: The markers of HBV active replication are present at a significantly higher degree in HIV Ab positive patients (*p<0.01), whereas the replication features of HDV don't seem to be modified by HIV Ab presence. When HDV infection is present the histologic damage is always heavy and not conditioned by HIV positiveness. On the contrary, the presence of HIV Ab seems to correlate with less severity in histologic damage in patients without Delta infection (2 CPH, 2 mild CAH among HIV Ab positive patients; 2 CPH, 3 mild CAH, 3 severe CAH and 2 cirrhosis among HIV Ab negative patients).

M.B.P.216 CHRONIC HEPATITIS IN HIV INFECTED PATIENTS

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Objective. To study the chronic hepatitis in HIV infected patients.
Methods. HIV antibodies were tested by ELISA (Sorin). Positive results were confirmed at Western Blot (Du Pont). Serological HBV and HDV markers were assayed by RIA (Sorin). The CDC classification for HIV infection has been used.
Results. 43 patients underwent liver biopsy for diagnostic investigations. 29 of them were in the II or III group. The other 14 patients were in the IV group. Other 32 patients underwent autoptical examination. 38.7%(29/75) of the total patients were HBsAg-pos. In 19 of them there was evidence of HDV infection. In the table are reported the numbers of HBsAg-pos. and HBsAg-neg. patients at various stages of HIV infection with evidence of CAH or cirrhosis.

	HBsAg-positive	HBsAg-negative	Total
II or III	13/14 (92.9%)	8/15 (53.3%)	21/29 (72.4%)
IV	3/6 (50.0%)	2/8 (25.0%)	5/14 (35.7%)
Autopsy	4/9 (44.4%)	5/23 (21.7%)	9/23 (33.1%)
Total	20/29 (68.9%)	15/46 (32.6%)	

Conclusion. CAH or cirrhosis are common in anti-HIV pos. patients and particularly in HBsAg-pos. individuals in CDC groups II or III, and in these cases it should be considered the oppurtunity of a treatment with artiviral drugs.

M.B.P.217

REACTIVATION OF ACUTE HEPATITIS B IN AIDS

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Objective. To investigate the role of HIV on the outcome of HBV infection, we describe a reactivation of acute hepatitis B in a patient with AIDS.

Methods and Results. The patient was a 26 years old male, drug addict. HBs Ag, anti-HBs, HBe Ag and anti-HBe, antibodies to the delta Ag were assayed by radioimmunoassay. Serum HBV DNA was detected by spot hybridization. In 1982 the patient had acute hepatitis B and appeared to recover fully clearing HBs Ag, HBe Ag and HBV DNA. The activities of his liver enzymes were persistently in normal range. He presented PGL and ARC, respectively in June 1986 and in January 1987. Full-blown AIDS (cerebral toxoplasmosis) developed in July 1987 and then the patient received long-term zidovudine and sulfamethopirazine/pyrimethamine therapy. In June 1988 acute hepatitis B recurred with AST) 2000 U/l, clinical jaundice, progressive hepatic failure and death. Markers of acute HBV infection including HBs Ag, HBe Ag and HBV DNA, reappeared while delta-Ab was persistently negative. The post-mortem liver biopsy was consistent with confluent hepatic necrosis.

Conclusion. Reinfection with another HBV subtype is unlikely. This pattern strongly suggests a late reactivation of HBV. Thus, although the virus is presently not thought to be directly cytotoxic for liver cells, acute hepatitis B may still reappear in the course of AIDS.

M.B.P.219

CORRELATION BETWEEN HIV AND HBV INFECTIONS.

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Objective. HIV and HBV infections: possible interactions.

Methods. 660 AbHIV+ (IVDA:76.3%;homosex:13.3%;blood recipients:3.6%;others:13.3%) were tested for HBV-markers, immunological and clinical findings. 242 were followed up for 24 months (±8.3). 18 had hepatic biopsy.

Results. 485 were positive for HBV-markers: 65 HBsAg+ (21 AbHDV+); 332 AbHBs+ and AbHBc+; 63 only AbHBc+. 19% of the followed up AbHBs+ and AbHBc+ patients lost the positivity for AbHBs. 14 showed a primary HBV infection: 6 with clinical evidence of acute hepatitis (only 7 became AbHBs+). The hepatic biopsies revealed 8 CPH and 10 CAH.

Conclusion. High presence of HBV-markers in AbHIV+ patients (in prevalence IVDA). Frequently loss of AbHBs (especially in AbHDV+); frequently reappearance of HBsAg in the AbHBc+ carriers. Reduced onset of AbHBs and perseverance of HBsAg in primary HBV infection. Positive markers of viral active replication in chronic hepatitis with low levels of cytolysis and reduced histological injury in sequentially biopsied patients. HBV infection doesn't seem to condition HIV infection in a shorttime.

Acknowledgment: this work was supported by the "C. Denegri Foundation".

M.B.P.221

INFLUENCE OF HIV INFECTION IN HEPATITIS DELTA CHRONIC CARRIERS.

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HIV infection is very usual among intravenous drug abusers (IVDA). On the other hand, drug addiction is one of the most important way of transmission of the Hepatitis Delta Virus (HDV). For these reasons, the aim of the present work was: to study the influence of anti-HIV positivity in HDV replication, as well as in the simultaneous presence of HDV and Hepatitis B Virus (HBV).

Forty three anti-HD positive patients were included. Most of them were IVDA (44%) and the rest referred parenteral exposure (14%), negative enquire (14%), transfusion (7%), household contacts (7%) and homosexuality (5%). Anti-HIV was detected by Western-blot. Serum Delta antigen (HDAg) was tested by immunoblot and HDV-RNA was determined by slot-blot hybridization using a ^{32}P-HDV-RNA obtained from the [illegible] vector.

Out of the 43 patients, 15 (35%) were anti-HIV positive (14 IVDA and 1 homosexual). All of them were asymptomatic and 2 presented serum p24. With respect to the HDV markers, there were no differences between these subjects with or without HIV infection, neither in the presence of serum HDAg (67% vs 71%, respectively) nor in the IgM anti-HD positivity (47% vs 46%, respectively). In contrast, HDV-RNA was detected in 14/15 (93.3%) anti-HD positive cases with anti-HIV and only in 16/28 (57.1%) anti-HIV negative ones (p < 0.01). The simultaneous replication of HBV and HDV (HBV-DNA and HDV-RNA positivity) was found in a significant higher percentage (p < 0.05) in those HIV-seropositive patients (9/15: 60%) than in the negative cases (5/28: 18%). The same occurred with the simultaneous presence of HBV-DNA and HBeAg: 40% in the anti-HIV positive subjects vs 18% in the anti-HIV negative patients (p < 0.05).

In conclusion: HDV-RNA was detected in a higher percentage among HDV carriers with HIV infection. Moreover, in these patients, the simultaneous HBV and HDV replication was more frequently observed. During the follow-up, it will be compared the clinical evolution of both group of anti-HD positive patients (with and without HIV infection).

M.B.P.218

HIV INFECTION AND DELTA HEPATITIS IN INTRAVENOUS DRUG ADDICTS

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The recently suggested close correlation between HIV and delta hepatitis virus (HIV) may merely reflect high double-exposure rates in promiscuous homosexuals.

Objective To correlate delta markers with stage of HIV disease in intravenous drug addicts, IVDA.

Subjects Eighty-two IVDA: 35 with AIDS, 30 HIV positive and 17 HIV negative.

Methods HIV antibody measured by repeat Elisa testing (Abbott). Total anti-HDV (Abbott); IgG anti-HDV, IgM-anti-HDV and delta antigen (RIA); HBsAg, anti-HBs and anti-HBc (Abbott RIA).

Results 1) Seventeen subjects tested positive for anti-HDV by Abbott Elisa; six of the 17 were HBsAg positive. Only the six HBsAg positive subjects were IgG and IgM anti-HDV positive.

2) IgM anti-HDV was present in 2 of 17 (11.8%) HIV negative, 4 of 30 (13.3%) HIV positive, but none of 35 AIDS subjects (p = 0.035, Fisher's exact test; AIDS vs non-AIDS)

Conclusions The data suggest a high false positive rate of anti-HDV in non-HBsAg positive sera with the Elisa technique and that anti-HDV production (IgG and IgM) may be lost in IVDA with AIDS.

M.B.P.220

MODULATION OF VIRAL HEPATITIS IN HIV-1 INFECTION

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OBJECTIVE: To study the outcome of HBV infection in HIV-1 infected patients.

METHODS: In a group of 306 HIV-1 infected patients 214 (70 %) had evidence of prior HBV infection. Homosexuals and i.v. drug abusers compose greater than 90 %. The prevalence of chronic HBV carriers, as determined by HBsAg positivity for longer than 6 months among HIV-1 infected patients yielded in 13 %.

RESULTS: Our data demonstrate low activity of SGOT and SGPT in patients coinfected with HIV-1 virus. Individuals suffering from chronic active hepatitis, symptomatic HIV-1 infection and T4 counts lower than 400 cell exhibit significantly increase of HBV-DNA in contrast to asymptomatic HIV-1 and HBV infected individuals. On the other hand HIV infected patients tend to have a mild course of chronic hepatitis.

CONCLUSION: Our data show evidence that suppression of cellular immunological reactions had beneficial effects on the clinical and histological outcome of HBV infection. However, there are no data showing any spontaneous clearence of HBV in AIDS patients. One might therefore expect that there is a correlation between markers of cellular immunity like T4 and T8 positive cells in HIV-1 infected patients and the clinical course of chronic HBV infection.

M.B.P.222

THE EFFECT OF HIV ON CHRONIC HEPATITIS B: A STUDY OF 150 HOMOSEXUAL MEN

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Objective. To determine the influence of concurrent HIV infection on chronic HBV infection.

Method. Serum markers of HBV replication (HBeAg and HBV-DNA) and disease activity (alanine transaminase, ALT) were analyzed for 150 male homosexual chronic HBsAg carriers, 82 (54.6%) of whom tested positive for antibodies to HIV.

Results. Subjects positive for HIV antibody were more likely to express HBeAg (62 of 80 cases) and HBV-DNA (52 of 67) in their sera than HIV seronegatives (35 of 67 ($p<0.001$) and 35 of 70 ($p<0.0005$) respectively). The degree of immune suppression however, did not seem to affect the influence of HIV on HBeAg/HBV-DNA expression. In HBeAg seropositive subjects, concurrent HIV infection was associated with lower serum alanine transferase (ALT) levels ($p<0.005$). This effect increased relative to the degree of immune suppression as determined by diminished CD4 lymphocyte counts. Conversely, in patients not expressing HBeAg in serum there was a weak trend ($p=0.130$) towards higher ALT levels with concurrent HIV.

Conclusion. This study suggests that whilst chronic hepatitis B may be less severe when accompanied by HIV infection, greater viral replication may make it more contagious and resistant to antiviral therapy. These data support an immune mediated pathogenesis for hepatitis B and have implications for its control.

M.B.P.223

LIVER DISEASE IN PATIENTS WITH AIDS

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.The evaluation of clinical, biochemical, serological and morphological data of liver involvement in high risk groups patients with was the aim of this work. Our purpose was to determine the spectrum of liver disease in AIDS and the clinico-morphological correlation in order to ascertain if any clinical or pathological feature was characteristic of AIDS.

Material: We have evaluated 81 patients with AIDS, being 20 hemophiliacs (18 A and 2 B) severely affected and 61 homosexual men.

Methods: We studied hepatitis B virus (HBV) serum markers by commercial RIA kits for the detection of HBsAg,Anti-HBs,Anti-HBc,HBeAg and Anti-HBe. Liver function tests including aminotransferases,total bilirubin,alkaline fosfatase were performed. Mostly of the liver biopsies were obtained percutaneously ,but some samples were obtained from autopsy material.

Results: The great majority of the patients were anicteric. More than 80% of the sera were Anti-HBs and Anti-HBc (+) . Serum aminotransferases levels were mildly elevated(less than twice the upper limit of the normal range) in the majority of the patients. Chronic persistent hepatitis,chronic active hepatitis and cirrhosis were the most frequent findings in hemophiliacs. Granulomas due to M.avium and M.tuberculosis were also other morphologic features.

M.B.P.224

THE INTERACTION OF HIV AND HEPATITIS B VACCINATION IN A COHORT OF HOMOSEXUAL AND BISEXUAL MEN

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Objective. To evaluate the effect of HIV infection on efficacy of the hepatitis B vaccine (HBV) and the effect of HBV on HIV disease progression.

Methods. 359 homosexual/bisexual men participated in a randomized controlled trial of HBV from 1980-1981. We began follow-up studies of HIV-related diseases in 1983. We compared peak hepatitis B surface antibody (HBsAb) response, development of immunity (defined as HBsAb SRU >10) and rate of loss of immunity in 2 groups: men who were HIV seropositive (SP) prior to first dose of HBV (N=26) and men who remained HIV seronegative (SN) throughout follow-up (N=126). We also compared the prevalence of AIDS and ARC in SP versus HIV-infected men receiving placebo (N=25).

Results. SP were less likely than SN to develop immunity (65% vs 90%, p=0.01). Of men achieving immunity, SP had significantly lower peak responses and were more likely to lose immunity than SN (p<0.01.) Kaplan-Meier analysis examining loss of immunity from time of first vaccine dose showed 41% of SP (95% CI=17%-65%) lost immunity by 20 months versus 56% of SN (95% CI=45%-67%) at 72 months. There was no difference in the prevalence of AIDS and ARC between SP versus HIV-infected men receiving placebo.

Conclusion. Plasma derived hepatitis B vaccine is significantly less efficacious in HIV seropositive than seronegative men. A majority of seronegatives also lose antibody over time, indicating the need for studies of the efficacy of booster doses. The hepatitis B vaccine does not cause acceleration of HIV-related disease.

M.B.P.225

TOXOPLASMOSE OCULAIRE AU COURS DU SIDA

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Objectifs. Décrire les caractéristiques de la toxoplasmose oculaire (TO) observée chez les patients (Pts) HIV +.

Méthodes. De 1/84 à 12/88 un examen du Fond d'Oeil (FO) a été fait par les mêmes ophtalmologues chez les Pts HIV ayant des troubles visuels et/ou systématiquement (2 FO/an chez les asymptomatiques (CDC II), 4 FO/an (CDC III et IVC2), 1 FO/mois/Pts SIDA). Les critères de TO étaient : vitré clair, prédominance de l'atteinte du pôle postérieur, foyer en règle unique/bords flous, taille variable ± plages de nécrose, extension en l'absence de traitement(Tt), cicatrisation sous Tt spécifique.

Résultats. Dix cas de TO (8 européens, 2 africaines ; HIV1 : 9, HIV2 : 1 ; $CD4 \leq 120$) ont été observés : 1984-86 : aucune TO/49 nouveaux cas de toxoplasmose (TOX) ; 1987 : 3 TO/20 TOX ; 1988 : 7 TO/33 TOX. Sept cas ont été révélés par une baisse de l'acuité visuelle, 3 étaient asymptomatiques. Une autre IO avait précédé la TO chez 4 Pts (2,6,7,22 mois). Chez 6 Pts la TO a été la 1ère IO. Deux Pts étaient sous AZT. Cinq Pts ont une TOX cérébrale associée (4 simultanées, 1 découverte 2 mois après la TO). Cinq n'ont pas de TOX cérébrale détectable (clinique/scanner). La cicatrisation a été obtenue 10 fois/10 sous pyrimethamine (P)/+ sulfadiazine (8 Pts) ou P/clindamycine (2 Pts).

Conclusion. 1) Dix cas de TO ont été observés en 1987 et 1988 - 2) La TO peut être la 1ère IO - 3) La TO est associée 5 fois/10 à une TOX cérébrale détectable - 4) Le traitement permet la cicatrisation des lésions - 5) La prophylaxie des rechutes est identique à celle des TOX cérébrales.

M.B.P.226

TOXOPLASMOSE OCULAIRE AU COURS DU SIDA

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Objectif. Préciser Les signes cliniques et ophtalmologiques (OPH) de la toxoplasmose oculaire (TO), son évolution sous traitement (trt) et ses relations avec la survenue d'une toxoplasmose cérébrale (TC).

Méthodes. Etude rétrospective des cas de TO chez des patients (pts) atteints de SIDA, depuis 1983 dans 2 services de maladies infectieuses.

Résultats. Il s'agissait de 9 hommes, 8 homosexuels, vus en 1985 (n=1), 1986 (n=1) et 1988 (n=7). 7/9 pts avaient une acuité visuelle, ≤5/10, et 3/9 pts une fièvre. Tous avaient une choriorétinite du pôle postérieur, associée à une hyalite. Chez 7/7 pts, l'angiographie confirmait le foyer choriorétinien et la ponction de la chambre antérieure ne montrait pas de synthèse locale d'anticorps. Le trt a été débuté 12 j (0-29) après les 1ers signes de la TO. Les pts ont reçu clindamycine, 1,2-4,8 g/j (n=5), sulfadiazine, 6g/j (n=3), ou spiramycine, 3 g/j (n=1), associées à pyriméthamine 50-100 mg/j, pendant 45 j, poursuivies à doses réduites chez 6 survivants. La TO a cicatrisé chez les 9 pts, après 37 j (21-90). Aucune rechute n'a été notée après 5,5 mois (1,5-9). Une TC est survenue chez 7/9 (78%) pts. 4 fois, TC et TO étaient reconnues simultanément et l'évolution de la TC était favorable ; mais 3 fois la TC se révélait 9, 38 et 50 j après le début du trt de la TO, et son évolution n'était pas évaluable.

Conclusion. La TO est devenue plus fréquente au cours du SIDA. Son diagnostic repose sur l'examen OPH. Une TC associée doit être recherchée.

M.B.P.227

OCULAR INVOLVEMENT IN CHILDREN WITH HIV INFECTION

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Objective. Evaluation of ocular involvement in children with HIV infection in respect to adult AIDS.

Methods. The AA report on ophthalmological findings in 57 HIV seropositive children. According to the definition proposed by CDC (april 1987) seropositive infants were 15 in P-0 class, 16 in P-1 class and 18 in P-2 class. 7 patients became negatives and 3 died. Ocular examination, at the start and every 3 months, included: ocular reflexes and motility, fundus and EVR in pathologic cases only.

Results. Ocular signs observed in 13 children (22.8%) were mainly represented by optic nerve involvement (optic disc pallor and subatrophy, papilledema). CMV retinitis in occured in 2 cases (11% vs > 50% in adults). Retinal microangiopathy was never observed in HIV seropositive children.

Conclusions. Paediatric AIDS is believed as a new inborn disease with very different clinical and biologic characteristics in respect to adult AIDS as well as from the ophthalmological point of view.

M.B.P.228

VITROUS FLUOROPHOTOMETRY IN HIV INFECTION

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Objective. To evaluate the ability of vitreous fluorophotometry to detect early lesion of vascular retinopathy during HIV infection.

Methods and Results. We have studied 18 subjects with HIV infection (5 AIDS with G.I. and 5 ARC); all patients underwent an eye examination including slit lamp biomicroscopy, indirect ophtalmoscopy, fluorangiography and vitreous fluorophotometry. In spite of the fundus normality the vitreous fluorophotometry readings were constantly above normal, showing average fluorescein values of 3.6 , 3.3 and 4.87 g/ml respectively in the anterior, middle and posterior vitreous.

Conclusion. Etiology and pathogenesis are unclear but the role of circulating immune complexes deposition, increase blood viscosity and HIV direct effect on vascular endothelium tissue, are discussed. The fluorescein angiographic documentation of mycroaneurisms, telangiectasias, focal areas of non perfusion and capillary loss in patients with HIV infection provides a pattern of microvascular retinopathy very similar to the diabetic one. Nevertheless fluorescein angiography is not a quantitative technique and shows low sensitivity in assessing fluorescein permeability. The fluorophotometry permits on the contrary a qualitative evaluation of the alterations of blood barrier which can be discovered by vitreous fluorophotometry before any clinical and fluorangiographic detectable lesion.

M.B.P.229

RETINAL MANIFESTATIONS IN HIV PATIENTS

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Objective: To evaluate the occurrence of fundus ocular manifestations in HIV patients; to assess therapeutic problems in CMV retinitis.
Methods: we studied 66 HIV-infected patients (42 AIDS, 10 AIDS-related complex, 14 without symptoms, anti-HIV+), 16 homo/bisexuals (24,2%), 44 i.v. drug abusers (66,7%), 4 heterosexuals (6,1%) and 2 haemophiliacs (3,0). They prospectively underwent a complete ophthalmologic examination, including indirect ophthalmoscopy, color photographs and eventually fluorescein angiography.

Results:	normal	cotton-wool spots (%)	CMV retinitis (%)	acute retinal necrosis syndrome (%)
AIDS (42)	21 (50.0)	18 (42.8)	4 (9.5)	1 (2.4)
ARC (10)	9 (90.0)	1 (10.0)	0	0
anti HIV+ (14)	14 (100)	0	0	0

CMV retinitis, treated with i.v. ganciclovir showed stabilization or partial improvement; all cases relapsed within two to six weeks of discontinuing therapy.
Conclusion: Cotton-wool spots are the main retinal changes; they seem to be related to the progression of HIV infection toward AIDS and unrelated to clinical manifestations. A complete opthalmological examination is needed in HIV pts for early diagnosis of CMV retinitis that could benefit of an early treatment. CMV retinitis relapses at the discontinuing therapy and long-term treatment would be probably necessary.

M.B.P.230

A STUDY OF RETINAL COTTON WOOL SPOTS IN HIV PATIENTS

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Objective: To investigate the characteristics of cotton wool spots (CWS) in HIV patients, compared with other systemic causes of CWS.
Methods: 66 HIV patients (42 AIDS, 14 ARC, 10 asymptomatics) were examined for ocular fundus changes, and, if CWS were detected, fundus color slides were taken and then projected into a grid sheet in order to draw the location and size of CWS; then we made a comparison with the photographs of 60 patients affected by hypertension, diabetes, central retinal vein occlusion with CWS.
Results: CWS were discovered in 42.8% of AIDS, 10% of ARC and 0% of asymptomatic HIV patients, and were present predominantly along the vascular arcades (superficial peripapillary capillary network) with a predilection for the posterior pole.
Conclusions: Compared to other non AIDS systemic abnormalities, CWS in HIV patients are similar in appearance and location, although, either single or multiple, they are more demarcated, never tend to be confluent and last longer. They are easily differentiated from early foci of CMV retinitis and no strong correlation seems to be between these two entities.

M.B.P.231

THE LIVER IN THE AIDS: A CLINICAL AND HISTOLOGIC STUDY

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From March 1985 to March 1988, 30 patients with AIDS were submitted to liver biopsy at the Infectious Disease Unit. They presented unexplained fever and/or hepatomegaly and/or impairment of liver function. The abnormal results of serum biochemical liver tests were alkaline phosphatase activities up to twice the normal value in 13 cases (43%) and SGOT/SGPT levels higher than three times the normal ones.

From the 32 biopsies (two patients had double ones) performed, 16(50%) were done through laparoscopy, 14(43.75%) by "blind" percutaneous puncture and two patients were submitted to autopsy.

The macroscopy showed liver enlargement in 15 cases (83%), congestion in 5 cases (27.7%) and splenomegaly in 8(44.4%).

The histopathology showed nonspecific hepatitis in 19 specimens (59.4%), fatty infiltration in 12(39%), aneosinophilic granulomas of unknown etiology in 5(15.3%), active chronic hepatitis in 2 (6.3%), cryptococcosis in 2(6.3%), cytomegalic inclusion body in 1 (3%), histoplasmosis in 1 (3%) and tuberculosis in 1 (3%).

The hepatic fragments were sent for culture of mycobacteria, common bacteria and fungi, but only one gave growth of Mycobacterium tuberculosis and the other ones were negative.

Hepatic involvement in AIDS is often nonspecific and deserve better appraisement.

M.B.P.232

GASTROINTESTINAL LYMPHOID HYPERPLASIA IN AIDS

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Objective. To demonstrate that disorders of gastrointestinal lymphatics may contribute to lymphocytopenia in AIDS.
Methods. We examined by fiberoptic endoscopy, biopsy and histology GI mucosa of AIDS patients with clinical and microbiological picture of enteropathy to identify lymphoid hyperplasia and dilatation of lymph vessels of the mucosa and submucosa, conditions associated with lymphocytopenia and lymphocyte loss via GI tract.
Results. T4 lymphopenia is a constant feature of late stages of HIV infection, that well correlates with presence of lymphoid hyperplasia (LH) of GI mucosa and signs of enteropathy (malabsorption, diarrhea, abdominal complaints, protein loss, endoluminal parasitic infections). At endoscopy the key finding of LH are multiple, 1-to 2 mm, pale areas or tiny mucosal excrescences with nodular appearance which histologically show lymphoid follicles, lymphangiectasy and villous atrophy.
Discussion. LH of GI tract in AIDS patients may be a contributing factor of lymphocytopenia, condition that can be due to the loss of the lyphocyte-rich lymph fluid into GI secondary to the disorders of GI lymphatic channels.

M.B.P.233

PANCREATITIS ASSOCIATED WITH HIV INFECTION

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Objective. To assess the prevalence of and risk factors for pancreatitis among patients followed for HIV infection in an urban infectious disease practice.
Methods. A retrospective study was conducted in patients who had AIDS (105 patients), ARC (46), were seropositive and asymptomatic (39), or who were uninfected but at risk for HIV-1 infection (9). Logistic regression was used to identify infections and medications associated with pancreatitis, as defined by clinical and laboratory criteria.
Results. Twenty-two percent of patients with AIDS, 9% with ARC, 3% of asymptomatic HIV-1 infected patients, and no uninfected patients at risk for HIV-1 developed pancreatitis. Pancreatitis was more likely to have occurred in patients with AIDS than in patients without AIDS ($p = 0.0017$). Additional factors bivariately associated with pancreatitis were biliary tract disease and hypertriglyceridemia, but not level of alcohol use. After matching for these factors and severity of current HIV disease, cryptosporidiosis, IV pentamidine and isoniazid were associated with pancreatitis ($p < 0.05$ for all 3). Significant unadjusted odds ratios were found for cytomegalovirus and cryptococcal infection and use of ketoconazole, but were not confirmed by logistic regression analysis.
Conclusion. These data support earlier reports that pancreatitis is commonly found in patients with AIDS. Cryptosporidiosis and certain drugs may be aggravating cofactors.

M.B.P.234

The value of gastrointestinal endoscopy for strategy and control of therapy in epidemic KS

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Objective: To examine the value of gastrointestinal endoscopy (GIE) in therapy of epidemic Kaposi's sarcoma (KS)
Methods: In a prospective study 20 pat with KS-lesions of the skin were examined by GIE before starting therapy (interferon, zidovudine, chemotherapy). 6/20 pat were controlled by GIE during therapy. In an additional group GIE was performed in 13 HIV-infected pat without skin- KS- lesions (WR V: 5x, WR VI: 8x)
Results: Gastrointestinal KS-lesions could be found in 12/20 pat (60 %) with lesions of the skin. 2/17 (17 %) presented less than 10 skin-lesions. However only in 3/12 pat (25 %) the number of gastrointestinal-lesions surpassed the number of skin-lesions. In 4/8 pat (50 %) where GIE showed no intestinal KS, we saw less than 10 skin-lesions. There was no correlation between the number and size of intestinal and skin-lesions of KS. 6 pat were controlled by GIE during therapy. It was remarkable, that 2/6 pat (33 %) showed progression of the skin-lesions, while gastrointestinal lesions disappeared. On the other hand in one pat with no change in skin-lesions there was a progression of intestinal KS. In the group of 13 pat without skin-KS, who became GIE for other reasons, no case of intestinal lesions was seen.
Conclusion: From these results we can conclude, that there may be a major difference in number and size of KS- lesions of the skin and the upper intestinal tract. GIE examination of pat with KS before and during therapy is essentiell in planing and evaluating the success of therapy.

M.B.P.235 ACUTE PANCREATITIS IN PATIENTS WITH AIDS

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OBJECTIVE. To describe 23 cases of acute pancreatitis in patients with AIDS.
METHODS. 23 patients with clinical, laboratory or CT evidence of acute pancreatitis were reviewed retrospectively. Four cases were diagnosed at surgery.
RESULTS. The patients represent 3.7% of 620 cases of AIDS seen at the hospital between 1984-1988. All patients were male homosexuals ranging in age from 26-61 with a mean of 37 years. 20 patients had received multiple drugs to include pentamidine (14), DHPG (9), penicillamine, amphotericin, fansidar and AZT. Four patients were chronic alcoholics. One had hyperlipidemia, one had a large cell lymphoma without pancreatic involvement, and one had no known predisposing factors. WBC ranged from 900 to 7000 with a mean of 3270. Amylase ranged from 86-896, lipase 39-7772. CT scan of the abdomen was positive in only 3 of 17 cases initially, but follow up CT scans helped in management. The clinical spectrum varied from moderate recurring abdominal pains with persistent hyperamylasemia or hyperlipasemia and a benign course, to a fulminant attack, at times mimicking a perforated viscus with a high immediate mortality (4 of 6).
CONCLUSIONS. 1). Clinically manifest acute pancreatitis occurs in at least 3.7% of hospital admissions for AIDS.
2) Clinical presentation varies, ranging from moderate chronic abdominal pain with a benign course, to a fulminant acute abdomen with high mortality.
3) 96% of patients had received potentially toxic drugs.
4) CT scan of the abdomen was most beneficial in follow up of fulminant cases, rather than for early diagnosis.
5) Clinicians should be aware of the possibility of pancreatitis in AIDS. Routine amylase and lipase is recommended.
6) The etiology of acute pancreatitis in AIDS requires further study.

M.B.P.236 HIV ENTEROPATHY IN LUSAKA, ZAMBIA: A CLINICAL, MICROBIOLOGICAL, HISTOLOGICAL AND FUNCTIONAL STUDY

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Objectives: to investigate the pathogenesis of chronic diarrhoea in HIV positive subjects in Lusaka
Methods: 44 seropositive patients with and 19 without chronic diarrhoea were compared to 36 seronegative controls with abdominal pain but no diarrhoea. Clinical and endoscopic examinations were done, stools examined by microscopy and culture and duodenal biopsies examined histologically. Some patients underwent tests of small bowel function (1-hour xylose tests and/or lactulose/mannitol permeability tests) and non-invasive pancreatic function tests (PAS/PABA excretion).
Results: 55% of patients with chronic diarrhoea had enteric pathogens compared to 10% of seropositives without diarrhoea and 3% of controls. None of the seronegative controls had abnormal duodenal biopsies while 33% of the seropositive patients had moderate to severe villous blunting, with greater inflammation in the patients with parasites. HIV-positive patients had evidence of small bowel dysfunction but this did not correlate with histology
Conclusions: Just over half of the Lusaka patients with HIV enteropathy have an identifiable pathogen, while some others have structural and functional evidence of small bowel damage. Chronic diarrhoea may result from direct damage to the gut from HIV with, or without, the addition of enteric pathogens. The direct effects of HIV need further study.

M.B.P.237 ACUTE DIARRHEA IN HIV + PATIENTS ASSOCIATED WITH *B. HOMINIS*.

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Objective: The association of *Blastocystis hominis* (BH) in stool with acute diarrhea is uncertain. During 1987 and 1988, we have seen the emergence of this protozoa in the stool of our HIV positive (+) patients with acute diarrhea. The clinical features of these patients' illnesses have been reviewed.
Methods: A retrospective study of 14 HIV + patients (asymptomatic HIV + =11, ARC=1, AIDS=2) in whom 18 separate episodes of acute diarrhea occurred was undertaken. In every case, >5 BH were seen/hpf on stool microscopy. *Salmonella, Shigella* and *Campylobacter* were not found on culture. AFB were not seen and *Cryptosporidium* was seen in 1 case.
Results: Twelve patients were homosexual and 2 were bisexual. Their major symptoms were malaise, abdominal pain and watery diarrhea for a mean period of 23 days (range 3-75d). CD4 lymphocyte counts (mean 280/mm^3, range 53-601) did not correlate with the duration or the severity of symptoms.
Stool microscopy showed:

BH only =6
BH + *E. nana* =3
BH + *E. nana* + *E. hartmannii*=1
BH + *E. nana* + *E. hartmannii* + *D. fragilis* =1
BH + E. histolytica =4
BH + Giardia lamblia =1
BH + cryptosporidium =1
BH + CMV colitis =1

In 6 episodes *B. hominis* was the only organism identified; 5 of these episodes occurred in the asymptomatic HIV + group. Symptoms in 17 of the 18 episodes resolved within 14 days of starting metronidazole in a dose ranging from 250-750 mg x 3/d for 5-10 days.
Conclusion: The presence of *B. hominis* in the stool of HIV + patients with acute diarrhea should not exclude a search for other causes. In the absence of any such cause, metronidazole can be effective in resolving symptoms. A prospective study is now needed to further examine the relationship between *B. hominis* and acute diarrhea.

M.B.P.238 ENDOLIMAX NANA AND BLASTOCYSTIS HOMINIS INFECTIONS IN HIV-1 SEROPOSITIVE PATIENTS.

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Objective. To determine the prevalence of enteric protozoa in symptomatic and asymptomatic adult HIV-1 seropositive patients. It has been suggested that protozoan parasites may play a role in the progression of HIV-1 infection. Methods. Stools from 64 adult (46 males; 18 females) HIV-1 seropositive patients enrolled in a study of the natural history of AIDS were analysed for the presence of enteric protozoa. The MIF and trichrome staining procedures for protozoa and the modified acid fast Kinyoun stain for Cryptosporidium were performed on freshly collected stool samples preserved in 10% formalin. Results. Mean age of group was 35.4 years. Risk factors for HIV-1 included homosexuality in 32 patients, intravenous drug use (IVDU) in 27 and heterosexual contact in 5. Twenty patients had AIDS, 27 had ARC and 17 had generalized lymphadenopathy (GLN). Twenty-eight (43.8%) patients had diarrhea. Overall 21/64 (32.8%) patients had evidence of enteric protozoa in their stools; 4 symptomatic and 3 asymptomatic AIDS patients, 9 symptomatic and 3 asymptomatic ARC patients and 2 symptomatic GLN patients. Among patients with diarrhea E.nana (12) and B.hominis (6) were the predominant protozoa seen. No cases of cryptosporidium, enteric bacterial or fungal pathogens were isolated Conclusions. No significant differences were noted between homosexual and IVDU patients or between AIDS and ARC patients in the frequency of enteric protozoa seen. Symptomatic ARC patients were found to be infected more frequently with protozoan parasites. E.nana and B.hominis were the most frequent protozoa identified in symptomatic patients and should be considered as additional protozoan pathogens causing diarrhea in symptomatic HIV-1 patients.

M.B.P.239 INVESTIGATION OF HIV POSITIVE PATIENTS WITH GASTROINTESTINAL SYMPTOMATOLOGY

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Objective. To review the clinicopathological findings of all HIV+ve patients presenting with gastrointestinal symptoms resulting in colorectal biopsy.
Methods. 126 patients, 70% with AIDS, presented with symptoms requiring lower bowel endoscopy and biopsy. The presenting symptoms were: diarrhoea 118 patients, lower abdominal pain 34, weight loss 27. Stool microscopy and culture, including virology, were performed.
Results. 41 patients had evidence of a pathogen which could account for their presenting symptoms. Multiple infections were present in 10 cases.

Pathogen	Total Number	Positive Stools	Positive Colorectal Biopsies
Cryptosporidia	16	5	11
Mycobacteria	15	14	10
Cytomegalovirus (CMV)	8	0	6
Salmonella	2	2	0
Campylobacter	2	2	0
Giardia	1	1	0
Kaposi's Sarcoma	4	0	4

One case had ulcerative colitis and 5 cases had intestinal spirochaetosis. The mycobacteria (M) were speciated as M. avium intracellulare (9), M.tuberculosis (3), M.fortuitum (1), unidentified (1).
Conclusion. 1.Rectal biopsy was most valuable for diagnosis of cryptosporidium and CMV and gave earlier results than culture for M(Mycobacteria). 2. 68% did not have an identifiable cause; antibiotic therapy or HIV enteropathy may have been responsible.

M.B.P.240 CANDIDA ESOPHAGITIS (CE) IN PATIENTS INFECTED BY HUMAN IMMUNODEFICIENCY VIRUS (HIV).

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Objective:To identify the incidence of CE as an opportunistic infection (OI) in our population who fulfill the AIDS criteria.Methods:We have practiced esophageal endoscopy (EE) to all patients admitted that belonged to groups at risk for AIDS.EE was done in the first 72 hours after admission and in spite of absence of symptoms or oral thrush.Patients gave their consent in all but 6 cases.We have studied 85 AIDS patients.Results:Candida esophagitis is present in 58% of cases (48 patients).24% (20 patients) of our AIDS cases have CE as the only OI present.In 80% (20 patients) of Pneumocystis carinii pneumonia(PCP) there is associated a CE process.In 8 cases CE was present alone as a OI but CE was associated with right-sided endocarditis,pneumonia or pulmonary tuberculosis in these cases.The therapeutic approach has been always ketoconazole 100 mg twice daily for 10 days.Discussion:In some patients at risk for AIDS CE is found as the only OI and in this subgroup some (8 cases) have a long follow-up (40 months) without presenting any other complication. Therapy is always succesful with oral ketoconazole assessed by disappearence of symptoms when manifested in CE.In some patients an EE repeated at a 10-day interval has corroborated the clinical response to ketoconazol.Prognostic significance may be given by the concomitant presence of other OI,or HIV antigenemia.If all patients at risk for AIDS were endoscoped we would find more unsuspected cases (asymptomatic ones) of CE.

M.B.P.241 GASTROINTESTINAL (GI) STRUCTURE AND MUCOSAL FUNCTION IN HIV POSITIVE PATIENTS.

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Unexplained weight loss and diarrhoea are relatively frequent in HIV infected patients. We have investigated 19 patients in whom no gastrointestinal pathogens could be identified to see if functional or structural changes in the small intestine could account for their weight loss and diarrhea. Nineteen patients (17 males, 2 females) were investigated by endoscopy. Biochemical testing demonstrated normal red blood cell folate and vitamin B12 levels in all patients. However, serum ferritin levels were increased in 12 patients. D-xylose absorption tests were abnormally low in 8/13 cases. Duodenal aspirates were negative for giardia lamblia. Light microscopy failed to show any structural abnormality in both upper and lower bowel biopsies. In contrast ultrastructural changes were demonstrated in all patients at the epithelial stromal junction of intestinal crypts with scattered degenerative or necrotic fibroblasts interspersed with reactive hyperplastic fibroblastic cells which appeared to lay down excessive collagen beneath the epithelial cells. These findings suggest that certain Biochemical and ultrastructural abnormalities are common in HIV positive patients even in the absence of infectious pathogens. Defects in carbohydrate absorption and ultrastructural changes may be responsible for some aspects of HIV enteropathy.

M.B.P.242 RELATION BETWEEN HIV INFECTION AND Non-A, Non-B HEPATITIS.

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It has been reported that hepatitis B virus chronic carriers with anti-HIV positive have less hepatic injury than those without HIV infection. However, it is still unknown the influence of HIV among patients with chronic Non-A, Non-B (NANB) hepatitis. Thus, we have studied the hepatic injury degree in chronic NANB hepatitis with or without anti-HIV.

There were included 13 patients with chronic NANB hepatitis. Eigth of them were anti-HIV negative (5 with a posttransfusional history and 3 drug abusers), and the other 5 were asymptomatic HIV carriers (all drug abusers). The presence of anti-HIV was confirmed by Western-blot.

The levels of albumin were higher among those NANB patients anti-HIV negative (4.3 ± 1.1 g/dl) than in the HIV-seropositive ones (3.6 ± 0.2). On the other hand, the transaminases were increased in the anti-HIV positive subjects when comparing with the anti-HIV negative cases (108.7 ± 105.7 vs 96 ± 79.4 IU/l, respectively), although there were not statistical differences. Finally, the histological diagnosis was very similar between both group of patients (anti-HIV +: 80% of chronic active hepatitis (CAH), 20% of chronic persistent hepatitis (CPH); anti-HIV -: 75% CAH, 12.5 CPH and 12.5% cirrhosis).

In conclusion, patients with chronic NANB hepatitis and HIV infection present higher levels of transaminases. This suggests that the hepatitis NANB virus could have a direct cytopathic effect and that the immune response is not involved in the hepatic injury. However, as the causal agent of the hepatitis NANB is not yet identified, this should be proven in future researchs.

M.B.P.243 HEMOPHAGOCYTIC HISTIOCYTOSIS IN THE LIVER OF AN HIV-INFECTED FORMER DRUG USER

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Objective. To report a case of hemophagocytic histiocytosis in the liver of an HIV-infected former IV drug user.
Methods. Clinical data over 23 months and two liver biopsies, including one studied by electron microscopy, were reviewed.
Results. A 32 year old former IV drug-abusing male had HIV antibody by ELISA and Western blot. Alanine aminotranserase (ALT) was initially 83 U/L and increased over six months to 458 U/L, at which time the first liver biopsy was performed. Fatigue and abdominal pain were correlated with increased ALT levels. During the next 8 months, ALT ranged from 237-316 and symptoms improved. On the biopsies liver architecture is preserved, but the portal tracts display mild to moderate fibrosis, focal mononuclear infiltration, and inconstant ductular proliferation. The parenchyma is intact, except for rare necrotic cells. Along the sinusoids are clusters of iron-positive phagocytes and prominant Kupffer cells exhibiting erythrophagocytosis, and in Disse's space there is increased collagen. A few scattered lipid granulomas appear near central veins. Serum HBsAg is negative.
Conclusion. Lacking evidence for other infections previously associated with hemophagocytic histiocytosis, we suggest that HIV may rarely cause the syndrome, which may be associated with manifestations of liver dysfunction. Definitive exclusion of other causes of erythrophagocytosis is not possible, however.

M.B.P.244 ULCERATING PHARYNGO-OESOPHAGEAL LEUKOPLAKIA IN ADVANCED HIV DISEASE.

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Objective: To characterise the cause of oesophageal ulceration in advanced HIV disease in the absence of infection with CMV or HSV.

Methods: Endoscopy and biopsy was performed on 5 homosexual men presenting with severe dysphagia. Three HIV seropositive men with dyspepsia were used as controls.

Results: Endoscopy revealed large undermined ulcers (>0.5 cm in diameter) in the pharynx and/or oesophagus in the 5 patients with dysphagia, and was macroscopically normal in the 3 controls. Subsequent histological examination of biopsies from the ulcerated areas showed features of viral leukoplakia in all cases; koilocytosis/multinucleation (5), parakeratosis (3), individual cell keratinization (3), and epidermal thickening/hyperplasia (2). There were no histological features of HSV infection in any of the cases, and evidence of candidal infection was seen in only 1 of the 5. CMV was not detected in any of the cases by immunocytochemistry or DNA in situ hybridization. Material from 4 of the 5 cases and 3 HIV seropositive controls was available for DNA in situ hybridization for EBV and HPV. EBV DNA was detected in 3 of the 4 cases and none of the controls. HPV DNA was detected in 3 of the 4 cases and 2 of the 3 controls.

Conclusion: A lesion histologically similar to Oral Hairy Leukoplakia can occur in the pharynx and oesophagus in advanced HIV infection where it may cause significant ulceration. EBV may be causally related to the leukoplakia seen in these cases.

M.B.P.245 SPONTANEOUS RESOLUTION OF CANDIDA ESOPHAGITIS(CE)IN A SEROCONVERTING PATIENT FOR HIV ANTIBODIES

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Objective:To report a case of CE in a seroconverting patient and to discuss whether CE in HIV seropositive patients should always be considered a criterion for AIDS.Material:A 22 year-old white man admitted because of a mononucleosis-like syndrome.He was drug addict since the last 6 months.
Results:The endoscopy and esophageal biopsy demonstrated CE.

	EIA screening	p24	gp 41	HIV Ag	WB
April 20,1988	-	-	-	+	Not Done
May 10,1988	cut off	-	+	+	-
May 20,1988	+	-	+	-	+

EIA:(Behring);p24;gp41(EIA env/core);HIV-Ag(Abbott).
An esophagic endoscopy performed 15 days later demonstrated spontaneous resolution without having received any antifungal therapy.Discussion:In view of our findings we suggest that CE should be considered a criterion for AIDS(at least for informing the patient that is suffering an AIDS)when there is associated another opportunistic infection or when this appear subsequently in a short period of time(less than 4 months),when the patient has a persistent low T4 count(250xmm3)over a 4-month period or when there is HIV antigenemia (excluding the seroconverting patients).All other cases should be followed closely to understand better the prognostic significance of CE.In our experience HIV seropositive patients not fulfilling the criteria commented above have been followed for long periods(45 months)without developing other opportunistic infections.

M.B.P.246 DETECTION OF HEPATITIS B VIRUS DNA IN PERIPHERAL BLOOD MONONUCLEAR CELLS FROM ASYMPTOMATIC ANTI-HIV CARRIERS

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It has been suggested that hepatitis B virus (HBV) could act as a co-factor in the development of AIDS in anti-HIV positive patients. Also, HBV-DNA has been detected in peripheral blood mononuclear cells (PBMC) from a high percentage of patients with AIDS or ARC. The aim of this study was to determine the presence of HBV-DNA and HIV-DNA in PBMC from symptomless anti-HIV carriers.
PBMC (2 x 10^7 cells) were obtained from 23 symptomless anti-HIV carriers (16 of them were positive to the hepatitis B virus surface antigen, HBsAg, and 7 negative to HBsAg), and from 50 anti-HIV negative patients (40 with HBsAg and 10 without this marker). Anti-HIV was detected by EIA and confirmed by Western Blot. The HBsAg test was performed by RIA. HBV-DNA and HIV-DNA were detected by dot-blot hybridization in total extracted cellular DNA from PBMC.
The results are summarized in this table:

	Anti-HIV+ N = 23		Anti-HIV- N = 50	
	HBsAG+ N = 16	HBsAg- N = 7	HBsAg+ N = 40	HBsAg- N = 10
PBMC HBV-DNA+	7 (44%)	0	17 (43%)	0

HBV-DNA was found in a similar percentage in PBMC from anti-HIV positive and negative patients. No differences were observed in the T4/T8 ratio in HIV-seropositive patients with or without HBV-DNA in their PBMC (1.1 ± 0.37 and 0.9 ± 0.34, respectively). HIV-DNA was detected in 10/23 (43%) of symptomless anti-HBV carriers. HBV-DNA and HIV-DNA were present simultaneously in only 2/23 (7%) of these patients.
In conclusion, the incidence of HBV-DNA in PBMC of anti-HIV positive or negative patients is similar. There is a small percentage of patients with HBV-DNA and HIV-DNA simultaneously in the PBMC.

Manifestations hématologiques
Hematologic

M.B.P.247

APHTHOUS ULCERATIONS OF THE GASTROINTESTINAL TRACT IN PATIENTS WITH AIDS

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A new syndrome of aphthous ulcerations of the pharynx and esophagus were recently described in three patients with AIDS (Ann Intern Med Aug 15 1988). We now report seven additional cases, including two patients with giant esophageal ulcers and one patient with colonic ulcers associated with gastrointestinal hemorrhage. All these cases responded dramatically to oral corticosteroid therapy. One patient had high titers of immune complexes by Raji cell assay.

These ulcerations may represent the one end of a spectrum of "autoimmune" ulcerations seen commonly in normal patients as recurrent oral aphthous stomatitis. Illustrative photographs will highlight the clinical cases.

M.B.P.248

HAEMATOLOGIC ABNORMALITIES IN HIV INFECTION.

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Objective.To describe the haematologic abnormalities in HIV infection.
Methods.From April 1985 to December 1988, 683 seropositive subjects were observed at the Center for AIDS control in Sicily.Eighty seven per cent of these were intraverous drug abusers. White cell count,granulocytic count,lymphocytic count,platelet count and red cell count were performed on all patients. In some patients we studied the periferic blood cells and bone marrow morphological characteristics.
Results.The most important haematologic abnormality is represented by thrombocytcpenia.In the group studied its frequency is of 13 per cent.We have found thrombocytopenia expecially at the early stages of disease,while other cytopenias,as anaemia and granulocytopenia,have been observed at the ARC or AIDS stages. Morphological alterations of the granulocytes, as Peulger-like anomaly,although non characteristic,were frequent in AIDS patients. Bone marrow morphological characteristics in 52 patients examined were:increased megakaryocytes,erythroid hypoplasia and megaloblastic changes.
Conclusion.HIV itself and/or other factors such as infections,malnutrition and drugs may affect haematologic parameters.
Various alteretions appear at different stages of the disease.These findings are very important for the choice therapy.

M.B.P.249

MICROANGIOPATHIE THROMBOTIQUE (MAT) ET INFECTION HIV

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Objectifs : Décrire les différents aspects cliniques et biologiques de la MAT au cours de l'infection HIV.
Méthodes : Six patients (pts) (5 hommes : 4 homosexuels, 1 toxicomane ; 1 femme zaïroise) présentant des manifestations rénales et hématologiques liées à une MAT, sont décrits ; le mode de présentation et l'évolution de la MAT sont analysés selon le stade CDC de l'infection HIV.
Résultats : Trois pts avaient un SIDA depuis 10 à 18 mois (IV C1:1 pt ; IV C1,D:2 pts). La MAT était révélée par une thrombopénie et une anémie hémolytique avec schizocytose (Hb:45 à 70 g/L; plaquettes : 5 à 23.10^9 /L). Deux des pts étaient traités pour une infection récente (toxoplasmose, mycobactériose). Chez ces 3 pts, l'évolution a été marquée par l'aggravation des signes hématologiques puis par l'apparition d'une insuffisance rénale (IR); ces 3 pts sont décédés en 3 à 4 mois, malgré les traitements institués pour la MAT.
Les 3 autres pts, à un stade plus précoce de l'infection HIV (III:1pt, IV C2:2pts) présentaient une IR aigue révélatrice de la MAT (histologie rénale:2 pts). La MAT révélait l'infection HIV chez 1 pt. L'atteinte hématologique était constante (Hb:80 à 90 g/L ; plaquettes:5 à 100.10^9 /L). Un pt est décédé d'IR aigue avant traitement. Chez les 2 autres pts - vivants à 6 et 18 mois - la MAT a été régressive en 2 à 5 semaines (hémodialyse initiale chez 1 pt).
Conclusions : 1 - L'infection HIV parait être (directement ou indirectement) l'une des circonstances étiologiques de la MAT. 2 - Chez ces 6 pts, il semble exister 2 tableaux de MAT, qui diffèrent par leur présentation initiale (hématologique ou rénale), l'évolution, et le stade HIV.

M.B.P.250

ETUDE PROSPECTIVE DES ANOMALIES DE LA COAGULATION CHEZ 156 PATIENTS CONSECUTIFS SEROPOSITIFS POUR LE VIH.

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156 patients séropositifs pour le VIH ont bénéficié de 3 groupes de tests explorant leur coagulation :
- tests de dépistage : temps de céphaline activé (TCA), temps de céphaline Kaolin (TCK), test de correction.
- tests de localisation du niveau de l'anomalie.
- tests spécifiques à la recherche d'un anticoagulant circulant (ACC) de type antiprothrombinase (APT) : temps de thromboplastine dilué (TTD), lupus anticoagulation test (LAC stago).

46 patients sur 156 présentaient un TCA allongé : 33 avaient un ACC de type APT. Les 13 autres présentaient un déficit le plus souvent multifactoriel (VIII, IX, XI ou XII). 111 sur 156 avaient un TCA normal. 33 présentaient un ACC de type APT (TTD positif 33 fois, LAC positif 21 fois). Sur ces 33, 21 avaient un syndrome inflammatoire marqué. L'analyse des résultats montre :
- la prévalence des anomalies de la coagulation chez les patients VIH + est de 50,6 %. Il s'agit dans 42,3 % des cas d'un ACC de type APT.
- l'allongement du TCA dépiste ces ACC 1 fois sur 2. Sa normalité ne permet pas d'exclure le diagnostic d'ACC (notamment si syndrome inflammatoire).
- cliniquement, absence de thrombose ou d'hémorragies dans notre série.
- Absence de relation avec le stade évolutif de l'infection par le VIH.
- les ACC s'intègrent probablement dans le cadre des manifestations auto-immunes chez les sujets VIH +.

M.B.P.251

"BONE MARROW IN AIDS PATIENTS".

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OBJECTIVE: To report our findings in bone marrow studies in patients fulfilling AIDS criteria.
MATERIAL: Bone marrow aspirates and/or biopsies from 30 patients were reviewed. These bone marrow studies have been performed because of otherwise inexplainable anemia or citopenia in most of cases, and/or in the setting of fever of unknown origin.
RESULTS: Cellularity was normal or slightly increased in 28 out of 30 cases (93%). One patient presented focal hypoplasia associated to the presence of granulomas, and another patient presented a global hypoplasia. Erytroblastic serie showed diserytropoetic features in 40% of cases often consisting in megaloblastic traits. Among white cell precursors we observed bone marrow hypereosinophilia in 7 out of 30 patients (23%), and one case with hyperbasophilia. Megacariocits were usually increased, often in association with peripheric thrombocytopenia. Reticulinic fibrosis was seen in 6 cases (20%). Perivascular plasmocytic infiltration was the most common finding, 20 out of 30 cases (66%). We observed granulomas in 4 patients (13%) due in 2 cases to miliary tuberculosis, and in the rest to asymptomatic visceral leishmaniasis.
Finally, haemophagocytosis was observed in other 2 cases.
CONCLUSIONS: Bone marrow study allowed us to diagnose an infectious disease in 13% of AIDS patients admitted because of fever of unknown origin.
We could also observe 20% of cases presenting fibrosis, a finding rarely described in AIDS.
In our serie, the most frequent finding in AIDS patients is perivascular plasmocytic infiltration and diserytropoesis.

M.B.P.252

CIRCULATING ANTICOAGULANT AND HUMAN IMMUNODEFICIENCY VIRUS INFECTION

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From January to September 1988, we made an inventory of 17 H.I.V. patients (11 males and 6 females) with a circulating anticoagulant (CAC) hospitalized in the Tropical and Infectious Diseases ward (Nice). The H.I.V. infection stages (CDC criteria) were : I (1 patient), III (3), IV (13). The presence of CAC was suspected when the activated partial thromboplastin time (APTT) was prolonged (by more than 7 seconds as compared with that in a control) and not corrected by the addition of normal plasma. The activity of the CAC was : antiprothrombinase (13 patients) (10 stage IV, 3 stage III), antipolymerase (3) (stage IV), heparine-like (1) (stage I). Clinical symptoms related to CAC isolation are rare, and were only reported for 3 of our patients ; 2 mucocutaneous hemorragic syndroms : one stage IV patient with a severe thrombopenia combined with an antiprothrombinase, the other a severe H.I.V. primo-infection with a heparine-like. For the third one (stage IV) : a thrombosis of the central retina artery associated to an antipolymerase. In a retrospective case control study of all the H.I.V. patients (n = 100) hospitalized in the same ward during the same period, we evaluated the prevalence of CAC to be 17 %. By a statistical analysis (XI2 test with adjustment). We found a significant relation to CAC and mycobacterial infection (tuberculosis and atypical) (p .001), but not for Pneumocystosis. In our study, there was no statistical difference after 6 months in the rate of survival between the 2 groups (CAC and no CAC). Only a prospective study would establish the relation between CAC, opportunistic infections and the out come of H.I.V. infection.

M.B.P.253 LUPUS LIKE ANTICOAGULANT AND ANTICARDIOLIPIN ANTIBODIES IN NON HOSPITALIZED HIV INFECTED PATIENTS

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LLAC and ACA have been studied in 204 HIV infected patients. None of them presented opportunistic infections at the moment of the investigation. 12% were classified in CDC stage 1, 46% in stage 2, 29% in stage 3, and 13% in stage 4. The LLAC was detected by three tests: APTT, dilute thromboplastin inhibition test, and kaolin clotting time. ACA were determined by Elisa. APTT was positive in 6.3% of the patients, KCT in 5.2%, and DTIT in 18%. ACA were positive in 11.6% (IgG) and 4.5% (IgM). There was some association between abnormal coagulation tests and ACA. The frequency of positivity of the coagulation tests was clearly correlated with the stage of the disease: APTT was prolonged in 0% of stage 1 patients, 3% of stage 2, 9.7% in stage 3 and 16.7% in stage 4. The same relationship was not observed for ACA, which were positive in 12% of stage 1 patients, 10.1% of stage 2, 24.4% of stage 3 and 16.7% of stage 4.
We conclude that : 1) LLAC and ACA are present in a relatively low proportion of HIV infected patients who do not present opportunistic infections; 2) there is a relationship between the frequency of positivity of these tests and the stage of the disease, particularly for the coagulation tests.

M.B.P.255 ABDOMINAL LYMPHADENOPATHY IN 200 HIV POSITIVE PATIENTS. ULTRASOUND AND CLINICAL STUDY.

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During a 6 months period, 200 HIV positive patients had abdominal ultrasound. There were 148 stage 1-2, 23 ARC syndrome, 29 AIDS. Adenopathy was found in 114 patients. This adenopathy was celiac in the majority of cases (80%) or within hepatic hilum (36%), or lomboaortic (23%). The size was under 3 cm in 76%. Clinical and biological data were rewieved and did not find any particular abnormality either infectious or tumoral. previous hepatitis was the most common finding (55%), even more frequent if more than 2 adenopathies were found (66%). The follow-up of this group of patients (9 to 18 months) did not demonstrate particular abdominal complications. Only 2 patients developped abdominal lymphoma. Although further follow-up is necessary, we believe that the presence of adenopathy less than 3 cm in size at abdominal ultrasound is a common finding in HIV positive patients and does not require further investigation.

M.B.P.257 BONE MARROW FINDINGS IN HIV INFECTED PATIENTS AT GAFFRÉE AND GUINLE UNIVERSITY HOSPITAL - UNIVERSITY OF RIO DE JANEIRO (UNI-RIO).

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Objective: To study cytological, histological and microbiological features of bone marrow specimens of 68 HIV infected patients admitted at our institution from 1985 to 1988 and who were classified as group III or group IV according to CDC criteria.
Methods: We studied 68 homosexual/bisexual males 25 to 48 years of age. Twenty-six were classified as group III and 42 as group IV. Bone marrow biopsies and aspirates were obtained from the posterior superior iliac crest. May Grunwald Giemsa, Prussia blue, HE, Wilder and Gomori staining were used.
Results: Cellularity, megakariocytic and lymphoplasmocytic series findings were as follows:

	Nº PATIENTS	CELLULARITY		MEGAKARIOCYTIC		LYMPHOPLASMOCYTIC
		HYPO	HYPER	HYPO	HYPER	HYPER
GROUP III	26	3(11,5%)	4(15,4%)	6(23,0%)	8(30,8%)	9(34,6%)
GROUP IV	42	11(26,2%)	1(2,4%)	7(16,7%)	14(33,3%)	32(76,2%)

Erythrophagocytosis was observed in 2 patients (group IV). Mycobacteria and fungi were not identified. T.gondii infection was demonstrated in 1 patient. Not rarely, megakariocytes were shown to be atypical.
Conclusions: Bone marrow samples should be routinelly obtained from HIV infected patients, specially those who present with peripheral cytopenia and (or) fever of obscure origin. Although some qualitative and quantitative changes were recognized, we could not find any specific alteration.

M.B.P.254 LES LYMPHADENOPATHIES CHRONIQUES SONT-ELLES LE TEMOIN D'UNE AGGRAVATION DE L'IMMUNODEFICIENCE LIEE AU VIH? ETUDE D'UNE COHORTE DE 264 SUJETS SEROPOSITIFS, BORDEAUX, FRANCE : 1985 -1988.

Morlat, Philippe* ; Lacoste, D.* ; Mazllati, P.* ; Dupon, M.* ; Pellegrin, J-L.* et le Groupe d'Epidémiologie Clinique du SIDA en Aquitaine (G.E.C.S.A.)*.
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Objectif. La classification des Centers for Disease Control de l'infection par le VIH distingue les patients asymptomatiques (groupe II) de ceux porteurs de lymphadénopathies chroniques (groupe III). Cette étude recherche si cette distinction correspond à une différence sur le plan du pronostic clinique et biologique.
Méthodes. Pour les sujets classés dans le groupe II ou le groupe III lors de leur inclusion et revus au moins une fois, les données suivantes ont été recueillies : passage dans le groupe IV et au stade SIDA, nombre absolu de lymphocytes T4 par mm^3 de sang (T4). Les probabilités cumulées de passage dans le groupe IV et au stade SIDA sont calculées dans chaque groupe par la méthode de Kaplan-Meier. Le test du logrank est utilisé pour la comparaison de l'évolution des groupes II et III. La comparaison des moyennes (m) du nombre de T4 est effectuée par le test de Student.
Resultats. A l'inclusion, 175 sujets appartenaient au groupe II et 89 au groupe III (données du 10 novembre 1988). Les probabilités cumulées de passer dans le groupe IV après 24 mois de suivi sont de 23,2% pour le groupe II et de 10,5% pour le groupe III ; celles d'aboutir à un SIDA sont respectivement de 12,7% et de 5,9%. Les différences d'évolution entre les groupes II et III ne sont pas statistiquement significatives au seuil de 5%. Le passage du groupe II au groupe IV s'est fait directement dans 85% des cas (n=27). On ne note pas de différence significative entre la moyenne des T4 à l'inclusion des sujets des groupes II (m=540 ; écart-type s=297) et III (m=504 ; s=231). Les moyennes des T4 de 20 patients restés groupe II et de 19 patients restés groupe III ont été comparées : aucune différence significative n'a été mise en évidence, non seulement à l'inclusion mais également après 12 mois. Leur taux moyen de variation a été de -15% pendant cette période.
Conclusion. Aucune différence n'a pu être mise en evidence dans l'évolution clinique et biologique des patients appartenant initialement au groupe II et au groupe III. Les lymphadénopathies ne semblent pas être le témoin d'une aggravation de l'immunodéficience liée au VIH : les sujets appartenant au groupe III ne paraissent pas devoir justifier d'une surveillance et d'une prise en charge thérapeutique plus intenses que les sujets asymptomatiques. Cette constatation doit être confirmée sur une plus longue période d'observation et/ou un plus grand nombre de patients.

M.B.P.256 KIKUCHI'S LYMPHADENITIS IN HIV INFECTION: A CASE REPORT.

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Objective. The authors report on a case of "histiocytic necrotizing lymphadenitis/Kikuchi's lymphadenitis" (HNL) which occurred in a 17 yr-old female with previous history of drug-addiction.
Case report. The patient seroconverted in 1986 and developed ARC (CDC IVa-WR5a) in July 1988. At that time, she showed generalized lymphadenopathy, lymphopenia (321/mmc) and CD4/CD8 ratio = 0.08. Flow cytometry and double fluorescence displayed a significant expansion of the HLA-D/DR+ subset, which was not due to an absolute increase in activated (CD3+) T-lymphocytes. A Jamshidi needle biopsy revealed moderate myelodisplasia with plasmocytosis. In October 1988, the patient underwent a lymph node biopsy. At histological examination, the normal structure was effaced by multiple foci of infiltration by histiocytes, plasmocytoid T-cells, small lymphocytes, and immunoblasts, with nuclear debris and varying degrees of necrosis. Immunophenotyping showed positivity of: i) histiocytes for lysozyme and CD11b, CD11c, CD14, and Ber-Mac3 molecules; ii) plasmocytoid T-cells for CD45 and CD18; iii) small lymphocytes for CD2, CD3, and CD5 (CD4/CD8 = 1/3). According to morphological and immunohistochemical findings, a diagnosis of Kikuchi's lymphadenitis was made.
Conclusion. To our knowledge, this represents the first reported example of HNL in an HIV-infected patient. It underlines the opportunity of including HIV among the possible etiologic agents of Kikuchi's lymphadenitis.

M.B.P.258 BONE MARROW FINDINGS IN 33 MULTISTAGED HIV-INFECTED PATIENTS

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Objective. To investigate bone marrow (BM) features in HIV infection in order to any prognostic evaluation.
Methods. 33 HIV-infected pts were studied. They were staged according to CDC criteria: 8 CDC III 10 IVC, 9 IVD, 2 IVB, 4 IVA. Osteomyelobiopsy was carried out by Jamshidi needle. Histopathological work-up was complemented by staining for opportunistic organisms.
Results.

Bone marrow findings	number of patients
Increased cellularity	13/33
Reduced cellularity	4/33
Reduced myelopoiesis	7/33
Dismyelopoiesis	15/33
Increased Megakaryocytes	33/33
Micromegakaryocytes and dystrophic forms	14/33
Lymphocyte infiltrates/aggregates	28/33
Activated macrophages and erythrophagocytosis	18/33
Granulomas (2 cases with giant cells)	3/33

3 cases showed a leukemic pattern.
Conclusion. Above results suggest that BM involvement in HIV infection resembles the hemopoietic dysplasia pattern implying a disorder of stem cell. No sharp correlation between BM abnormalities is identifiable.

Manifestations endocriniennes, cardiaques, rénales, musculo-squelettiques
Endocrine/Cardiac/Kidney/Musculoskeletal

M.B.P.259

ECHOCARDIOGRAPHY IN AIDS PATIENTS. A PROSPECTIVE STUDY IN 24 PATIENTS.

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Objective: To assess the prevalence and the extent of cardiac abnormalities in AIDS patients with no cardiac history.

Methods: 24 patients with AIDS for 0-485 days (mean 82) were examined. Twentytwo homosexual men, one man with unknown risk factor and a woman infected by transfusion. None were intravenous drug abusers. All patientes were hospitalised: 17 with pneumocystis carinii infection, one with Kaposi's sarcoma and 6 patients with other opportunistic infections incl. CMV and mycobacterial disease. No patients showed signs of clinical cardiac failure. Echocardiographies were performed on an G.E RT 3000 phased array. Examination included standard M-mode + 2D echoes. The echoes were videotaped and reviewed blindly by a cardiac specialist.

Results: 13 cardiac abnormalities were found in 11 patients. Eight patients had slightly to moderat dilatation of the right ventricular chamber 28-36mm (mean 30.1) and 5 patients had a moderat pericardiac exudate. No patients had tachycardia more than corresponding to fever. We found no signs of endocarditis, myocarditis or cardiomyopathia.

Conclusion: Minor cardiac abnormalities seems to be common in AIDS patients with acute infection. In AIDS patients with other riskfactors than intravenous drug abuse they are hardly of clinical importance.

M.B.P.260

NEUROMUSCULAR INVOLVEMENT IN HIV INFECTION.

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The involvement of the peripheral nervous system (PNS) in patients with infection by the human immunodeficiency virus (HIV) is less well known than that of the central nervous system (CNS). Because of the rarity of these complications, and the interest of their diagnostic and therapeutic aspects, we report 7 patients with HIV infection and abnormalities of the PNS. There were six males and one female, with an age range of 25 to 45 years, with the following conditions: two axonal polyneuropathies , two chronic inflammatory demyelinating polyneuropathies and three polymyosites. At the time of the diagnosis of the PNS involvement, three polyneuropathy patients were stage IV-C1 and one IV-C2, whereas two polymyositis patients were stage II and two were simultaneously diagnosed of tuberculous meningitis and cerebral cryptococcosis. Both patients with axonal polyneuropathy had severe impairement of their general condition with advanced cachexia, which suggests that the neurologic abnormalities could be the result of metabolic and nutritional causes (an accepted pathogenetic mechanism), rather than HIV or other organisms infectious effects. Both demyelinating neuropathy patients did not receive treatement: one patient refused treatement while the other had a rapid and fatal evolution. Of note, the first of these two last patients, improved notoriously without treatment. Only one of the three patients with polymyositis did respond to corticosteroid therapy.
All four polyneuropathy cases had features of both types of neuropathy (axonal and demyelinating). In two patients we observed at different times of their clinical course, transitions from one type of neuropathy to the other and vice versa. We suggest the possibility that these polyneuropathies constitute a single entity, with variable clinical and electrophysiological features.

M.B.P.261

RHEUMATIC SYMPTOMATOLOGY IN PATIENTS INFECTED WITH THE HUMAN IMMUNODEFICIENCY VIRUS (HIV): PREVALENCE AND RELATIONSHIP TO CLINICAL AND LABORATORY VARIABLES

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Objective. To define the prevalence of rheumatic symptomatology in a cohort of HIV infected patients as well as its relationships to a variety of clinical and laboratory variables.
Methods. Combined retrospective and prospective analysis of 75 patients followed for a mean of 39 months. Each subject was serially assessed for the development of rheumatic symptomatology during follow-up for HIV infection.
Results. During the follow-up period, 20% developed articular symptoms including four patients with Reiter's or psoriatic arthritis, and 11 patients with new onset oligoarticular or polyarticular arthritis (group A). Fifty-three patients (71%) had no rheumatic symptoms (group B) and 7 patients (9%) had miscellaneous rheumatic symptoms. Group A patients were more likely to be at an advanced clinical stage of HIV infection (i.e. CDC Class IV) than group B ($p<.001$) and had lower hemoglobin, lymphocyte counts, T helper counts and higher ESR values than group B patients ($p<.01$). There was no association between articular disease and any specific risk behavior, other sexually transmitted diseases, infections or malignancies.
Conclusion. Articular disease appears to be relatively common in the setting of HIV infection and correlates with both an advanced state of infection and immunosuppression. These data may partially explain the reported sensitivity of such patients to the adverse effects of immunosuppressive drugs.

M.B.P.262

JOINT, BONE AND MUSCLE LESIONS AND HIV INFECTION.

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Rheumatologists at our hospitals have been referred 106 HIV-positive patients since 1985, representing about 4% of the known HIV-positive population in our area. Thirty homosexual men and 2 women presented with acute, aseptic, peripheral, non-erosive, seronegative arthritis (mean, 4 joints affected). Associated features included psoriasis (12 patients), keratoderma blenorrhagica (2), plantar fasciitis (2), urethritis (5), conjunctivitis (4) and uveitis (1). Four of 5 patients tested had HLA-B27. Two with recent diarrhoea had serological evidence of yersinia infection. No microorganisms were identified in joint material except for HIV in 4 patients. At onset of arthritis only 2 had AIDS and 9 were not known to be HIV-positive. Six patients have progressed to AIDS; 4 have died. In 14, including those progressing to AIDS, joint symptoms have been severe, persistent and poorly responsive to NSAIDs. In 5 arthritis has resolved. Other rheumatic lesions seen include infective lesions (7 patients) including one with disseminated histoplasmosis; myalgia/arthralgia (30), with features suggestive of myositis in 12; spinal pain (19); non-inflammatory peripheral arthropathy (6); and soft tissue lesions (12). Rheumatic syndromes in HIV-positive patients are becoming better defined. It is unclear, however, whether HIV itself is a genuine risk factor for some of these, especially aseptic arthritis. The London experience may help to clarify this issue. Pathogenetic mechanisms, including the role of microorganisms and immunodeficiency, require further study.

M.B.P.263

"REDUCED CORTISOL PRODUCTION AND ADRENAL NECROSIS IN PATIENTS WITH AIDS". LEWI, D.S.*; ACCETTURI, C.A.*; SADER, H.*; DIAS, R.S.*; KATER, C.E.*; MOTTA, P.R.*. - * Escola Paulista de Medicina - São Paulo - SP - Brasil.

Objective: To verify adrenocortical reserve and adrenal histopathology in patients with AIDS.

Methods: To verify adrenocortical reserve we measured plasma cortisol levels before and 60 min. after ACTH stimulation (Cortrosyn®, 250 µg IV bolus) in 28 patients with AIDS, 5 with ARC, 10 with chronic non AIDS diseases and 32 normal subjects. Adrenal histopathology was studied in 17 of the 20 patients with AIDS who died. The 95% confidence intervals (CI) for the ACTH-stimulated cortisol levels was established at 18.4 µg/dl.

Results: Five (18%) AIDS patients presented values below the CI: 13,4 ± 1,4 µg/dl. All 5 had massive adrenal necrosis at post-mortem examination (2 had also Citomegalovirus inclusion and 1 *Criptococcus neoformans*). Sensitivity and especificity of the ACTH test compared with the presence or absence of significant necrosis was: 71,4% and 100%, respectively. No patients with ARC or chronic non-AIDS diseases had decreased cortisol response to ACTH stimulation.

Conclusion: Since 18% of patients with AIDS had proven adrenal necrosis with cortisol insufficiency, and might benefit from glucocorticoid replacement therapy, we suggest that a rapid ACTH testing should be performed in every such patient.

M.B.P.264

DIABETES INSIPIDUS AS A COMPLICATION OF CEREBRAL TOXOPLASMOSIS IN AN AIDS PATIENT

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Case presentation. A 52 year old homosexual HIV+ve patient presented with sudden onset headache, dysphasia and blurred vision. He had a low grade pyrexia, right sided upper motor neurone 7th nerve palsy and left sided homonymous hemianopia. Brain CT scan showed multiple localised frontal, occipital, temporal and parietal lobe (left > right) cystic enhancing lesions suggestive of brain toxoplasma infection. He responded very well to treatment with Fansidar (two tablets b.d.), his signs and symptoms disappeared and he was discharged on maintenance Fansidar at a dose of one tablet every alternate day. Six weeks following the beginning of his brain infection he developed polydipsia and polyuria. Diabetes insipidus was confirmed with normal blood glucose, urine osmolalities never exceeding 172 mmol/L and plasma osmolalities of over 300 mmol/L. In spite of clear evidence of hypothalmic dysfunction his anterior pituitary function was normal with a good cortisol response to hypoglycaemia, normal T4 (82 nmol/L), prolactin (574 u/L) and normal responses of TSH, LH and FSH to their respective releasing factors. Treatment with DDAVP resulted in rapid resolution of diabetic symptoms.
Conclusions. Neurogenic diabetes insipidus can follow cerebral toxoplasmosis in AIDS patients.

M.B.P.265 DEFICIENCY OF GLUCOCORTICOIDS IN AIDS

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At autopsy of patients with AIDS 88 % of the adrenal and 30 % of the pituitary glands show pathologic changes (GROLL et al.1989). Nevertheless levels of cortisol and results of ACTH stimulation tests are within normal range in most of the patients. Patients with AIDS suffer a continous stress due to psychological reasons, infections, tumors, etc., so that cortisol levels within "normal range" might not be sufficient to meet the enhanced demand.

Beside an iv. ACTH stimulation test (determination of cortisol, -hydroxyprogesterone and aldosterone at 0, 30 and 60 min.) an iv. stimulation test with corticotropin releasing hormone (CRH)(determination of ACTH at 0, 30 and 60 min.) was carried out in 20 patients with AIDS and 2 patients with ARC under resting conditions at 8 o´clock am (two different days).

In 21 patients basal cortisol levels were within "normal range" (7 - 25 ug/dL) with sufficient inrease after ACTH stimulation in 12 patients. In 1 patient cortisol was high (38 ug/dL) without further increase after stimulation. ACTH was high (80 pg/ml) in 10 patients, exceeding 100 pg/ml in 4. 5 of the 12 patients with normal basal ACTH didn´t show an increase after CRH stimulation, as well as 3 of the 10 patients with high basal ACTH levels.

High levels of ACTH under "resting conditions" point at a stressed state of the patients. With maximal ACTH stimulation cortisol levels are slightly sufficient. Inadequate secretion of cortisol must be feared in case of an additional stress, as further enhancement of ACTH secretion is not possible. For that reason we advice an early substitution of cortison in severe stress situations.

M.B.P.266 " GONADAL HORMONE LEVELS AND TESTICULAR HISTOLOGY IN AIDS".

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OBJETIVE To correlate testicular histopathology with gonadal hormone levels in patients with AIDS

METHODS Twelve patients (CDC IV), 11 homosexual males (20-55yrs) with gonads under normal volume (Prader 8-12) and 1 haemophilic prepurbetal boy (10 yrs) were studied. Three plasma sample were collected from each patient at 30 min. interval between 8-10 a.m. in order to measure gonadotropins (LH and FSH) and Testosterone (T), in a pool, by specific RIA methods. The results were compared to sex, age and weight matched controls. Twenty four fragments like biopsies were obtained immediatly after death from the 12 patients, in order to prevent autholisis. The following components were evaluated: germinal epithelium (GE) Sertoli cells (SC), tubular lumen (TL), cellular free lumen and basement membrane (BM).

RESULTS: The average hormonal levels($\bar{x} \pm s$) were 217,0 ± 54,8 ng/dl from T; 16,3 ± 4,7 mUI/ml from LH and 11,2 ± 2,7 mUI/ml from FSH. Testicular histology were divided into 3 groups: 1) subtle dearrangement from GE with young cells in the lumen, TL diminishment and BM thickening with all germinal components presents in 4 (36,4%) cases. 2) TL diminishment, GE height diminishment with tunica propria thickening, marked hypospermatogenesis with focal maturation arrest (CITO II), predominance of SC in 5 (45,5%) cases. 3) absence of GE with BM thickening, TL diminishment and a "Sertoli cell only" picture in 2 (18,1%) cases. The hormonal levels and the testicular histology from the prepubertal boy were similar to normal from age.

CONCLUSIONS: T levels but not LH or FSH were different and lower than normal controls. Althought there were no positive correlation between T levels and the degree of testicular dearrangement the highest gonadotrpin levels were founded among AIDS patients from group 2. These data suggest a pituitary-gonadal functional attempt of recovery in this group. In our cases testicular volume were under normal values, therewere tubular dearrangement and a concurrent disturbance of gonadal hormone levels. According to our findings we cannot exclude a double endocrine impairement at testicular and hypothalamic-pituitary level in AIDS.

M.B.P.267 HIV INDUCES GLUCOCORTICOID RESISTANCE IN MONONUCLEAR CELLS.

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Objective: To determine the mechanism of glucocorticoid resistance of mononuclear cells in some HIV-patients presenting clinical evidence of adrenocortical insufficiency (melanosis, marked hypotension, extreme fatigue and "water intoxication") but elevated levels of ACTH and plasma and urinary cortisol.

Methods: Saturation isothermes were constructed on mononuclear cells isolated by Ficoll-Hypaque, in 9 controls and 3 patients by adding increasing amounts of ^{3}H-dexamethasone (0.1-20nM). Non specific binding: 1µM. Results were evaluated by Scatchard analysis.

Results:

	K_d (nM)	B_{max} (fmol/10^6 cells)
1	14.2	39.5
2	4.4	17.7
3	6.1	14.5
Controls	2.2 ∓ 1.3	7.29 ∓ 5.2

Conclusions: The decrease of affinity (Kd) and the increase in glucocorticoid receptor number (B max) suggests peripheral glucorticoid resistence, with secondary ACTH and cortisol increase. HIV-infection may induce glucocorticoid resistance in man.

M.B.P.268 ASSESSMENT OF ADRENAL FUNCTION IN AIDS PATIENTS WITH DOCUMENTED CMV INFECTION -

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CMV infection occurs in up to 90% of pts with AIDS. Autopsy findings of adrenal infection by CMV are common.

OBJECTIVE: To assess the frequency of clinically significant adrenal insufficiency AIDS pts with documented CMV infection.

METHODS: 9 pts with severe CMV disease were assessed. 6 pts were evaluated at the time of initial hospitalization for induction with Ganciclovir (Group A). 3 pts were evaluated while on maintenance therapy (Group B). Serum sodium, potassium and serial BP's were obtained. A cortrosyn stimulation test was performed using 250 ug cosyntropin with cortisol levels drawn at time 0 and 60 min. Blood and urine were obtained for viral cultures.

RESULTS: 7/9 pts had normal cortrosyn stimulation tests. 2/9 pts had borderline tests, both represented advanced AIDS with multiple OI's and prior hospitalizations.

		-- mean --			Cmv/Cults		Cortrosyn stim		
Gp	#PTS	Na	K	BP	Blood	Urine	NL	Borderline	Abnl
A	6	135	4.5	108	0/4	2/4	5*	1***	0
B	3	137	4.0	112	0/1	0/1	2**	1***	0

* mean cortisol time 0 = 17.9, 60 min = 35.1. ** mean cortisol at time 0 = 10.1, 60 min = 26.7. *** cortisols at times 0 = 13.4 and 14.7, 60 min = 17.6 and 17.8.

CONCLUSIONS: In our ongoing series, normal adrenal function as assessed by cortrosyn stimulation was present in 5/6 pts at initial dx and 2/3 pts with ongoing disease. 2 pts had borderline stimulation tests. No patient had documented adrenal insufficiency. The incidence of clinically significant adrenal involvement would appear to be low with 2/9 pts having borderline responses requiring close follow-up. Pts with advanced AIDS appear to be at greatest risk of developing adrenal insufficiency.

M.B.P.269 MODIFICATIONS IN CIRCADIAN RHYTHMS OF PLASMA LEVELS OF CORTISOL, ACTH , TESTOSTERONE, AND ADRENAL ANDROGENS (DHEA AND DHEA-S) IN HIV-INFECTED MALE PATIENTS.

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Objective: Nycthemeral variations in plasma levels of cortisol, dehydroepiandrosterone (DHEA) and its sulfate (DHEA-S), testosterone and ACTH were studied in seven CDC2 and six CDC4 male patients and fourteen healthy subjects in order to detect modifications in hormone secretions occuring in HIV infection at various stages of the disease.

Methods: Plasma hormone levels were all determined by radioimmunoassay. Blood samples were collected every 4 hours from 08.30 a.m. to 08.30 a.m. the next morning. The cosinor method was used in order to detect the existence of a 24-hour rhythm and Student's t-test was applied to compare 24-hour mean hormone levels (mesors) and rhythm amplitudes.

Results: A significant 24-hour rhythm was found for each of the five hormones in the three groups of subjects studied.The secretory pattern of each hormone was very similar from one group to another and no apparent difference appeared in the shapes of the curves found for the various groups of subjects studied. Compared with normal subjects, mesors were significantly higher for cortisol ($p<0.001$) and lower for DHEA, DHEA-S and ACTH ($p<0.001$ for each hormone) in all HIV-infected patients. Twenty-four hour adjusted mean testosterone levels were similar in controls and CDC2 patients and significantly decreased ($p<0.05$) in the CDC4 patient group.

Conclusion: Analysis of the circadian rhythms of plasma hormone levels clearly indicated an altered adrenal hormonal state in all HIV-infected male patients, even during the asymptomatic period of the infection. During this period, although patients already had elevated plasma cortisol and lowered adrenal androgen levels, no hypogonadism was found, according to plasma testosterone levels.

M.B.P.270 DISORDERS OF LIPID METABOLISM IN AIDS

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High triglyceride and low cholesterol serum levels are frequent findings in patients with AIDS.

For a more precise evaluation of the lipid metabolism besides triglycerides and cholesterol free fatty acids (FFAs), lipoproteins and apolipoprotein subfractions were determined in the serum (fasting state) of 25 patients with AIDS and 8 patients with ARC (all men) by standard laboratory tests and compared to clinical and other laboratory data.

The most striking deficiency was found in the high density lipoprotein (HDL)-cholesterol fraction, which was decreased (<35 mg/dl) in 76% of patients, with extremely low levels (<15 mg/dl) in 24 % caused by a lack of apolipoprotein A_1 (in 85 % of patients) and A_2 (in 64 % of patients).

Of the FFAs palmitoleic acid was deminished in 28 %, stearoleic acid in 21 %, and the essential FFAs in 39 % of patients.

Deficiency of HDL-Cholesterol and FFAs worsened with the stadium of the disease and the extent of emaciation.

High triglyceride and low HDL-Cholesterol levels are commonly encountered in hepatitis, yet in this study there was no indication of inflammatory liver disease to cause the alteration. The extremely low concentration of HDL-cholesterol due to apolipoprotein A_1 deficiency, mainly in emaciated patients remind of heterozygous Tangier disease, in which lymphadenopathy, splenomegaly and macrophage dysfunction predominate. A follow-up study evaluating the benefit of substitutional therapies has been started.

M.B.P.271 HYPORENINEMIC HYPOALDOSTERONISM ASSOCIATED WITH HIV-1 POSITIVITY

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Objective. Hyporeninemic hypoaldosteronism,associated with HIV-1 infection has been reported (F. Kalin '87). In order to evaluate the occurence of this anomaly we set up a prospective study.
Methods. We measured plasma cortisol (F), aldosterone (Aldo) and renin activity (PRA) by specific radioimmuno assay as well as plasma and urinary ionogram in 217 HIV-1 infected caucasians (CDC stage 2 to 4). Control population was comparable for saxe, age, and sodium dietary content. Statiscal analysis was performed using Mann-Whitney test and multivariate analysis.

Table	number of	median	±	range
	subjects	F(ng/ml)	Aldo(ng/ml)	PRA(ng/ml xhr)
Controls	72	150(50-400)	0,13(0,04-0,39)	2,6(0,3-7,4)
		p < 0,05	p < 0,001	p < 0,001
HIV-1 +	217	179(40-470)	0,08(0,03-0,76)	1,6(0,3-10)

Results. F was significantly higher in patients than in controls (p < 0,05). Aldo and PRA were significantly lower in HIV-1 infected patients (p < 0,001). Neither of the parameters varied according to stage. Three patients presented an hyporeninemic hypoaldosteronism with persistent hyperkalemia.
Conclusion. Hyporeninemic hypoaldosteronism with intact glucocorticoid secretion in HIV-1-infection suggests a dysfunction of the juxtaglomerular apparatus rather than a primary adrenal damage (J. Glasgow,'85). The early presence of these features (stage 2) rules out any causal effect of opportunistic infections (stage 4) (L. Membreno '87), but suggests a direct effect of the virus or an auto-immune etiology.

M.B.P.272 COMPARISON OF THYROID BIOCHEMICAL ABNORMALITIES (TBA) IN ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) AND OTHER ILLNESSES.

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Transient TBA are currently observed in nonthyroidal-illnesses (NTI) and particularly in severe infections but their incidence in AIDS is not yet known. Therefore, we studied the thyroid function in 102 patients with AIDS (stages 1 to 4) aged 19-78 (group I), in 102 age-sex matched controls with various infectious diseases (group 2) and in 4302 unselected patients aged 15-99 (group 3), admitted to our medical service. Thyroid function was assessed by serum T4, T3, TBG, FTI (T4/TBG) and TSH. When a thyroid disease was suspected , a complete panel of investigations was performed including free T4 and T3, and TRH test.

A low T3 syndrome was observed in 20% of all patients, including AIDS patients. Thyroid diseases were found in one patient in group 1(1%) and in 84 patients in group 3 (2%). In clinically euthyroid patients, the other TBA were distributed as follows(in % in groups 1/ 2/ 3) : decreased T4 (7/3/2), decreased FTI (7/1/0.2), increased T4 (1/9/2.7), increased FTI (1/4/1.4), increased TSH (2/2/2). Moreover, in patients of group 3 with high TSH, 1.8% had normal FTI indicating euthyroidism. When compared to controls, patients with AIDS, although euthyroid, had significantly different mean values of T4 (AIDS vs Controls, 7.4 and 8.2 µg/dl, P<0.025), T3 (127 and 142 ng/dl, P<0.025), FTI (1.26 and 1.55 ng/dl, P<0.001), TSH (2.6 and 1.8 µU/ml, P<0.01). Mean serum thyroglobulin levels were not different in groups 1 and 2.

In conclusion : 1) Decreased T4 frequency is higher in AIDS than in other NTI although the proportion of true thyroid disease is the same; 2) abnormal TBG level accounts for more than half of TBA, particularly in patients with low T4; 3) consequently, FTI is the most appropriate tool for screening thyroid dysfunction in AIDS and NTI patients.

M.B.P.273 MYOCARDITIS IN INTRAVENOUS DRUG ABUSERS WITH AND WITHOUT ACQUIRED IMMUNODEFICIENCY SYNDROME: AN AUTOPSY STUDY

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Objective: To compare cardiac involvement in intravenous drug abusers (IVDA) with the acquired immunodeficiency syndrome (AIDS) to IVDA without AIDS.
Methods: Consecutive unselected autopsies in IVDA performed from 1983 to 1988 were reviewed. Of 177 autopsies of IVDA, anatomic, morphologic and histologic data were available in 42 patients (pts) (AIDS; 32 male, age 27-60) with AIDS (defined according to the clinical criteria of the Centers of Disease Control) and 25 pts (NON-AIDS; 14 male, age 31-58 years) without clinical AIDS. Myocarditis (MYOC) (Lymphocytic or plasma cell infiltration), dilatation of the left (LVDIL), right (RVDIL), or both ventricles (BVDIL), pericarditis (PERI), pericardial effusion (EFFUS) and endocarditis (ENDO) in both groups is shown below: (Some pts appear in more than one group.; *=p<0.05)

	MYOC	LVDIL	RVDIL	BVDIL	EFFUS	ENDO
AIDS (n=42)	24	5	7	4	10	7*
NON-AIDS (n=25)	17	4	3	3	4	15

Myocarditis is comparable in AIDS and NON-AIDS and is not related to cardiac chamber dilatation, pericardial disease or pyogenic infection. Severe bacterial infection, particularly endocarditis, is common in NON-AIDS (87%) but uncommon in AIDS (5%). Opportunistic infection occurs in AIDS and is not related to MYOC. In IVDA, with and without AIDS, myocarditis is common but unrelated to other pathologic states.

M.B.P.274 THE PATHOLOGY OF THE MALE GENITAL TRACT IN AIDS.

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Objective. The male genital tract of AIDS patients frequently contains lesions and abnormalities which could be clinically asymptomatic.
Method. To study the pathology of AIDS of the male genital tract, the prostates and testes of 80 consecutive AIDS autopsy cases were examined histologically and 14 were stained with the p17 anti HIV monoclonal antibody.
Results. The following opportunistic infections were identified; Toxoplasmosis of testes (2 cases), cytomegalovirus (5 cases - 1 testis, 4 prostates), candidiasis of prostatic urethra (1 case). Seven tumors were identified in the series. Three were apparently unrelated to AIDS, namely 1 Sertoli cell adenoma, and 2 well differentiated stage A prostatic carcinomas. The AIDS related neoplasms were 1 Kaposi's sarcoma of testis, 2 non-Hodgkin's lymphoma involving testes and prostates, and 1 primary immunoblastic lymphoma of testis. In addition marked spermatogenic arrest, germ cell degeneration, peritubal fibrosis and Leydig cell depletion were seen in all cases. The anti HIV p17 monoclonal antibody showed small random foci of positive staining in 8 of 14 testes cases studied, located over one or several degenerating germ cells. Nine of 14 prostates showed few minute foci of epithelial staining.
Conclusion. The male genital tract of AIDS patients contains opportunistic infections, neoplasms and apparent direct infection by the HIV virus.

M.B.P.275 GENITOANAL ULCERS IN HIV-INFECTION

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Objective. To examine frequency, etiology and significance of genitoanal ulcers in HIV-infected patients.-
Methods. 267 HIV-positive patients (84% male homosexuals, 16 % other risk groups; 19 asymptomatic (SLS), 87 LAS, 76 ARC, 85 AIDS) were examined repeatedly over a 4 year period. Genitoanal ulcers were examined clinically, microbiologically, serolgically and partly histologically.-
Results. Herpes simplex was the most important cause for anal ulcers:55/267 (21%) had at least one episode of ulcerating herpes analis. Incidence increased with advancing stage of HIV-infection: SLS none, LAS/ARC 15 % (32/162) and AIDS 33 % (29/87). The ulcers were atypical: extremely painful,"punched-out" lesions, showing no tendency to heal. On first manifestation the mean absolute CD 4-T-lymphocyte-count was 319/µl (lowest normal limit=490µl). 80 % of cultures showed positive results (HSV II=90%, HSV I=10%). Oral acyclovir was effective even in a dosage of 5 x 200 mg/d for 5-10d.- 2 genital ulcers were caused by treponema pallidum, once in combination with haemophilus ducreyi. Clinical picture and therapy were unremarkable.- Aphthous genital and oral ulcers occurred during the acute HIV-illness.-
Conclusion: Genitoanal ulcers should always remind of a possible HIV-infection. Furthermore, ulcerating herpes analis is a distinct clinical marker for a severe cellular immunodeficiency.

M.B.P.276 NEED FOR GYNECOLOGIC PROTOCOLS IN AIDS PRIMARY CARE CLINICS.

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Objective: To develop a protocol ensuring effective recognition and management of gynecologic disease in the increasing number of women attending a primary care clinic for HIVAb+ patients. Methods: A protocol was designed on the basis of: (1) a questionnaire on gynecologic symptoms and disease administered to 178 HIVAb+ women at our clinic; (2) review of literature and other available data on gynecologic disease in At Risk and HIVAb+ women with respect to prevalence, natural history and management of specific diseases; (3) review of currently available AIDS medical management guidelines. Results: Genital herpes and candidiasis, PID, and papilloma virus disease (condylomata, cervical dysplasia and carcinoma) were identified as diseases of particular concern in the management of HIVAb+ women. These diseases were found to be more prevalent, more aggressive, chronic and recurrent, and to require more extensive or different treatment than in HIVAb- women. They are not included in most current guidelines for medical management of HIVAb+ patients, and most gynecologic protocols in primary care have not been modified for HIVAb+ women. Conclusion: Providers should be informed on the unusual manifestations of gynecologic disease in HIVAb+ women. Conversely, severe or recurrent STDs should suggest the need for HIV counselling and testing. Special gynecologic protocols and services are necessary but not yet designed for effective management of At Risk and HIVAb+ women. Data is available for improved management of these patients in the primary care setting, and a trial protocol is now being tested in our clinic.

M.B.P.277 OUTCOME OF PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) ON CHRONIC DIALYSIS (D).

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In July 1987, we evaluated 165 adult patients undergoing Hemodialysis (HD) and CAPD;102 patients with a functioning kidney allograft (Tr) and 126 staff caring for them, for HIV infection. All patients and staff were evaluated serologically by ELISA (Abbot) to identify antibodies to specific HIV antigens. Each positive ELISA was confirmed by Western Blot, in two samples. There were two false positive ELISA reactions.

Prevalence of HIV infection (HIV+) was 2,7% in D; 1% in Tr and 0 in staff. Only one out of 6 HIV + patients was intravenous drug user (IDU),the remaining have not any other risk factors than blood trasfusions and 3 of them a previous Tr. Also 2 patients with IDU-HIV-associated nephropathy requiring chronic maintenance D were included in this study.

The 8 HIV+ patients,4 men and 4 women,aged 18-66, were followed during more than 18 months or till they died. Two HIV+ patients were on CAPD; 5 continued on HD,in an isolated unit, and the last one was Tr.The D sessions were performed using CDC guidelines for HIV preventing contagion. None new HIV+ patient has been observed in the periodically ELISA tests performed every 4 months in patients on D or Tr. All patients but one had OKT4 count and OKT4/OKT8 rate reduced.Three out of 8 HIV+ patients developed Acquired Immunodeficiency Syndrome (AIDS) (CDC 1987) and they died between 12-30 months after HIV+ was first observed.Two out of 3 patients who developed AIDS were IDU and the remaining only had blood trasfusions as known risk factor.

Blood transfusion or Tr, before 1987 was a likely way of contamination for HIV in our area. HIV+ patients on D had a high risk to develop AIDS. AIDS patients on D had a poor prognosis.

M.B.P.278 HENOCH-SCHONLEIN PURPURA & IgA GLOMERULONEPHRITIS ASSOCIATED WITH H.I.V. INFECTION

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Objective: A case of Henoch-Schonlein purpura & IgA glomerulonephritis in association with H.I.V. infection is described.

Results: 33 yr.Caucasian male (H.I.V. +ve since '85)developed purpuric rash on trunk, legs & buttock(typical H.S. distribution)with arthalgia in Nov.'87 & required 2 months steroid therapy until symptoms cleared. At presentation CD4 413 (500-1400) P24 antigen reactive 1+protein & blood on urinalysis. IgA↑3.14 (0.53-0.48 g/l). FBC,ESR,MBA & immunology screen negative. AZT commenced May'88. Subsequent anaemia required transfusion and dose reduction. Bacterial pneumonia Nov'88 treated with amoxycillin followed by acute renal failure. Creatinine 0.1mmol/l 23/10/88, 0.47mmol/l 3/11/88. Creatinine clearance 10/11/88 0.5 (1.5-2.5mL/s). 24 hour urinary protein 1.67 grams (vol.1014 - 0.3ml. creat.clearance). Urinalysis 4+ blood & protein. Renal biopsy "segmental necrotizing glomerulonephritis with IgA deposition consistent with H.S. syndrome supported by I.F. AZT ceased. Rx with pulse steroids & cyclophosphamide - developed haemorrhagic cystitis. Creatinine 0.25 16/12/88 with CD4 95, antigen +ve.

Conclusion: A case of classical H.S. purpura is described, initially responding to steroids, progressing to acute renal failure following an episode of pneumonia treated with amoxycillin. The patient was known to be H.I.V. & P24 antigen positive at onset of illness. The association has rarely been described & is not the typical picture of H.I.V. associated glomerulonephritis, i.e. focal segmental glomerulosclerosis with a nephrotic picture.

M.B.P.279 OUTCOME OF KIDNEY TRANSPLANTED PATIENTS WITH HIV

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The choice of renal transplantation for ESRD(End Stage Renal Disease) has been controverse since the first descriptions of such patients infected with HIV. We have followed up six(06) transplanted patients who had positive ELISA for HIV(confirmed by IMMUNOBLOT). All of them had diagnosis made after transplantation. Four(4) had sera collected before transplantation, that were available and tested for anti HIV.

Pat	sex	HIVdef Transp	Route Transm	Don	Drug	Follow up TimeTx	Follow up TimeDiag	Class	Creat
01	M	+	B.T.	L	P+A	38	38	IV C	1.6
02	M	+	B.T.	L	P+A	33	33	IV C	1.0
03	F	+	B.T.	c	P+C	17	17	III	1.2
04	M	-	K.A.	c	P+C	19	07	II	1.4
05	M	?	B.T.	L	P+A	28	07	II	1.3
06	M	?	D.A.	L.	P+A	96	04	II	1.0

Class=CDC.Classification,Creat=Seric.Creatinine(mg/dl), L= Living.donor,c=Cadaveric.donor,P=Prednisone,A=Azathioprine C=Ciclosporine,K.A.=Kidney.Allograft,D.A.=Drug.Addict,B.T.= Blood transfusion.Follow up time = Months.

The average follow up after transplantation was 38.5 months, and 16 months for HIV diagnosis. Two patients presented opportunistic infection(CMV retinitis and oral candidiasis). The good results in this short serie and the absence of a control group (HIV positive patients on dialysis treatment) do not allow us to conclude wich modality of treatment offers the best survival. Therefore we may not assume a policies of denying cadaveric allografts to ESRD patients infected with HIV.

M.B.P.280 LACK OF CLINICAL EVIDENCE FOR A GLOMERULOPATHY (GP) IN 203 PATIENTS WITH HIV-INFECTION

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Objective. Several authors described a nephrotic syndrome, frequently progressing to renal failure in more than 20% of patients with HIV-infection of different stages. Though renal histological changes were rather unspecific these authors postulated the existance of a HIV-associated GP. We therefore investigated proteinuria (PU) and serum creatinine (S-crea) in 203 HIV-patients.

Methods. 122 patients (gr1) had early stages of the disease without opportunistic infections (O.I.), 81 patients suffered from acute O.I. (gr2). In case of positive qualitative test (Combistix), quantitative measurement of PU (Biuret) was carried out; when PU was 0.5 g/l SDS-gel-electrophoresis (EPHO) was performed.

Results. None of gr1 patients had a PU 0.5 g/l or an elevated S-crea. 10/81 patients of gr2 had a PU between 0.5 and 3 g/l, one further of gr2 patients developed a transient PU of 4.7 g/l. Only 3 of the proteinuric patients had a glomerular pattern in EPHO, all 3 had CMV- or EBV-infections.14/81 patients showed a transient elevation of S-crea (x±SD of the max. S-crea: 164±43 umol/l) during pentamidine therapy for pneumocystis carinii infection, 1 PT treated with high dose acyclovir had to be temporarily dialyzed.

Conclusion. In our 203 HIV-patients no nephrotic syndrome and no sustained elevation of S-crea was observed. All cases of PU and transient elevations of S-crea were associated with severe O.I. and high doses of potentially nephrotoxic antibiotics.

M.B.P.281 NEPHROPATHY AS THE INITIAL SIGN OF AIDS:

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AIDS-associated nephropathy is characterised by the presence of focal and segmental glomerulosclerosis (FSGS) with rapidly progression to terminal renal failure. We study 303 HIV-infected patients, 280 men and 23 women. Risk factors were: 221 homossexuals, 37 hemophiliacs, 14 unknown, 13 heterossexual contacts, 12 blood transfusion, 6 IV drug addicts. We found nephrotic syndrome(NS) in 3 (0.9%) associated with azotemia in 2 (moderate in 1 and severe in 1). Renal biopsy showed FSGS in 2 an diffuse glomerulosclerosis in 1. All progressed to terminal renal failure, 2 died 2 an 14 months after the onset of NS. One has been submitted to maintenance hemodialysis for ten months.

In 2 patients(IV drug addict and unknown risk factor) the diagnosis of HIV infection was only possible when they presented opportunistic infections, 3 and 4 months after the onset of NS.

We conclude that NS may be the initial manifestation of HIV disease and we suggest that anti-HIV tests should be done in all adult nephrotic patients.

M.B.P.282 THE TREATMENT OF INFECTIOUS CAUSES OF AIDS-ASSOCIATED HEART DISEASE.

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Although we have found that some infectious causes of AIDS-associated heart disease are treatable, it was unclear if the odds of successful treatment were altered because of the presence of cardiac involvement. We therefore analysed the results of treatment in our own patients and in patients reported in the literature. Successful treatment of infection was defined as eradication of the cardiac pathogen after completion of the intended course of therapy. We found that the odds of successful treatment for tuberculous pericarditis were substantially lower than if the tb was extracardiac (33% vs. 60%). The only factor that separated those who succeeded from those who failed therapy was an elevated gamma globulin in those who succeeded. Symptomatic cardiac disease due to M. avium resulted in extremely short survival, regardless of treatment. For symptomatic cryptococcal myocarditis, the odds of successful treatment were no different in AIDS patients with extracardiac disseminated cryptococcosis. But it was only in cryptococcal myocarditis that improvement in cardiac function was demonstrated during specific therapy. S. typhimurium endocarditis (STE) was eradicated using conventional medication only, and did not relapse, even though no maintenance therapy was given. This suggests that STE may be easier to treat than S. typhimurium bacteremia without a known focus of infection. T. gondii heart disease appears to require at least 2 months of treatment. These observations suggest that although some infections are less likely to respond to treatment if there is cardiac involvement, mostly the response to treatment is similar to the response with only extracardiac disease.

M.B.P.283 ECHOCARDIOGRAPHIC ABNORMALITIES IN AIDS

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Objective. To determine cardiac involvement in AIDS.

Methods. Two-dimensional echocardiography was performed in 32 consecutive patients (mean age: 39 years; range 26–66), with AIDS, CDC-classification IV–C, who did not have cardiac complaints.

Results. Pericardial effusion was present in 13/32 patients (39%). Valvular abnormalities were present in 5/32 patients (15%), of whom 2 had vegetations and 3 a prolapsing mitral valve leaflet. Wall motion abnormalities were seen in 21/32 patients (63%) and varied from moderately depressed regional myocardial function to overt, severely impaired global left ventricular function (5 patients).
Cardiac abnormalities were absent in only 2 patients (6%).

Conclusions. Cardiac abnormalities are common in patients with AIDS and usually led to - subclinical - affection of myocardial function.

M.B.P.284 CHARACTERISTICS OF PATIENTS WITH AIDS-ASSOCIATED HEART DISEASE BUT NO DEMONSTRABLE CARDIAC PATHOGEN.

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We retrospectively studied 41 adult patients (18 known to us, 23 from the literature) with AIDS and symptomatic heart disease in whom the cause of the heart disease was assessed by culture and/or biopsy. Fifteen (36%) had no demonstrable cardiac pathogen (NoPath), 13 had infectious pericarditis, 8 had infectious myocarditis and 5 had a cardiac tumor. The NoPath group had a higher proportion of intravenous drug abusers and a much lower proportion of homosexuals (0.07, Newman-Keuls). Most (93%) in the NoPath group had AIDS rather than AIDS-related complex (ARC), whereas 38% of the infectious pericarditis group had ARC ($p=0.04$, X^2). The interval from the onset of AIDS or ARC to cardiac symptoms averaged 15.4 months in the NoPath group, versus 5.3 months in the groups with a cardiac pathogen (with 3 month cutpoint, $p=0.024$, Fishers). The NoPath group tended towards a higher frequency of prior P. carinii infection ($p=0.07$, Fishers), and all groups but those with cardiac tumor had a lower rate of prior cutaneous Kaposi's sarcoma ($p=0.04$, X^2). Other infections were equally distributed between groups. HIV was isolated from the heart in only 2 patients (pericardial fluid in 1 patient with infectious pericarditis; in the myocardium of 1 patient in the NoPath group). These data suggest that finding no demonstrable pathogen in an AIDS patient with symptomatic heart disease is common, may be due to a prior, healed infection, perhaps related to P. carinii, and probably is not due to a direct cardiac effect of the HIV virus.

M.B.P.285 LEFT VENTRICULAR DYSFUNCTION IN AIDS PATIENTS WITH SEVERE PNEUMOCYSTIS CARINII INFECTION.

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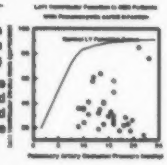
Objectives: Respiratory failure, secondary to *Pneumocystis carinii* infection (PCP) continues to have an extremely high mortality. Cardiomyopathy has been described in patients with AIDS (Raffanti SP, 1988). In this study we examined the hemodynamics of patients with PCP and severe respiratory failure.

Methods: We evaluated twelve patients (age = 34+/-8 yrs) with AIDS, documented PCP and severe respiratory failure (FIO2 = 0.85+/-0.16) requiring PEEP. We chose subjects who had no evidence of any concomitant bacterial, fungal, mycobacterial or viral infection as affirmed by lack of clinical site and negative cultures, including blood. Hemodynamic data were obtained with a balloon tipped pulmonary artery catheter. Cardiac outputs were obtained by thermodilution. Data were examined on admission to the ICU and at 12 and 24 hours.

Results: Our data showed:

	Pulse	MAP	MPAP	RA	PAOP	CI	LVSWI	SVR
Init	118 + 21	88 + 16	32 + 9	14 + 6	14 + 4	4.3 + 1.1	33 + 12	614 + 226
12hr	122 + 22	71 + 14	26 + 10	13 + 3	15 + 3	4.3 + 1.7	26 + 17	[illegible] + 103
24hr	122 + 22	77 + 14	27 + 9	16 + 6	17 + 4	4.4 + 1.8	40 + 19	[illegible] + 186



Conclusion: Our patients with PCP demonstrated a hyperdynamic state not unlike that associated with sepsis. We found them to have profound myocardial dysfunction, with left ventricular function curves shifted downward and to the right. This may have therapeutic implications in the management of AIDS patients with respiratory failure due to PCP.

M.B.P.286 ELECTROCARDIOGRAPHIC CHANGES IN PATIENTS RECEIVING PENTAMIDINE FOR THE TREATMENT OF PNEUMOCYSTOSIS.

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Department of Internal Medicine, University of Southern California, Los Angeles, California, U.S.A.

Objectives: In 1987, two patients developed torsade de pointe (TDP) on pentamidine for the treatment of *Pneumocystis carinii* pneumonia (PCP)in the absence of electrolyte abnormalities..The purpose of this study was to study the electrocardiographic effect of pentamidine (PTM)..
Results: WE prospectively obtained a serial of 12-lead ECG studies in 10 consecutive patients with AIDS and PCP who were receiving PTM.The ECG was obtained before administration of PTM, and 2.6 ± 0.8 days (cumulative dose of PTM 852 ± 414 mg).and 7.2 ± 1.1 days (cumulative dose 1882 ± 586 mg) after therapy. No patient had overt heart disease,thyroid abnormality or electrolyte disturbances.
Results: The heart rate at baseline was 88 ± 16, and that did not change on day 2.6 (97 ± 21) or day 7.2 (86 ± 22).Similarly, the PR interval of 146 ± 19 ms remained stable at days 2.6 (145 ± 22) and 7.2 (147 ± 21).Also QTc 0f 422 ± 22 remained unchanged (419 ± 20 on day 2.6 and 436 ± 32 on day 7.2).Although one patient had mild QTc prolongation from 420 to 510 ms there was no other ECG abnormality.
Conclusion: 1.Pentamidine produced no significant dose related ECG effects. 2.TDP appears to be an idiosyncratic complication of PTM.3.Abnormal QTc prolongation during therapy with PTM is relatively rare and when present, should be treated as a warning sign of impeding TDP.

M.B.P.287 *STAPHYLOCOCCUS AUREUS* ENDOCARDITIS IN HIV(+) AND HIV(-) INTRAVENOUS DRUG ABUSERS

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Objective. To evaluate the clinical presentation and outcome among HIV(+) and HIV(-) intravenous drug abusers (IVDA) with *S. aureus* endocarditis.
Methods. Retrospective chart review of 50 patients hospitalized for *S. aureus* endocarditis between March 1985 and November 1988 was done. 32 were HIV(+) and 18 HIV(-). 3 patients seroconverted. Age, sex, race, medical history, physical exam, laboratory parameters and outcome were assessed.
Results. Mean age was similar in both groups. More women (63%) than men (37%) were noted in the HIV(+) group. No difference in sex distribution was seen in the HIV(-) group. In HIV(+) group, 78% were black american; 19% white, and 3% hispanic. No racial differences were noted in the HIV (-) group. Fever-78% and cough-25% were less frequent presenting symptoms in HIV(+) compared with 95% and 72%, respectively, in HIV(-). No differences in physical and chest X-ray findings were noted. Mean hemoglobin (11.7) and white count (14.2) were higher in HIV(-) patients than HIV(+), respectively (10.8 and 10.5). More vegetations were identified in the HIV(-) group than HIV(+) (58% vs 24%). Recurrence of *S. aureus* endocarditis was the same in both groups. 4 patients had prior or concurrent opportunistic infections (OI). 4 developed OI within 10 mos of endocarditis. 8 HIV(+) patients died; 6 of complications of endocarditis, 1 of PCP, and 1 of an unrelated cause.
Conclusion. HIV(+) patients with *S. aureus* endocarditis were more likely to be black american women. Poor outcome and high fatality rate favored the HIV(+) group.

Néoplasme
Neoplasm

M.B.P.288 POLYCLONAL AND MONOCLONAL B-CELL LYMPHOMA IN AIDS

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Department of Medicine**, Veterans Administration Medical Center, San Francisco, CA, U.S.A.

Objectives: The identification of clinical characteristics associated with two molecular subgroups of AIDS-associated B-cell lymphoma.
Methods: Immunoglobulin gene rearrangement studies and DNA dot-blot analyses for Epstein-Barr virus (EBV) were performed on 23 lymphoma tissue specimens obtained at diagnosis from patients with AIDS-associated non-Hodgkin's lymphoma (NHL) and correlated with clinical features.
Results: Fourteen tumors were identified as monoclonal and nine as polyclonal. The polyclonal lymphomas included immunoblastic (6), diffuse large cell (2), and small noncleaved (1) histologies. Monoclonal lymphomas included immunoblastic (8), small noncleaved (5), and large cell (1). Six primary CNS lymphomas were all monoclonal, immunoblastic. EBV DNA sequences were identified in 4 of 7 monoclonal samples and 1 of 4 polyclonal samples. Non-CNS lymphoma patients with polyclonal disease (n=7) lived longer (median 12 vs 3.5 mos;p=.003), had higher total T4 cell counts (369 vs 120/mm^2; p=.01), and were more likely to have Stage I disease (4/7 vs 0/6;p=0.07) than those with monoclonal non-CNS disease. The frequency of a prior AIDS diagnosis, performance score, and the frequency of extranodal disease (known prognostic features) were similar in each group.
Conclusions: Molecular analysis suggests two disease processes in patients with AIDS-associated NHL, each associated with distinct clinical features and prognosis.

M.B.P.289 KAPOSI'S SARCOMA IN PATIENTS WITH HIV INFECTION

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Objective. To study the clinical features and response to treatment of KS in patients with HIV INFECTION.
Methods. All patients with HIV infection and histologically proven KS were studied. For staging purposes fibreoptic endoscopy was carried out. Patients were treated with combination chemotherapy using actinomycin D, vincristine and bleomycin.
Results. 101 (82%) patients were male and 22 (18%) were female. The mean age of males was 34 years and that for females was 31 years. Generalised lymphadenopathy was found in 107 (87%) patients. Skin lesions in the form of nodules, plaques or diffuse infiltration were found in 115 (93%) patients. 6 patients had mucosal lesions of KS, lymphadenopathy but no skin lesions while 2 had only lymphadenopathic KS. Mucosal lesions were found in the buccal cavity (52%), in the nasopharynx (4%), on the conjunctivae (7%), in the bronchi (17%). Two patients had concomitant infection with Pneumocystis carinii. 98 patients were treated and of the 76 evaluated treatment failure occurred in 18 (23%) while partial or complete remission occurred in 58 (77%). The cumulative death rate for a 24 month period was 35.8%.
Conclusions. Patients with AIDS-related KS respond well to chemotherapy with an initial dramatic improvement. However relapses frequently occur. Patients with pulmonary KS have a poorer prognosis.

M.B.P.290 LYMPHOMAS IN PATIENTS WITH HIV INFECTION.

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OBJECTIVE: We identified 18 patients with AIDS, AIDS-related complex or with serological evidence of HIV infection, seen at a single hospital since 1982, and analysed the clinical presentation, type of lymphoma, treatment and outcome to better understand their disease.
METHODS: Retrospective review of medical records and prospective follow up of patients seen since July of 1988.
RESULTS: 16 patients had non-Hodgkin's lymphoma (NHL); 1 Hodgkin's disease, and 1 had the simultaneous presence of both Hodgkin's disease and NHL. All patients were white homosexual men with a mean age of 38.2 years. In 47% this was the initial presentation of HIV infection. We classified 65% of the NHL as high grade (7 small noncleaved, 2 large cell, immunoblastic, and 2 high grade otherwise unclassifiable), 29% as intermediate grade (5 diffuse large cell), and 1 patient had a low grade lymphoplasmocytoid lymphoma. Extranodal involvement was present in 47% with the gastrointestinal tract and the liver being the common sites. Of 12 patients treated with chemotherapy, 7 treated with MACOP-B, achieved complete remission. However, one patient relapsed after 86 weeks. Both patients with Hodgkin's disease had an aggressive course with poor response to therapy.
CONCLUSIONS: High grade malignant lymphomas, frequently with atypical presentations, occur in patients infected with HIV and should be treated with intensive chemotherapy regardless of stage. The response to treatment with MACOP-B is favorable; however, late relapses can occur.

M.B.P.291 KAPOSI'S SARCOMA - CLINICAL DISTRIBUTION, OPPORTUNISTIC INFECTIONS AND SURVIVAL.

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Objective: To evaluate the clinical distribution, Opportunistic Infection (OI) and survival of AIDS patients with Kaposi's Sarcoma (KS).
Methods: Of 235 patients meeting the CDC case definition for AIDS, 59 (25,10%) were diagnosed with KS. These were evaluated for clinical distribution and examined for occurence of opportunistic infections. Cumulative survival rate was assessed in 22 patients (Cutler, Ederer 1958) with KS with and without OI.
Results: Kaposi's Sarcoma occurred in 59 male patients, 35 homosexual (59,32%) and 26 bisexual men (44,00%). The skin was involved in 54 patients (91,5%), lymphnodes 16 (27,11%), gastrointestinal tract 16 (27,11%), lung 3 (5,08), genitourinary tract 2 (3,38%) and brain 1 (1,7%). We observed infections in 48 (81,35%). Candidiasis was the most frequent OI occurring in 39 patients (66,10%), Mycobacterium tuberculosis in 13 (22,03%), Criptosporidium in 10 (16,94%) and cerebral toxoplasmosis in 9 (15,25%). The proportion surviving one-year among 22 patients with KS with and without OI was 85%, two-year-survival 25% and three-year and four-year survival was 14%. Among 18 patients with both KS and OI, one-year-survival was 70% but a sharp drop occurs thereafter: by two years only 7% survive and none survive three years.
Conclusions: The prevalence of KS in our AIDS patients is high (25,10%). All patients were homo/bisexual men. The majority of KS involved skin, lymphnodes and GI tract. Opportunistic infections seem to be responsible for decreased survival in KS.

M.B.P.292 LOWER GENITAL TRACT NEOPLASIA. ITS INCIDENCE IN HIV INFECTED WOMEN AND THE ROLE OF HUMAN PAPILLOMA VIRUS (HPV) AND OTHER RISK FACTORS.

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A high incidence of cervical dysplasia has been noted in HIV positive women. Therefore, 29 women infected with HIV were studied cytologically and by colpobiopsy. Results are as follows:

	Mode of Transmission										
	IV	Hetero.	B. Trans.	NORMAL	ATYPIA	CIN*	INV*	VIN*	VAIN*	CLINICAL HPV	SUBCLINICAL HPV
No of patients	14	12	3	5	1	10	0	3	0	12	8
% of patients	48%	41%	11%	17%	3%	34%	0%	10%	0%	41%	28%

69% of our study group had evidence of HPV infection and 41% had lower genital tract neoplasia. However, these high percentages may be a function of increased exposure to other well recognised risk factors for such disease, eg. age of first sexual intercourse, number of sexual partners, smoking etc. We will present the results of a study, including HPV sub-types, carefully controlled for these factors and designed to investigate the role of HIV and the immunosuppression incurred as a result of HIV infection in the increased incidence of lower genital tract neoplasia in this group.

* CIN = cervical intra-epithelial neoplasia. VIN = vulval intra-epithelial neoplasia.
INV = invasion, micro or macro. VAIN = vaginal intra-epithelial neoplasia.

M.B.P.293 MALIGNANT NEOPLASMS IN SURGICAL SPECIMENS OF DIFFERENT AIDS RISK GROUPS.

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We examined 1107 surgical specimens from 323 AIDS patients to determine frequency and site of malignant neoplasms (MN) and differences, if any, among the two major risk groups of homosexuals (HS) and IV drug abusers (IVDA). There were 121 patients (37%) with MN, including 88 (27%) with Kaposi's sarcoma (KS), and 27 (8%) with malignant lymphoma (ML). Four HS had both KS and ML. Five patients had squamous cell carcinoma (SCC) and one prostatic carcinoma. KS was found in 73 of 178 skin biopsies (bx)(41%), and constituted the most common opportunistic disease (OD) at this site. KS was also found in 15 of 81 lymph node bx (19%), 10 of 194 digestive tract bx (5%), 8 of 329 lung bx (2.4%), 4 of 21 oropharyngeal bx (19%), and 1 of 73 liver bx (1.4%). KS was the first presenting OD in 69 of 88 (78%) patients. KS was 7 times more common in HS vs IVDA and was diagnosed in 70 of 187 HS (37%) vs 5 of 100 IVDA (5%). Malignant lymphoma (ML) was found in 14 of 81 lymph node bx (17%), 5 of 194 digestive tract bx (2.6%), 5 of 167 bone marrow bx (3%), 3 of 178 skin bx (1.7%), 2 of 8 brain bx (25%), and once each in soft tissue, liver, oral mucosa, and lung. ML was the first presenting OD in 17 of 27 (63%) patients. ML occurred with approximately equal frequency in HS and IVDA [20 of 187 HS (10%), 8 of 100 IVDA (8%)]. ML was, however, more frequently seen in extranodal sites in HS (16 of 24; 66%) than in IVDA (3 of 8; 37%). SCC occurred in larynx (2), anus (1), penis (1), and skin (1) and exclusively in HS. We conclude that KS is the most frequent MN in HS, and ML in IVDA. ML is more commonly extranodal in HS than in IVDA.

M.B.P.294 B-ALL in HIV-positive 27 y.o. man .

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Objective. To present the clinical course of B-ALL in HIV-positive heroin abuser, the response to therapy and the autopsy findings .
Methods. 27 y.o. man, HIV-positive (CD4< 0.2 x 10^9/L and skin anergy) , heroin abuser, with lymphadenopaty , splenomegaly , anemia and thrombocytopenia . Acute oligoblastic leukemia with massive infiltration of bone marrow biopsy by FAB L3 lymphoblasts, PAS positive. Phenotype : Calla (CD10) 90% , CD 19,20 90% , DR 94% ; negative for T-cells and myeloid markers . Cytogenetic : t(8;14). The blasts cells were negative for EB Nuclear Antigen (EBNA). Chest X-ray, CAT, and cerebral fluid cytology were negative for tumour. Therapy: two courses of induction therapy (ciclophosphamide, vincristine, adryamicyn, and VP16) and CNS prophilaxis with methotrexate and prednisone.
Results. Poor and short partial remission was obtained. During aplasia bilateral pneumonia of u.o.. A few days later the patient developed dramatic blasts regrowth with fever,hemorragic diathesis and coma. Cerebral CAT : tumour of u.o. The patient died after "down-hill" course.
Autopsy findings : leukemic dissemination ; pulmonary cavitation by Aspergillus Fumigatus; cerebral tumour by leukemic mass.
Conclusions.B-LLA is rarely associated to HIV-infection: few, but increasing reports in literature. Some authors are the opinion that the current CDC classification of AIDS should be widened to include B-cell ALL in HIV-seropositive subjects.
The course was dramatic and therapy ineffective as reported by others authors.

M.B.P.295 UNUSUAL PRESENTATION AND CLINICO-PATHOLOGICAL CORRELATIONS IN NON HODGKIN'S LYMPHOMAS (NHL) ASSOCIATED WITH HIV INFECTION

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We have evaluated the potential correlations between histopathology, clinical expression and immunodeficiency status in 57 patients with NHL associated with HIV infection.

Histopathology (n)	Stage		CDC group		CD4 cells/mm³	
	I-IIE	III-IV	IV	II-III	< 200	> 200
Immunoblastic (13)	10	3	10	3	7	2
Diffuse large cell(29)	13	16	10	19	13	11
Burkitt (15)	2	13	4	11	3	8

Patients with immunoblastic NHL had low CD4 cell counts, belonged to CDC group IV and presented usually with localized extra-nodal tumor:skin(4), brain (2), gut (2), lung (1), kidney (1). Patients with Burkitt lymphoma had a disseminated disease with bone marrow involvement in 5/15 and central nervous system involvement in 4/15, but often asymptomatic HIV infection. Patients with diffuse large cell NHL had an intermediate status.

M.B.P.296 ABSENCE OF HLA DR5 AND KAPOSI'S SARCOMA IN TRINIDAD & TOBAGO

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Although the association of Kaposi's Sarcoma (KS) and HLA Dr5 has not been found in all reports the majority of studies have shown an increased antigen frequency of DR5 and in some studies a concomitant decreased frequency of DR3 both in endemic KS and HIV associated KS. Trinidad and Tobago has a population of 1.2 million people comprising people of African origin (41%), Indian origin from North India (41%), Mixed race (16%), Caucasian 1% and Chinese 1%. The people of African origin came to Trinidad via the slave trade from 1680 and the Indians from North India as indentured labourers from 1845. Up to December 31, 1988 there were 389 cases of AIDS in Trinidad, 288 of whom were Afro-Trinidadians and 26 Indo-Trinidadians. However, there were only 3 cases of KS all of whom were in people of predominantly Caucasian ancestry. There is no IV drug abuse in Trinidad. Statistics of DR3 antigen frequencies show a frequency of 31.6 in African blacks, 28.0 in North American blacks, 29.0 in North Indians, 25.2 in Afro Trinidadians and 21.5 in Indo-Trinidadians. On the other hand, while the DR5 antigen frequencies were 24.8 in African blacks, 29.2 in N. American blacks and 22.6 in N. Indians, it was only 8.5 in Indo-Trinidadians and absent in Afro-Trinidadians. The absence of DR5 in this population may then explain the extremely low incidence of KS in Trinidad and Tobago and supports the epidemiological claims for an association between KS and DR5.

M.B.P.297 KAPOSI'S SARCOMA (KS) IN WOMEN WITH ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Cheung, Tony W. and Siegal F. Queens Hospital Center(QHC)and Long Island Jewish Medical Center (LIJ), Jamaica and New Hyde Park, N. Y. 11432 and SUNY at Stony Brook, N. Y. 11794, U. S. A.

Most patients(pts) with AIDS related KS are male homosexuals. KS in female patients with AIDS is rare.
Objective. To survey cases of AIDS related KS in women and examine their clinical course.
Methods. Records from tumor registries and patient charts from private oncologists from QHC and LIJ were reviewed. A literature computer search was also used to look for cases of female AIDS related KS.
Results. Seven patients range in age from 23 to 34 years; 5 are black,1 Hispanic and 1 Haitian. Six patients, except the Haitian, are intravenous drug users. All pts developed opportunistic infections: oral candidiasis (7),Pneumocystis carinii pneumonia (3), genital herpes simplex(3),herpes labialis(1), CMV infection(2). All pts except one were diagnosed to have KS clinically and confirmed by biopsy; 6 have dermal involvement with visible skin lesions of the trunk and lower extremities. Chest x-ray of these 6 patients showed interstitial infiltrates. Bronchoscopy confirmed KS. The seventh patient presented with angioimmunoblastic lymphadenopathy; later right eye proptosis developed which, on biopsy, revealed non-Hodgkin's lymphoma. She expired 4 months later and on autopsy there was KS in the lung and stomach. Survival of all 7 pts was only 1 to 6 months (median 3-4 months).
Conclusion. Women with AIDS related KS have a very aggressive course. All cases presented have pulmonary involvement. We suggest that the putative etiological agent(s) can be transmitted by the intravenous route.

M.B.P.298 LYMPHOBLASTIC LEUKEMIA IN HIV-INFECTED PATIENTS

Minoli,Lorenzo;Maserati, R.; Pan, A.; Malfitano, A.; Sacchi,R Pagnucco, G.*. Infectious Disease and *Hematology Depts., IRCCS San Matteo, Università di Pavia, 27100 Pavia ITALY.

Among the hematologic malignancies arising in HIV-infected pts., acute lymphoblastic leukemia (ALL) is often classified as belonging to the FAB L3 subtype (Burkitt-like). We recently observed 2 cases of L3 ALL featured by almost the same biological findings but different clinical presentations.
CASE 1. A 45 yrs. old bisexual male was admitted for fever and purpura; no lymphnodal, hepatic or splenic enlargement was noticed. Peripheral and bone marrow studies showed the presence of large-sized, vacuolized, hyperbasophilic blasts, whose immunological pattern was: HLA-DR +; sIg + (IgM,IgG,λ); CD19 (B4) +; CD20 (B1) +; CD10 (CALLA) +. A 4-wk induction regimen with VCR, DOX and CYT, DEX plus i.t. MTX was completed and followed by 2 intensification courses with HD MTX, HD Ara-C, m-AMSA and VP16. Remission lasted 11 mos., until the pt. died despite salvage treatment (MITOX).
CASE 2. This 30 yrs. old male drug abuser was admitted with fever, diffuse skeletal pain and axillar lymphnodal, liver and splenic enlargement. His hematological disease was almost identical to that of case 1, with exactly the same blast markers. Paraplegia due to an intraspinal lymphomatous mass (showed by positive myelography) complicated the clinical presentation. Currently the pt. is being treated with the same induction regimen as case 1.
ALLs in HIV-infected pts. may present with a wide array of symptoms and require an aggressiva therapeutic approach,

M.B.P.299 PREDICTORS OF SHORTENED SURVIVAL IN PATIENTS WITH KAPOSI'S SARCOMA AND HIV-1-INFECTION

Tschechne, Barbara; Brunkhorst, U.; Schedel, I. and Deicher, H.
Hannover Medical School, Hannover, F.R. Germany.

Objective. To determine clinical, viral and immunological characteristics at the time of diagnosis of Kaposi's sarcoma in patients with HIV-1-infection in correlation to survival.
Methods. HIV-1-infected patients with biopsy proven Kaposi's sarcoma were contracted in this study.
Results. During observation period of this study (37 months) 21 patients with HIV-1-infection and Kapos's sarcoma were identified. 19/21 patients had contracted other bacterial, viral and/or opportunistic infections. In our study the prognosis of Kaposi's sarcoma depends on the appearance of other concomitant infectious agents such as Pneumocystis carinii, CMV etc. Furthermore the decrease of CD4/CD8-ratio, prevalence of specific p24-antigen i.e. and loss of specific antibodies to p24-core-protein corresponds with a poor prognosis.
Conclusion. Predictors of shortened survival in patients with HIV-1-infection and biopsy proven Kaposi's sarcoma included loss of specific antibody to p24, p24-antigenaemia, decreased CD4/CD8-ratio and/or appearance of opportunistic infections such as PCP.

M.B.P.300 TREATMENT OF DISSEMINATED MYCOBACTERIUM AVIUM (MAI) WITH CIPROFLOXACIN (CPF), ETHAMBUTOL (ETH), RIFAMPIN (RIF) AND AMIKACIN (AMK).

Chiu, Joseph; Nussbaum, J.; Bozzette, S.; Young, L.; Hesseltine, P.; and McCutchan, J.A., California Collaborative Treatment Group, USA.

Objective. To assess the clinical and microbiological response to a multiple drug regimen for disseminated MAI.
Methods. 17 AIDS pts. with sustained MAI bacteremia were treated with AMK (7.5mg/kg/day for first 4 wks.), CPF (750mg BID), ETH (15mg/kg/day), and RIF (10mg/kg/day) for at least 3 months. Median time since AIDS diagnosis was 21 wks (range 2-52) and since outset of possible MAI symptoms (see table) was 4 wks. (range 0-38).
Results. Log_{10} median colony forming units (CFU) fell by 1.2 (2.4→1.2) in 4 wks in concert with decreased prevalence of symptoms. Improvements were sustained thru 12 wks. in those who tolerated therapy. Treatment was terminated prematurely (<12 wks.) for nausea (4) and hepatitis (2).

WEEKS	0	4	8	12	>16
NUMBER OF PATIENTS	17	15	11	10	6
MEDIAN CFU./ML (LOG_{10})	2.4	1.2	1.3	1.2	0.2
FEVER %	94	27	36	30	71
WEIGHT LOSS %	88	53	45	60	57
NIGHT SWEATS %	82	40	18	10	29
DIARRHEA %	41	27	18	40	57

Conclusion. This regimen relieves symptoms and reduces bacteremia in a majority of patients, but has significant toxicity, requires parenteral administration, and does not frequently terminate bacteremia.

Programmes de soins infirmiers : éducation
Nursing Health Care Programmes: Education

M.B.P.301 PATIENT COMPLIANCE AND TERMINATION IN COMMUNITY-BASED CLINICAL TRIALS OF AIDS TREATMENT.

Holzemer, Stephen P.; and Seeman, J.D. Community Research Initiative, New York, NY, U.S.A.

Objective. To present an analysis of data concerning participant compliance and termination in clinical trials.
Methods. We analyzed drop-out rates for participants enrolled in clinical trials carried out in the past year by the Community Research Initiative. We also estimated the effect of certain interventions designed to diminish drop-out rate.
Results. Of 260 participants in two trials over a one-year period, 60% remain in the trial. Reasons for termination include death, intercurrent illness, voluntary withdrawal, and noncompliance. We estimate that in the latter two categories, a 25% greater drop-out rate would have occurred were it not for our initiation of at-home and in-hospital visits to provide treatment, and initiation of telephone counselling and on-site supportive intervention to participants and to their lay care-givers.
Conclusion. A high drop-out rate should be anticipated in clinical trials involving persons with AIDS/ARC. It can be compensated for by increasing the number of participants, and by augmenting personnel to provide aggressive case-management, as illustrated.

M.B.P.302 CLINICAL IMPACT OF CASE MANAGEMENT BY AN INPATIENT AIDS CLINICAL NURSE SPECIALIST ON COSTS AND QUALITY OF PATIENT CARE

Diane E. Schull, Parkland Memorial Hospital, Dallas, Texas, USA.

Objective: To study the effects of an inpatient AIDS Clinical Nurse Specialist and case management practice on costs, clinical outcomes and quality of patient care.
Methods: The patient populations used in this study were those inpatient admissions in 1988, 1987, 1986 and documented as HIV+, ARC, or AIDS. Data was analyzed for two (2) time periods related to the appointment of an inpatient-based Clinical Nurse Specialist (CNS) in 1988. Case management included the identification and classification of each patient and upon admission, daily patient contact and anticipatory and comprehensive planning during each phase of the patient's illness. The case management protocol extended beyond hospitalization to include discharge and follow-up into the outpatient AIDS clinic. Average length of stay (LOS) and readmissions were the indexes used to evaluate cost-effectiveness and quality of care respectively.
Results:

Group I: 1986	Group II: 1987	Group III: Oct.-Dec. 1988	
n = 191	n = 331	n = 150	
LOS 11.66	LOS 11.51	LOS 9.03	p = < 0.05*
readmission 31%	readmission 33%	readmission 11%	p = < 0.05*

* chi square analysis

The average LOS was 11.66 days in 1986 and 11.51 days in 1987. With the involvement of an inpatient-based AIDS Clinical Nurse Specialist, the average LOS was decreased to 9.03 days. The percentage of readmissions to the institution was 31% in 1986 and 33% in 1987, and similarly fell to 11% in 1988.
Conclusion: The results of this study indicate that LOS and readmission rates are significantly reduced by the role of an inpatient-based CNS and case management.

M.B.P.303 THE ROLE OF NURSING IN MANAGING COMMUNITY-BASED RESEARCH

Holzemer, Stephen P.; Tomita, M.; Forrest, J.; Bennett, J.; and Scherer, P. Community Research Initiative (CRI) New York. NY, U.S.A.

Objective. To describe problems encountered and resolutions developed in management of community-based research from a nursing perspective.
Methods. Identification of problems and resolutions in the following categories: protocol development and implementation, data collection, quality assurance, budgeting for research, case-management in recruitment and retention of research subjects, and personnel management.
Results. The New York CRI is the first free-standing, community-based research organization in the USA. The CRI-model has created methods of managing clinical research trials from a community perspective. The CRI-model has been developed with clinical nurses assuming a major role in management of clinical trials.
Conclusion. Using clinical research nurses to manage clinical trials provides one approach to successful operation of community-based research. Our experience should be of value to those planning or implementing a community-based research model.

M.B.P.304 NURSING IN THE COMMUNITY FOR PEOPLE WITH HIV: DESCRIPTION OF A TRAINING/IMPLEMENTATION PROGRAMME

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*Oxford Regional Health Authority, Oxford, UK, **Oxfordshire Health Authority, Oxford, UK.

Objective. To develop and implement a training programme to ensure the most effective utilization of community nursing services by people with HIV infection and disease.
Methods. Experience in Oxfordshire of working with HIV disease was confined mostly to acute sector staff, thus blocking the full utilization of community care by people with HIV. Integration of HIV care into community nursing services was achieved by developing a facility whereby one community nurse from each population-based geographical sector was released for training and work on the in-patient wards.
Results. Nurses were able to facilitate the care at home of patients through liaison between hospital and local primary health care (PHC) teams, and by sharing knowledge and experience with colleagues. The programme was implemneted by identifying staff, devising a training curriculum and providing the policy and resource back up which was necessary. These processes will be fully described in the presentation.
Conclusion. Care in the community must be actively developed. The specialization of services in the acute sector reduces the care options for the patient. Such development is most effective when implemented through the PHC team setting in the community.

M.B.P.305 PROJECTIVE REPORT ABOUT SELF, FAMILY, ENVIRONMENT AND DISCOMFORT ASSOCIATED WITH SYMPTOMATIC HUMAN IMMUNODEFICIENCY VIRUS INFECTION IN CHILDREN.

Schwartz, P., Carter, Susan, Raburn, T., and Hanson, I.
Baylor College of Medicine/Texas Children's Hospital, Houston, Texas.

Objective. To demonstrate that the child with AIDS and symptomatic HIV infection can describe the progression of physical discomfort through the use of colors, body outline drawings, and visual analog.
Methods. Projective drawings and visual analogs are solicited monthly over a 2 year period while children are outpatients at a hospital clinic. Drawings are analyzed using standard analysis guidelines for children's art. Visual analogs (facial scales) are analyzed on the interval level comparing parent and medical report of the child's health to the scores on the scale.
Results. Preliminary results on 8 children over an 11 month period indicate that children can pinpoint in drawings sites of physical discomfort, as well as sources of psychological distress. The 3 children with stable family lives indicate varying degrees of physical discomfort through their drawings, but depict happy self, family, and environment, thus showing a relatively low visual analog score (the lower the score, the "happier" the child). The 5 other children with less stable home environments and/or behavioral disorders have higher visual analog scores.
Conclusion. Preliminary results indicate that communication through art work can be constructive and predictive in children who may not be able to communicate their feelings verbally. These drawings are also helpful in determining sites of discomfort, therefore enhancing healthcare.

M.B.P.306 INFECTION CONTROL NURSE ROLE: POWERFUL CHANGE AGENT IN PSYCHIATRIC SYSTEMS IN THE ERA OF AIDS

Sheila Dollard-Pavlis*, J. Gordon**, *Connecticut Mental Health Center, Yale-New Haven Medical Center, New Haven; **University of New Haven, West Haven, CT, U.S.A.

Objective. Because psychiatric units tend to stress psychosocial rather than medical aspects of care, practitioners in these settings are generally less comfortable with Infection Control (IC) procedures and are concerned about how these will adversely affect the established therapeutic milieu. The successful integration of AIDS patients on these units will depend on the Infection Control Nurses (ICN) ability to innovatively conceptualize the role as a key organizational change agent. Using a frame of reference common to psychiatric-mental health nursing (P-MHN) and sociology, attention is focused on the pivotal role of ICN in shaping organizational response to the first cohorts of HIV affected persons in psychiatric systems.
Mehtods. Relevant concepts are presented, drawn from data gathered from participant/non-participant observations, survey responses and informal interview of staff, patients and families. Confidentiality is maintained by presenting illustrative case material synthesized from published and unpublished sources.
Results. Given the anxiety AIDS engenders among psychiatric administrators and staff, the ICN is thrust into prominence and must shape policies and procedures that govern patient treatment and staff behaviors. In an atmosphere frequently fraught with tension and urgency, the ICN must rapidly develop a plan that maximizes administrative goals, facilitates treatment and protects patients, families and staff. Realization of these sometimes conflicting tasks will depend on the knowledge, sensitivity and abilities of the ICN whose active attitudes and personal attributes can create a hostile or therapeutic involvement.
Conclusions. The successful integration of AIDS patients on psychiatric units requires an ICN who attends to the interrelationships of biopsychosocial theories, research and practices. The ICN, who has a strong background in both IC and P-MHN can be a powerful positive influence and lend authenticity and acceptability to the IC policies and procedures in a psychiatric system.

M.B.P.307

HIV SELF ASSESSMENT AND CARE PROGRAM

Tom Emanuele, R.N., AIDS Nurse Clinician, AIDS Clinic, Parkland Memorial Hospital, Dallas, Texas, U.S.A.

OBJECTIVE: To develop a comprehensive program of preventative care services for eligible clients utilizing a Registered Nurse (R.N.) as a consistent primary caregiver.
METHOD: The client must first throughly understand what Human Immunodeficiency Virus (HIV) is and what it means to them. Secondly they must understand normal vs. abnormal in reference to their health status. Finally they must be taught how to assess themselves for any changes in their health status. The components of the program are HIV counseling according to C.D.C. standards, complete physical exam for HIV infection staging, and patient education to teach the client to perform self-exam to assess for changes from their baseline health status.

Eligibility criteria are ascertained by the R.N. Clinician, and are: HIV seropositivity, desire and mental ability to learn self-assessment. Projected outcomes include increase in client and staff satisfaction, reduction of morbid events, hospitalizations and need for emergency services, maintenance of wellness, independence and financial stability
CONCLUSION: This program allows for the earliest entry of the client into the healthcare network while allowing them to remain productive members of society through their self-care and physical status assessment.

M.B.P.308

OUTBREAK OF NORWEGIAN SCABIES AMONG HEALTH-CARE WORKERS

Kelly, Ann; Fry, C.
St. Stephen's Hospital, London, England.

Objective To control an atypical outbreak of Norwegian Scabies amongst patients who were immuno-suppressed on an Aids designated ward. Diagnosing and treating 40 health-care workers and their partners and close contacts. Preventing the spread to non-infected persons from one severely infestated patient.

Method

1) Diagnosing and surveillance of an outbreak of atypical Norwegian Scabies and identifying infected health-care workers and patients.
2) Co-ordinating the treatment by ensuring all ward personnel were contacted and treated simultaneously. One other patient was treated at the same time.
3) Continued surveillance until all personnel were asymptomatic.
4) Standards of the ward had to be maintained and ensure infected staff were not giving direct patient care.

Results

1) Effectively contained the outbreak.
2) Prevented spread to uninfected persons.
3) Maintained the high standards of nursing care on the ward.

Conclusion

1) When patients are seen with skin problems Norwegian Scabies may be considered, so outbreaks can be prevented.
2) Similar method of treatment recommended as it proved to be effective.
3) Health-care workers and patients followed up as re-infestation could re-occur.

M.B.P.309

DEVELOPING COMMUNITY NURSES SKILLS IN HIV/AIDS PROGRAMMES

*Snee Thomas, and Robottom B**, Pratt R***, Wills C*** Kuykendall J***, Newbury J***. *Department of Health, London England, UK and ***English National Board for Nursing, Midwifery and Health Visiting, London, England, UK. ***Riverside Health Authority, London, England, UK.

Objectives:- A Government initiative aimed at improving levels of understanding among community nurses of HIV infection and AIDS; to provide opportunities for them to examine personal attitudes which may be obstacles to effective care and preventative treatment; to encourage their participation in HIV programmes.

Methods:- Workshops of two day duration were held in 14 Health Regions in England to demonstrate dissemination of information by a cascade effect; between 20 and 40 senior nurse managers took part in each. Sessions were facilitated by a team experienced in the care of HIV infected people. On completion each participant was asked to list specific initiatives to be implemented locally. Six months later participants were followed-up to determine achievements, barriers encountered and possible solutions to them. An evaluation was made of the effectiveness of the Workshop with a view towards making recommendations on local and national policy.

Results:- Various initiatives set up demonstrated that Districts with low HIV prevalance encountered difficulties in sustaining the initiative. More enthusiastic follow-up was demonstrated in Districts with perceived growing AIDS caseloads. In all participants, levels of confidence improved.

Conclusions:- A method of initiating cascade communication is a beneficial method of using key people who, after analysing their own attitudes to the subject had sufficient influence to effect change.

M.B.P.310

TOTAL HOME HEALTH CARE FOR PATIENTS WITH HIV DISEASE

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Windsor Home Care, Inc., New York, NY, U.S.A.

Objective: To develop and implement a program for the transfer of the comprehensive health care of the AIDS patient to the home setting providing a more desirable alternative to the costly hospital setting particularly in light of the shortage of beds in hospitals where AIDS is endemic.
Methods: Describe and implement a program which encompasses total health care services for the AIDS patient in the home setting.
Results: Program components developed and implemented are: 1) Physicians knowledgable & compassionate in the care of the AIDS patient with a sound belief level in home care as a viable alternative; 2) Nursing service case management & coordination focussed on the AIDS patient in complete collaboration with the physicians; the following services are necessary: a. Direct caregivers specially trained in the care of the AIDS patient with IV therapy and teaching programs for patients & family. A "wellness" program is inherent for sound health practice & counselling, b. Vendors to provide IV therapy pharmaceuticals & supplies, durable medical equipment, medical transport & lab services who are sensitive to the special needs of the AIDS patient, c. Therapeutic professionals such as SWs, PTs, OTs & STs to provide rehabilitative services & crisis intervention, d. Community support services for meal delivery, pet care & support groups for patient & family; 3) Health care cost payors with cost-effectiveness & compassion for the AIDS patients' preference for home health care; 4) Out-patient facilities to provide for necessary transfusions, invasive procedures & testing. In 1988, 350 patients have been provided with this type of care in the NYC metropolitan area.
Conclusion: AIDS patients can receive cost-effective, comprehensive, safe and compassionate home health care.

M.B.P.311

INTERDISCIPLINARY HIV CASE MANAGEMENT TEAM

Tom Emanuele, R.N., K. Joy, RN, BSN, L. McMurtry, MSSW, Parkland Memorial Hospital, Dallas, Texas, USA.

OBJECTIVE: To develop a system to coordinate appropriate home care services for Persons with AIDS (PWA's) within a model utilizing components from existing nursing process and social work case management models.
METHOD: Establishing a hospital-based case manager to assess patient needs and coordinate implementation of necessary medical and social services through regularly scheduled weekly networking case conferences. Collaboration of existing community-based AIDS service organizations involved with Parkland patients to provide needed hospital, clinic and community-based services.
RESULTS: By discussing spiritual, psychosocial and healthcare needs of 25-40 patients at each meeting and identifying actual and potential problems, group members discuss means of addressing them without duplicating efforts and providing for smooth transition for the client from hospital to home or clinic to home. With few exceptions the team can assure discharge to home for our patients.
CONCLUSION: Networking has made it possible to start discharge planning on admission and as a result, decrease length of stay. The team now has the flexibility to quickly respond when healthcare outcomes do not meet expectations.

M.B.P.312

A DESCRIPTION OF NYC'S GAY POPULATION AS A LEGITIMATE COMMUNITY: AND IT'S RESPONSE TO HIV DISEASE.

Smith, Donald G.*; Lyden, M.**; May, K.***
*Mount Sinai Medical Center, New York, New York, USA, **New York University Medical Center, New York, New York, USA, ***University of Arizona, Tucson, Arizona USA.

Objective. (1)To describe and evaluate the NYC gay population as a legitimate community by standard definitions. (2)To perform a nursing assessment on the affect of HIV disease on the community and recommend nursing interventions.
Methods. A needs assessment was performed by interviews with groups representing the community; ie. NYC's Office of Gay and Lesbian Health Concerns, interviews of NYC gay males and a literature review of published studies on AIDS within the community.
Results. The NYC gay population identifies themselves as a community and meets current definitions of community. The assessment showed direct affect on the community. It identified goals for the community's health: (1)Return of the community to a state of health. (2)To prevent an increase of the number of AIDS cases within the community. (3) To reduce the number of other STD's.
Conclusion. We identified a community, who's health is in crisis. It has identified it's own goals on returning to health, and developed a response through community involvement. We identified ways Community Health nurses can assist the community in it's return to health, by developing nursing programs to support the Person with AIDS. (2)By supporting community educational programs on prevention. (3)Planning additional resources for the community.

M.B.P.313 LOS ANGELES PEDIATRIC AIDS NETWORK (LAPAN): A COUNTY-WIDE MODEL TO MAXIMIZE SERVICE DELIVERY FOR CHILDREN DIAGNOSED WITH HIV, AND THEIR FAMILIES.

Garell, D.C., Kaplan, Marcy E., California Children Services, Los Angeles California, USA.

Objective: To promote interagency collaboration and facilitate effective service provision to children with HIV and their families. This project addresses current and future resource needs, clinical case management of all HIV patients, and social service concerns. Methods: Hospitals and community-based organizations (CBO's) were brought together to form the LAPAN Coordinating Council. An automated case management system is being developed to facilitate communication, create a common data base and use of CBO's. Terminals will be placed and social workers assigned at 7 participating hospitals. A formal needs assessment has been completed. Joint collaboration has also been established with staff from an NIH-funded treatment grant and a CDC Pediatric Surveillance Grant. LAPAN has also established a Consortium (LAPAC) to increase communication and exchange ideas amongst front-line professionals providing direct service. Results: The demonstration project has developed an automated case management system, methods to prevent duplication of service delivery, and has enhanced utilization. Conclusions: The creation of an infrastructure to manage pediatric HIV cases in Los Angeles is critical. Multiple use of resources and joint planning has been essential to meet the needs of this multi-problem population.

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M.B.P.314 THE DEVELOPMENT OF A PRENATAL-PEDIATRIC AIDS LIASON SERVICE AT A MUNICIPAL HOSPITAL

Laqueur, Peter, Urcuyo L., Tropnas J., Grier P., Abisogun B., Watts L. - Woodhull Medical & Mental Health Center, Brooklyn, NY, USA.

Objective. To describe the development of a unique Prenatal-Pediatric AIDS Liason Service at a municipal hospital.
Methods and Results. Woodhull Medical & Mental Health Center, a division of NYC Health and Hospitals Corporation, is a large municipal hospital serving an impoverished black and latino community with a high incidence of IVDU and a high seroprevelenc rate for HIV. Increased outreach, counselling and testing, specifically targetted to women and children at risk for HIV-associated illnesses, has resulted in the need for a comprehensive, interdisciplinary approach to perinatal HIV infection. The Prenatal-Pediatric AIDS Liason Service (P-PALS), funded through the NYC Department of Mental Health, was developed to provide the necessary linkages between the Departments of Obstetrics, Pediatrics, Psychiatry, Medicine and Ambulatory Care to provide a family-oriented approach which optimizes continuity of care. The focus of the program is to assist the HIV positive pregnant woman and her family in coping with the possibility that her infant may be born HIV positive and to provide ongoing social, psychiatric and medical care for families who have children with HIV associated illness. The professional staff is comprised of a team which includes a child psychiatrist, social worker, nurse clinician and child life worker. Issues of foster care placement will also be highlighted.
Conclusion. Unified early intervention will improve the care of the woman and her child, diminish the need for long term placement, and provide a model of care based on the family rather than focussing individually on the mother and child.

M.B.P.315 COMPREHENSIVE CARE PROGRAM FOR CHILDREN WITH HIV-RELATED PROBLEMS AND THEIR CARE GIVERS

Read, Stanley, King, S.M., Arneson, C., Palmer, S., Goldie, R., Szewczyk, L., Lefebvre, A., et al. Hospital for Sick Children, Toronto, Canada.

Objectives: To provide comprehensive medical, social and psychological care and support for children with HIV-related problems and their care givers.
Methods: HIV positive children and their care givers are followed by a team of medical specialists, along with team members from nursing, psychology, psychiatry, social work, clinical nutrition, pharmacy, pastoral care and Childrens Aid. Three comprehensive care programs are coordinated to provide optimal care. These include the Hemophilia Comprehensive Care Program, the Adolescent Medicine Program and the HIV Comprehensive Care Program. Psychiatric involvement emphasizes development of coping mechanisms for dealing with stress. Serial psychometric testing is done.
Results: To date, about 50 HIV-positive children are followed by the combined programs. Of these, 35 are children with hemophilia, 5 are neonatal transmissions, 5 are blood transfusion recipients and 5 are adolescent street prostitutes.
Conclusion: An integrated program combining medical, psychologic and social services provides optimal care for children with HIV infection and their care givers.

M.B.P.316 LES SOINS INFIRMIERS FACE A L'EPIDEMIE DE SIDA

Schneeberger, Claudie. Val de Marne, France.

Devant la complexité de cette épidémie, dégager les différents rôle de l'infirmière en matière de soins infirmiers:

Dans L'accueil et la prise en charge des malades atteints du SIDA, l'accompagnement tout au long de la maladie et dans les derniers instants de la vie en organisant les mesures préventives permettant une plus grande sécurité dans les gestes techniques des soignants.

En développant une attitude professionnelle appropriée respectant l'homme dans ses différences lui assurant la confidentialité et préservant sa dignité.

Dans le cadre des actions de prévention la responsabilité de l'infirmière dans la participation aux programmes d'information de la population pour apprendre à éviter le SIDA.

Son rôle dans l'éducation pour modifier les habitudes les plus intimes et conduire chaque personne vers une gestion globale de sa santé en développant des attitudes responsables.

M.B.P.317 THE EFFECTIVENESS AND FEASIBILITY OF HOSPITAL-BASED SUPPORT GROUP INTERVENTION FOR PARENTS OF HIV-INFECTED CHILDREN

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Objective: To evaluate the effectiveness of a support group for parents of HIV-infected children. Methods: 21 group members were recruited from the Clinical Immunology Center at CHLA and other referral agencies in Los Angeles. HIV status of children varied from asymptomatic to full-blown AIDS. Mode of transmission included blood transfusion (15) and perinatal (6). Group met bi-weekly from 1/87 through 8/88. Results: During the first six months, attendance ranged from 7-11 participants; all had children with treatment-associated HIV. 24 parents elected not to attend the group, citing feelings of increased stigma and isolation. Others discontinued participation citing depression and anxiety induced by clinical problems described in other participant's children. As the proportion of perinatal cases increased, participation in group declined. Conclusions: Ongoing group support intervention for parents with HIV-infected children resulted in unexpected difficulties. Dysfunctional families are additionally burdened by the ramifications of HIV in multiple family members. Support group attendance may not be a priority. Alternative support services must be developed to meet the needs of this multi-problem population.

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M.B.P.318 HIV AND MATERNAL CHILD HEALTH: EXPANDING THE EXPERTISE AMONG PROVIDERS

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Objective. To describe a training program which seeks to expand HIV expertise among non-physician health providers in maternal child health (MCH).

Methods. In California, 150 contract agencies throughout the state provide maternal child health care with the support of the State Department of Health Services. These programs include prenatal health care, follow up for high risk and addicted infants, care for disabled or delayed children, health care and parenting education for teen parents, etc. However, many MCH providers in the state feel that HIV expertise rests primarily with a few specialists in major urban areas (San Francisco and Los Angeles). This presentation will describe rationales for expanding HIV expertise to maternal child health providers throughout the state and discuss a specific training protocol designed to help accomplish this goal.

Results. Five two-day trainings will be held throughout the state by May 30, 1989. We will offer preliminary evaluation of the program's success. The complete training manual will be available for review.

Conclusions. A training program for maternal child health providers can expand HIV expertise to individuals and areas that are not currently confident of their ability to provide such care.

Supported in part by a grant from the California State Office of AIDS, contract # 88-94560.

M.B.P.319 A COMPARISON OF HEALTH CARE DELIVERED TO PEOPLE WITH AIDS AND ARC BY A NURSE PRACTITIONER AND A PHYSICIAN-A CASE MATCHED RETROSPECTIVE STUDY

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OBJECTIVE: To compare health care delivered to people with AIDS and ARC by a Nurse Practitioner (NP) and a Physician (MD).
METHODS: A retrospective study was conducted on 22 AIDS and ARC patients randomly assigned to an NP and an MD for health care in an outpatient clinic. All subjects were gay men on Zidovudine for one year or longer.
RESULTS: Each sample consisted of 7 men with AIDS and 4 with ARC. The MD group had 2 with KS at the onset compared with 4 in the NP group.

	months in study	# of visits	initial T4#	changes in T4#	changes in WBC	changes in Hct	changes in weight	serious OI's	hospital-izations
MD	14.09	11.2	176	-62	-.55	-1.61	-5.85 lbs	4	5
NP	14.5	14.8	141	-45	-.96	-3.08	-5.18 lbs	4	4

NP subjects were followed longer and seen more frequently. Initial T4 values were similar as were changes in blood parameters. Hct differences were affected by transfusions(11 by MD, 0 by NP). The groups were remarkably similar in the number of HIV related hospitalizations and serious OI's.
CONCLUSION: A Nurse Practitioner can provide health care to people with AIDS and ARC, equal in quality and safety, to that of a Physician in an outpatient setting.

M.B.P.320 SURVEY OF TENNESSEE NURSES ATTITUDES TOWARD AIDS

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Objective. To describe knowledge and attitudes of nurses regarding AIDS.
Methods. The survey contained questions which focused on respondents' perceptions of their needs for information about AIDS/HIV, treatment, risk factors, referral sources, and learning modalities.
Results. Most nurses (N314) would assist in treatment of HIV-positive patients. Nurses tended to refer patients to public health departments and social workers for counseling. Nurses usually obtained information regarding AIDS from journals and conferences. Only about one half of the nurses were satisfied with their current level of knowledge of AIDS.
Conclusion. The survey provided useful information in the development of training materials and programs for nurses.

M.B.P.321 GAY GRIEF IN THE CONTEXT OF AIDS

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Objective. To examine the biopsychosocial phenomenon of gay grief in the context of AIDS, as well as explore nursing interventions pertinent to this topic.
Methods. The topic is approached from a theoretical perspective, using the relevant literature on homosexuality and grief in combination with the author's own observations and conceptualisations. Gay grief is defined as the grief experienced by homosexual individuals who lose a significant other. For the purposes of this paper this definition is narrowed further to include only homosexual men who have lost a lover to AIDS. The purpose of the discussion is to sensitize the audience to this important phenomenon by comparing and contrasting conventional grief theories to the unique issues faced by bereaved lovers of AIDS patients. In light of the physical, psychological and social issues brought to light by the AIDS crisis, nurses need to be aware of variables interfering with normal, healthy grief reactions within this clientele. The detrimental effects of bereavement on the immune system are discussed as well as the possible role intense grief can play in the onset of AIDS in the HIV seropositive individual.
Results. A conceptual framework for looking at grief and bereavement in lovers of AIDS patients is presented as a tool for understanding gay grief and guiding nursing interventions.
Conclusion. Very little is as yet known about specific grief reactions in the homosexual community. This paper highlights some of the main issues.

M.B.P.322 PROVIDER EDUCATION: THE EFFECT OF AIDS INSERVICE TRAINING ON NURSING STAFF IN A PSYCHIATRIC SETTING.

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Objective: To decrease nurses AIDS related anxiety and improve AIDS education and counseling skills.
Methods: Fortyfive minute inservices were conducted for night nursing staff from four units in a psychiatric hospital. Nineteen nurses completed pre and post inservice surveys. The surveys measured the nurse's level of anxiety, comfort and knowledge concerning important issues in the care of patients with AIDS. The nurse's level of commitment to incorporating AIDS related issues in patient education was also measured.
Results: Survey results indicate a 16% increase in the maximum level (75-100 on a scale of 0-100) of commitment to incorporating safe sex and risk factors in patient education. Maximum comfort level increased 25% for discussing safe sex practices with patients and 10% for discussing risk factors. A 37% increase in maximum comfort level with knowledge of CDC defined AIDS, ARC and HIV positive was reported. A 43% increase in maximum comfort level with counseling HIV positive patients and a 16% increase in maximum comfort with counselling patients with AIDS was indicated. There was also a significant increase in the mean level of comfort in the previous categories. The survey indicated no significant change in anxiety concerning infection when working with patients with AIDS.
Conclusions: Inservice education for nurses caring for HIV infected patients can increase their commitment to AIDS related patient education as well as their comfort level with counseling patients and knowledge concerning AIDS related issues.

Thérapie et évaluation clinique : pharmacologie
Therapy and Clinical Evaluation: Pharmacology

M.B.P.323 PHARMACOKINETICS OF ZIDOVUDINE IN AIDS PATIENTS : INFLUENCE OF AGE AND HEPATIC DISORDERS

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Objective : Pharmacokinetics of Zidovudine was evaluated in 31 AIDS patients after oral chronic administration of 300 mg qid or 3 mg/kg qid in infants. Patients were divided into 4 groups : infants (6-12 months), adults (25-55 years), elderly (>60 years), and patients with hepatic disorders (HD).

Methods : Pharmacokinetic profiles were determinated at steady-state during 6 hours after drug administration. Plasma concentrations were determinated by reversed phase HPLC with spectrophotometric detection.

Results :

Mean ± SEM	Cmin ng/ml	Cmax ng/ml	Tmax min	T1/2 min	Clp ml/min	Vd l/kg
Infants	15 ± 3	1745 ± 285	30 ± 0	64.8 ± 2.4	288 ± 6	3.0 ± 0.3
Adults	65 ± 19	1773 ± 203	51 ± 7	85.2 ± 7.8	1561 ± 115	2.5 ± 0.3
Elderly	96 ± 36	2857 ± 1728	50 ± 21	129.6 ± 32.8	1035 ± 275	4.1 ± 2.4
H D	209 ± 81	2916 ± 1034	60 ± 19	109.2 ± 12.0	1203 ± 592	3.2 ± 1.4

Conclusion: Pharmacokinetic data obtained in infants validate the choosen dosage regimen. In elderly and in patients with hepatic disorders, kinetic parameters show a noticeable decrease of zidovudine elimination rate. High peak and trough plasma concentrations may indicate toxic drug accumulation. We suggest, in these high-risk patients, to lengthen the time interval between dose intake.

M.B.P.324 EVALUATION OF LESS FREQUENT ZIDOVUDINE DOSING IN CHILDREN WITH SYMPTOMATIC HIV INFECTION

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Objective: To evaluate the tolerance and pharmacokinetics of less frequent zidovudine dosing regimens in children with symptomatic HIV infection.
Method: In this ongoing phase 1 study children aged between 3 months and 6 years with symptomatic HIV infection but not AIDS, are being randomized to receive oral zidovudine at the following daily dosage: Group A - 600 mg/m^2, Group B - 720 mg/m^2.
For the first 4 weeks the zidovudine is administered in 4 equally divided doses. Thereafter the frequency of dosing is reduced to twice daily. the randomization is stratified according to age (3 months - 2 years and 2 years - 6 years). On days 0 (post dose 1), 28, 56 and 84 blood samples are being taken at regular times intervals for the assay of zidovudine levels.
The patients tolerance to therapy, clinical and virological status is being assessed at 2 weekly intervals.
Results: Fourteen children have been included, 8 older than 2 years (mean age 37.5 mo) and 6 younger (mean age 9.5 mo). All children fulfilled the laboratory criteria of HIV infection and were classified as falling into category P2A plus at least one other subgroup of the CDC classification of HIV in children. Six of the 14 children have received the twice daily dosage regimen for approximately one month without experiencing any adverse effects. To date the drug has been well tolerated and no dose modifications have been required.
Conclusions: The results of this study should indicate whether further evaluation of twice daily dosing in children is warranted.

M.B.P.325 CYANOCOBALAMIN (VITAMIN B_{12}) SUPPLEMENTATION DOES NOT PREVENT THE HEMATOLOGIC TOXICITY OF AZIDOTHYMIDINE (AZT)

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Objective. AZT and B_{12} deficiency both produce macrocytic anemia. Low normal serum B_{12} levels (<400 pg/ml) are associated with increased risk of granulocytopenia in AIDS and ARC patients taking AZT. Accordingly, we conducted a controlled trial to see if monthly B_{12} injections could prevent hematologic toxicity from AZT.

Method. 172 AIDS and ARC patients with serum B_{12} levels >200 pg/ml who were beginning (128) or taking (44) AZT at standard doses (1-1.2 grams/day) were randomly assigned to receive either four monthly IM injections of 1 mg of B_{12} or no injections. Serum B_{12}, WBC, absolute neutrophil counts (ANC), hemoglobin (HGB) mean corpuscular volume (MCV), platelets (PLT) and, AZT dose were followed monthly for at least six months.

Results. Mean B_{12} levels were increased four weeks after the first injection and remained elevated compared to controls throughout the study. Although by chance B_{12} recipients had higher ANC levels than controls at entry (2887 vs 2477, p=.032), all subsequent means of ANC, WBC, HGB, MCV, and platelets were similar (p>.08 for all comparisons). No differences in AZT tolerance or transfusion requirements were found.

Conclusion. Four monthly IM injections of B_{12} sufficient to increase serum B_{12} levels did not reduce the hematologic toxicity of AZT given for currently licensed indications.

M.B.P.326 ZIDOVUDINE MYOPATHY-A PROSPECTIVE STUDY

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Objective. To study the relationship between Zidovudine (AZT) administration, myopathy and creatine kinase (CK).

Methods. 102 AIDS patients were seen monthly and clinical features of myopathy were recorded, including myalgia, muscle fatigue, reduced power and muscle wasting. Monthly CK levels were estimated. 78 of the patients were on regular AZT (usual dose 1000-1200mg/day) and 33 of these had been treated for 300 days or more. 24 patients not on AZT were studied as a control group to deliniate other causes of CK rise.

Patient	Onset of Myopathy Days on AZT (x)	Onset of Rise in CK Days on AZT (y)	x-y (Days)
1	371	290	81
2	426	275	51
3	350	312	38
4	350	300	50
5	323	270	53
6	378	326	52
MEAN	366	312	54

Results. Myopathy was severe and disabling, mainly affecting the legs and was preceded by a rise in CK. CK continued to rise to very high levels (>1000IU/l) during treatment. Dose reduction was ineffective, but marked clinical recovery occurred within 2 months of stopping AZT; CK levels fell to normal within 4 weeks.

Conclusion. 1.Sustained rises in CK provide the first indication of Zidovudine myopathy, hence CK should be routinely performed.
2.Myopathy is a progressive disabling complication of Zidovudine therapy, occurring in 18% (6/33) of patients on long-term therapy (>300 days).

M.B.P.327 NON CONCLUSIVE RESULTS IN HIV WESTERN BLOT ANALYSIS OF MOZAMBICAN SERA.

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Objective:To describe the pattern of reaction of Mozambican sera with non conclusive results on HIV Western Blot Analysis.

Methodology:Serum samples from urban general population, blood donors, AIDS suspected cases and war displaced population repeatedly reactives by ELISA for HIV1 and HIV 2 antibodies and with non conclusive results in Western Blot were classified in relation with their protein band reaction. Some of them were tested by different commercially available WB kits. The frequency of the different observed pattern of reactivities was estimated.

Results:The most frequent observed reactivity patterns were reaction with p 24 band for HIV 1 WB (38%) and p26 for HIV 2 WB (20.6%). However in HIV 2 WB, 10.9% of sera analysed showed reaction with p68,p56,p36,p26 and p16 without any reaction with glycoprotein bands. Non conclusive results were more frequently found in HIV 2 than in HIV 1 WB. Some non conclusive sera by LAV BLOT II when tested by HIV 2 Dupont de Nemours and HTLV-IV SBL Western Blots showed also non conclusive pattern of reactivity. Same happened when non conclusive sera by HIV 1 Bio-Rad WB were tested by HIV 1 Dupont de Nemours WB. Non conclusive results appeared in sera from all the studied population groups.

Conclusion:Appearence of non conclusive results in WB analysis of ELISA positive Mozambican sera seems to be independent of the reagents used and due to sera or individuals characteristics.

M.B.P.328 A STUDY OF THE SAFETY AND EFFICACY OF RECOMBINANT HUMAN ERYTHROPOIETIN (r-HuEPO) IN AIDS PATIENTS WITH ANEMIA INDUCED BY THEIR DISEASE AND ZIDOVUDINE (RETROVIR, AZT) THERAPY

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Objective. To determine if anemic AIDS patients who are all on concomitant zidovudine therapy and are transfusion-dependent have any measurable change in their hematocrit, hemoglobin and reticulocyte count after treatment with r-HuEPO.

Methods.Nine evaluable subjects with a pretreatment hematocrit of 30% or less were treated with ascending doses of r-HuEPO up to 900 u/kg weekly for 24 weeks. Patients were on daily doses of zidovudine of 400 to 4200 mg. The hematocrit, hemoglobin and reticulocyte count were obtained on a weekly basis.

Results.All but one subject attained a hematocrit of 38-40% during the 24 week trial, becoming transfusion-independent.

Conclusions.r-HuEPO appears to be a possible adjunctive therapy for AIDS patients who are anemic due to their disease and zidovudine therapy. This durg merits further wide-scale clinical trials.

M.B.P.329 MYOPATHY ASSOCIATED WITH LONG-TERM ZIDOVUDINE THERAPY

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Objective. To evaluate the frequency and clinical presentation of myopathy associated with long-term zidovudine therapy.

Methods. Patients receiving zidovudine for >40 wks were assessed, using medical history, physical exam and blood tests. Patients identified with possible myopathy were further evaluated with EMG and muscle biopsy.

Results. 50 patients (33 AIDS,17 ARC) had received zidovudine for a mean of 73 wks (range 40-140 wks). 15 (30%) had myopathy as manifested by myalgias-80%, muscle wasting-93%, and rhabdomyolysis-7%. Muscle groups involved included proximal muscles in the lower extremities-100% and upper extremities-27%, and intercostal muscles-13%. Associated symptoms included arthralgias-47%, weight loss >4kg-93%, and paresthesias-40%. Blood tests included persistently elevated LDH (1.5-2X normal) and CPK (1.5-8X normal). EMG was consistent with myopathy. Muscle biopsy showed degenerated myofibers, rare microvacuolar changes, and mild inflammation. Myopathy occurred in 53% of ARC patients and 18% of AIDS patients. Onset was between 52-107 wks of therapy and in patients having received a mean cumulative dose of 600-800gms. 8 patients required drug interruption. Symptoms improved within 1-8 wks. LDH decreased in all patients by 8 wks and CPK in 87% of patients by 4 wks. 4/8 patients developed recurrent symptoms within 1 week of restarting zidovudine.

Conclusion. Myopathy is common in patients receiving long-term zidovudine. Proximal muscle wasting in the lower extremities was the most common finding. Increased LDH was an early indication of myopathy.

M.B.P.330 HIV ASSOCIATED MYOPATHY: FEATURES IN 21 PATIENTS AND ROLE OF AZT

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Objective. To describe the features of 21 patients with HIV-associated myopathy as well as the role of AZT in this disorder.

Methods. All patients were evaluated at Mount Sinai Hospital. Electrophysiological testing included nerve conduction studies and needle electromyography (EMG). Muscle biopsies were processed by light and electron microscopy, and viral localization performed with immunohistochemistry and in situ hybridization.

Results. 12 patients had AIDS, 4 had ARC, and 5 were asymptomatic HIV-seropositive. 5 had been diagnosed as AIDS Wasting Syndrome. All presented with proximal muscle weakness. Creatine kinase (CK) levels were elevated over a wide range (mean 1438 IU/L). EMG revealed myopathic motor units in all patients, with abnormal spontaneous activity in 17. Muscle biopsy findings in 20 patients included inflammatory or noninflammatory myofiber degeneration, nemaline rods, cytoplasmic bodies and vacuolization. 8 of 9 patients treated with corticosteroids improved. 10 patients had never been treated with AZT. Of 11 patients on AZT, the myopathy worsened after AZT withdrawal in 4, and 2 improved with its reinstitution.

Conclusion. Myopathy is associated with HIV infection, and may be misdiagnosed as AIDS Wasting Syndrome. Corticosteroid therapy is effective. In our series, AZT does not appear causally linked to this disorder.

M.B.P.331 SERUM LEVEL AND SERUM KINETIC OF ZIDOVUDINE: INVESTIGATION WITH A RADIOIMMUNOASSAY (RIA)

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To evaluate serum levels and serum kinetics of Zidovudine (Azidothymidin, AZT) with different dosagne and dosage intervals, serum samples of patients who had Zidovudine treatment have been investigated retro- and prospectively. Analysis was performed with a radioimmunoassay (ZDV-Trac™ RIA).

Retrospectively 282 serum samples of 47 patients were examined. Blood samples have been obtained two hours after oral application. The mean Zidovudine concentration was 735 nmol/l, 1272 nmol/l, and 1387 nmol/l when dosages of 6 x 100 mg/d, 6 x 200 mg/d, and 6 x 300 mg/d were applied, respectively.

Prospectively, serum kinetics of Zidovudine has been investigated at start of therapy. Five hours after application of 100 or 200 mg Zidovudine, serum concentration has fallen below 130 nmol/l, being reported to be the minimal effective serum concentration. After application of 250, 300 and 500 mg, serum concentration have been below 130 mg after 6 hours.

The RIA was highly specific, no cross-reactivity and non-specific reactivity has been noted.

Zidovudine is an intracellular active compound. Therefore, serum levels are of limited value. After retrospective correlation with the outcome of patients, recommendations of dosage regimens atributable to serum levels are reasonable. In long dosage intervals, effective intracellular concentration may not be achieved.

M.B.P.332 PHARMACOKINETICS(PK) OF ZIDOVUDINE(ZDV) IN ADULT PATIENTS WITH HIV INFECTION AND HEPATIC DISEASE (HD)

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Objective. To determine ZDV's PK in patients with HIV infection and HD.
Methods. In an ongoing study, patients were stratified into 5 categories of stable HD according to serum ALT (<5X to >30X normal), TBIL and PT. On sequential study days, each patient received a single dose each of ZDV 120 mg IV followed by ZDV 200 mg PO. Multiple blood samples were obtained. ZDV and GZDV conc. were determined by HPLC and analyzed using noncompartmental methods.
Results. Five patients (3 males, 2 females) with HD and ALT values between 1.5 to 10 X normal and normal TBIL and PT values have completed the study. ZDV/GZDV PK are presented below:

	IV		PO	
	ZDV	GZDV	ZDV	GZDV
C^{max} (ug/mL)	1.5 ± 0.5	1.5 ± 0.2	1.9 ± 0.3	5.4 ± 1.4
AUC (ug/mL x hr)	1.6 ± 0.5	2.8 ± 0.4	1.7 ± 0.1	7.9 ± 0.8
F (%)	---	---	0.7 ± 0.1	---
$t_{1/2}$ (hr)	1.6 ± 0.3	1.9 ± 0.7	1.7 ± 0.5	1.4 ± 0.2
Vdss (L/kg)	1.8 ± 0.8	---	2.1 ± 1.0	---
TBC (L/hr/kg)	1.1 ± 0.4	---	1.3 ± 0.3	---

Conclusion: Preliminary ZDV and GZDV PK data in patients with mild HD is similar to previously reported data in patients with normal renal and hepatic function. Patients with moderate and advanced HD are under study.

M.B.P.333 ASSESSMENT BY PCR OF HIV-1 ACTIVITY IN AIDS-KS PATIENTS TREATED WITH RECOMBINANT INTERFERON ALPHA (r-IFNa)

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Objective. To evaluate the effect of r-IFNa on HIV-1 replication in AIDS.
Methods. Eight patients with AIDS-KS receiving daily injections of r-IFNa (Schering) for therapy of KS tumors were studied multiple times over 1 to 2 years for serum levels of HIV-1 antigen (Ag), reverse transcriptase activity (RTA), and gene detection by PCR. PCR was performed on extracted DNA using simultaneous amplification of GAG and ENV sequences followed by selective hybridization with the respective probes .
Results. Five of 8 cases were tumor responders; 4 complete, 1 partial. Prior to therapy, PCR and RTA were positive in all eight cases, and Ag was found in 7 cases (1 tumor nonresponder was persistently negative). Antigen or RTA levels decreased in 5/5 tumor responders (2 Ag, 2 RTA, 1 both). In 1 nonresponder, viral DNA became undetectable despite persisting antigen.
Conclusion. r-IFNa produced decreases in activity of HIV-1 in 6/8 AIDS-KS patients including all 5 cases with tumor responses, but in no case was the decrease shown by all virologic parameters. PCR detection of viral DNA revealed persisting virus activity despite clearance of antigen and RTA. Future drug trials should include monitoring of HIV-1 activity by serum PCR.

M.B.P.334 BAYESIAN ESTIMATION OF THE PHARMACOKINETIC PARAMETERS OF CHRONIC ZIDOVUDINE (ZDV) THERAPY IN HIV INFECTED PATIENTS.

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Objective To determine whether the individual pharmacokinetic parameters of ZDV can be estimated by Bayesian approach from data collected during multiple routine clinic visits in HIV infected patients.
Methods Eighty patients with AIDS or ARC receiving oral ZDV therapy at the AIDS Clinic of the UCSF Medical Center were recruited.On the morning prior to each routine clinic visit,the subjects recorded the dose and exact time of taking the last two doses of ZDV.During the clinic visit,an additional plasma sample was drawn at the time of routine blood sampling.This procedure was repeated for four clinic visits.Plasma ZDV levels were assayed by HPLC.The plasma concentration-time data was analysed by Bayesian analysis using TDMS^{R} and Drugcalc^{R}.
Results Preliminary results indicate a mean terminal half-life of 1.33±0.39 hours,an average bioavailability of 50.4±13.8%,a total body clearance of 1.04±0.13L/hr and a volume of distribution of 1.94±0.44L/kg.
Conclusions Results are in aggreement with literature data.Our results using population pharmacokinetics suggest that the pharmacokinetic disposition of ZDV is unchanged within HIV infected patients on chronic ZDV therapy.

M.B.P.335 EFFECT OF ZIDOVUDINE WITH PHASE I AND II METABOLISM IN THE LIVER

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The nucleoside analogue zidovudine is being employed in the therapy of HIV-infected subjects. The effect of zidovudine on the liver metabolism is of utmost interest. We chose 9 subjects not receiving any supplementary medication and we measured the parameters of the liver microsomal enzyme activity (antipyrine elimination incl. metabolite excretion and 6-beta-OH-cortisol in urine) before intake of zidovudine 800mg/day as well as after a treatment period of 14 days. Antipyrine and its metabolites were determined by HPLC. Following a two-week intake of zidovudine an induction of the microsomal enzyme system was observed, the excretion of 6-beta-OH-cortisol increased sigificantly from 342 to 697 g/24 hours. The half-life of antipyrine decreased from 12.2 to 10.1 hours. Contrariliy, the phase-2-metabolisation of the antipyrine metabolites nora-and 4-OH-antipyrine were significantly lower. These altered from 8.32 to 6.29 ml/min. and from 12.4 to 9.6 ml/min., respectively. This effect by zidovudine seems almost exclusively due to the inhibition of the glucoronism in the liver. The clearance to metabolite of the glucurinised nor-antipyrine and of 4-OH-antipyrine decreased by 18 and 29%, respectively.
On grounds of these results, clear interaction will occur during the simultaneous application of zidovudine with other drugs metabolised by phases I and II liver metabolism.

M.B.P.336 ZIDOVUDINE LEVELS IN AIDS AND ARC:VIROLOGIC AND HAEMATOLOGIC EFFECTS

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Objective. To evaluate virologic and haematologic effects of different concentrations of zidovudine (ZDV) in p24 antigen and reverse transcriptase (RT) positive ARC and AIDS patients.
Methods. Six AIDS and two ARC subjects received ZDV(10 mg/kg q4h for 4 weeks, followed by 5 mg/kg q4h for 5 months). RT from lymphocytes and p24 antigen (EIA DuPont)were detected monthly. ZDV levels were evaluated (RIA,ZDVTRAC,Incstar) on day 10 and 60 at 0,30,60 minutes after oral administration.

Results.	p24 POS	RT POS
-month 0	8/8 (100%)	8/8 (100%)
-month 2	0/8 (0%)	3/8 (37%)
-month 6	3/8 (37%)	5/8 (62%)

	Mean ZDV levels(μmol/L)		
	0 min	30 min	60 min
-day 10	0.3	10.6	8.7
-day 60	0.3	4.8	3.3

Subjects with mild hepatic impairment(ALT<3 times upper normal values)had a high peak concentration(10 μmol/L)longer than other patients.
Conclusion. A)Dose of 5 mg/kg is sufficient to obtain a mean concentration of the drug 2 to 3 times above the "in vitro" minimum inhibitory dose for HIV-1. B)In hepatopatic patients with normal ZDV levels, the prolungation of peak concentration is sufficient to induce anaemia. C)At the evaluated doses, ZDV can reduce virus replication(shown by negative antigenaemia), but doesn't inhibit it completely.

M.B.P.337 A PRELIMINARY STUDY OF SERUM AZT LEVELS IN HIV-INFECTED INDIVIDUALS

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Objective. To determine whether serum AZT levels correlate with clinical efficacy and/or toxicity, and whether acetaminophen (A) effects serum AZT levels.
Methods. We measured serum AZT levels in 10 patients receiving varying oral doses, of whom 3 had rises in CD_4 from a mean of 327 to 535; 3 had no change in CD_4, and 4 had a decline in CD_4. One patient had clinical improvement, 3 had definite toxicity from AZT. Trough levels were drawn just prior to the AZT dose, and peaks were drawn at 1 and 2 hours post dose. Three patients were given A (650 mg q 6 hrs x 48 hrs) and levels were rechecked. Levels were measured by both RIA and HPLC methods.
Results. Mean peak levels (532 ng/ml) in patients taking 1200 mg of AZT per day correlated with dose. A did not affect peak or trough levels of AZT at the dosage of A used. Toxicity does not appear to be related to serum AZT levels in this small study population. In one patient with underlying bone marrow injury, 100 mg of AZT q 12 hrs produced profound red cell toxicity (peak 224, trough 39 ug/ul)
Conclusion. A longer study which correlates serum and intracellular AZT and GAZT peak and trough levels with measures of efficacy (CD_4, p24 antigen, B-2 microglobulin and clinical improvement) and toxicity (anemia, granulocytopenia, myositis, neuropathy) may give important information about AZT in treatment of HIV infection.

M.B.P.338 INTERACTIVE PHARMACOKINETICS OF ZIDOVUDINE AND ACETAMINOPHEN

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Objective. Since both Zidovudine (ZDV, Retrovir) and acetaminophen (Tylenol) are metabolized by hepatic conjugation, competition for conjugating enzymes may result in reduced elimination of either or both agents with a potential for increased toxicity. This study was done to evaluate the potential interaction between ZDV and acetaminophen.
Methods. Pharmacokinetics of ZDV after IV administration (2.5 mg/kg) was studied in 7 HIV-infected persons with normal renal and hepatic function after 3 days of maintenance oral ZDV (100-200 mg q4h) and with acetaminophen after 3 days of both ZDV and acetaminophen (650 mg q6h). Multiple blood and urine samples were collected over 48 hrs following the IV dose of ZDV. Serum samples were heated (56° C) for 35 min then extracted with a C18 solid phase column. ZDV was quantitated by HPLC. Serum concentration versus time data were analyzed using compartmental and non-compartmental methods.

Results.	ZDV alone	ZDV+Tylenol	p value
ZDV clearances (ml/min/kg)	19.4 ± 2.9	20.4 ± 4.0	> 0.05
mean term. disposition rate cons. (hr^{-1})	0.53	0.63	> 0.05
vol. of distribution (1/kg)	1.27 ± 0.35	1.24 ± 0.27	> 0.05

Conclusions. Our study indicates that acetaminophen does NOT effect the distribution or elimination of ZDV.

M.B.P.339 A SENSITIVE AND SPECIFIC HPLC METHOD FOR THE DETERMINATION OF ZIDOVUDINE AND ZIDOVUDINE GLUCURONIDE IN PLASMA AND URINE.

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Objective. To develop a sensitive and specific HPLC method for the determination of zidovudine (AZT) and zidovudine glucuronide (GAZT) in plasma and urine.
Methods. The method involves the use of double internal standards, allowing reference of AZT peaks to the appropriate internal standard, the choice depending on the range of concentrations encountered. Free (unconjugated) AZT is quantified by extraction with 5% isopropyl alcohol in chloroform. Total (conjugated and unconjugated) AZT is quantified by incubating the samples with bacterial β-glucuronidase and phosphate buffer at PH 6.8 for 4 hours at 37 °C. The samples are then extracted as described for free AZT. GAZT concentrations are calculated by difference, corrected for GAZT MW. The mobile phase consists of 9% acetonitrile in monobasic ammonium phosphate. We used a C_{18} column, and UV detection at 266 nm.
Results. The coefficient of variation of the between-run and within-run assay precision is < 10 % and the coefficient of variation of the assay accuracy determined from the analysis of quality control samples is also < 10 %. We saw no interference from various over-the-counter and prescription drugs often used in treating the infectious complications of AIDS.
Conclusion. Using this method we are able to quantify AZT and GAZT in human plasma and urine samples obtained over a 12-hour period after a single oral dose of 200 mg of AZT.

M.B.P.340 PHARMACOKINETICS OF AZT AMONG HIV INFECTED PATIENTS TREATED BY ITRACONAZOLE.

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Objective. Symptomatic HIV infected patients are frequently submitted to Azidothymidine (AZT) therapy in association with antibiotics and/or antimycotics. We were interested to investigate the pharmacokinetic properties of AZT during the administration of Itraconazole, a new antimycotic compound.
Methods. Seven patients (5 patients CDC 4C2 and 2 patients CDC 4C1), regularly treated by AZT for 48 ± 4.5 weeks at the dose of 3 ± 0.1 mg/kg/day were submitted to two pharmacokinetic studies. The first was carried out during treatment by AZT only (test A) and the second after Itraconazole (2 x 100 mg/day) was added to AZT for at least 2 weeks (test B). Pharmacokinetic profiles were estimated by blood sampling at 0, 30, 60, 120, 240 minutes after the oral intake of 200 mg AZT. AZT serum concentrations were determined by a radioimmunoassay method using a iodine-125 tracer.
Results. AZT was not detectable in the sera prior to the tests. AZT peak serum levels were observed 30 minutes after the oral intake respectively in 5/7 and 7/7 patients during tests A and B. Mean maximal values (2466 ± 437 vs 2107 ± 257 ng/ml, NS) were comparable in the two profiles and were in the range of those previously reported. However, two patients presented better profiles of AZT concentrations during Itraconazole treatment.
Conclusions. These results confirm that AZT is rapidly absorbed from the gastrointestinal tract. Itraconazole seems to have no deleterious effect on the pharmacokinetics of AZT. The higher concentration observed in two patients during Itraconazole treatment could be the consequence of the improvement of the digestive candidosis and consequently a better resorption of the drug.

M.B.P.341 MOLECULAR INTERACTION OF RECOMBINANT β INTERFERON AND ZIDOVUDINE (AZT): ALTERATIONS OF AZT PHARMACOKINETICS IN HIV-INFECTED PATIENTS.

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Zidovudine, the drug of choice for patients with AIDS, is known to be metabolized by mammalian systems to a variety of metabolites including 5'-azido-3'deoxy-5-O-glucuronide (GAZT). Interferons are known to alter the microsomal enzyme system responsible for metabolism of some drugs. The aim of this study was to investigate the effect of combination therapy of recombinant interferon-β (rIFN-β) and AZT on the pharmacokinetics and rates of metabolism of AZT in HIV-infected patients. AZT was given orally (200 mg every 4 hours) for 8 weeks prior to initiation of rIFN-β therapy ($90x10^6$ U/day, subcutaneously). Serum samples were obtained prior to and at days 3 and 15 following initiation of rIFN-β therapy. Serum was analyzed by high performance liquid chromatography (HPLC) for both AZT and GAZT. The serum data were analyzed by computer assisted pharmacokinetics program which calculates rates of AZT metabolism. The half life for AZT was increased 2 to 3 folds by day 15. The rate of metabolism of AZT was diminished from 1.18 hr^{-1} prior to rIFN-β therapy, to 0.4 hr^{-1} and 0.08 hr^{-1} at days 3 and 15 respectively. Volume of distribution of AZT was 2.7 L/Kg at day 0 and increased significantly to 7 and 5.8 L/Kg on days 3 and 15 respectively. Other kinetic parameters were also determined. In conclusion, this study indicates that rIFN-β inhibits the rate of AZT metabolism in AIDS patients.

M.B.P.342 INTRAVENOUS AND ORAL PHARMACOKINETICS OF ZIDOVUDINE IN HEMOPHILIA PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS INFECTION.

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Objective - To compare intravenous (iv) and oral (po) zidovudine (ZDV) kinetics in HIV-infected hemophilia patients during chronic dosing.
Methods - Nine patients received ZDV (300 mg po q4h while awake) for 12 weeks; iv and po kinetic studies were performed every 6 weeks. ZDV and ZDV-glucuronide (GZDV) were measured in plasma by HPLC.

Results - Week	1	6	12
ZDV-iv-2h(mcg/ml)	1.2 ± 0.4	1.2 ± 0.3	0.7 ± 0.3
ZDV iv-4h	0.2 ± 0.1	0.2 ± 0.1	0.3 ± 0.1
ZDV oral-2h	0.5 ± 0.4	0.4 ± 0.2	0.4 ± 0.1
ZDV oral-4h	0.1 ± 0.05	0.1 ± 0.04	0.1 ± 0.08
GZDV/ZDV-2h iv	2.6 ± 0.8	2.6 ± 0.8	2.5 ± 1.3
GZDV/ZDV-4h iv	2.7 ± 0.9	3.0 ± 1.9	2.7 ± 1.6
GZDV/ZDV-2h oral	4.6 ± 2.4	4.9 ± 2.2	4.4 ± 2.7
GZDV/ZDV-4h oral	3.8 ± 1.9	3.4 ± 2.0	2.7 ± 1.2

The iv ZDV half-life at 1, 6, and 12 weeks was 1.9 ± 1 h, 3.4 ± 3 h and 2.1 ± 1 h, while after oral ZDV it was 3.1 ± 3 h, 4.2 ± 2 h, and 3.4 ± 2 h.
Conclusion - Although the mean ZDV levels were similar, a high degree of intrapatient variation was noted. The lower concentrations after oral ZDV were most likely due to "first-pass" metabolism, as indicated by the GZDV to ZDV ratio. These data indicate that chronic therapy with a standardized ZDV dosage regimen may result in a variable plasma level profile.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

M.B.P.343 PHARMACOKINETICS OF ZIDOVUDINE AND P24 Ag TIME-COURSE IN 48 ARC PATIENTS UNDER STEADY-STATE CONDITIONS.

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4 : V.I.H. Groupe INSERM d'essais thérapeutiques. Unité INSERM 292, Hôpital Bicêtre, 94275 LE KREMLIN-BICETRE - FRANCE.

Aims of the trial : 1) To assess the pharmacokinetics (PK) of zidovudine in patients on a chronic regimen. 2) To estimate the plasma time-course of the P24 antigen both after the first dose and under a chronic treatment. 3) To find a correlation between PK and antigenemia over a four week survey. 48 ARC patients (IVa CDC), 39 M 9F with positive P24 antigen entered an open randomized multicenter trial between 12-87 and 12-88. They were allocated to one of the 6 following zidovudine oral dose : 200, 300, 400, 600 every 8 hours, 300 mg every 6 hours, 600 mg every 12 hours.The protocol has been approved by local ethical comittee and the patients gave written informed consent.

Method : On Day 0 and DAY 14 patients were sampled at time 0 - 0.2 - 0.33 - 0.66 - 1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 24 h and every 72 hours from D0 to D30 or D40. Samples were assayed for Ag and zidovudine and metabolite by immunocapture test (Abbot) and HPLC respectively.

Results : Preliminary data suggest that zidovudine undergoes extensive first pass effect as indicated by high plasma level ofa metabolite with a very short Tmax, closed to that of the parent compound. No antigen release was observed at any time. It should be noted that when occuring, significant antigenemia decrease or negativation is a rapid and early feature (2d to 9th day). Pretreatment antigenemia level and dosing regimen seem to be relevant for the interpretation of P24 Ag changes.

Conclusion : PK data and Ag concentration data allowed to develop concentration-effect relationship model.

M.B.P.344 PHARMACOKINETICS OF ZIDOVUDINE (AZT) AND ITS GLUCURONIDE (G.AZT) IN HEALTHY SUBJECTS AND IN UREMIC PATIENTS ; INFLUENCE OF HEMODIALYSIS

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Pharmacokinetics of zidovudine (azidothymidine - AZT) was investigated after oral administration (200 mg) in 25 HIV seronegative subjects : 14 patients with severe renal impairment (creatinine clearance 6 to 31 ml/min), 5 hemodialyzed anuric patients, and 6 healthy subjects.

Plasma and urine concentrations of AZT and its glucuronidated metabolite (G. AZT) were measured simultaneously by HPLC assay. In healthy subjects, G.AZT concentrations are higher than those of AZT ; AUC were 10.5 ± 0.9 and 1.4 ± 0.2 h.mg/l respectively. Formation of G.AZT rate-limits its elimination : G. AZT half-life parallels that of AZT which is around 1 hour. In uremic patients AZT concentrations are moderately increased (AUC = 3.1 ± 0.3 h.mg/l), whereas half-life and MRT remains unchanged, despite the decreased renal clearance (16 ± 2 vs 220 ± 58 ml/min) and decreased urinary excretion (1.6 ± 0.3 vs 8.1 ± 1.0 % of the dose). In contrast G.AZT concentrations are markedly increased (AUC = 178.5 ± 39.2 h.mg/l). As a consequence of the decreased renal clearance (27 ± 3 vs 331 ± 42 ml/min), elimination is the rate limiting step and half-life is increased (8 ± 2 vs 0.9 ± 0.1 h). Contribution of a 4-hour hemodialysis session to AZT elimination appears negligible whereas elimination of G.AZT is enhanced. On the sole basis of AZT pharmacokinetic data no particular dosage adjustment appears necessary in patients with severe renal impairment. However with usual dosage regimen high levels of G.AZT should be anticipated and clinical consequences of such an accumulation remain to be established.

M.B.P.345 COMPARISON OF RADIOIMMUNOASSAY (RIA) AND HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) METHODS FOR SERUM ZIDOVUDINE (AZT) LEVEL MEASUREMENTS

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Objective. The objective of this study was to compare the HPLC and RIA methods in measuring the AZT (Zidovudine) level after oral administration.

Method. 39 serum samples were drawn from 10 patients at zero, one and two hours post oral administration of Zidovudine. The serum concentration of Zidovudine was measured using both the HPLC method (ammonium phosphate buffer/acetonitrile mobile phase; wavelength 266 nm; 160 mm spherisorb ODS-2 5 microns column) on a Perkin Elmer LC-75 system, and a commercially available RIA kit. The RIA kit was provided by INCSTAR Corporation (Stillwater, MN). Controls were included in both methods. The results of the two methods were statistically compared using linear regression analysis.

Results. The results of the two methods did not correlate statistically (correlation coefficient=0.79). The zero, one and two hours post administration of Zidovudine serum levels were also compared. The correlation coefficient were 0.20, 0.75, and 0.68 respectively.

Conclusion. The results obtained by the RIA method did not correlate well with the HPLC method. The variation was not consistent. The RIA method values were consistently higher for the one hour and two hours post ingestion levels.

Thérapie et évaluation clinique : marqueurs de l'évolution en cours de thérapie
Therapy and Clinical Evaluation: Markers of Evolution During Therapy

M.B.P.346 THE ENUMERATION OF PERIPHERAL BLOOD HIV-ANTIBODY SECRETING CELLS AS A MONITOR OF THE ACTIVITY OF ANTIVIRAL DRUGS

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Objective. To determine rapidly the in vivo effectiveness of an antiviral drug, particularly in the absence of antigenemia or significant immunological or clinical abnormalities.

Methods. We have used the enzyme-linked immunospot (ELISPOT) methodology successfully to detect and enumerate circulating antibody secreting cells (ASC) specific to an HIV gp41 recombinant protein in children and adults infected with HIV. The population in the current study comprises adults with ARC or AIDS who were untreated or had received AZT for a minimum of 3 weeks.

Results.

	UNTREATED		TREATED WITH AZT	
	No. Tested	No. HIV-ASC Positive*	No. Tested	No. HIV-ASC Positive*
Patients with ARC	10	8	6	0
Patients with AIDS	6	4	7	1
Patients with ARC/AIDS	16	12(75%)**	13	1 (8%)**

*≥ 8 ASC to HIV per million peripheral blood mononuclear cells ** p<0.02

Discussion. The observed results could have been due to the suppressive effect of AZT on: (1) the ASC detection system in vitro; (2) the ability of the host to synthesize immunoglobulin in vivo; (3) the replication in vivo of HIV with concomitant reduction in the production of viral antigens required to boost the host's immune system for the persistence of circulating HIV ASC. The first two hypotheses have been excluded by experiments which demonstrated that AZT, up to 100 µM, had no effect on the detection system, and that subjects on AZT treatment showed no decreased numbers of total immunoglobulin secreting cells in the peripheral blood. We conclude then that the HIV ELISPOT detects an in vivo antiviral effect and that this method should prove useful in evaluating new antivirals in humans or experimental animals.

M.B.P.347 EVALUATION DES LYMPHOCYTES T ACTIVES ET DES SOUS-POPULATIONS NATURAL KILLER AU COURS DU TRAITEMENT PAR LA ZIDOVUDINE DE PATIENTS PRESENTANT UN ARC.

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Objectif : Déterminer les effets de la Zidovudine (AZT) sur les lymphocytes T activés (HLA-Dr) et les cellules Natural-Killer (Leu2+ 7+) chez des patients présentant un ARC (AIDS-related-complex).

Méthode : Parmi les 80 patients présentant un ARC et recevant de l'AZT, 200 mg toutes les 4 heures par voie orale (E. Dournon et col. Lancet, 1988, ii : 1297-1302), 35 sujets pris au hasard ont fait l'objet de phénotypages lymphocytaires plus extensifs. Les lymphocytes sanguins ont été analysés sur cytométre en flux (FACScan Becton-Dickinson) après double marquage en immunofluorescence. Les combinaisons d'anticorps monoclonaux utilisées sont : Leu3 (CD4) avec Leu2 (CD8), mais aussi Leu2 avec Leu 7 et Leu4 (CD3) avec HLA-Dr (class II MHC). Les mesures ont été effectuées avant le début du traitement puis tous les mois durant une étude de 9 mois.

Résultats : Les taux de lymphocytes sanguins ne présentent que des fluctuations de faible amplitude. De même, les % de lymphocytes exprimant le marqueur membranaire CD3 (lymphocytes T) ne varient pas significativement. On n'observe pas non plus de modifications intéressantes des % de cellules Leu2+ (CD8) et Leu 2+ 7+ (Nature Killer). Par contre la fraction des lymphocytes T qui expriment le marqueur d'activation (Leu4+ HLA-Dr+) diminue de manière progressive et régulière jusqu'au 6è mois (Jo = 37%±2, 3è mois : 33%±2, 6è mois : 23%±2) pour augmenter ensuite (9è mois : 31% ±3). Enfin on retrouve la faible augmentation initiale des CD4.

Conclusion : Sur ce groupe de patients (ARC) le traitement par l'AZT entraine une diminution significative et importante deslymphocytes T activés qui correspond à la période d'amélioration clinique décrite.

M.B.P.348 Relevance of antigenemia in AIDS patients treated with AZT.

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In the HIV infected patients the quantitative measurement of antigenemia (Ag) was considered to provide an index of the antiviral effect of treatment. We evaluated the signifance of Ag in 56 AIDS patients (Pts) treated with AZT and belonging to the Claude Bernard Hospital AZT study cohort. All the Pts had had the first opportunistic infection (O.I) within the 8 weeks preceeding treatment and were followed up for a mean of 55 weeks (W.)
Antigenemia was assayed by Abbott antigen HIV EIA. The limit of sensitivity was 40 U/ml. T lymphocytes phenotyping was done by direct immunofluorescence with flow cytometry and monoclonal antibodies (Beckton-Dickinson).
Before treatment 35 Pts (46%) were Ag positif (+).We evaluated the predictive value of antigenemia at day 0 according to the clinical course of the Pts. We divided the Pts in 3 groups: Group I (n=18): Death; Group II (n=21): development of a new opportunistic infection (OI), Group III (n=17): No evolution of the disease.
The mortality rate (group I) did not differ in Ag(+) (n=12/35) Pts and in Ag(-)(6/21) Pts. The mean survival time was not different in Ag(+): 61 W and Ag(-): 66 W Pts. The occurence of OI (group II) was the same in Ag(+)(n=15/35) and Ag(-)(n=6/21) Pts. In the Ag(+) patients the mean Ag level at day 0 did not differ significantly in the 3 groups: Group I: 610 U/ml, Group II: 300 U/ml, Group III: 240 U/ml.
At day 0 the mean and median count of CD4 cells for the 3 groups was no different in Ag(+) Pts (66/mm³-median 48) and Ag(-) Pts (46/mm³-median 33).
At month 1, antigenemia decreased (≥ 2 fold the base value) or became negative in 51% of Ag(+) Pts. The same Ag course was observed in the 3 groups of patients.
Conclusion: Whatever Ag at day 0, we observed no difference in the clinical course of these 56 AIDS patients treated with AZT. Decrease of Ag at month 1 was not associated with any particular clinical evolution.In this group of AIDS patients, Ag had no predictive value.

M.B.P.349 CLINICAL AND LABORATORY EFFECTS OF AZT IN HIV POSITIVE MEN COMPARED TO A CONCURRENT CONTROL GROUP

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Objective: To establish the efficacy of AZT during an open trial using a concurrent control group for comparison.
Methods: 20 patients from the Toronto site of the Canadian Multicentre AZT Dose Range Finding Study were matched with 20 controls from the University of Toronto Epidemiology Study using the criteria of platelet count, hemoglobin and T4 cell count. Laboratory and clinical parameters were monitored for 84 weeks. All patients were HIV positive but none had AIDS.
Results: Development of AIDS was greater in the control group (3/20 at week 72 and 6/20 at week 84) than in the AZT treated group (0/20 at week 72 and 2/20 at week 84). The small number of patients studied has limited the statistical power of this observation (p=.1138). No differences were seen over time between the groups for laboratory findings except absolute lymphocyte count, which declined from a mean of 2063 pre-AZT to 1512 at week 72 in the treatment group, compared to the control group whose relative counts were 2181 and 1936 (p<.05). T4/T8 ratios showed a (non-significant) downward trend in the control group compared to the treatment group.
Conclusion: AZT did not affect laboratory parameters (apart from lymphocyte count) to any greater degree than did the effect of untreated HIV infection. There may have been a slight protective effect of AZT on the T4/T8 ratio. AZT may prove to be effective in slowing the rate of conversion to AIDS, although further study needs to be done in this regard. The validity of concurrent control group comparison requires further evaluation.

M.B.P.350 CHEZ LE PATIENT, UNE FRACTION SEULEMENT DE L'INFECTION RETROVIRALE PARAIT SENSIBLE A L'AZT.

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Objectifs: comparer chez un patient (CDC IV) sous AZT per os les niveaux successifs de rétrovirus exprimés in vivo dans les cellules mononucléées du sang (CMN).
Méthodes: les CMN (ficoll) séquentielles d'un meme patient sont décongelées simultanément, irradiées (60000 rads), et co-cultivées avec PHA-blastes normaux. Les vitesses moyennes de positivation des cultures (= score' en % du maximum, cf abstract connexe) donne une valeur de l'infection productive in vivo. Dosage de l'antigénemie p24/25* (S-p24, positif si DO Signal/Seuil >1).
Résultats: Score-vitesses' d'expression HIV par CMN irradiées et S-p24*

Patients	A	B	C	D	E	F	G	H	I	J
Avant AZT	93*/1.80	80/2.1	87/1.6	84/0.5	70/2.1	77/2.7	76/0.5	64/1.6	28/1.3	19/1.0
Minimum sous AZT	51*/1.10	21/2.3	00/1.0	25/0.5	15/3.0	05/0.7	10/0.5	00/1.3	02/1.4	00/1.5
(jrs..)	(40)	(45)	(14)	(8)	(21)	(45)	(60)	(38)	(160)	(30)
Maximum sous AZT	77*/0.90	61/0.7	71/1.5	40/0.5	49/0.6	60/0.6	50/0.6	16/1.0	31/1.3	17/0.7
(jrs..)	(80)	(300)	(25)	(25)	(340)	(225)	(300)	(175)	(395)	(300)

Conclusions: L'infection rétro-virale active persiste sous AZT après réduction significative mais transitoire. Le processus infectieux AZT-résistant semble peu générateur de S-p24. Le système d'évaluation à partir des CMN irradiées pourrait être un substitut biologique aux points de mesures cliniques dans les essais thérapeutiques.

M.B.P.351 PERSISTING OF HIV-VIREMIA IN p24 ANTIGEN NEGATIVE SUBJECTS RECEIVING ZIDOVUDINE.

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Objective. To determine the relationship between serum p24 antigen, HIV viremia and HIV infection complications in subjects receiving Zidovudine (ZDV).
Methods. We studied 15 patients with AIDS and ARC: 13 of them received ZDV (500 mg x 4/die for 4 week, followed by 250 mg x 4 for 20 months; dosage was reduced in 4 patients; 2 received placebo. Lymphocytes were cultured monthly to assay the reverse transcriptase (RT) activity. HIV p24 in serum was detected monthly with a capture assay (ELISA DuPont).

Results.	ZDV : RTpos	p24pos	placebo: RTpos	p24pos
-before treatment	13 (100%)	7 (54%)	2 (100%)	2 (100%)
- 4 weeks	7 (54%)	1 (8%)	2 (100%)	2 (100%)
- 8 weeks	3 (23%)	0 (0%)	2 (100%)	2 (100%)

The 3 RT positive patients maintained the positivity in the following months: all died (11,20,21 months). In 7 other patients HIV was isolated in successive detections: 4 developed opportunistic infections, 1 died (16 months). In 3 patients HIV was never isolated: only 1 developed a peripheral neuropathy.
Conclusion. Morbility is associated with persistent viremia. In some subjects the used dosage of ZDV is sufficient to reduce viral replication with lack of detectable antigen in serum, but not to have a complete inhibition. This could be correlated with a low dosage or with a high virus replication.

M.B.P.352 DISEASE PROGRESSION DESPITE ANTIGEN DECLINE DURING ZIDOVUDINE TREATMENT OF ASYMPTOMATIC HIV-INFECTED SUBJECTS: NEED FOR PLACEBO-CONTROLLED TRIALS

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Objective. To study the feasibility, antiviral and immunological effects of long-term simplified-dosage zidovudine (AZT) treatment of asymptomatic HIV-infected subjects.
Methods. 18 asymptomatic men with persistent HIV-1 p24 antigenemia were treated with zidovudine 250-500 mg (± acyclovir 800 mg) 6-hourly for 4-12 weeks, and subsequently with zidovudine 500 mg (± acyclovir 1600 mg) for 60 weeks. Six additional HIV antigenemic men were treated directly with zidovudine 500 mg 12-hourly for 48 weeks.
Results. Over the treatment period serum HIV-1 p24 (HIV-Ag) levels declined in 23/24 men. Mean serum HIV-Ag levels in different treatment-groups declined 65-80%. Acyclovir addition made no obvious difference. Median CD4+ cell counts at the end of the study period were at pretreatment level. In 2 men Pneumocystis carinii pneumonia was diagnosed after 60, respectively 80 weeks. Adverse reactions to the study drugs were infrequent and mild. Anemia caused symptoms in 3 men; serious leucopenia or neutropenia was not observed.
Conclusion. Both 250 mg 6-hourly and 500 mg 12-hourly are effective zidovudine starting-doses; prolonged suppression of viral replication is feasible with a 12-hourly maintenance dose. However, even with early zidovudine treatment and considerable suppression of HIV-Ag production disease progression can still occur. Tolerance of treatment warrents placebo-controlled trials.

M.B.P.353 FOLLOW-UP OF IN- VITRO IMMUNOLOGIC PARAMETERS AND INTERFERON PRODUCTION DURING LONG- TERM ZIDOVUDINE TREATMENT IN HIV- POSITIVE PATIENTS.

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Objective: to assess the influence of zidovudine (ZVD) treatment on functional parameters of cell-mediated immune response in vitro (proliferative response to T- and B-cell mitogens, production of gamma-interferon and Interleukin 2) and on spontaneous and virus-induced alpha Interferon (Ifn) production.
Methods: Peripheral blood mononuclear cells from 15 consecutive HIV+ patients in stage IV (A, B or C2), were incubated with optimal concentrations of PHA, CON-A and PWM, and with or without Newcastle disease virus strain F, before starting ZVD, and after 2 and 6 months of treatment (3.5 mg/kg/4hrs). Proliferative responses were assessed by 3H-Tdr incorporation and expressed as D-CPM, while biological assays were employed to assess Ifn and IL-2 levels. Results were evaluated with repeated - measures ANOVA, and with Friedman test for not - normally distributed values.
Results: Clinical stage of patients remained unchanged during the study. Mean proliferative response to PHA and CON-A did not show any significant variation, while mean response to PWM increased from 9860 to 17046 CPM after 2 months, and dropped to 10400 by the end of the study (P=0.048). A moderate (though not significant) decrease in gamma- and alpha-Ifn production was observed. By contrast, spontaneous alpha-Ifn release dropped significantly at 2 months, and remained at very low levels at 6 months (P=0.0022), while IL-2 production rose particularly after 2 months (rank 11th to 19th; P=0.0261).
Conclusions: Our preliminary report indicates that long-term ZVD treatment is devoid of any adverse effect both on proliferative response to mitogens and on alpha- and gamma-Ifn yield in vitro. A significant increase in response to PWM and in IL-2 production was observed, suggesting a functional recovery of B- and T-cell, possibly related to impairment of HIV replication. This hypothesis seems to be confirmed by a significant depression of spontaneously released alpha-Ifn (a possible marker of non-T cell infection by HIV, data in press)

M.B.P.354 AZT TREATMENT INDUCES A DECREASE OF SOLUBLE INTERLEUKIN 2 RECEPTOR (sIL-2R) BUT NOT OF SOLUBLE CD8 ANTIGEN (sCD8) SERUM LEVELS IN HIV INFECTED PATIENTS.

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Objective. To investigate whether sIL-2R and sCD8 levels differ in patients with CD4 counts higher or lower than 400 cells/mm3 and whether AZT influences the serum levels of sIL-2R and sCD8 Ag.
Methods. sIL-2R and sCD8 have been measured in 52 HIV infected patients (12 AIDS) and 12 healthy controls (HC) using an ELISA method (T Cell Science). In 10 AZT treated patients the tests were repeated on the 30th and 90th day of therapy and p24 Ag (T Cell Science) was determined on a parallel.
Results. All patients had markedly elevated sIL-2R and sCD8 levels respectively (2202±1107 U/ml in patients vs 332±126 in HC, p 0.0001; 992±376 U/ml vs 346 ±78 in HC, p 0.0001). No significant differences were found either between subjects with CD4 cell counts higher or lower than 400 c/mm3 or between patients with or without AIDS. A significant reduction of sIL-2R serum concentration was observed during AZT treatment in all patients (mean:T0 1811 U/ml, T30th 1215 U/ml, T90th 1193 U/ml, p 0.005) but 1 presenting persistent antigenaemia.
Conclusions. AZT seems to reduce the release of sIL-2R, possibility as a consequence of a reduced destruction of T/helper; no influence can be demonstred on sCD8 level. Our results suggest that sIL-2R serum level determination could be a usefull tool in monitoring AZT therapy effects.

M.B.P.356 PREDICTIVE VALUE OF CD8 CELL COUNT IN MORBIDITY AND MORTALITY AMONG AIDS AND ARC PATIENTS (P) TREATED WITH ZIDOVUDINE (AZT)

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We prospectively studied a population of 45 AIDS P and 81 ARC P under AZT treatment (T) for a mean period of 34 weeks to assess their immunological and clinical evolution. CD4, CD8, blood cell count and physical examination were obtained monthly. Baseline CD4 cell count lower than 100/mm3 was associated with a higher incidence of opportunistic infections (OI) (37% vs 7%-p=0.0007) and a higher case fatality rate (25.5% vs 2.4%-p=0.0002). The same correlation was found for low CD8 cell count. There were 10 ARC P and 17 AIDS P with baseline CD8 cell count below 400/mm3 and 71 ARC P and 28 AIDS P with baseline CD8 cell count over 400/mm3. OI occured during AZT T among 40% of ARC P with CD8 value below 400/mm3 and 8% of ARC P with CD8 value over 400/mm3 (p=0.02). There was no influence of CD8 value on occurence of OI in AIDS P. Low CD8 cell value in both AIDS and ARC P was also correlated with higher mortality: 40.7% of P died if baseline CD8 cell count was lower than 400/mm3, 3% of P if baseline CD8 cell count was higher than 400/mm3 (p=0). Positive predictive value of occurence of OI and death among P with CD4 value lower than 100/mm3 were respectively 45.8% (57% for ARC P, 41.2% for AIDS P) and 45.8% (42% for ARC P, 47% for AIDS P) if baseline CD8 cell count was lower than 400/mm3 and respectively 18.2% (23% for ARC P, 15.4% for AIDS P) and 4.5% (0% for ARC P, 7.7% for AIDS P) if baseline CD8 value was over 400/mm3.
In HIV P treated with AZT, low baseline CD8 cell count has a predictive value for developing AIDS in ARC P and CD8 cell count enhances the predictive value of CD4 cell count for OI development and occurence of death.

M.B.P.358 ERYTHROCYTE ADENOSINE DEAMINASE (ADA) EXPRESSION IN AZT-TREATED AIDS PATIENTS

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**Istituto di Genetica Biochimica ed Evoluzionistica del CNR,Pavia,Italy.

Objective To assess the erythrocyte ADA expression in AZT treated patients.
Methods Measurement of ADA activity and enzymatic determinations of dATP and ATP in erythrocyte extracts of 9 AZT-treated patients (5 ARC,4 AIDS) with sexually transmitted HIV-1 infection. One unit of ADA activity is 1 nmol of inosine formed in 1 min. ATP and dATP concentrations are expressed in nmol/ 10^{9} cells.
Results Before AZT therapy. ADA activities were significantly higher (p<.001) in ARC and AIDS patients (39.5 U ±7.2) compared to controls (30 cases;9.5 U±1.8).dATP concentrations were in the normal range (< 2),while ATP values were low (mean 102 v.s. 148 of the controls).
During AZT therapy. A progressive increase of ADA (100 ÷ 150) was detected during the first 3 months of the treatment.Subsequently constantly high activities were monthly observed.After 3 mo the ATP concentrations (mean 58.7) were by approximately 50% reduced,whereas dATP concentration was low.
Conclusion We have observed increased ADA activity and decreased ATP concentration in the erythrocytes of 9 ARC/AIDS patients.Such phenomenon was enhanced by AZT therapy.Since ADA and adenosine kinase compete for a common substrate,the greatly increased activity of the former may interfere with nucleotide salvage by the latter.From which macrocitic anemia may ensue.

M.B.P.355 AZT THERAPY IS ASSOCIATED WITH AN INCREASED CAPACITY OF PHA-STIMULATED CELLS TO EXPRESS IL-2 RECEPTORS (IL-2R).

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Objective: To determine whether AZT therapy in HIV+ patients can improve in vitro T lymphocyte function.
Methods: 34 AIDS patients enrolled in the 002 ATEU protocol for AZT treatment were sequentially evaluated at intervals up to one year. PHA-stimulated mononuclear cells were incubated for 24 hours; the cells were cytoflourographically analyzed for expression of IL-2R by reactivity with CD25 monoclonal antibody.
Results: At time of entry, IL-2R expression were markedly depressed in HIV+ subjects. The mean value 5.4± 0.9% compared to 63.3 ± 2.6% in heterosexual controls. In the treated patients, there was a progressive increase in the capacity of cells to express IL-2R. Data was calculated by two methods. The average IL-2R, using the last observation, had increased to 13.4 ± 2.4% (p<0.01 compared to baseline). When all values during the treatment period were considered, the mean was 17.0 ± 2.6%. Further analysis suggested that in the HIV+ treated patients, the responsive cells were primarily of the CD8 phenotype whereas, in controls, they were mostly CD4+. During the year of treatment, there was no increase in either PHA of T cell colony responses.
Conclusions: These studies suggest that AZT therapy is associated with a sustained improvement in one functional parameter of T cell reactivity; their capacity to be activated by PHA, as indicated by expression of IL-2R.

M.B.P.357 QUANTITATIVE DOSAGE OF CORE ANTIBODIES IS A BETTER PRONOSTIC MARKER THAN HIV ANTIGEN ASSAY.

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Methods : During a follow-up period of 0.5 to 39 months (mean : 13.9 months) sera of 30 European and 16 African HIV infected patients (pts) at all stages of the disease (i.e. : asymptomatic, PGL, ARC, AIDS) were retrospectively investigated for the presence of HIV antigen (Ag), core antibodies (Ab) and envelope (env) Ab (Abbott Diagnostics-North Chicago-Il).
Results : In all pts, env Ab were detected in high titers without significant variations during the follow-up. HIV Ag was detected in the serum samples of 14 pts : 1 African with AIDS and 13 Europeans. At the beginning of the follow-up, 10% of the European pts were antigenemic and 20% at the end. Core Ab were detected during the follow-up period in all the Africans except in the pt with HIV Ag. The geometric mean (GM) of core Ab titers was 1/6738 in the asymptomatic pts and 1/113 in the AIDS pts. All European pts without HIV antigenemia had core Ab; 4 of them lost their Ab during the follow-up period. 9 out of 13 European HIV antigenemic pts had core Ab; 4 of them lost their Ab during the follow-up period. The GM of core Ab titers was 1/26 in the asymptomatic pts and 1/5.5 in the AIDS pts.
Conclusion : HIV Ag is rarely expressed in African pts; moreover, even in the late stage of the disease, HIV Ag is not detected in 37% of European pts and detection is intermittent. In contrast, the decline or the disappearance of core Ab is clearly related with evolution of the disease, in African like in European pts. Follow-up of quantitative dosage of core Ab seems to be of more value as a pronostic marker than the detection of HIV Ag.

M.B.P.359 EFFECT OF AZT CESSATION ON LEVELS OF ANTIBODIES PARTICIPANT IN ANTIBODY DEPENDENT CELL CYTOTOXICITY (ADCC) REACTIONS

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Objective. To assess the effect of AZT cessation on levels of ADCC-relevant antibodies in patient sera.
Method. A standard 6 hour ^{51}Cr release cytotoxicity assay was used to assess ADCC activity longitudinally over a 20 month period in 2 asymptomatic HIV-1 seropositive patients that had transiently stopped AZT therapy. In addition sera from a healthy control seronegative donor was used. Target cells were uninfected and HTLV-IIIB infected U-937 cells,dispersed into 96 well microtiter plates (5000 cells/ well). Serial 10-fold-dilutions of sera from each time point for each patient and the control were added to the targets to achieve final serum dilutions of 1:100 to 1:100,000. Effector lymphocytes obtained from a seronegative healthy donor were added to the wells at a effector:target ratio of 15:1.
Results. At dilutions 10^{-2} and 10^{-3} of patient sera, we noted ADCC activity in both patients. This activity was less marked at a 10^{-4} dilution and disappeared at 10^{-5}.Upon initiation of AZT therapy, ADCC activity diminished progressively in the patients until AZT was stopped. Sera obtained immediately following a 6 week wash out period showed a marked rise of ADCC activity to baseline levels.
Conclusion. These data on 2 patients suggest that ADCC antibody activity diminishes while patients are on AZT and that this activity rebounds following cessation of drug. These findings are being expended to provide further insight into the role of ADCC in pathogenesis and/or protection in HIV-associated disease.

M.B.P.360 Effect of azidothymidine (AZT) on neopterin, β2-microglobulin, soluble CD8, soluble interleukin-2 receptor, tumor necrosis factor and HIV P24 antigen levels in patients with AIDS-related complex and AIDS.

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Nine patients with AIDS-related complex and 11 AIDS patients with *Pneumocystis carinii* pneumonia were treated with AZT 1500 or 1200 mg/day and followed for up to 72 weeks. Subsequently, the dose was reduced to 600 mg/day in some patients. Circulating neopterin, β2-microglobulin (β2-M), soluble CD8 (SCD8), soluble interleukin-2 receptor (SIL-2R), tumor necrosis factor (TNF) and HIV P24 antigen levels were measured at 4 weeks before treatment, at baseline and following AZT therapy at 4-week intervals. The results (means±SEM) are shown below.

Weeks	Neopterin ng/ml	β2-M μg/l	SCD8 units/ml	SIL-2R units/ml	TNF pg/ml	P24 Antigen pg/ml
-4	10.8±0.8	5835±680	1288±149	1162±85	10.6±5.1	152±33
0	11.9±1.0	5435±550	1232±128	1045±90	10.0±3.1	163±40
+4	10.6±1.2	4358±340	1040±125	1054±106	19.6±7.9	124±82
+8	9.2±1.2	4328±491	1161±132	1004±105	16.7±9.9	61±17
+12	8.3±1.4	3587±212	944±97	928±102	17.8±5.1	54±16
+16	9.6±1.0	3900±236	999±83	980±106	8.6±3.9	55±10
+20	10.9±1.7	5028±700	1064±140	965±156	12.8±8.5	29±16

Neopterin, β2-M and SCD8 levels decreased after 12 weeks of AZT treatment. However, these values increased towards pretreatment values by 20 weeks of drug administration. In contrast, HIV P24 antigen levels decreased significantly after 12 weeks of treatment and remained low after 20 weeks of AZT treatment.

M.B.P.361 SEROLOGIC HIV Ag LEVELS AND AZT THERAPY IN DRUG ADDICTS

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Objective: To estimate HIV Ag modification in drug addict patients treated with Azidotimidine (1200 mg/die).
Methods: Fifty-four HIV Ab positive patients were studied and followed within a 3-12 months period (average 125 days): 9 AIDS (4 HIV Ag positive), 26 ARC (11 HIV Ag positive), 19 PGL (13 HIV Ag positive).
Results: Among the 28 HIV Ag positive patients, 8 (28.5%) became seronegative in an average period of 90 days (1 AIDS, 3 ARC, 4 PGL). Among the three ARC seronegative patients at the third month of therapy two seroconverted at the sixth and at the twelfth month respectively. Also two among the four PGL patients who were seronegative at the third month of therapy, were again positive at the sixth month but at antigenemic titles lower than before treatment. During the therapy, 3 ARC patients who were seronegative at time of recruitment (11.5%) became HIV Ag seropositive. At the same time one of these three patients was diagnosed as AIDS. There was the evolution to worse stages of the disease in four cases (7.4%): 3 ARC (5.5%) and 1 PGL (1.8%). Opportunistic infections were observed only in 2 AIDS patients during AZT treatment.
Conclusions: AZT treatment seems to lower seric HIV Ag levels and to reduce the evolution of the HIV correlated disease.

M.B.P.362 EFFECT OF ZIDOVUDINE ON HEPATITIS B VIRUS (HBV) REPLICATION IN PATIENTS WITH CHRONIC HIV AND HBV INFECTION.

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An inhibitory effect of 3' Azido 3' Deoxythymidine Triphosphate on hepatitis B virus (HBV) DNA polymerase has been shown in vitro and in an animal model. Objective : to assess the effect of Zidovudine (AZT) on HBV replication, as reflected by serum HBV DNA, in patients with HIV-HBV coinfection. Patients and methods : fifteen patients, mean age 36 years (range 25-48) were studied : 13 were homosexual or bisexual, 2 were intravenous drug addicts. One patient had AIDS Related Complex (ARC), 2 had Persistent Generalized Lymphadenopathy (LPG) ; 12 had AIDS. All were chronic HBV carriers with replication (presence of HBeAg and HBV DNA in the serum). No patient had antibodies against Hepatitis Delta Virus. Twelve patients had elevated serum aminotransferase. All patients received AZT at full dose of 200 mg orally every 4 hours. The mean duration of treatment at full dose was 14 weeks (range 1-65) ; in 11 patients (73 %) AZT dosage was reduced by half because of leucopenia. Indeed AZT therapy was given for a mean total duration of 39 weeks (range 6-59). Serum HBV DNA was assessed every month during treatment.
Results : Serum HBV DNA remained positive in all patients, and did not change significantly in any patient at any time during treatment.
Conclusion : Our results show that AZT therapy has no inhibitory effect on HBV replication, as assessed by serum HBV DNA, in chronic HBV carriers with HIV infection.

M.B.P.363 EFFECT OF ZIDOVUDINE ON HIV RELATED ARTHRITIS

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Objective: to investigate the effect of zidovudine on cure for migrating and relapsing arthritis in a subject with HIV infection.
Methods: a male 22 years old, irregularly drug user, was diagnosed as HIV-infected on April 1986, by enzyme linked immunosorbent assay and WB confirmatory test. The patient was well and showed no sign of immunodeficiency and so he was assigned to the II^{nd} group of CDC classification. Laboratory studies evidenced 2511/mm^3 lymphocytes (20% T helper; 43% T suppressor). The patient was well until August 1987, when he had a febrile acute athrosinovitis involving right knee. Synovial fluid analysis disclosed a sterile fluid with 12500 cells, mainly lymphocites (65%). Haematological studies showed 13740 WBC (62% N; 22% L; 13% M; 3%E); VPI 56, the body temperature was 38° C; No other possible cause of infection or secundary arthrosinovitis was revealed. X-Ray film of the knee showed no lesions. FANS were administered and the patient recovered and was discharged on the 9th day. After 1 month, the arthrosinovitis relapsed on the right knee with the same characteristics. Approximately four months after the first episode, another arthrosinovitis developed in the left knee. The same illness had 5 relapses in the following 7 months and the patient was always treated with FANS. 11 months after the first episode, HIV culture of synovial fluid was negative. We weren't able to demonstrate positivity for HIV-antigen on serum and articular fluid. We failed to demonstrate HLA B-27 also. In that time, laboratory studies evidenced total lymphocytes 2803 (26% T helper; 43% T suppressor). No clinical sign of worsening of immunodeficiency was desclosed. Zidovudine 1200 mg/die was administered and the arthrosinovitis didn't relapse over the succeeding 6 months. Conclusion: in spite of failure of the demonstration of HIV in the synovial fluid, it's very reasonable that HIV is directly involved in relapsing and migrating arthrosinovitis: that's demonstrated also by the efficacy therapy with zidovudine. However, further studies are necessary.

M.B.P.364 HIV-ASSOCIATED ALOPECIA IN A WOMAN AND REGROWTH OF HAIR AFTER ZIDOVUDIN-THERAPY (A CASE-REPORT)

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Hair loss is quite a common finding in ARC- and AIDS-patients. We describe a patient with diffuse alopecia and wasting-syndrome with reproducible regrowth after zidovudine-therapy.

A 26-year old white, HIV-positiv woman presented with atopic neurodermitis, recurrent fever and weight-loss and almost complete alopecia. Clinical and laboratory examinations showed no evidence of Lupus erythematodes, syphillis or an other illness, that could explain the alopecia.
After 4 months of therapy with zidovudin for her HIV-Infection, her hair showed a striking recovery and she stopped wearing her wig.

Then, zidovudin hat to be discontinued due to granulocytopenia. Two weeks later she developped a candida-esophagitis and was treated with ketoconazole for 10 days. From now on, she had no therapy at all except methadone.
After 3 months without any antiretroviral therapy, she presented again with an almost complete baldness. Zidovudin was readministred. One week later, we found growth of new and thin hair. Ten weeks after readministration of zidovudin at a dose of 200mg q6h we found marked growth of new and thick hair.
We conclude that HIV-associated alopecia may be reversible under zidovudin-therapy. Photographic documentation will be presented and possible pathophysiologic mechanism discussed.

M.B.P.365 DERMATOLOGICAL MANIFESTATIONS DURING ZIDOVUDINE TREATMENT

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Objectives: To determine the course of dermatological symptoms during zidovudine treatment. Methods: Dermatological manifestations of 33 patients treated for 35.5 weeks (4 - 84 weeks) with zidovudine 6 x 200 mg or 4 x 250 mg orally were observed. Results: Regarding Kaposi's sarcoma, 6/12 patients showed a stabilisation or partial regression of their lesions. Oral hairy leukoplakia healed in 54.6 % of cases. In oral candidosis 6/10 had no relapse after antimycotic therapy at beginning of zidovudine treatment. Therapy-resistent psoriasis in 3 patients healed partially or completely 10 weeks after beginning of zidovudine treatment. Conclusions: Zidovudine treatment reduces relapses and leads to a better response to local therapy of dermatological manifestations.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

M.B.P.366 TREATMENT OF ADVANCED AIDS RELATED KAPOSI'S SARCOMA (KS) EXPERIENCE WITH 112 PTS FROM ONE INSTITUTION.

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Objective: To describe the treatment of AIDS related Kaposi's sarcoma (KS) in 112 patients from a single institution.
Methods: 112 Patients (Pts) who had advanced KS were accrued to three different treatment regimens, from 1985 to 1988. Pts received either Adriamycin (A) alone, combination of A, Bleomycin, and Vincristine (ABV) or BV. 21 pts were subsequently given recombinant alpha interferon 2A (Schering) as maintenance therapy at doses of either 5,10, or 15 million units SQ daily, at time of KS response.
Results: Pts had extensive KS with >60% having greater than 50 cutaneous lesions and 23% with symptomatic visceral involvement. Severe immune dysfunction was present with a history of opportunistic infection (OI) in 22% and CD4 lymphocyte <200/mm^3 in 90%. Response rates were: 88% with ABV (63 pts), 72% with BV (18 pts), and 48% with A (31 pts). Major toxicity was neutropenia <1000/mm^3 in 60% of pts receiving A containing regimens. Median survival was 9 months in all Rx groups. 20% of the pts receiving alpha INF 2A as maintenance therapy had further resolution of disease or prolonged freedom from progression without noticeable decline in p24 Ag levels.
Conclusion: 1) Advanced KS can be successfully treated with combination chemotherapy; 2) Survival is short, due to development of OI as well as KS progression; 3) factors predictive of short survival are weight loss and CD4 lymphocyte count <100/mm^3; 4) alpha INF 2A has limited but definite benefit as maintenance in some pts with advanced KS.

M.B.P.367 BONE MARROW CHANGES IN HIV-1 POSITIVE ASYMPTOMATIC PATIENTS ON ZIDOVUDINE

M. Fanning, K. Gelmon, J. Falutz, J. Montaner, C. Tsoukas, J. Ruedy, et al, Universities of Toronto, British Columbia, and McGill.

Objective: A Canadian Multicentre Dose Range Finding Study was initiated to determine the effect of escalating doses of zidovudine on the bone marrows of 72 HIV positive patients (CDC groups II, III, IVC$_2$).
Methods: Therapy consisted of 600 mg/day for 18 weeks, incrementally increased to 1200 mg/day at 27 weeks. Patients were clinically evaluated q 3 weeks and had bone marrow biopsies and aspirates at the start of therapy and at every dose change for a total of 5 studies per patient. 305 aspirates and 267 biopsies were obtained from 65 patients who completed the 42 week trial.
Results: Pretreatment marrows showed plasmacytosis in 10 patients (17%), lymphoid aggregates in 18 (20%) and abnormalities in iron stores in 37 (54%). 63 marrows were normoblastic; 66 had normal myelopoesis. After the initial dose of 600 mg/day, 3 marrows remained normoblastic, 33 were megaloblastic, 5 showed dyserythropoesis, and 27 showed both megaloblastosis and dyserythropoesis. With increasing dose and duration of therapy there was increasing dyserythropoesis. After a 6 week washout of drug, 18 of 60 marrows returned to normoblastic. One patient developed red cell aplasia at week 36. Marked changes were noted in the myeloid series with a left shift. Megakaryocytes varied unrelated to platelet counts.
Conclusion: The effects of zidovudine on the bone marrow occurred at a low dose of 600 mg/day. The lack of reversibility of the changes on the erythroid and myeloid series may suggest a stem cell defect. The large number of all types of iron abnormalities requires further study.

M.B.P.368 EVALUATION OF THE ASSOCIATION OF ZIDOVUDINE (Z) and VINBLASTINE (V) IN TREATMENT OF AIDS-RELATED KAPOSI'S SARCOMA (KS).

Gharakhanian Shahin, De Sahb R., Vaseghi M., Cardon B., Rozenbaum W. Infectious Disease Unit, Rothschild Hospital, Paris, France.

Objective. To evaluate tolerance of a treatment associating Z and V for patients with KS.
Methods. 22 male patients (pts), mean age 40.2 years (22-58), 6 of whom had had prior opportunistic infections, were followed-up for a mean 6 months (2-11) in an open study. Treatment with Z and V was initiated a mean 17±12 months (2-47) after diagnosis of KS. V was administered by weekly IV injection, mean dose 2.9 mg (2-6). Z was initiated at 600 mg/day. All pts received Trimethoprim-Sulfamethoxazole for prevention of pneumocystis. Evaluation was by monthly clinical examination and CBC, which were compared with pre-treatment values (M0) at M 1,2 and 3 (t-test).
Results. Compared to initial values, the Hb, WBC and PMN counts were significantly lower at M 2 & 3. WBC and PMN counts were significantly lower at M 6. Platelet counts were significantly higher at M 1,2 & 3 (table 1). PMN nadir was 500/mm³ and Hb nadir was 7.4g/l. V was interrupted at least once in 14 of 22 pts after 4.6±2.3 months, due to neutropenia. Z was reduced or interrupted in 11 pts. Of 16 pts followed-up for 6 months or more, 2 died (KS and toxoplasmosis) and 4 ended treatment (neutropenia). KS was stable in 12 pts, worse in 7 and improved in 2 (table2).

TABLE I

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

TABLE II

[illegible]	[illegible]	STABILIZATION	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Conclusion. The toxicity generated by the treatment of KS with an association of Z and V appears to be acceptable. A controlled study is necessary to assess the benefit on KS and immune function, of Z + V taken together or separately.

M.B.P.369 *RESULTS AFTER 18 MONTHS OF TREATMENT WITH ZIDOVUDINE.*

MªJosé Mellado, MJ.Cilleruelo, J.Villota, G.Barreiro, ML.Péres, PM.Fontelos. Instituto Carlos III. S.Pediatria. Madrid. SPAIN.

OBJECTIVES: We analyse the evolution of one child with AIDS who was the first case in Spain who received treatment with Zidovudine (ZDV).
MATERIAL AND METHODS: We study a female, 6 years old, who presents a Von Willebrand disease. On April 85, she got infected by HIV when she was transfunded with commercial VIII factor that later was confirmed to be contaminated by this virus. She's remited to our Centre in November 87 to be studied and she was includes in P$_2$CD$_2$D$_3$ class according to CDC classification for pediatric AIDS. On December 87 she began treatment with ZDV, 14 mg/K/d during 10 months and later this dosage was doubled.
RESULTS: Her clinical evolution depends on her lung disease, lymphocytic interstial pneumonia (LIP). She has suffered recurrent pneumonias by H. Influenzae, S. Penumonias and S. Aureus once a month. These processes have decreased in number, one every 3 months, after treatment with ZDV. Nevertheless, the increased pulmonary vascular resistance has led to tricuspid regurgitation that improves with Niphedipine. She presents recurrent mucocutaneous candidiasis, CMV + in cell culture and positive stool culture for Salmonella and Cryptosporidium without diarrhoea. The nutritional status improve at the beginning of treatment but now it's stationary. She continues - with immunological disorders, persistent polyclonal hipergammaglobulinemia and a low T$_4$/T$_8$ ratio. Serial titles of P$_{24}$ Ag have decreased since she began treatment with ZDV from 528pg/ml to 166pg/ml at the present time. We have detected a title of 16584 IgG to EBV, coinciding with a pneumonia. This title persist high at the present time.
CONCLUSION: We think treatment with ZDV has been useful in this patient, despite of the immunological deterioration and the recurrent lung infections. We base on the decrease in serum of P$_{24}$ Ag title and because she has prolonged her life 3 years, more than it was expected at the begining of the disease.

M.B.P.370 VIRAL ANTIGEN(HIV-Ag) EVOLUTION IN AIDS AND ARC PATIENTS WITH ZIDOVUDINE TREATMENT.

ME VALENCIA, R MARTINEZ ZAPICO, V PINTADO, JML DUPLA, P LAVILLA, A GIL. Hospital La Paz. Madrid. Spain.

Objective: To study the evolution of the HIV-Ag levels in AIDS and ARC patients during the treatment with Zidovudine (AZT).
METHODS: HIV-Ag was studied in 26 patients with HIV infection (18 AIDS, 8 ARC), before starting treatment and monthly during the follow up. The HIV-Ag was determined by ELISA (Pasteur). Levels of antigenaemia higher than 50 pg/ml were considered as positive. All positive sera were confirmed by a neutralization test. All patients were being treated initially with AZT 200 mg po-q4h and this dose was modified upon haematologic parameters. The mean follow-up period was 20 weeks.
Results: HIV-Ag was detected in 10 patients(38%).9 had AIDS, follow-up was completed in 8. A) 5 patients had HIV-Ag (+) before starting AZT. In 2 patients the Ag became negative in the 4th and 16th week. However HIV-Ag became positive later with levels higher than initial values. The 2 patients died in 3th and 6th month from starting therapy. In another patient Ag became negative in the 12th week and died 4 weeks later. In 2 patients Ag remained positive. One died in the 3th month of treatment and another is alive after 28 weeks of follow-up. B) In 3 patients antigenaemia was initially negative and became positive in the 4th, 28th and 32th week of AZT treatment and they are still alive.
Conclusions: AZT since to decrease initially the levels of HIV-Ag. This feature doesn't mean a better prognosis. Reappareance of HIV-Ag is a common finding after several weeks of treatment. Patients with Ag (+) prior to treatment seem to have a worse prognosis.

Manifestations cliniques
Clinical Manifestations

M.B.P.371 BACTEREMIA IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS

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Lincoln Hospital and New York Medical College, Bronx, New York, USA.

Objective. To determine the rates and patterns of bacteremia including Nosocomial Infections (NI), in patients with Human Immunodeficiency Virus (HIV) infection.

Methods. Over a 24 month period, 462 adults with HIV infections were hospitalised. Computerized NI data for the hospitalized population and the HIV infected patients was analysed using NOSO-3 software.
Results. Forty (8.6%) episodes of NI developed in 27 (5.8%) of the 462 patients. The NI rates for the hospital and medical service were 1.9% and 1.7% respectively in the same period. Intravenous site (IV) infections occurred in 14 (52%) followed by bacteremias in 11 (41%). In 6 of 11 cases the pathogen causing bacteremias and IV site infections were similar. The NI bacteremia rate in HIV infected patients and the hospital population were 2.3% and 0.4% respectively. Mortality occurred in 13 (48%) patients during the hospitalisation when NI developed.

Interestingly, the NI pathogens isolated from the HIV infected patients and the hospital population were similar: S. aureus, 7 (29%), Acinetobacter anitratus, 5 (21%), and E. coli, 3 (11%).
Conclusion. HIV infected patients are at increased risk of secondary infections particularly, bacteremias and IV infections. Emphasis on IV site care may help in preventing these infections and perhaps the subsequent mortality.

M.B.P.372

PULMONARY TUBERCULOSIS AND HIV DISEASE IN INFANTS AND CHILDREN

Adel E.A. Malek, K. Mukelabai, E.P. Luo
University Teaching Hospital, Lusaka, Zambia.

OBJECTIVE: To determine the seroprevalence of HIV Disease in Infants and children with Pulmonary Tuberculosis, the clinical presentation and overall prognosis.
METHODS: Based on diagnostic scoring system, 96 in-patients with definite evidence of pulmonary tuberculosis were included in the study. For each patient we checked: Growth Chart, BCG Scar, and nutritional status. Physical examination and Chest X-Ray were done on admission and repeated after 2 months. Full Blood Count and ESR were done every 2nd week. Screening for anti-HIV antibodies was done using ELISA (Abbott or Wellcozyme) test. Any reaction to the antituberculous drugs (Streptomycin, Rifampicin, Thiacetazone and INH) was monitored.
RESULTS: Of 96 confirmed cases with pulmonary tuberculosis 23(24.0%) were seropositive, (peak: 1 - 2 years). While it was 3 - 5 years in the seronegative group. Twenty (87.0%) seropositive patients and 66 (90.0%) seronegative patients received BCG Vaccination. The nutritional status was poor in 19 (82.6%) seropositive and 52(71.2%) seronegative patients. Primary complex ± parenchymal lesion was found in 17 (74.0%) seropositive and 69 (94.5%) seronegative patients. Two (8.7%) seropositive and 3 (4.1%) seronegative patients had pleural effusion. Three (13.0%) seropositive and one (1.4%) seronegative patients had miliary tuberculosis. One (4.3%) seropositive patient had tuberculous meningitis with no cases in the seronegative group. Six (26.1%) seropositive and 47(64.4%) seronegative patients showed clinical improvement. One (4.3%) seropositive and two (2.7%) seronegative patients reacted to antituberculous drugs. Nine (39.1%) seropositive and 5 (6.8%) seronegative patients died during the study.
CONCLUSION: Pulmonary Tuberculosis is more aggressive when coupled with HIV Disease in infants and children. BCG Vaccination does not seem to offer significant protection against acquiring pulmonary tuberculosis.

M.B.P.373

HIV INFECTION AND TUBERCULOSIS IN MOZAMBIQUE

J.Barreto, C.Palha de Sousa, H.Djedje, L.Parkkali, L.Barquet, F.de la Cruz, F.Neves et al.
Immunology Lab.,Instituto Nacional de Saude,& Tuberculosis Control Programme,Maputo, Mozambique.

Objective: To assess HIV 1 and HIV 2 infection risk in Mozambique Tuberculosis Patients through a case-control study.
Methodology: TB patients under specific antituberculotic treatment aged more than 14 years are studied in the cities of Maputo and Nampula. A control group is being selected from blood donors matching age, sex, occupation and place of residence.Moreover TB occurrence is being actively searched and recorded in AIDS diagnosed cases.
HIV 1 and HIV 2 antibodies are screened by ELISA and those repeatedly positive, confirmed by Western Blot. Risk Ratio is estimated from the Odds-ratio using a Mantel Haenszel weighted average.
Results: Data already available reveals higher HIV infection rates among TB patients when compared with control population. Whereas, by December 1988, in 26 AIDS cases reported to WHO, 8 of them had the diagnosis of Tb (30.3%).
Conclusions: HIV infection risk seems to be high among Mozambican Tb Patients and Tb appears frequently as associated infection in AIDS cases.

M.B.P.374

HIGH CASE RATE OF EXTRAPULMONARY AND PULMONARY TUBERCULOSIS IN HIV INFECTED IN UPPER AUSTRIA

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From 3/1985 to 1/1989 more than 30 % of all AIDS patients first presented with extrapulmonary tuberculosis (tb-adenitis, tb-meningitis or miliary tuberculosis).
In all of them, except one woman who died of infection with mycobacterium avium intracellulare, mycobacterium tuberculosis could be isolated and in vitro sensitivity testing could be done (results will be shown). Except one heterosexually infected woman and one man with unknown risk all patients belonged to the high risk group of intravenous drug abusers. The median range of CD4 cells in those patients was higher compared with AIDS patients suffering from other opportunistic infections.
In patients with LAS/ARC pulmonary tb was seen in 4 %.

Results of intracutaneous skin testing (we consider important in differential diagnosis to lymphoma) will be presented as well as the median survival rate of AIDS patients with extrapulmonary tb or the time to progression to AIDS in the others.

M.B.P.375

PREDICTORS OF MORTALITY IN PATIENTS WITH AIDS AND PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

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Veterans Administration Medical Center (VAMC), San Francisco, and the University of California, San Francisco, CA, USA.

Objective. To identify the clinical and laboratory features on admission to hospital that are predictive of mortality in patients with AIDS and PCP.
Methods. We reviewed retrospectively the charts of all patients with AIDS and PCP admitted to the VAMC between January 1984 and August 1987. The respiratory rates, white blood cell counts (WBC), serum albumin concentrations, and arterial blood gases of survivors and nonsurvivors were compared.
Results. Fifty cases of PCP were identified, of which 35 survived hospitalization. On admission, survivors were significantly less tachypneic than nonsurvivors (mean respiratory rate ± S.D. = 21.7 ± 4.8 vs. 28.4 ± 8.0 breaths/min; $P<0.01$). The mean arterial pO_2 on admission was significantly higher ($P<0.01$) in survivors (69.0 ± 16.0 mm Hg) than in nonsurvivors (55.3 ± 11.2 mm Hg). Moreover, of 13 patients with $pO_2 \geq 75$ mm Hg, none died ($P<0.01$, when compared with the survival rate for $pO_2 < 75$). Severe hypoxia was not correlated with a poor outcome; all 3 patients with a pCO_2 <40 mm Hg survived. The WBC, serum albumin levels, arterial pCO_2 and pH were comparable in survivors and nonsurvivors.
Conclusions. In patients with PCP, an arterial $pO_2 \geq 75$ mm Hg on admission is associated with increased survival. By identifying patients with a good prognosis, the pO_2 may help select candidates for shortened hospitalizations or outpatient therapy.

M.B.P.376

RESULTS OF A CONSENSUS PANEL ON PROCESS OF CARE FOR PATIENT. WITH PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

C. BENNETT, WC MATHEWS, J KOSECOFF, D KANOUSE, RAND Corporation, Santa Monica, Ca, UCLA Med Center, LA; UCSD Med Center, SD, Ca USA

Objective: To develop consensus opinions for defining process of medical care for the entire episode of illness for patients with PCP.

Methods: As part of a research study aimed at evaluation of quality of care for AIDS pts w/PCP, seven AIDS specialists with training in various specialties (Int Med,2; Pulmonary-1; Infectious disease-3; Immunology-1) evaluated process of care and clinical factors for treatment of PCP.

Results: Panelists agreed on: criteria for identification from the medical record of an initial episode of PCP, appropriate diagnosis, definitions of pulmonary severity and extrapulmonary comorbidity; and appropriate antimicrobial and adjunctive pharmacologic treatment and other process of care markers. Panelists also agreed on appropriate indications for out-pt therapy, clinical markers of response to initial treatment, and a temporal window for evaluating treatment response.

Conclusion: A panel reached consensus on many aspects of care that may be helpful in evaluating quality of medical care for the entire episode of illness related to PCP (pre-hospital, in-hospital, and post-hospital care) and might predict outcomes for episodes of PCP. These results will be presented at the conference.

M.B.P.377

SPLENIC PNEUMOCYSTOSIS

Piot, Didier; Gathe, J.; del Junco, G.; Stool, E.; Trujillo, R.
Park Plaza Hospital, Houston, Texas, U.S.A.

Objective: To describe splenic involvement with Pneumocystis Carinii (PC) as a manifestation of extrapulmonary pneumocystosis in the absence of clinical PCP.
Methods. A 27-year-old white, male homosexual was diagnosed with AIDS when he developed Candida esophagitis in October 1987. He had been maintained on AZT and twice monthly aerosolized pentamidine, when he presented with vague pleuritic left lower chest and abdominal pain and fever of 103.0 F. 12 months later. He initially responded to broad spectrum antibiotics, but his fever returned when they were discontinued.
Results. PE was remarkable only for a palpable spleen tip. Chest x-ray and gallium scan were normal. A CT scan of the abdomen showed multiple splenic masses. Splenectomy revealed multiple large masses of PC by GMS stain. Multiple microscopic foci of PC were also present and confined to the red pulp, confirming hematogenous dissemination. The white pulp showed lymphoid depletion. He responded well to pentamidine. Postoperative atelectasis lead to bronchoscopy with transbronchial biopsy and bronchoalveolar lavage which were negative for PCP.
Conclusions. 1. Although PCP is the most common opportunistic infection in AIDS, extrapulmonary pneumocystosis is rare.
2. Extrapulmonary pneumocystosis can occur in the absence of clinically evident PCP.
3. PC can spread to extrapulmonary sites via hematogenous or lymphagenous routes. Risk factors for dissemination remain unclear.
4. The spleen may be a site at risk for extrapulmonary pneumocystosis because of its filtration function.
5. To predict more cases of extrapulmonary pneumocystosis in patients who receive only pulmonary prophylaxis.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

M.B.P.378 DISSEMINATED GRANULOMATOUS PNEUMOCYSTOSIS IN A PATIENT RECEIVING AEROSOLIZED PENTAMIDINE PROPHYLAXIS

Ward, Douglas J. George Washington University School of Medicine, Washington, D C

A 35 year old gay male had Pneumocystis pneumonia in 5/87. He was maintained afterwards on AZT plus aerosolized pentamidine prophylaxis. In 9/88 he again developed weight loss, chronic fevers and dyspnea, and was admitted with a spontaneous pneumothorax. Pneumocystis was diagnosed by bronchoscopy, and he was treated with pentamidine, which was switched to trimethoprim/dapsone because of renal failure. His status progressively deteriorated, complicated by renal failure, seizures, diarrhea and edema, and he died of respiratory insufficiency after two weeks. On autopsy he was found to have disseminated granulomatous Pneumocystis involving the lung, heart, lymph nodes, liver, spleen, GI tract, adrenal and thyroid glands and choroid, as well as disseminated cytomegaloviral inclusions.

There have been 17 cases of extrapulmonary pneumocystis reported in the literature, six of these in patients with AIDS. Only four of these, however, have been truly disseminated with multiple organ involvement (one with AIDS). This patient may have predisposed to disseminated disease because of his use of aerosolized pentamidine, which suppresses infection in the lungs, but has no extrapulmonary effect. As this form of prophylaxis becomes more widespread, extrapulmonary pneumocystis may become more common.

M.B.P.379 *PNEUMOCYSTIS CARINII* CHOROIDITIS

Cassey, D.M., Rao, N.A., and Zimmerman, P.L.
University of Southern California and the Estelle Doheny Eye Institute, Los Angeles, California, USA

Objective. To describe highly characteristic clinical features and light and electron microscopic findings of *P. Carinii* choroidal infiltrates in three patients with AIDS.
Methods. Three patients were followed antemortem for AIDS-related conditions; two had Cytomegalovirus retinitis treated with ganciclovir. New choroid lesions developed and retinal photographs were obtained. At autopsy, the globes of the eyes were examined grossly, by light microscopy and by electron microscopy.
Results. The characteristic fundus changes in *P. carinii* choroditis consist of multiple slightly elevated, plaque-like, yellow-white lesions in the choroid. Some of these choroidal lesions are round or oval, while others are geographic or multilobulated in shape. The lesions vary in size and are usually covered by relatively normal retinal pigment epithelium. However, some of the larger lesions may show areas of mild retinal pigment epithelial alteration consisting of fine mottling or granular change. The fundus changes are not associated with intraocular inflammation. The etiology of the fundus pathology was determined by electron microscopy demonstrating P. carinii organisms.
Conclusions. *P. carinii* can produce characteristic funduscopic changes in the choroid and such findings can indicate disseminated *P. carinii* infection.

M.B.P.380 INCIDENCE OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN MEN INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS-1 (HIV-1)

Phair, John, Muñoz, A., Detels, R., Rinaldo, C. and Saah, A., Multicenter AIDS Cohort Study, Chicago, IL.

Objective: To determine the risk of developing PCP in homosexual men infected with HIV-1.
Methods: 1744 seropositive homosexual men were enrolled into a prospective study of HIV-1 infection in 1984-85. A history, physical examination and T-cell phenotyping were obtained every 6 mo. Outcomes through 7/31/88 are included in the analysis.
Results: Of 1660 men with available baseline CD4 counts, 185 developed PCP. This table stratifies outcome over 3 years by CD4 number at entry.

CD4 Count	N	PCP	6 mo.(%)	12 mo.(%)	36 mo.(%)
0-200	78	22	8.3	17.9	38.2
200-350	231	53	0.4	3.7	24.1
350-500	391	43	0.0	1.3	9.5
500-700	479	46	0.0	0.4	9.0
>700	487	21	0.0	0.0	4.1

Among participants whose CD4 count cell decreased to $200/mm^3$ at some time during the study, weight loss and thrush significantly ($p \leq 0.01$) increased risk at 6, 12 and 36 months; fatigue and fever were predictive ($p \leq 0.01$) for short term (less $\leq$ 12 mo) development of PCP. Diarrhea, herpes zoster or hairy leukoplakia were not predictive.
Conclusion: Risk of developing PCP significantly ($p \leq 0.001$) increased with decreasing CD4 cell count. Specific signs and symptoms occurring in immunosuppressed participants significantly add to the risk of PCP.

M.B.P.381 PSYCHIATRIC MORBIDITY IN HIV INFECTED INDIVIDUALS IN INDIA

JACOB,K.S., MOSES,H., JOHN,J.K. AND JOHN,T.J.
Christian Medical College,Vellore,India.

Objective. To document the psychiatric morbidity among HIV carriers and AIDS victims.

Method. 24 subjects were assessed to document psychiatric morbidity.The diagnosis of HIV infection/AIDS was communicated in the context of the psychotherapeutic support provided.They were followed up for a period of 2 to 6 weeks and additional psychopathology documented.DSM-III criteria were used for diagnosis.
Results.Psychiatric morbidity at initial screening included Delirium(1),Major Depressive Disorder(1),Adjustment Disorder with depressed mood(7),and Marital discord(1).After the diagnosis of HIV infection was communicated the additional morbidity included Adjustment Disorder(3),Major Depression(1),Alcohol Dependence Syndrome(2) and Suicide(1).The individual who reacted with Major Depression also developed alcohol dependence and he committed suicide.
Discussion.The possibility that preexisting psychopathology predisposed these individuals to sexual promiscuity needs to be explored.The majority of individuals reacted with depression and could be supported through the crisis.

M.B.P.382 PREVALENCE AND COURSE OF PSYCHIATRIC DISTURBANCES ASSOCIATED WITH HIV INFECTION (CDC CATEGORIES II-IV)

Boom, Frans van den*; Sno, Herman**; Storosum, Jitsak**
* Netherlands Institute of Mental Health, Utrecht, The Netherlands. **University of Amsterdam, Dept. of Psychiatry, Amsterdam, The Netherlands

Objective: Gain insight in the prevalence and course of psychiatric distubances/disorders in HIV infected persons
Method: Every newly registered patient in a period of one year at the Academical Medical Centre (AMC) in Amsterdam will be followed during 12 months. A psychiatrist will give a DSM III R diagnosis at entrance, and after 6 and 12 months; a neurological examination will be executed at entrance; a psychiatric interview using the Diagnostic Interview Schedule will be held at entrance and 12 month later; with a bimonthly frequency several self report questionnaires (General health Questionnaire, Beck's Depression Scale) will be filled out, a neuropsychological test battery will be administered, and a 10 minute interview will be held.
For those who need psychiatric treatment, interventions and complications (eg with medication) will be monitored and registered. Special attention will be payed to organic complications.
Results: Preliminary results will be presented.

M.B.P.383 DIAGNOSIS OF DEPRESSION IN HIV INFECTED INDIVIDUALS

Hong, B.A.,; Rice, J; Brookshire, D. and Guedet, P.

AIDS Clinical Trials Unit, Washington University School of Medicine, Saint Louis, Missouri, USA.

OBJECTIVE. To examine the presence and course of depression in HIV infected individuals.
METHOD. A random sample of 26 seropositive individuals, 10 ARC and 10 AIDS patients who were enrolled in an AIDS Clinical Trial Unit were evaluated for depression by means of a standard psychiatric research interview. The SADS-L (Schedule For Affective Disorders and Schizophrenia-Lifetime) was used. Diagnoses were made by RDC (Research Diagnostic Criteria) criteria. Subjects were interviewed on the average of 15 months post HIV testing.
RESULTS. Fifty percent (N=23) met criteria for a depressive diagnosis during the interval from HIV testing to the time of the present assessment. Forty percent (N=18) experienced a major depression which lasted a week or longer. Ten percent experienced a minor depression. Twenty-one percent (N=10) had suicide ideation or death wish. Two subjects attempted suicide. Depression appeared to be less frequent one year or greater after HIV testing, as only two subjects reported current problems with major depression and three with minor depression.
CONCLUSION. It is noteworthy that half of the sample had a clinically significant depression. Further, depression appears to be less common as individuals have time to cope with their HIV status.

M.B.P.384 PREVALENCE DES TROUBLES PSYCHIATRIQUES PARMI LES PATIENTS HOSPITALISES POUR SIDA.

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Zerboni R.***
*Servizio Psichiatrico "Origgi I"(Responsabile Prof.G.F.Goldwurm); **Reparto Infettivi Adulti (Responsabile Prof.F.Giannelli) - Ospedale Cà Granda Niguarda - Milano - ITALY
***Clinica Dermosifilopatica dell'Università degli Studi di Milano (Responsabile Prof.R.Caputo)

Objective. Plusieurs auteurs ont trouvé une prévalence des troubles psychiatriques,parmi les sujets infecté de l'HIV à different stade,qui oscille entre le 30% et le 50% selon l'étude.Nous avons voulu vérifier si cette donnée on peut la retrouver aussi parmi nos patients.
Méthodes. Nous avons pris en considération la population des sujets hospitalisés en maladies infectieuses à l'hôpital de Niguarda à cause de l'HIV. Depuis deux ans,parmi ces patients,on a observé la prevalence et les principaux aspects anamnestiques et cliniques des ceux qui avaient presenté des troubles psychiques.
Résultats. Les patients hospitalisés pour SIDA en 19 mois ont été 125,dont 107 (85,6%)mâles et 18 (14,4%)femelles;l'âge moyen a été 28,2a.. Parmi les facteurs de risque,l'utilisation des drogues a representé le 76,2%,l'homosexualité le 11%,les transfusions le 8,4% et les rapports hétérosexuels le 4,2%. La prévalence des troubles(t.) psychiques a été du 37,6%(47/125)dont les t. mentaux organiques étaient le 42,6%(20/47),les t. de l'humeur le 14,9%(7/47),les t.de l'adaptation le 12,8%(6/47),les t.de la personnalité le 8,5%(4/47),les t.d'anxiété le 8,5%(4/47),les schizophrénies le 4,2%(2/47) et enfin les t.psychotiques pas classés ailleurs le 8,5%(4/47).
Conclusions. Notre étude semble confirmer les travaux d'autres auteurs,soit pour la prévalence des troubles psychiques,soit pour le pourcentage des t. mentaux organiques.

Traitement de la PCP : Pentamidine et autres médicaments (diagnostic clinique)
PCP Treatment: Pentamidine and Other Drugs (Clinical Diagnosis)

T.B.P.1

EVALUATION QUANTITATIVE DU PARASITISME AU COURS DE LA PNEUMOCYSTOSE (PNCP) CHEZ LES PATIENTS ATTEINTS DE SIDA OU D'AUTRES IMMUNODEPRESSIONS.

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Objectif : Rechercher si, comme pour l'expression clinique, il existe une différence dans l'intensité du parasitisme au cours des pneumocystoses survenant chez les sujets atteints de SIDA ou d'autres immunodépressions.
Méthodes : Cette étude concerne 80 patients : 67 SIDA (G1) et 13 autres immunodéprimés (G2); tous ont une pneumocystose diagnostiquée par lavage bronchiolo-alvéolaire (LBA), 29 ont une insuffisance respiratoire aiguë (IRA) avec PaO2 <50 mmHg. L'intensité du parasitisme a été évaluée sur le nombre d'amas présents dans 10 µl du culot de centrifugation du LBA selon une méthode semi-quantitative : parasitisme faible + à ++, intense +++ à +++++.
Résultats :

	G1		G2	
Parasitisme	faible	intense	faible	intense
PaO2<50 mmHg n = 26	0	19	7	0
PaO2>50 mmHg n = 54	16	32	5	1

Conclusions : Il existe des différences d'intensité du parasitisme dans les deux populations étudiées en particulier au cours des PNC.P sévères avec IRA : parasitisme intense dans G1, faible dans G2.

T.B.P.2

FINAL DIAGNOSIS IN PATIENTS WITH NEGATIVE BRONCHO-ALVEOLAR LAVAGE FOR PNEUMOCYSTIS.

Slim, Jihad*, Perez, G., Forrester, C., Shafii, A., Johnson, E.S.
Saint Michael's Medical Center, Newark, New Jersey, U.S.A.

Objective: To attempt and determine a final diagnosis in patients with a negative Broncho-Alveolar Lavage (BAL) for PCP.
Methods: Review of all hospital charts of HIV positive patients with bronchoscopy for suspected PCP. Further analysis of those charts with negative PCP on BAL included clinical symptoms, laboratory examinations, chest x-rays and gallium scans.
Results: 88 HIV positive patients underwent 93 bronchoscopies with negative silver methenamine stains for PCP. 13 of these events were felt to be PCP, these included five with positive results on transbronchial biopsy and eight with a compatible laboratory and clinical course. 22 were found to have positive mycobacterial cultures, seven of which were M. tuberculosis. Right sided endocarditis with embolic pneumonia accounted for six cases, 5 had positive fungal cultures and another five showed CMV. Seventeen remained without an etiologic diagnosis.
Conclusion: Most patients with suspected PCP with negative silver stains on BAL had an etiologic agent identified. These agents were usually treatable.

T.B.P.3

A PATHOLOGIC BASIS FOR BRONCHOALVEOLAR LAVAGE (BAL) NEUTROPHILIA IN PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

Mason, Gregory R, Foutty LL, and Dickman PS. Harbor-UCLA Medical Center, Torrance CA, 90509, USA.

Objective. In 60 patients with PCP, > 5% BAL neutrophils predicted morbidity more sensitively and specifically than the degree of hypoxemia, hypoalbuminemia or increased LDH (Am Rev Resp Dis, in press). We sought to determine a pathologic basis of excess bronchoalveolar lavage (BAL) neutrophil percentages in Pneumocystis carinii pneumonia.
Methods. Transbronchial biopsies of 29 patients with documented PCP and specimens adequate to assess the histology the lung parenchyma were reviewed. Biopsies were scored from 0 (absent) to 3 (easily found in most fields) for the degree of diffuse alveolar damage (DAD) and for the presence of polymorphonuclear leukocytes (PMN's) as well as the presence of organisms, edema, chronic inflammation, fibrosis and intra-alveolar or interstitial PMN's.
Results. The presence of DAD and interstitial or intra-alveolar PMN's were the most common abnormalities in the lung parenchyma and each was found in 27 of 29 patients. The presence of fibrosis was the least common finding, present in only 6 of 27 patients.
Conclusions. DAD and neutrophilic infiltration were commonly found in the transbronchial lung biopsies in patients with AIDS. Neutrophilic infiltrates are not a well-recognized sequelae of PCP, however, PMN's in the lung may account for more severe clinical manifestations of this disease and provide the basis for staging of PCP with BAL neutrophils.

T.B.P.4

INTERET ET LIMITES DES EXPECTORATIONS INDUITES DANS LE DIAGNOSTIC DE LA PNEUMOCYSTOSE DU SIDA.

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*Hôpital Tenon, Paris, France ; **Hôpital Claude Bernard, Paris, France ; ***INSERM U13, Paris, France.

Objectif. Evaluation diagnostique de l'expectoration induite (EI) comparée au lavage bronchioalvéolaire (LBA).
Patients et méthodes. Un recueil d'EI et de LBA a été fait simultanément chez 132 patients HIV positifs suspects de pneumocystose dont 23 hospitalisés en soins intensifs. Des examens itératifs ont été faits chez 17 patients. EI : recueil après induction par un aérosol salé hypertonique (3 %) avec l'aide d'un kinésithérapeute. LBA : selon la technique habituelle.
Traitement des prélèvements : fluidification des EI (dihydroxydithiolbutane) puis centrifugation - colorations par Giemsa, impregnation argentique et/ou Bleu de Toluidine O et/ou Gram Weigert. la lecture des lames codées a été faite par deux examinateurs.
Résultats.

Service	LBA (%)	E I (%)	Sensibilité E I/LBA (%)
Maladies Infectieuses	50 / 120 (42)	32 / 120 (27)	32 / 50 (64)
Soins intensifs	16 / 31 (52)	4 / 31 (13)	4 / 16 (25)

Conclusion. 1) Spécificité des EI : 100 %. 2) Sensibilité des EI plus faible chez les patients de soins intensifs (25 % versus 64 %) probablement due au traitement anti Pneumocystis administré pendant plus de 7 jours dans cette série. 3) L'induction des expectorations s'est révélée impossible chez 20 % des patients. 4) Au total, chez des patients ne recevant pas de traitement anti Pneumocystis, le recueil du LBA pourrait être évité dans 24 % des cas.

T.B.P.5

ANTIBODIES TO PNEUMOCYSTIS CARINII. REDUCED LEVELS IN HIV INFECTED PATIENTS DURING PNEUMOCYSTIS INFECTION AND EVALUATION OF PASSIVE IMMUNISATION.

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** Scottish National Blood Transfusion Service, Edinburgh, Scotland.
*** Infectious Diseases Unit, City Hospital, Edinburgh, Scotland.

Objective. To follow the relationship between P.carinii antibody levels and acute infection in sequential samples from HIV antibody positive patients with respiratory symptoms and to investigate the possibility of using immunotherapy.

Methods. Using an IFA based on frozen sections of infected rat lung, P.carinii antibody estimations were performed on 38 HIV positive patients and 37 HIV negative immunocompromised patients with respiratory symptoms. Multiple samples from 25 symptomatic positive patients were examined and the P.carinii antibody level correlated with available bronchoalvolar lavage or induced sputum results.

Results. Five patients with proven P.C.P. had an acute fall in antibody level and a further 3 showed recovery of antibody following diagnosis and treatment. The same pattern was observed in those patients with suspected but not proven P.C.P. Antibodies to other viruses and serum immunoglobulins did not show a similar pattern. The P.carinii antibody level in 40 blood donors and in intravenous globulin (IVG) samples selected at random was estimated.

Conclusion. The use of IVG in acute infection with P.carinii and as prophylaxis against infection either alone or in conjunction with other therapeutic agents, is worth further evaluation.

T.B.P.6

PURIFICATION AND CHARACTERIZATION OF A MAJOR HUMAN PNEUMOCYSTIS CARINII SURFACE ANTIGEN

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National Institutes of Health, Bethesda, Maryland, USA.

Objectives. Purified Pneumocystis carinii (PC) antigens are needed for investigations into host-organism interaction and host immune responses following infection. Since human and rat PC are antigenically different, antigens of human PC should be used in such studies. The goal of the current study was to purify a major antigen of human PC.
Methods. PC were obtained from autopsy lungs of patients that died of PC-pneumonia. Organisms were treated with zymolyase, a ß-1,3-glucanase, and the antigen was purified by HPLC using a sizing column followed by ion-exchange chromatography. To evaluate the size of the native molecule, a cross-linking study using bis(sulfosuccinimidyl)substrate (BS³) was done.
Results. Zymolyase treatment of PC solubilized the predominant antigen, which has a size of 95,000 MW when evaluated by SDS-polyacrylamide gel electrophoresis under reducing conditions. This antigen reacts with a monoclonal antibody (6B8) previously shown to be specific for human PC; immunofluorescence studies have shown that it binds to the surface of PC. Reactivity with the monoclonal antibody was used to follow purification. The size of the native molecule, based on sizing column chromatography, was greater than 290,000 MW. Following ion-exchange chromatrography, a single band of 95,000 MW was seen on SDS-PAGE, and this band reacted by immunoblot with antibody 6B8. Cross-linking of the molecule prior to SDS-PAGE suggests that the antigen is a trimer, based on the presence of a new 270 000 MW antigen on SDS-PAGE that also reacted by immunoblot with 6B8.
Conclusion. A major surface antigen of human P. carinii with a molecular weight of 95,000 under reduced and denatured conditions has been purified to homogeneity. This purified antigen can be used to develop assays to investigate the cellular and humoral response of humans to PC infection.

T.B.P.7

THE DIAGNOSIS OF PNEUMOCYSTIS CARINII PNEUMONIA IN HIGH RISK PATIENTS BY INDUCED SPUTUM USING A DIRECT IMMUNOFLUORESCENT ANTIBODY TEST

Heath-Chiozzi, Margo; Mitchell,M.; Rosol-Donoghue,J.; Cotton,D.; Hulme,P.; Hanff,P. Beth Israel Hospital, Harvard Medical School, Boston, MA, USA.

Objective. Evaluation of the Genetic Systems direct immunofluorescent monoclonal antibody test (DFA) to detect *Pneumocystis carinii* in induced sputum.

Methods. Induced sputum (IS) was collected from 27 patients who were HIV seropositive or in a high risk group and had interstitial infiltrates on chest x-ray, room air $PO_2 \leq 80$, and/or a positive Gallium scan. Bronchoalveolar lavage (BAL) was performed on most patients whose IS was nondiagnostic. IS and BAL were processed using published techniques and stained by Toluidine Blue O (TBO) and DFA. TBO smears with heavy yeast were considered uninterpretable (TBOU). Slides with ≥3 cysts were considered positive.

Results. There were 16 DFA positive IS smears of which 8 were also TBO +, 4 were TBOU and 4 were TBO -. Six of these 8 patients who were DFA + but TBOU or TBO - were confirmed to have pneumocystis pneumonia (PCP) by BAL whereas 2 patients refused BAL; 1 had a clinical course consistent with PCP, the other was lost to follow-up. Eleven IS smears were DFA negative; 10 were TBO - and 1 was TBOU. Six of these were confirmed negative by BAL. Of the 5 remaining patients who did not go on to BAL, 3 improved without specific PCP therapy, 1 had been reinduced to rule out a PCP treatment failure, and a final clinical diagnosis could not be made in 1 patient due to concomitant PCP and antibacterial therapy.

Conclusion. In patients at high risk for AIDS-related PCP, DFA is more sensitive than TBO and makes the diagnosis of PCP by induced sputum a simple, rapid, and highly sensitive test.

T.B.P.9

A MEASURE OF PNEUMOCYSTIS CARINII PULMONARY BURDEN.

Baughman Robert P, Frame PT.Department of Medicine, University of Cincinnati, Cincinnati, OH, U.S.A.

Objective. To develop a method for estimating the burden of *Pneumocystis carinii* (Pc) in bronchoalveolar lavage (BAL) fluid of AIDS patients (pts). Methods. BAL fluid from AIDS pts with Pc pneumonia were prepared with a cytocentrifuge and a modified Wright-Giemsa stain. The number of Pc in clusters was compared to the number of nucleated cells counted. Intra- and intersubject variability was determined by analysis of variance and the F-ratio (F) and p values calculated. Results. Pc clusters from BAL specimens of 20 pts were counted three times. The cluster number that was associated with 200, 500, and 1000 cells was noted. There was significant intersubject variability for the 200, 500, and 1000 cells (200 cells: F=9.0; 500 cells: F=13.3; 1000 cells: F=16.8, all p<0.001). The correlation coefficient for 500 cells between counts (R=.81, p<0.001) was higher than 200 cell counts, but similar to 1000 cell counts; the number of clusters with 500 cells was used thereafter. Because the BAL fluid volume may alter the cell differential, we studied BAL specimens aspirated after each of four introduced aliquots of 60 ml saline in 15 Pc pts. There was no significant intrasubject variability (F=.10,p=N.S.), but there was significant intersubject variability (F=53.7, p<0.0001). Sequential lavage specimens from 24 pts before (PRE) and after (POST) therapy for Pc pneumonia were studied. Sixteen pts responded to therapy; all had a decrease in Pc clusters (PRE=5.4±1.1 (Mean±S.E.M.); POST=.4±.2, p<0.001). Eight pts had persistent disease; the BAL contained the same or more Pc (PRE=5.2±1.6; POST= 5.5±1.6). Conclusion. Pc can be quantitated in BAL fluid; this may be useful in assessing therapy.

T.B.P.11

Rapid Diagnosis of Pneumocystis carinii pneumonia (PCP) in Patients with AIDS using a Direct Fluorescent Monoclonal Antibody (DFA) Assay.

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Objective: To compare a new DFA (Genetic Systems) with a Giemsa (Diff-Quick) for the diagnosis of PCP from sputum and bronchoalveolar lavage (BAL).

Methods: Induced sputum from patients with suspected PCP was digested, centrifuged and smeared onto slides. Heat fixed Giemsa and acetone fixed DFA stained slides were examined for trophs and cysts. BAL was done on patients negative by sputum, when possible.

Methods: Of 111 patients evaluated, a total of 60 were diagnosed with PCP, 52/60 with Giemsa on sputum (87% sensitivity) and 51/60 on sputum with DFA (85% sensitivity). 5 patients had PCP diagnosed by both methods on a subsequent sputum after treatment of a bacterial superinfection. 8/32 patients negative on sputum induction were positive by both DFA and Giemsa as were 3 additional patients who had BAL alone. Of the 30 patients that did not go to bronchoscopy, other diagnoses became apparent in 18 and 7 remained indeterminate. There was one false positive and one false negative DFA sputum assay.

Conclusion: This DFA is a rapid and sensitive method of identifying *P. carinii* in sputum and bronchoscopy specimens and is comparable to the standard high yield Giemsa stain.

T.B.P.8

BRONCHOALVEOLAR LAVAGE (BAL) CMV CULTURE POSITIVITY (CMV+) IS ASSOCIATED WITH BETTER OUTCOME OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN MEN WITH AIDS.

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Objective: To determine the significance of CMV+ in confirmed PCP.
Methods: Retrospective cohort study of all patients undergoing bronchoscopy at UCSD for possible PCP between 1/1/85 and 12/31/87. CMV+ and CMV- patients were compared for prognostic factors at presentation and for outcome. Unfavorable outcomes were death within 30 days and intubation.
Results: Of 248 episodes, 136 were confirmed PCP. All had BAL fluid viral culture; 122 were uncontaminated and evaluable. Ten cases in women (1 CMV+) were excluded. Analysis of the remaining 112 cases showed:

PRESENTATION	Number	Age	1st PCP	PaO2	ABNL CXR	Hgb	LDH
BAL-CMV+ (%)	52 (46)	x=34	42 (81)	x=68	52 (100)	x=12	x=414
BAL-CMV- (%)	60 (54)	x=34	45 (75)	x=68	60 (100)	x=12	x=487

OUTCOME	Death	Intubation	Death or Intubation
BAL-CMV+ (%)	6 (12)	4 (08)	7 (13)
BAL-CMV- (%)	13 (22)	13 (22)	20 (33)
Rel Risk (C.I.)	.53 (.22-1.27)	.34 (.08-1.09)	.40 (.20-0.84)
	p = n.s.	p < 0.05	p < 0.02

Conclusion: Nearly 1/2 of men with PCP had BAL CMV+. CMV+ men had similar presentations but apparently better outcomes than CMV- men. CMV-mediated immunosupression may reduce lung injury in PCP or CMV+ men may have underlying lung dysfunction and present with earlier PCP.

T.B.P.10

DEFECTIVE PERIPHERAL OXYGEN UTILIZATION IN AIDS PATIENTS WITH RESPIRATORY FAILURE DUE TO PNEUMOCYSTIS CARINII.

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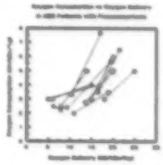
Objectives: A peripheral defect in oxygen utilization has been well described in septic shock and the Adult Respiratory Distress Syndrome (ARDS). Some have suggested that inadequate levels of oxygen transport to peripheral tissues may contribute to the mortality seen in these diseases. In this study we examined peripheral oxygen utilization in AIDS patients with severe respiratory failure secondary to *Pneumocystis carinii* infection (PCP).

Methods: We evaluated twelve patients (age = 34+/-8 yrs) with AIDS, documented PCP and severe respiratory failure (FIO2 = 0.86+/-0.16) requiring PEEP. We chose subjects who had no evidence of any concomitant bacterial, fungal, mycobacterial or viral infection as affirmed by lack of clinical site and negative cultures, including blood. Cardiac outputs were obtained by thermodilution and oxygen consumption calculated by the Fick equation.

Results: Our data showed

	CI	HgB	DO2I	VO2I	LACTATE
Init	4.3 + 1.1	10 + 1.7	539 + 164	152 + 65	2.4 + 1.1
12Hr	4.3 + 1.7	10 + 1.5	544 + 249	145 + 49	2.5 + 0.7
24Hr	4.4 + 1.9	10 + 1.5	546 + 304	138 + 55	4.4 + 1.9



Conclusion: Our patients with PCP and respiratory failure had a supply dependent oxygen consumption at higher levels of oxygen delivery than have been found in normal humans, suggesting a systemic defect in oxygen utilization similar to that seen in bacterial sepsis and ARDS. This may be significant with respect to management.

T.B.P.12

FREQUENT INABILITY TO CONFIRM THE DIAGNOSIS OF PRESUMPTIVE PNEUMOCYSTIS CARINII PNEUMONIA (PPCP).

Bozzette, Samuel A; Sattler, F; Chui, J; Gluckstein, D; Coffman, J; Hewlett, C. UC San Diego, U Southern Cal, UC Irvine, Kaiser/Sunset Hospital and The California Collaborative Treatment Group, San Diego, CA, U.S.A.

Objective: To assess the reliability of the diagnosis of PPCP and the utility of clinical assessment in distinguishing confirmable cases.
Method: The presentation and course of persons with PPCP was examined. All were patients enrolled into a randomized trial of corticosteroids which required subsequent confirmation of diagnosis. Only patients who had a positive induced sputum or underwent bronchoscopy were included.
Result: PCP was confirmed in 158 of 202 patients (78% pos and 22% neg).

Finding	% of PCP+ (Sensitivity)	% of PCP- (False Pos Rate)	Pos Predict Value	Neg Predict Value
Cough	91	84	79	32
Fever	87	75	81	36
Exert Dyspnea	93	84	80	39
Rest Dyspnea	61	46	83	28
Chest Tightness	56	57	78	21
PaO2 < median (65)	52	41	82	25

The pretest and posttest probabilities of disease were not significantly different for all findings and combinations of findings (not shown).
Conclusion: The diagnosis of PPCP frequently cannot be confirmed. Confirmable and unconfirmable PPCP present similarly. No finding alters the probability of confirmable disease to a clinically relevant extent. Actions based on a diagnosis of PPCP must be undertaken with caution.

T.B.P.13

A NEW METHOD FOR THE DIAGNOSIS OF PNEUMOCYSTIS CARINII IN BRONCHOALVEOLAR LAVAGE

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**Diagnostic Pasteur, Marne-la-Coquette, France.

Objective. An indirect fluorescent-antibody technique is compared to a traditional silver staining method for the diagnosis of Pneumocystis carinii (P.c) cystes in bronchoalveolar lavage (BAL) specimens.
Methods. 200 BAL specimens from 140 patients are treated simultaneously with the indirect fluorescent-antibody technique (Detect IF P. carinii**) and Musto's rapid silver staining method.
Results. Of the 200 samples, 73 are positive for P.c., both method included. 90,4% of the positive sample are diagnosed by the indirect immunofluorescence (IIF) method and 80,8% by Musto's technique.
Conclusion. The IIF method permits again in the diagnosis of P.c. in BAL, especially when samples contain a small number of cysts. The technique is simple in performance and has the advantage of an easy and a rapid lecture.

T.B.P.14

PNEUMOCYSTIS CARINII: DIAGNOSIS IN NON-INDUCED SPUTUM BY IMMUNOFLUORESCENCE

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Schedel,I.**,Deicher,H.**,et al.**
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Objective. To develop a reliable routine procedure for diagnosing Pneumocystis (PC) in spontaneously expectorated sputum of patients with AIDS or suspected AIDS.
Methods. Non-commercial indirect immunofluorescence test (IFT) based on polyclonal rabbit-antiserum to PC.
Results. Non-induced sputa of 128 HIV-patients with suspected pneumocystosis (PCP) were examined. The IFT was diagnostic in 50 (39 %) patients. In 30 out of the 78 patients with a negative sputum diagnosis, a bronchoalveolar lavage (BAL) was performed subsequently, because PCP still was suspected.
In 3 of these cases PC was detected in the BAL material. Another sputum diagnosis was taken for false-positive due to the further clinical course. Thus, on the basis of clinical parameters and comparative sputum/BAL examination, 94 % sensitivity and 99 % specificity of the test was attained in this cluster of patients.
Conclusion. Our results suggest that PC is commonly present in spontaneously expectorated sputum of HIV-patients with PCP. A properly designed immunofluorescence technique makes this material a most useful diagnostic specimen.

T.B.P.15

PREDICTIVE DATA FOR POSITIVE BRONCHOALVEOLAR LAVAGE RESULTS IN PNEUMOCYSTIS PNEUMONIA.

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Objective: To determine if any factors may be predictive of bronchoalveolar lavage (BAL) recovery of PCP in suspected cases of pneumonia.
Method: A retrospective review of 127 bronchoscopies performed for suspected PCP was undertaken with analysis of hospital charts. Symptoms, chemistry profile, arterial blood gases, chest x-rays and gallium scans were compared in 62 patients with positive and 65 with negative results for PCP.
Results: Those with positive results had an average shorter duration of anti PCP treatment prior to (BAL), had a lower incidence of negative chest x-rays, had 100% incidence of positive gallium scans and higher lactic dehydrogenase levels. Symptomatically those with positive (BAL) had longer duration of symptoms and lower incidence of productive cough. Arterial blood gas measurements, complete cell counts and T-cell studies showed no differences between groups.
Conclusion: There are some laboratory data (lactic dehydrogenase, chest x-ray and gallium scan) and/or symptoms (duration and productive cough) which can be predicti-   ositive (BAL) results.

T.B.P.16

UNUSUAL PATHOLOGIC MANIFESTATIONS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS.

William D. Travis, S Pittaluga, GY Lipschik, FP Ognibene, AF Suffredini, HC Lane, et al.
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Objective: To investigate the pathologic features of PCP in AIDS patients.
Methods: 162 lung biopsies (156 transbronchial, 6 open biopsies) from 71 NIH AIDS patients with PCP were reviewed. Serial biopsies in 55 patients (2-9 total biopsies) and autopsies in 31 enabled study of the evolution of pathology of PCP.
Results: Several unusual pathologic manifestations of PCP were observed:

Histologic Feature	No. Biopsies (%)
Fibrosis	
Interstitial	74 (63)
Intraluminal	42 (36)
Absence of alveolar exudate	21 (18)
Numerous alveolar macrophages	8 (7)
Granulomatous inflammation	5 (4)
Marked chronic inflammation	4 (3)
Hyaline membranes	4 (3)
Bullous cystic changes	2 (2)
Minimal histologic reaction	2 (1)
Vascular infiltration and vasculitis	1 (1)

Conclusion: PCP has a wide spectrum of pathologic manifestations in AIDS patients. It is important to recognise unusual pathologic features of PCP since it is the most common life-threatening pulmonary complication of AIDS.

T.B.P.17

How predictive are LDH-elevations for the severity of pneumocystis carinii pneumonia in AIDS patients?

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The elevation of plasma lactate dehydrogenase (LDH) is a common phenomenon during pneumocystis carinii pneumonia in AIDS. Prospectively we evaluated the reliability of LDH eleavation to predict severe respiratory distress; arteriell oxygen pressure (PO2) less than 60 mmHg; during pneumocystis carinii pneumonia (PCP). We, therefore, correlated LDH and PO2 in 13 patients with 14 episodes of PCP. A significant negative correlation between both values were found (r=-0.46; p 0.001). For LDH values less than 300 U/l, only 3 of 52 PO2 values were less than 60 mmHg (specifity 96.2%). For LDH values higher than 300 U/l only 38.5% of the PO2 values were less than 60 mmHg (sensitivity 38.5%). When LDH values were between 300 and 600 U/l the range of PO2 values was between 32 and 94 mmHg. Positive and negative prediction values of LDH 300 U/l for the diagnosis of severe respiratory distress were 50% (18/36) and 81% (13/16), respectively.
Conclusion: LDH and PO2 are significantly correlate in pneumocystis carinii pneumonia. However, due to low sensitivity and low predictive value, LDH determination is of limited value in prediction of severe respiratory distress in pneumocystis carinii pneumonia in AIDS patients.

T.B.P.18

COMPARISON OF FIRST EPISODE OF PCP IN COMMUNITY PATIENTS AND INMATES

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Objective: Compare survival of community patients (CP) and inmates (I) diagnosed with their first episode of PCP.
Methods: Retrospective review of all patients with primary PCP admitted to the AMC AIDS Treatment Center between 1/1/87 and 10/31/88. Only those patients with documented PCP, ie confirmed by bronchoscopy, were included in the study. Ethnic origin, risk group, lab parameters on admission, use of AZT and survival were evaluated.
Results: 20 community patients and 26 inmates were included in the study. In the community patients, there were 80% Caucasion, 10% black, 10% Hispanic. Among inmates there were 12% Caucasion, 27% black, 61% Hispanic. Risk group data showed community patients 65% bi/homosexual, 20% IVDA, 15% other. Inmates had 77% IVDA, 8% bi/homosexual, 15% IVDA/Homosexual. 20% of community patients were on AZT prior to admission; 5% of inmate patients were on AZT prior to admission. Average LDH on admission: CP=348; I=408. Average Hct on admission: CP=37.5; I=33.4. Mortality was CP=5%; I=23%. Mortality in those individuals not on AZT: CP=6%; I=24%.
Conclusion: Inmates with primary PCP arrived at AMC sicker than community patients, as evidenced by higher LDH and lower Hct in the inmate population. Furthermore, despite presumably similar workup and treatment by the medical staff at ATC, inmates did worse than community patients as evidenced by their significantly higher mortality.

T.B.P.19

PNEUMOCYSTOSE ET SIDA A BRAZZAVILLE, CONGO.

Carme, Bernard, Mboussa J., Mpele, P., Datry, A. Mouanga-Yidika, G. Itoua-Ngaporo A. et al. Centre Hospitalier et Universitaire de Brazzaville, Congo. Centre Hospitalo-Universitaire Pitié-Salpêtrière, Paris, France.

Objectif: Confirmer la rareté de la pneumocystose chez les sujets congolais atteints de SIDA.

Methodes: 30 sujets (16 hommes et 14 femmes), agês de 23 à 51 ans atteints de SIDA (sérologie VIH positive et critères de la définition OMS, Bangui 1985), présentant des manifestations pulmonaires et ayant eu une recherche de BAAR négative, on fait l'objet, à Brazzaville, d'un lavage broncho-alvéolaire (LBA). Les étalements du culot de centrifugation du produit de lavage ont été colorés selon la technique d'imprégnation argentique rapide de MUSTO et coll. afin de rechercher Pneumocystis carinii. Résultats: Pour les patients investigués, le tableau clinique associait dans 75% des cas toux, dyspnée, douleurs thoraciques et fièvres. La radiographie du poumon retrouvait chez la moitié des patients une pneumopathie localisée uni ou bilatérale et dans 25% des cas une pneumopathie interstitielle. La notion de prise de sulfaméthoxazole et triméthoprime, dans les jours ayant précédés le LBA, se rencontrait une fois sur 4. Quatre cas seulement de pneumocystose ont été diagnostiqués (13.3%)
CONCLUSION: La rareté de la pneumocystose est confirmée chez les sidéens brazzavillois.

T.B.P.20

NON OBVIOUS AIDS :
Pneumocystis carinii Pneumonia in the Elderly
VINTI, Henri ; PESCE, A. ; Taillan, B. ; DUJARDIN, P. ; CASSUTO, J.P.
Université de Nice, FRANCE.

Pneumocystis carinii Pneumonia (PCP) is the most common opportunistic infection in patients with AIDS. Diagnosis is mostly considered in young patients with risk factors ; it is obviousless in the elderly.
During the past two years, we observed in our department seven cases of PCP in patients over the age of 60. Four of these patients were shown to have AIDS (one homosexual man and three who had had a blood transfusion en 1984). The fifth, a bisexual man, had been seropositive for HIV since 1986, and the remaining two had other imunosuppressive disease. In all cases, diagnosis was established on finding the pathogen in the liquid of broncho-alveolar lavage. Except in the patient who was already known to be seropositive for HIV, diagnosis was delayed, and bronchoscopy was performed only when the clinical and radiological finding showed deterioration despite conventional antimicrobial treatment.
In our region, 15 % of patients with AIDS are over 60, because of the high prevalence of the disease (129 cases per million inhabitants) and the mean age of the population (27 % over 60). We think that PCP should be systematically considered in elderly patients with atypical, unresponsive chest infection.

Traitement de la PCP : Pentamidien et autres médicaments (traitement clinique)
PCP Treatment: Pentamidine and Other Drugs (Clinical Treatment)

T.B.P.21

PRIMARY AND SECONDARY PROPHYLAXIS AGAINST PNEUMOCYSTIS CARINII PNEUMONIA WITH FANSIDAR®

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II. Department of Internal Medicine, Rudolf Virchow University Clinic (Wedding), Freie Universität Berlin, FRG.

Objective: Because of the high incidence of Pneumocystis carinii pneumonia (PcP) in HIV infected patients and because of the high incidence of relapses after therapy, specific prophylaxis is essential. The efficacy of Fansidar® in primary prophylaxis and Fansidar® vs. aerosolized pentamidine in secondary prophylaxis was evaluated.
Methods: Fansidar® dosage: 2 tablets twice a week, folinic acid substitution. Aerosolized pentamidine: 60 mg every two vs. 300 mg every four weeks. Patients who had Fansidar® prophylaxis after CNS toxoplasmosis without PcP manifestation before, were enrolled in the primary prophylaxis group. Secondary prophylaxis with Fansidar® was started within one week after the end of PcP therapy.
Results: Five of 47 patients (10 %) who had secondary Fansidar® prophylaxis developed relapses of PcP, but 7/22 patients (32 %) without prophylaxis. Thirteen patients are under aerosolized pentamidine prophylaxis; none of the patients developed PcP relapses. In 1/35 patients (3 %) under primary Fansidar® prophylaxis a PcP episode was seen, but in 3/14 Patienten (21 %) without primary prophylaxis. Side effects related to Fansidar® were noted in 21/82 patients, but only in 3 patients Fansidar® had to be discontinued.
Conclusion. Fansidar® is highly effective in prophylaxis against PcP, especially in primary prophylaxis. First results showed aerosolized pentamidine probably equally effective.

T.B.P.22

A QUANTITATIVE SCORING SYSTEM FOR EVALUATING THE RESPONSE TO THERAPY OF PNEUMOCYSTIC CARINII PNEUMONIA (PCP)

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*Research Triangle Institute, Research Triangle Park, NC,USA, **Indiana University, Indianapolis, IN,USA, 'University of Southern California, CA, USA, +Natl. Inst. of Allergy & Infectious Diseases, Bethesda, MD, USA.

Objective: Develop an instrument for measuring response to PCP therapy.
Methods: A "pneumonia evaluation" score for the key signs and symptoms of PCP was devised, incorporating subscores for respiratory rate, fever, cough, chest tightness, dyspnea and supplemental oxygen requirement. It was compared to arterial-alveolar (A-a) gradients, chest x-rays and global clinical assessments in the first 30 evaluable cases of an ongoing NIAID-sponsored AIDS Clinical Trials Group study of PCP therapy. Thirty more cases will ripen and be analyzed in April, 1989.
Results: In cases with favorable outcomes at day 21, all showed improved scores (average 81%, range 35-100%) at day 21 and all except 1 showed improved scores (average 49%, range 6-90%) at day 10. In those with A-a gradients calculated on room air, all showed improvements (average 49%, range 19-100%) at day 21 and all except 1 showed improvements at day 10, (average 31%, range 3-61%). In the 6 cases with clinically unfavorable outcomes, many of the scores had little room to worsen: one improved 7% and the other 5 worsened an average of 24% (range 7-61%). The chest x-ray results tended to lag behind both the scores and the A-a gradients.
Conclusion: This scoring system may reflect response to PCP therapy more rapidly and with greater amplitude than A-a gradients or chest x-rays.
(This work was supported by the NIAID AIDS Clinical Trials Group program.)

T.B.P.23

AEROSOLIZED PENTAMIDINE (AP) IN THE TREATMENT OF PCP EPISODES : AN OPEN MULTINATIONAL TRIAL, PRELIMINARY RESULTS ON 70 PATIENTS.

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METHODS -HIV positive patients were enrolled if they met the following criteria : histologically proven PCP, mild or moderate episode defined by PO2 > 55 mmhg ; patients previously treated for the present episode were enrolled only if they had failed to respond to previous drugs. AP was administered at the dose of 300 mg once a day with a jet nebuliser (RESPIGARD II). It was intended to treat the patients a minimum of 7 days and a maximum 21 days ; patients were assessed clinically daily and 4 weeks after AP discontinuation ; ABG, lung X ray and lab values were repeated every 3rd day. A favorable response was defined by normal ABG, apyrexia, no dyspnea, and an improvement of the lung X ray at the end of therapy with no relapse after AP discontinuation.
RESULTS - Up to now among 120 patients planned, 70 males patients (mean age of 34.5 years) were enrolled, 63 of whom being considered as suitable for efficacy analysis.
43/63 patients suffered from their first bout of PCP ; 6/63 patients had failed to prior therapy ; the mean PO2 was 76.9 mmhg. Overall 68 % of the patients responded to AP and 32 % failed (one patient died) ; in the patients who responded to AP, dyspnea apyrexia and improvement were obtained with a mean of 7.5 and 8.9 days respectively ; patients with no pretherapy alveolar damage (on lung X ray) showed a higher cure rate than patients with alveolar damages (77 % VS 52,2 % p = 0.05). All clinical failures but 2 responded to Cotrimoxazole. Mild cough or bronchospasm occured in 25 % of the patients and the systemic tolerance was excellent.
CONCLUSION - The overall response rate was somewhat lower and the onset of improvement was slower than with cotrimoxazole or parenteral pentamidine. Because the tolerance was good, another clinical trial has been initiated to evaluate a 600 mg AP daily dosage.

T.B.P.24

SURVIVAL RATE AND PROGNOSIS FOR AIDS PATIENTS WITH SEVERE PNEUMOCYSTIS CARINI PNEUMONIA (PCP). REQUIRING MECHANICALLY VENTILATION (MV).

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Objective. To evaluate the prognosis for AIDS patients with severe PCP requiring MV.
Methods. Clinical outcome was evaluated in 19 consecutive patients (all men 17 homosexuals, 2 with unknown riskfactor) with first episode of PCP who required MV. Survivors were defined as patients discharged from hospital.
Results. lo patients (53%) survived. 2 (lo%) of the survivors died, 286 (Kaposi) and 4ol days (Bovine TB) after MV respectilleły. 8 (42%) patients are alive after mean 475+/- 22o days and 5 (26%) patients returned to their normal civil jobs. The mean time in hospital, before specific therapy was initiated, was 2.3 +/- 1.7 days for survivors compared to 8.o +/- 7.7 days for nonsurvivors (p=o.o3) and the mean duration of MV 5.4 +/- 2.4 for survivors compared to lo.8 +/- 5.7 days for nonsurvivors (p=o.o2).
There was no significant differences with respect to: 1. duration of symptoms before admission. 2. use of corticosteroids. 3. addition of secondary diagnosis or 4. respiratory status immediately after intubation.
Conclusion. The survival rate for first episode of PCP requiring MV are better than previously reported. The prognosis for survivors are equal to the prognosis for other AIDS patients. Early diagnosis and treatment seem to be important for the survival. The usefullness of corticosteroids still remains to be proved.

T.B.P.25

REDUCED DOSE OR AEROSOLIZED PENTAMIDINE TREATMENT FOR *PNEUMOCYSTIS CARINII* PNEUMONIA (PCP): 3-6 MONTH FOLLOW-UP

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Objective: To investigate the toxicity, efficacy, and pharmacokinetics of reduced dose or aerosolized pentamidine for the treatment of mild PCP. Methods: 45 patients were entered into a randomized trial of reduced dose (3 mg/kg/day) intravenous pentamidine or aerosolized pentamidine (600 mg/day; Respirgard-2 nebulizer) for mild PCP ($PO2 \geq 60$ mm Hg). Pentamidine concentrations in plasma and bronchoalveolar lavage (BAL) were measured by HPLC. Results: Of 22 IV patients, 1 was excluded because PCP was not confirmed, 4 failed to respond to therapy, 2 developed major toxicity and 17/21 (81.0%) responded satisfactorily. Of 23 aerosolized patients, PCP was not confirmed in 1, 1 received no drug, 4 failed to respond, none developed major toxicity, and 17/19 (89.4%) responded satisfactorily. There were 2 deaths in the aerosolized group. The early relapse rate (3 months) were 0/17 and 10/15 ($p<.05$) for IV or aerosolized therapy.

Bronchoalveolar lavage concentrations of pentamidine were 89.8 ± 48.4 ng/ml and 110 ± 90.2 ng/ml ($p>0.05$; NS) in patients with or without relapse. Conclusion: Mild PCP responds satisfactorily to reduced dose IV or aerosolized pentamidine. The early relapse rate following aerosolized treatment is high and was not prevented by aerosolized pentamidine prophylaxis. BAL concentrations of pentamidine were not correlated with relapse. Pentamidine accumulates in plasma with daily intravenous therapy even in patients with normal renal function.

T.B.P.26

PENETRATION OF TRIMETHOPRIM(TMP) COMPARED WITH THAT OF SULFAMETHOXAZOLE(SMX) IN BRONCHOALVEOLAR LAVAGE FLUID (BALF) DURING PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

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Aim. To improve knowledge on local kinetics of high doses TMP/SMX by comparing penetration of TMP and SMX into the extracelluler fraction of alveolar exsudate where PC is present.
Methods. 10 HIV+ patients with suspected (and later confirmed) PCP received a constant infusion of TMP (20mg/kg/d)-SMX (100mg/kg/d), initiated 2h before BAL. BAL was performed in the right middle lobe. Blood and BALF samples obtained during BAL were centrifuged and stored at -80°. TMP and SMX were assayed by bioassay and HPLC, respectively.

Results	Serum (µg/ml)	BALF (µg/ml)	Pp (%)	[TMP] BALF/[TMP] serum [SMX] BALF/[SMX] serum
TMP	3.1 ± 1.3	1.9 ± 0.7	76 ± 36	57 ± 40
SMX	162 ± 12	3.0 ± 1.4	1.8 ± 1.2	

Discussion. Although BAL dilution may differ, it is clearly equal for both drugs in one individual patient. Thus, comparing BALF/serum ratios may be a way to compare aptitudes of compounds given simultaneously to penetrate into the extracelluler fraction of alveolar fluid.
Conclusion. In patients with PCP, TMP exhibits a markedly superior aptitude to penetrate into the extracelluler fraction of alveolar fluid as compared to SMX. Consequently a ≈1/1 ratio is present at the site of infection. This study suggests that TMP-SMX dosage ratios different from that commercially available may deserve studies in experimental models of PCP.

T.B.P.27

TRAITEMENT DE LA PNEUMOCYSTOSE DU SIDA PAR LE DFMO

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Objectif. Evaluation de l'efficacité et de la tolérance du Difluorométhylornithine (DFMO) dans la pneumocystose au cours du SIDA.
Patients et méthodes. Le DFMO a été administré à la dose de 400 mg/kg/j IV pendant 15 jours puis 300 mg/kg/j P.O. pendant 30 jours. L'efficacité a pu être évaluée chez 22 patients : Groupe I (n=5) PaO_2 = 49 mmHg (27-68) : traitement de première intention, Groupe II (n=17) PaO2 = 63 mmHg (38-92) : traitement de relais après intolérance (n=11) ou échec d'un autre traitement (n=6). La tolérance a été évaluée chez 27 patients.
Résultats. La durée moyenne du traitement a été de 20 jours (4-57). Groupe I : 3/5 guérison ou améliorations. Groupe II : 15/17 (88 %) guérisons ou améliorations. 91 % de réponses favorables ont été obtenues chez les 11 patients dont la PaO_2 était supérieure à 50 mmHg versus 72 % chez les 11 patients avec PaO_2 inférieure à 50 mmHg. Les effets secondaires les plus fréquents étaient : thrombopénie (52 %), anémie (41 %), neutropénie (37 %), diarrhée (30 %). Ils ont nécessité l'arrêt du DFMO dans 9/27 cas (33 %).
Conclusion. 1) En traitement de première intention, l'efficacité du DFMO semble inférieure à celle des traitements conventionnels. 2) En relais, le taux global de réponse favorable (88 %) est élevé mais pourrait être lié à l'effet du traitement antérieur. 3) La toxicité hématologique est fréquente.

T.B.P.28

AEROSOL THERAPY WITH PENTAMIDINE ISETHIONATE IN ACUTE MODERATE CASES OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

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Objektive. To examine the effectiveness, side effects and pharmacokinetik data of aerosol therapy with Pentamidine.
Methods. Because of toxic side effects, Pentamidine isethionate by parenteral application can only be considered as a second choice in the therapy of PCP. In an open prospective multi-centered study in 1988, ten patients with light to moderate cases of PCP were treated with aerosol therapy. The most important criteria for inclusion in this study were PaO2 over 60 mmHg and expiratory volume over 2 liters or 50 % of the normal range. The histological diagnosis was supported by bronchoskopy. The patients received 300 mg of Pentamidine daily by inhalation (Respigard II) over a period of 21 days. Additionaly, the Pentamidine level in the blood and in 24 hour-urine samples were measured by a modified HPLC method. Controlled factors were blood count, blood sugar, lactic acid, and the laboratory levels of the liver and kidney functions.
Conclusion. For light to moderate cases of PCP, aerosol therapy with Pentamidine administered by the proper inhalation systems present an alternative to the formaly known methods. However, a 300 mg dosage appears too low. Further research is needed to determine the optimal dosage.
Results. Eight out of ten patients were successfully treated, although complications were created by accompanying infections and intrapulmonary Kaposi-Sarkoma. The measured Pentamidine level in the blood stayed in a range from 0-10 ng/ml. The secretion in the urine was found to be 00.1 - 0.5 o/oo of the inhaled dosage. A cumulative effect did not occur. Contrary to the above mentioned method of parenteral application, no toxic side effects were found.
Of the remaining two patients, one had an early relapse. The other had to be transferred to another form of therapy due to a worsened X-ray.

T.B.P.29

Eflornithine in the treatment of Pneumocystis Carinii Pneumonia (PCP).

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Eflornithine (E) has been demonstrated to have activity against PCP. From 1985 to 1988 42 patients that had failed or had had significant adverse reactions to Pentamidine and TMP-SMX were treated with E. There were 23 definite responses (R) and 2 propable responses. One patient died of another opportunistic infection and 16 patient failed therapy (F). No differences were observed between responders and failures in the duration of AIDS, number of previous episodes of PCP,presence of other opportunistic infections or KS. Onlv 1 responder required mechanical ventilation at the start of therapy as opposed to 12/16 failures ($p<.001$). The initial WBC was 5.09 ∓ 1.88 in R as compared to 9.18 ∓ 4.26 in F ($p<.01$). There was a trend to higher A-a gradient in F (mean 80 ∓ 19) vs R (72 + 16) but this was not satistically different ($p>.2$). Adverse effects included thrombocytopenia, in 74% of patients, the WBC declined in 65% and hematocrit in 16%. No patient had significant bleeding or a secondary infection. Four patients had diarrhea requiring antimotility agents. E is effective therapy in patients with mild to moderate disease. As with standard therapy outcome is poor in patients with severe disease requiring mechanical ventilation. Further dose-response investigation to maximize efficacy and minimize toxicity is indicated.

T.B.P.30

CLINDAMYCIN PLUS PRIMAQUINE AS PRIMARY THERAPY FOR PNEUMOCYSTIS CARINII (PC) PNEUMONIA IN AIDS PATIENTS

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Objective. An open-labelled, pilot study to determine safety and efficacy of clindamycin and primaquine for treatment of mild (A - a gradient < 30 mm/Hg) PC pneumonia in AIDS patients. Methods. Histologically proven PC pneumonia was required for entry. Patients were excluded if they had received prior antiprotozoal therapy or prophylaxis within 6 weeks prior to entry, or if they had significant diarrhea, absolute granulocyte count (AGC) < 1000/mm^3, platelet count < 100,000/mm^3, Hgb < 10 gm, creatinine > 2mg/dl, or SGOT > 5 times normal. Clindamycin 900 mg IV every 8 hours plus primaquine 30 mg orally per day were administered for the first 10 days. Clindamycin dosing was then changed to 450 mg orally every 6 hours if patients met defined criteria for clinical response. Total duration of treatment was 21 days. Outcome was determined by a pneumonia scoring system incorporating fever, respiratory rate, dyspnea, cough, chest tightness, supplemental oxygen requirement and chest X-ray, and by change in A - a gradient. Bimonthly aerosol pentamidine prophylaxis was begun 2 wks after completing therapy. Results. All 8 patients entered to date showed marked improvement by the 7th day of treatment. Six patients completed treatment with clindamycin and primaquine and were cured. Two patients experienced side effects mandating change to standard therapy during the second week; one developed fever and rash, the other transient, severe neutropenia (AGC of 300). Both were cured. Additional minor side effects included rash, mild neutropenia, and mild methemoglobinemia. No relapses have yet occurred (mean follow-up after treatment: 8 weeks; range: 1-21 weeks). An additional 3 patients were treated in San Francisco with a totally oral clindamycin and primaquine regimen. All improved clinically but failed to complete 21 days of treatment due to rash (2) or mild transaminase elevation (1).
Conclusions. Although further study is warranted, clindamycin and primaquine may represent an alternative treatment for PC pneumonia in AIDS.

T.B.P.31 CORRELATION BETWEEN ICU SURVIVAL AND REQUIRED CPAP/PEEP IN AIDS PATIENTS WITH PNEUMOCYSTIS CARINII PNEUMONIA

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Objective: The survival of patients (pts) with Pneumocystis carinii pneumonia (PCP) and AIDS who require ICU admission and mechanical ventilation has been shown to be poor. This study was undertaken to determine the survival rates of pts with PCP treated with positive airway pressure (CPAP by mask, CPAP by endotracheal tube, PEEP with mechanical ventilatory support).
Methods: The charts of all pts with PCP admitted to the ICU between 1985 and 1989 were reviewed retrospectively to determine patterns of survival and correlation between survival and treatment with CPAP/PEEP. The pts were treated by the same physician group using established protocols for airway pressure therapy to maintain adequate oxygenation.
Results: Preliminary data from 24 pts requiring CPAP/PEEP revealed that 6/24 (25%) were discharged from the ICU alive, and were ultimately discharged from the hospital. The highest CPAP/PEEP level needed to maintain adequate oxygenation was a mean of 10 ± 3.5 cm H20 in survivors and 15 ± 4.5 cm H20 in non-survivors. These differences are highly significant at $p < 0.001$ by chi square analysis.
Conclusion: We routinely use CPAP/PEEP to improve oxygenation in pts with PCP. The need for CPAP/PEEP levels of 15 cm H20 or greater to maintain acceptable oxygenation is associated with a significantly higher mortality in these pts. This is most likely related to a greater degree of lung involvement with pneumocystis in those requiring higher CPAP/PEEP levels.

T.B.P.33 PROSPECTIVE RANDOMIZED STUDY OF TMP/SMX (T/S) VERSUS PENTAMIDINE AEROSOL (P IN PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

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In an open randomized study, 30 AIDS patients suffering from PCP whose arterial PO2 were higher than 60 mmHg were treated for 21 days with either T/S at 20/100 mg/kg/d (n = 15), or aerosol methanesulfonate Pentamidine (600 mg/d) administered daily during 30 minutes with an ultrasonic nebulizer system (n = 15). Patients were comparable in : age (38,6 v 38,5), first PCP episodes, arterial PO2 (71,6 v 71,5), and clinical and biological severity.
Results :

Number of patients	S/T 15	P 15	P Value
Treatment success	7	9	NS
Failures	1 (dead)	5 (dead = 2)	p = 0,06
Therapy modification (adverse reaction)	2	0	NS
Treatment success without modification but (minor adverse reaction)	5	0	p = 0,02
Not evaluable dead within 48 h	0	1	

NS = not significant
Conclusions : in our study a higher number of failures in the P group occured (p = 0,06), but no adverse systemic reactions (p = 0,02). Number of cured patients without treatment modification is not statitically different for the 2 groups. Patients in S/T group experienced more adverse reactions (p = 0,02).

T.B.P.35 THE USE OF STEROIDS IN THE THERAPY OF RESPIRATORY FAILURE COMPLICATING PNEUMOCYSTIS (PCP)

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Objective. We studied the effect of adjuvant high dose corticosteroids in the treatment of 16 patients with AIDS and PCP resulting in respiratory failure.
Methods. Retrospective chart review of 16 patients with a PO2<60 on FIO2 ≥ 0.60 and/or PO2<50 on RA.
Results. Steroids was given in a dose of 20-40 mg Methylprednisilone intravenously q6h for 7-10 days. 13 men and 3 women, ages 20-65 were studied. Risk factors included homosexual (6), IV drug abusers (6) and 4 unknown. 4/16 were previously treated with Zidovudine at the time of admission. In 15/16 respiratory failure complicated the first episode of PCP. In 13/16 mechanical ventilation was required. 6/16 patients died without a response to steroids following respiratory failure. 5 recovered and were alive and discharged at 3 month follow-up. 4 appeared to recover initially but died within 1 month, and 1 initially responded but remains unconscious in the hospital. Of the 10 patients who appeared to respond initially to steroids, 8 had a relapse of PCP after stopping steroids. Relapse was defined as worsening chest x-ray and PO2 after an initial improvement. These were retreated for PCP.
Conclusion. Adjuvant steroid initially helped reverse respiratory failure due to PCP in 60% However, the relapse rate was high and only 31% remained alive 3 or more months later.

T.B.P.32 TREATMENT AND OUTCOME OF PNEUMOCYSTIS CARINII PNEUMONIA IN AIDS PATIENTS.

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Objective. To evaluate the efficacy and safety of treating Pneumocystis carinii pneumonia (PCP) in AIDS patients.
Methods. Analysis of a standardized protocol from 75 consecutive HIV positive patients diagnosed of having PCP admitted to our department.
Results. Eighty nine episodes of PCP were recorded, 83% by histologic verification and 17% by clinical criteria. Chest x-ray of 13 (15%) patients taken initial in the episode were normal. Patients were treated with sulfamethoxazole/trimethoprim (ST) (82 episodes, median daily dose of S/T : 4900/980 mg, median duration 20 days) and/or pentamidine (P) (17 episodes, median daily dose 200 mg, median duration 11 days). Two episodes of PCP were not treated. The ST and P regimens resulted both in about 50% objective side effects, but only 10% treated with ST and 24% treated with P had their treatment discontinued because of side effects. Of patients with primary PCP 7 (10%) patients died of PCP inspite of drug therapy. Twelve (16%) primary PCP patients and 5 (36%) patients with recurrent episodes of PCP died during hospitalization. No patient who died had a normal chest x-ray. Relapse of PCP after secondary prophylaxis with low dose ST (daily dose of S/T : 800/160 mg, average followup time 261 days) occurs in 3 (6%), compared to 11 (69%) patients who did not receive prophylaxis (average followup time 131 days) (p<0.00001). The survival rate after 1 year among patients with primary PCP with the diagnosis made in 1986 (23 patients) and 1987 (39 patients) was 0.52 and 0.74, respectively, as opposed to 0.08 when diagnosed prior to 1986 (13 patients) (p<0.01). Seven (64%) of 11 patients requiring mechanical ventilation were discharged from the hospital.
Conclusions. In most of our PCP patients, treatment with ST and P and secondary prophylaxis with ST is safe and effective. Controlled studies are needed to verify that newer alternatives are superior to treatment with ST and P. Furthermore, early diagnosis of PCP may improve the prognosis. Lastly, mechanical ventilation is a reasonable option when needed in patients with PCP.

T.B.P.34 THE BIOAVAILABILITY OF CO-TRIMOXAZOLE IN PATIENTS WITH AIDS RECEIVING TREATMENT FOR PNEUMOCYSTIS CARINII PNEUMONIA.

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Objective. To investigate the bioavailability of co-trimoxazole in AIDS patients with normal and abnormal fat absorption.
Methods. Five HIV antibody positive males mean age 38 years (20-60years), mean weight 60kg (48-70kg) receiving a mean dose of 124mg/kg/day co-trimoxazole for the treatment of P. carinii pneumonia were studied. Plasma concentration time profiles for trimethoprim (TMP) and sulphamethoxazole (SMX) were obtained during a 6 hour dosage interval after the same dose of co-trimoxazole given intravenously and orally. Serum levels of TMP and SMX were measured using high performance liquid chromatography. Fat absorption was determined by the measurement of $^{14}CO_2$ in breath following ingestion of a test meal containing ^{14}C triolein with 60g fat. Bioavailability was calculated using standard pharmacokinetic methods.
Results. The mean bioavailabilities of TMP and SMX in patients with fat malabsorption were 108 (±12SD)% and 91 (±11SD)% respectively. By comparison the mean bioavailabilities of TMP and SMX in patients with normal fat absorption were 90 (±4SD)% and 101 (±7SD)% respectively.
Conclusion. Preliminary data suggest that in patients with AIDS oral and intravenous co-trimoxazole achieve similar serum TMP and SMX levels even in the presence of abnormalities of fat absorption.

T.B.P.36 DIAGNOSIS AND TRATMENT OF PNEUMOCYSTIS PNEUMONIA: A SURVEY OF OREGON AND VANCOUVER, WASHINGTON PHYSICIANS

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OBJECTIVE: To describe how physicians in the state of Oregon and Vancouver, washington responded to questions about the diagnosis and treatment of pneumocystis pneumonia.
METHODS: Physicians were surveyed in the Portland area(including Vancouver) and the state of Oregon who were primary providers of care to those with AIDS. Physicians were offerred $20.00 payment for their time in filling out the survey. Forty five surveys were sent out with a three week return.
RESULTS: Thirty four surveys were returned with a 76% response rate. The following were the results found. The top lab results utilized at the initial evaluation were CBC and ABGS. Induced sputums and bronchoscopic BAL were the primary methods used in the diagnostic workup. The noninvasive test marker used in diagnosis was the abnormal chest X-Ray. When requested about the initial therapy prior to diagnosis, 29% used TMP/SMZ (IV) with varying dosages, 25% used oral TMP/SMZ and 23% used Pentamadine (IV). The second agent of choice after failure or toxicity, was IV Pentamadine by 53% and Inhaled Pentamadineby 15% of the respondents. Physicians favored Inhaled Pentamadine at 48% for maintenance therapy, with 26% using TMP/SMZ. Only 29% of the respondents did prophylactic treatment. Universal criteria for prophylactic treatment was CD T4 <200. Overall the physicians had seen approximately 642 patients with the majority seeing 10-20pts.
CONCLUSION: We will use the data to educate involved physicians in treatment.

T.B.P.37 PROSPECTIVE RANDOMIZED TREATMENT FOR PNEUMOCYSTIS CARINII-PNEUMONIA (PCP) IN AIDS PATIENTS.

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Despite the high incidence of PCP in HIV infection, few large scale prospective treatment trials have been reported. Objective: To compare trimethoprim-sulfamethoxazole (TS) (20 mg T & 100 mg S/kg/day) vs pentamidine isethionate (P) (4 mg/kg/day) both given IV for 21 days. Methods: One hundred sixty patients were randomized; ninety-two patients received TS and 68 P. Results: There were no significant differences in mean age (TS=36.8 P=36.3), % male (TS=80 P=81), risk factors (% IVDA TS=69 P=63; % homosexual/bisexual men TS=18 P=22; % other TS=13 P=15), % first episode of PCP (TS=91 P=88), mean temperatures (°F) (TS=102.2 P=102.0), mean A-a O_2 gradient TS=48 ± 17 P=44 ± 20) and mean lymphocyte count (TS=1090 P=1133). On or after day 5, patients were evaluated for response to therapy. Failure to complete therapy on initial drug was common 74 (80%) for TS and 47 (69%) for P (NS). Of those receiving TS, 4 died within 5 days, (42%) required change in therapy for failure to respond, and 31 (34%) required change for severe toxicity (neutropenia 15, rash 11, hepatitis 4, nausea and vomiting 4, renal insufficiency 1). Of those receiving P, 3 died within 5 days, 27 (40%) required change in therapy for failure to respond, and 17 (25%) required change for severe toxicity (hypoglycemia 5, neutropenia 4, hypotension 4, rash 3, renal insufficiency 3, fever 1). The overall survival was similar in the TS (67%) vs P (74%) groups. The survival rates for those requiring change in therapy were: TS followed by P (TS-P) due to failure 46%, TS-P due to toxicity 97%; P followed by TS (P-TS) due to failure 56%, P-TS due to toxicity 94%. Survical rates (at end of therapy) for groups not requiring change and completing 5 days of therapy were TS (83%) and P (79%) (NS). Conclusion: TS and P are equivalent therapy for PCP in AIDS patients. Neither can be relied on solely in the treatment of this pneumonia. Change in therapy due to drug toxicity is not associated with a worsened survival rate (96%) in contrast to change due to failure to respond (50%) ($p < .01$)

T.B.P.38 PENTAMIDINE USE IN A TERTIARY CARE HOSPITAL 1984-1988

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Objective: To review use of Pentamidine at a tertiary care centre in Northern Alberta, since first reported case of AIDS in 1983 and first cardiac transplant in 1985.
Method: Patient chart review of pharmacy list.
Results: Increasing use of pentamidine was noted annually from 1984 (1 course) through 1988 (23 courses). A total of 31 patients (27 male, 4 female) received 36 courses of treatment ranging from 2 to 30 days. Most patients had an underlying disorder of AIDS (22), but 7 patient had other predisposing factors to Pneumocystis carinii pneumonia (PCP) including 4 patients with cardiac transplants. The diagnosis of PCP was confirmed on 23 occasions. Fifteen courses of pentamidine were started after inital cotrimoxazole had produced side effects while 8 were started for failure to improve on cotrimoxazole.
On 12 occasions pentamidine was discontinued because of well recognized side effects. In 1 case, hypoglycemia persisted 2 weeks following discontinuation of the drug. In 50% of the cardiac transplant recipients, other drug level management was complicated by pentamidine.
Conclusion: Use of the unlicensed drug pentamidine has increased at our centre with increasing numbers of HIV infected patients and transplantation recipients. A significant number of cases (13%) occurred in cardiac transplant recipients where drug management was made more difficult.

T.B.P.39 ERYTHROMYCIN IN THE TREATMENT OF PcP IN AIDS PATIENTS

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Objective. We studied retrospectively 17 episodes of PcP in 14 patients diagnosed between April 1985 and October 1988 which were treated by erythromycin. The patients had a known or an acutely appearing allergic/toxic reaction to the standard therapy by TMP/SMX and/or parenteral pentamidine.
Methods. In 11 out of 17 episodes, the diagnosis of PcP was histologically proven. All of the 17 episodes were characterized by PcP-typical clinical picture, the typical x-ray changes of the lungs, and elevation of ESR, LDH, neopterin and serum immunoglobulins. All patients had a marked cellular immunodeficiency. The erythromycin regimen was 4-6x 500 mg daily. The mean duration of therapy was 23 days. Severe side effects were not seen. In 5 cases, erythromycin was administered immediately after diagnosis.The other 12 episodes had been pretreated by TMP/SMX and/or parenteral pentamidine. The mean duration of pretreatment with TMP/SMX was 10 days, with pentamidine 7 days.
Results. In 15 of 17 episodes of PcP, erythromycin treatment was successful and achieved complete cure. In 2 cases of PcP proven by bronchoscopy and histology and pretreated by TMP/SMX, the symptoms did not improve under a 7-day treatment with erythromycin. These patients received pentamidine i.v. which resulted in cure. The follow-up showed that after 7 episodes treated successfully with erythromycin, relapse occurred after a mean of 7.2 months. Eight of the 14 patients died after a mean of 5.2 months because of other opportunistic infections or kachexia without a relapse of PcP.
Conclusion. Erythromycin is effective in the treatment of PcP. Prospective comparative studies are desirable.

T.B.P.40 TREATMENT OF AIDS-RELATED PCP BY PENTAMIDINE INHALATION

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Objective. To evaluate the safety and efficacy of aerosol pentamidine isethionate.
Methods. 28 patients with mild or moderate PcP ($PO_2 \geq 55$ mm Hg) were treated by inhalation of pentamidine, 300 mg once daily for 21 days using a Respigard II nebulizer. Successful treatment was defined as substantial improvement after the first week of treatment and an untreated relapse-free period of at least 4 weeks' follow-up.
Results.

Successful treatment	Early failure within the first days	Failure	Chest x-ray not completely cleared	Early relapse (within 4 weeks)
17 (61%)	4	5	1	1

Initial PO_2 in patients with successful treatment ranged from 56-126 (median 78 mm Hg). In the group of treatment failure (n=11) the initial PO_2 ranged from 55-98 (median 66 mm Hg). This difference was not significant (Wilcoxon's Test, $p > 0.1$). Major side effects could not be observed. Continuously taken blood samples showed serum levels of pentamidine ranging from 0-10 ng/ml, whereas i.v. administration leads to serum levels of about 400 ng/ml. However, half of the patients developed cough during the first days of inhalation. This could be prevented by the previous administration of terbutaline. Some patients had a bitter taste which disappeared within minutes after inhalation, in some cases loss of appetite occurred. One case of mild erythroderma responded to antihistaminic treatment.
Conclusion. The efficacy of aerosol pentamidine is comparable to standard therapy by cotrimoxazole or pentamidine (i.v., i.m.). Acceptance by the patients was satisfactory. No severe adverse reaction occurred.

T.B.P.41 TRAITEMENT DE LA PNEUMOCYSTOSE PAR LE COTRIMOXAZOLE

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Objectif. Analyser l'efficacité et la tolérance du cotrimoxazole dans le traitement de la pneumocystose.
Méthodes.Etude retrospective portant sur des patients atteints de pneumocystose entre 1985 et 1988. Les résultats sont exprimés en m±ds; les comparaisons sont faites à l'aide du test apparié de Student.
Résultats. 100 sujets, moyenne d'âge=36±9 ans. 76 étaient homosexuels, 10 toxicomanes intraveineux, 4 polytransfusés et 13 autres. Le traitement était efficace pour 86 patients,inefficace pour 4 patients, parmi lesquels 3 présentaient une infection pulmonaire associée. 10 sujets avaient arrêté le traitement pour raison d'effets secondaires.

Paramètres biologiques	N° patients	Période du traitement J0	J20	p
P.neutro	66	4215±2462	2262±2107	<0.0001
P.éosino	58	83±99	129±132	<0.002
Hémoglob.	70	11.33±2.08	10.47±1.70	<0.0001
SGOT	47	49±69	68±99	<0.02
SGPT	47	43±41	90±116	<0.004

Conclusion Le cotrimoxazole est efficace dans le traitement de la pneumocystose,mais des effets myélotoxiques demeurent.

T.B.P.42 PNEUMOCYSTIS CARINII PNEUMONIA IN THE ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

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Objective. Analysis of Pneumocystis carinii pneumonia (PCP) in patients with AIDS. Methods. Retrospective chart and CXR review. Results. Since 1983 we have treated 31 patients with AIDS and PCP. All except 5 were homosexual males, with 22 (71%) having PCP as the initial manifestation of AIDS. All patients had CXR changes on presentation. Three had atypical changes including lobar consolidation and multiple cavities. Arterial pO_2 on room air ranged from 33-87 (av61). Diagnosis was made in 32 of 39 episodes (82%) using bronchoalveolar lavage. Therapy was initiated with trimethoprim-sulpha (T-S) or pentamidine (P). Nine of 27 episodes (33%) were successfully treated with T-S alone vs 3 of 11 (27%) with P alone. Eleven of 21 (52%) experienced adverse effects with T-S vs 8 of 11 (73%) to P. Adjunctive steroid therapy was required in 16 of 39 episodes (41%) with 9 deaths subsequently. Overall 11 of 39 episodes (28%) resulted in death, 7 in association with concomitant CMV infection. Ten of 31 patients (32%) had two or more episodes of PCP occurring within 5-27 (av11.4) mo. of successful therapy.
Conclusion. Our experience parallels that reported from other centres in N.America.

T.B.P.43

HIGH RATES OF RECURRENT PNEUMOCYSTIS PNEUMONIA AND TOXICITY IN AIDS PATIENTS TAKING PYRIMETHAMINE-SULFADOXINE PROPHYLAXIS.

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Objective: To evaluate recurrence rates of Pneumocystis pneumonia (PCP) and toxicity in AIDS patients (pts) receiving pyrimethamine-sulfadoxine (P-S) for secondary prophylaxis of PCP.
Methods: A retrospective analysis was done of all pts at DCS's AIDS Clinic who received P-S from March 1987 through December 1988. All patients had AIDS and at least one episode of PCP prior to initiation of P-S, and were on variable doses of zidovudine (AZT).
Results: There were 38 pts who received both AZT and P-S (1 tablet weekly) from 0.5 to 22 mos (mean 6 mos). They were followed for 3 to 41 mos (mean 15.5 mos) from time of first episode of PCP. Four pts were lost to follow-up, 2 were noncompliant, and 2 had non-PCP related deaths while taking P-S. Of the remaining 30, 9(30%) had recurrent PCP, 14 (47%) discontinued P-S due to adverse reactions, 3 discontinued P-S to receive another form of prophylaxis, and 4 remained on P-S. Adverse reactions included maculopapular rash (4), Stevens-Johnson syndrome (3), hematologic abnormalities (4), elevated liver function tests (2), and malaise (1). The 9 pts who developed PCP took P-S for 4-12 mos (mean 7.4 mos), and recurrences occurred 6-11 mos (mean 9.8 mos) after first episodes of PCP. Eight pts had positive sputum Giemsa stains, and 1 had presumptive PCP; 7 required hospitalization. Of the 16 who discontinued P-S for adverse reactions or noncompliance, 5 developed recurrent PCP 1-7 months after discontinu-ation, none of whom received another form of PCP prophylaxis.
Conclusion: Recurrence rates of PCP in pts taking P-S (30%) were higher than those reported previously and P-S was poorly tolerated, requiring discontinuation in an additional 47% of evaluable pts. Life threatening toxicity developed in 10% (Stevens-Johnson Syndrome). Controlled, prospective trials are necessary to establish the most effective and least toxic regimen(s) for prophylaxis of PCP in AIDS.

T.B.P.44

PRIMARY VERSUS SECONDARY PCP PROPHYLAXIS

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Objective. To compare the efficacy of primary and secondary PCP prophylaxis.
Methods. From November 1986, all patients whose CD4 cell count fell below 200/ul, or who developed an AIDS defining illness (ADI) other than PCP, were offered primary (1°) prophylaxis with either dapsone 100mg twice weekly, sulphadoxine-pyrimethamine one tablet weekly, or nebulized pentamidine 400mg monthly. Secondary prophylaxis was given to all patients following treatment for their first episode of PCP. One of the above agents or TMP-SMX one bid was used. All but 9 patients received AZT during the study period. Endpoints of the study were PCP, or death. Follow-up continued to December 1988.
Results. 107 pts received 1° prophylaxis and 93 pts received 2° prophylaxis.

Development of PCP on	1° prophylaxis	2° prophylaxis
Dapsone	25/81 (31%)	19/48 (40%)
Sulphadoxine/pyrimethamine	3/18 (17%)	6/14 (46%)
Pentamidine	1/8 (13%)	1/20 (5%)
TMP-SMX	0	2/12 (17%)
Total	29/107 (27%)	28/93 (30%)
Mean time to PCP	8.9±6.7 mths	9.6±6.7 mths
Mean PCP-free interval	10.9±7.2 mths	7±4.9 mths
Deaths	10	9
Toxicity	13	4

Conclusion. There was no difference in efficacy of primary versus secondary prophylaxis for PCP.

T.B.P.45

SECONDARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA WITH SYSTEMIC PENTAMIDINE

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Objective. To determine the efficacy of intermittent systemic pentamidine for secondary prophylaxis of PCP in AIDS.
Methods. Since January 1987, all patients with histologically-confirmed PCP who gave consent and had adequate peripheral venous access were acutely treated with a 21 day course of either TMP/SMZ or pentamidine, then given pentamidine 4 mg/kg IV weekly x 4, then 4 mg/kg IV every 4 weeks. Most patients also received zidovudine concomitantly with maintenance pentamidine.
Results. Eighteen patients were followed for a mean of 8.5 months to date (range 2-23 months). Three episodes of PCP occurred, but all were mild cases, none of which required ventilatory support. No deaths from secondary cases of PCP have occurred to date. Glucose intolerance developed in one patient after a 21 day course of daily pentamidine followed by 2 months of q. 4 week treatment.
Conclusion. Secondary prophylaxis of PCP with systemic pentamidine is effective in preventing mortality from recurrent pneumocystis pneumonia Larger prospective studies should be done to optimize pentamidine dose and compare this modality to other PCP prophylactic regimens.

T.B.P.46

CLINICAL AND PHARMACOKINETIC INTERACTIONS OF COMBINED ZIDOVUDINE (ZDV) THERAPY AND SULFADOXINE-PYRIMETHAMINE (FANSIDAR) PROPHYLAXIS IN POST-PCP AIDS PATIENTS (ACTG 021).

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Objective. Combination anti-retroviral and PCP prophylactic therapy are commonly used in HIV-infected patients. Potential clinical and pharmacokinetic interactions of combined ZDV and secondary PCP prophylactic therapies are investigated in this study. Data from the ZDV/Fansidar cohort are reported.
Methods. 30 AIDS patients recovered form an initial episode of PCP are randomized equally to receive ZDV (200 mg q 4h) plus either TMP-SMX (1 DS qd, 7d/wk) Fansidar (1 tab/wk) or aerosol pentamidine (150 mg q 2 wks). Intensive clinical, biochemical, hematologic, and pharmacokinetic parameters are followed for one year. Among 5 patients receiving ZDV/Fansidar, no significant clinical (specifically rashes), hematologic, biochemical abnormalities have developed nor PCP recurrence over a mean 16 week (range 8-24 weeks) follow-up period. ZDV pharmacokinetic analyses have shown a prolongation in time to peak ZDV concentration from 0.5hr. to 2.5hr., and an increase in $t_{1/2}$ from 1.0 hr to 2.0 hr. following the addition of Fansidar in 3 of 5 patients. Steady state ZDV concentration has increased from 0.6-0.8 uM to 4.9 uM after 6 weeks of combined therapy in 3 of 5 patients as well.
Conclusion. These data indicate that ZDV and Fansidar are clinically well-tolerated and effective but dosage adjustment may be necessary due to possible pharmacokinetic interaction of the 2 drugs over time.

T.B.P.47

UTILISATION DU FANSIDAR POUR LA PROPHYLAXIE DE LA PNEUMOCYSTOSE ET DE LA TOXOPLASMOSE.

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Objectif : Evaluer l'efficacité de l'association sulfadoxine-pyrimétamine (Fansidar) en prophylaxie primaire de la pneumocystose et de la toxoplasmose cérébrale chez des patients infectés par le VIH.
Méthodes : 42 sujets (39 hommes et trois femmes) ont reçu 3 comprimés de Fansidar tous les quinze jours et une supplémentation en acide folique (Spéciafoldine 1 comprimé par jour ou Lederfoline 50 mg 1 ampoule per os une fois par semaine). Ces patients avaient un taux de lymphocytes T4 inférieur à 200/mm³ et n'avaient pas eu de pneumocystose ou de toxoplasmose préalables. 17 étaient asymptomatiques, 10 présentaient un ARC et 15 un SIDA. La durée moyenne du traitement a été de 304 jours (de 15 à 923 jours).
Résultats : Aucun cas de pneumocystose ou de toxoplasmose n'a été observé chez les malades traités. Les effets secondaires observés ont été mineurs : 5 cas d'allergie cutanée(11,9%), 1 cas de leuconeutropénie (2,38%) et un cas de céphalées (2,38%) ayant nécessité l'arrêt du traitement. Une anémie macrocytaire a été observée chez un seul malade qui ne prenait pas la prescription d'acide folique.
Conclusion : La tolérance et l'efficacité de la prophylaxie primaire de la pneumocystose et de la toxoplasmose par le Fansidar apparaît, à la dose de 3 comprimés tous les 15 jours, meilleure que celle rapportée dans les études antérieures réalisées à des posologies différentes.

T.B.P.48

PYRIMETHAMINE-SULFADIAZINE IN THE PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA IN AIDS PATIENTS WITH CEREBRAL TOXOPLASMOSIS

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Objective. To determine if maintenance therapy with sulfadiazine-pyrimethamine (SP) in patients with central nervous system toxoplasmosis (TOXO) and the acquired immunodeficiency syndrome (AIDS) is effective in the prophylaxis of Pneumocystis carinii pneumonia (PCP) or if such patients require additional preventive therapy.
Methods. We reviewed the records of patients maintained on SP following an initial episode of TOXO. The diagnosis of TOXO was established by the presence of typical ring-enhancing lesions on brain CT scan and clinical and radiographic response to therapy with SP in patients at high-risk for HIV infection.
Results. 20 patients who had received at least 3 months of SP, including 3 who had had previous or coincident PCP, were identified. The dosage of sulfadiazine ranged from 2-6 grams per day, pyrimethamine 25-50 mg. per day. Zidovudine was also administered to 6 patients (35 patient-months). During 162 patient-months of followup, none of the patients developed PCP (mean 8.1 months, range 3-20 months).
Conclusion. Maintenance therapy with SP provides effective prophylaxis of PCP in patients with AIDS.

Prophylaxie par la pentamidine
Prophylaxis with Pentamidine

T.B.P.49 PREVENTION DES RECHUTES DE PNEUMOCYSTOSE PAR LES AEROSOLS DE PENTAMIDINE : ETUDE PROSPECTIVE RANDOMISEE CHEZ LES PATIENTS SIDA TRAITES PAR AZT.

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Objectif. Evaluer l'efficacité et la tolérance des aérosols de Pentamidine (APM) dans la prévention des rechutes de pneumocystose (PCP).
Patients et méthodes. 51 patients ayant présenté une PCP récente (moins de 5 mois) et ne recevant pas de prophylaxie anti-Pneumocystis ont été randomisés : Groupe I : AZT plus APM, Groupe II : AZT seule. Les APM ont été délivrés tous les 15 jours le 1er mois puis tous les mois à la dose de 4 mg/kg par un appareil ultrasonique. Les doses initiales d'AZT de 1200 mg/j étaient adaptées selon la tolérance hématologique.
Résultats. Les deux groupes étaient comparables sur le plan des critères démographiques de la gravité du déficit immunitaire et du suivi de l'AZT. Parmi les 48 patients évaluables, le nombre de rechutes après un recul moyen après la PCP de 9,4 mois a été de 2/22 (9 %) dans le Groupe I et 16/26 (61 %) dans le Groupe II. Aucune réaction d'intolérance systémique n'est survenue. Les principaux effets secondaires étaient la toux (41 %) et une gêne respiratoire au décours de l'inhalation (32 %), conduisant à un seul arrêt prématuré.
Conclusions. 1) Les rechutes de PCP sont fréquentes chez des patients traités par AZT. 2) Les aérosols de Pentamidine diminuent le risque de PCP. 3) L'intolérance bronchique est le principal effet secondaire observé.

T.B.P.50 COMPLIANCE AND LABORATORY DATA PREDICT RELAPSE RATE OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) DURING PROPHYLAXIS WITH AEROSOL PENTAMIDINE

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Objective. To assess the effect of patients' compliance during pentamidine prophylaxis (PX) and of laboratory data during the initial PCP episode on PCP relapse rate (PCPR).
Methods. The inhalation compliance of all 44 AIDS patients treated with aerosol pentamidine (60 mg every 2 weeks) for PX of PCPR and the laboratory data during the initial PCP episode were retrospectively analysed. Laboratory data for lymphocyte subpopulations and serum lactate dehydrogenase (LDH) were available for 30 patients. All PCPR were recorded. Patients who missed ≥ 3 inhalations and at least 15% of all scheduled ones were stratified into the non-compliant Group A, all others into the compliant Group B.
Results. Median duration of pentamidine PX was 31 weeks (range 2 - 77 weeks). During this period 10 PCPR occurred (2.8 per 100 patient-months). Two of them were fatal. Only 16 patients had 100% compliance. Two patients suffered a second PCPR, both after repeated PX non-compliance.

Group	Patients	1st PCPR	Median PX duration	PCPR probability/1st year (95% C.I.)	
A	14	5	28.4 weeks	65%* (32% - 95%)	*p < 0.05 (life-table,
B	30	5	30.2 weeks	18,2%* (6% - 40%)	Peto-Peto Wilcoxon test)

Parameter	Assumed change	Increased relative risk for PCPR/assumed change	
% missed PX	10% up	1.5*	*p < 0.05, univariate Cox regression, 44 patients)
CD4 cells	20% down	2.1**	**p < 0.05, multivariate Cox regression, 30 patients)
LDH	200 U/l up	2.1**	

Conclusion. Poor compliance with prophylactic pentamidine inhalations leads to a significantly higher rate of PCPR. The laboratory values significantly associated with higher rate of PCPR were elevated levels of LDH and depressed levels of CD4 lymphocytes during the initial PCP episode.

T.B.P.51 SUCCESSFUL CHEMOPROPHYLAXIS OF PCP BY POSTURAL INHALATION AND LOW DOSE AEROSOLIZED PENTAMIDINE

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OBJECTIVE: To evaluate the efficacy of low dose aerosolized pentamidine when administered by postural inhalation. METHODS: 97 patients[52 AIDS(37 S/P PCP) 45 ARC] intolerant of sulfa drug PCP prophylaxis were followed for a median of 11 months(range 5-19). Pentamidine isoethionate was administered by Pulmosonic nebulizer(2.5-3.5 microns) at a dose of 60 mg. every 3 weeks via postural inhalation, i.e., in the supine and left and right lateral decubitus positions each for 10 minutes. Those experiencing bronchospasm were subsequently prophylaxed with albuterol inhalent prior to each pentamidine administration. RESULT: Of 97 patients followed at this dose for a median of 11 months there were 3 episodes of PCP(1 AIDS, 2 ARC). All 3 episodes were diffuse in nature and were successfully treated with IV pentamidine. All 3 episodes occurred in noncompliant patients who had missed 2 or more consecutive doses(accounting for a 9 week or greater interval between doses). There were no severe adverse reactions to the drug. Minor adverse effects included: cough-46(47%), bronchospasm-14(14%) and metallic taste-58(60%). No episodes of PCP occurred in patients compliant with the protocol.
CONCLUSION: Postural inhalation may allow for improved efficacy and/or reduced dose of prophylactic aerosolized pentamidine. Controlled trials with larger numbers, more efficient nebulizers and of longer duration are indicated.

T.B.P.52 HOME AEROSOLIZED PENTAMIDINE PROPHYLAXIS IN AN INNER CITY POPULATION.

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OBJECTIVE: To determine efficacy, tolerance and compliance (comp) with home aerosolized pentamidine (AP) prophylaxis in AIDS and ARC patients (pts) of poor, minority and intravenous drug use background in a NYC clinic.
METHODS: Pts received instruction in the use of the Pulmosonic® Nebulizer (PN) and in the preparation of Pentamidine for aerosolilization. Standard dose was 60 mgs. weekly for the first 4 weeks (wks) and biweekly thereafter. Evaluable pts were followed for ≥ 4 wks.
RESULTS: 58 pts were evaluable. 45 males, 13 females; 38 Hispanic, 17 black, 3 white. Mean age 36 (range 22-59). 30/58 (52%) IVDUs, 13/58 (22%) heterosexual partners, 12/58 (21%) homosexuals, 1 (2%) transfusion recipient, 2 (3%) no known risk. 52/58 (90%) had AIDS, 48/58 (83%) status-post PCP. 6/58 (10%) had ARC with low CD4 (mean:87). 6/58 (10%) had asthma. Pts were followed for a mean of 23 wks (range 4-44 wks), total 1307 pt wks. 57/58 (98%) were also on AZT. 9/58 (16%) developed PCP; all were noncomp with AP for at least 4 wks prior to PCP. Reasons for noncomp in the 9 pts included: drug use (3), AP-induced respiratory symptoms (2), fear of treatment (Rx) (2), poor understanding of AP importance (2). 5/9 with PCP (56%) were also noncomp with AZT. Of 48 pts receiving AZT who did not develop PCP, 10 (21%) were comp with <50% of AP Rxs: 4 (8%) were comp with >50% but <100% of AP Rx: 34 (71%) were comp with 100% of AP Rx. 4/48 (8%) were also noncomp with AZT.
CONCLUSION: Home AP by PN is a safe, effective method of PCP prophylaxis in an inner city population of primarily IVDUs. AP comp was less than AZT comp.

T.B.P.53 LONG TERM SAFETY AND EFFECTIVENESS OF AEROSOL PENTAMIDINE FOR PREVENTION OF PNEUMOCYSTIS CARINII PNEUMONIA

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Objective. To determine the safety of aerosol pentamidine and its effectivness in preventing PCP compared to historical controls.
Methods. Aerosol pentamidine was administered weekly for four weeks and then biweekly at a dose of 60 mg via and ultrasonic nebuliser (Fisoneb). Toxicity was judged based on examinations, pulmonary function, hematologic, and biochemical tests. Efficacy was judged based on comparison of rates of PCP versus NIAID protocol 002.
Results. A total of 266 participants were treated for 1-20 months (9.6 ± 5.2 mos). Most were homosexual men; 90% had AIDS; 71% had a previous episode of PCP. At entry the mean time since diagnosis of AIDS was 11.7 ± 10.1 mos. There were no serious adverse reactions and no systemic toxicity was seen; 14.2% of patients required a bronchodilator; 91% of patients had a stable or improving pulmonary function. There were 49 withdrawals and 72 deaths. A total of 25 cases of PCP occurred; the occurence rate was 3.8% among patients (n=80) with no previous episodes; it was 4.9% among those (123) with one episode; it was 25.4% among those (63) with two or more previous episodes. There were 6 pneumothoraces and 3 cases of extrapulmonary pneumocystosis. Based on historical controls, there was a 16-fold reduction in the recurrence rate of PCP among patients who had one previous episode.
Conclusion. Aerosol pentamidine was safe and it prevented PCP. Higher or more frequent doses may be needed as immune deficiency progresses.

T.B.P.54 AEROSOLIZED PENTAMIDINE FOR THE SECONDARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA IN THE ACQUIRED IMMUNODEFICIENCY SYNDROME: A REPORT FROM THE CANADIAN COOPERATIVE TRIAL. *

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OBJECTIVE. To evaluate the safety and effectiveness of aerosolized pentamidine for the secondary prophylaxis of Pneumocystis carinii pneumonia (PCP) in the acquired immunodeficiency syndrome (AIDS).

METHODS. Trial Design: randomized, double blind, placebo-controlled. Inclusion Criteria: (I) Recovered from first episode of AIDS-related PCP within 2 to 24 weeks, (II) No other AIDS defining opportunistic infection or active pulmonary pathology (III) No antiretroviral or immunomodulating agents (except AZT) during the study or within 30 days of entry (IV) Pulmonary function test VC ≥ [illegible] of predicted; FEV-1 ≥ 65% of total FEV and corrected DLCO >60%. Intervention: Patients were randomly allocated to receive pentamidine 60mg per dose or placebo. The study drug was delivered via a hand held ultrasonic nebulizer (FISONEB®, MAD=2.5-5.0, microns [depending on the sizing technique]) in a supervised fashion over 15 to 20 minutes. Patients received 5 doses during the initial 14 days followed by one dose every 2 weeks for a total of 24 weeks. Follow-up: Complete history, physical and laboratory evaluation including PFT's were performed at regular intervals. Anti-PCP medications were prescribed unless PCP was documented.

RESULTS. 162 patients from 16 centres were randomized at the time the study was terminated. A total of 32 cases of PCP were diagnosed, 27 of them occurred among the 78 placebo treated patients while 5 occurred among the 84 patients receiving aerosolized pentamidine (p<.0001 Chi square). Median follow-up was not significantly different in both groups.

CONCLUSION. Aerosolized pentamidine is highly effective in the secondary prophylaxis of AIDS-related PCP.

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T.B.P.55 PROPHYLACTIC INHALATION PENTAMIDINE IN PATIENTS WITH HIV DISEASE

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Objective. To evaluate inhalation pentamidine in the prophylaxis of PCP in immunosuppressed HIV positive patients.
Method. We prospectively studied 46 HIV positive immunodeficient patients. 200 mg of pentamidine in 4 cc sterile water were delivered by inhalation every other week using an Aerotec II apparatus. Three groups of patients were studied. 1. 10 HIV positive patients with a T4 count less than 250 LZ and no history of PCP. 2. 9 HIV positive patients with a history of PCP but no tissue documentation. 3. 27 HIV positive patients with biopsy-proven PCP.
Results. 46 patients were treated an average of 20.8 weeks. There were 5 episodes of presumed PCP pneumonia. 8 patients were lost to followup. The overall recurrence rate was 13.2%. The results in each group are as follows:

Group	Average Treatment Time	(Range)	Recurrences	Rate
1	5.8	(2-20)	0	0
2	4.3	(2-20)	1	16.7%
3	7.7	(2-36)	4	18.0%

All 5 of the patients who developed pneumonia were treated with anti-PCP therapy. 3 of these 5 patients died.
Conclusion. We noted an overall recurrence rate of 13.2% in patients on aerosolized pentamidine which is below that reported for patients without prophylaxis. Although our numbers are small the study is ongoing. The fact that the majority of our patients were IVDA's and still followed the treatment protocol is encouraging.

T.B.P.56 A CLINICAL EXPERIENCE WITH AEROSOLIZED PENTAMIDINE (AP).

SD Nightingale, RS Ferguson, SM Pounders, JD Jockush & KJ Robertson. Parkland Memorial Hospital, Dallas, TX, USA.

Since 6/22/88 we have treated 308 HIV positive patients with AP 300 mg q month for 112 +/- 80 days. Four withdrew after 1 treatment because of cough; treatments were otherwise uncomplicated. Serial pulmonary function tests in 24 patients before and after 6 months of treatment were:

	FEV1(%pred)	FVC(%pred)	FEV25-75(%pred)	DLCO(cor for Hb)
Pre	94	86	113	20.2
Post	92	94	91	21.3
P	NS	<.01	<.01	=.0502

14 patients developed PCP while on AP: 1/99 with ARC or CD4 <400, 2/56 with AIDS but no prior PCP, and 11/153 with AIDS and prior of PCP. These 11 had had their 1st PCP an average of 422 (range 253-908) days before starting AP. 5/11 (45%) of the recurrent PCP episodes were fatal, and 2 were complicated by pneumothoraces. For comparison, from 7/1-12/31/88 we saw 93 1st PCP cases in patients not on AP of which 22 (24%) were fatal and 2 were complicated by pneumothoraces. Finally, 3/153 developed bacterial pneumonia that responded to antibiotic therapy.

This uncontrolled experience suggests that AP may reduce the frequency, but not the severity, of PCP in HIV positive patients. While AP was well tolerated and DLCO stable, a decrease in small airway flow (FEF25-75) appears to be a subclinical but statistically significant complication of therapy.

T.B.P.57 ABSOLUTE PULMONARY DEPOSITION OF NEBULISED PENTAMIDINE ISETHIONATE

Thomas, Simon; O'Doherty, M.; Page, C.; Barlow, D.; Croft, D. and Bateman, N.
St. Thomas' Hospital, London, UK.

Objective. To measure the absolute pulmonary deposition of two doses of pentamidine administered using two different nebuliser systems.
Methods. Following salbutamol pre-treatment, 8 patients with AIDS inhaled 50 and 150 mg pentamidine mixed with 37 MBq (0.05 mg) 99mTc human serum albumin (total volume 3 ml) via two nebuliser systems, System 22 Mizer (S22M, Medicaid UK) and Respigard (RII Marquest) using gas flow of 6 L/min. Pulmonary and non-pulmonary (oropharyngeal and gastric) deposition was measured using a gamma camera and absolute deposition calculated using a correction derived from lung phantom studies. Spirometry was measured before and after salbutamol and after pentamidine inhalation and adverse effects were recorded.
Results. Absolute pulmonary pentamidine deposition (mg±SEM) results are shown in the table:

	S22M		RII	
Nebuliser dose	Both lungs	R lung	Both lungs	R lung
50 mg	2.78±0.42	1.46±0.22	1.53±0.31	0.82±0.15
150 mg	7.24±0.16	3.74±0.63	4.47±0.53	2.42±0.32

S22M delivered more drug to the lungs and in a shorter time, with over 90% deposited within 10 min. RII produced less pulmonary and non-pulmonary deposition and fewer adverse effects. Inhalation of 150 mg pentamidine produced small reductions in FEV1 with both S22M (16.2%, p<0.01) and RII (7.5%, p<0.01).
Conclusions. Pulmonary pentamidine deposition was greatest using S22M but RII was associated with fewer adverse effects.

T.B.P.58 AEROSOL PENTHAMIDINE FOR TREATMENT AND SECONDARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII (PCP)

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Ten patients with PCP were treated with aerosol penthamidine 400 mg daily for 10 days followed by secondary prophylaxis of 400 mg once weekly. We used the nebulizer Viasol MA2 that produces particles <2 u and has a residual volume of 0.2 ml. Monitoring for assessing effectiveness and side-effects included hemoglobin oxygen saturation during exercise, biochemical parameters, FEV1 and VC. Follow-up bronchoscopy was performed at least once after >30 days of secondary prophylaxis.
Results. 8/10 patients responded to therapy, 2 patients did not and were given trimethoprim-sulfamethoxazol (TS) concomitantly. After improvement TS was discontinued and secondary prophylaxis continued. All patients were negative for pneumocystis at follow-up bronchoscopy. Neither clinical signs nor monitored parameters indicated any relapses. Three patients died after 6 weeks, 6 months and 17 months. At autopsy none of them had pneumocystis.
Conclusions. In our study aerosol penthamidine was effective for PCP in 8 of 10 patients. Controlled studies are needed to establish its role in the treatment of PCP. There is also a need to compare different nebulizers. In 10 patients given secondary prophylaxis we observed no relapses. We find this very encouraging. Despite the high dose given no adverse effects were observed besides ligth cough and complaints of unpleasant taste.

T.B.P.59 PROPHYLACTIC TREATMENT WITH AEROSOL PENTAMIDINE TO PREVENT RELAPSE OF PCP.

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* State University Hospital, Copenhagen;
**University Hospital, Hvidovre, Copenhagen, Denmark.

Objective: To evaluate the efficacy of aerosol pentamidine in the prophylaxis of PCP relapses.
Patients: 45 AIDS patients were prophylactically treated with aerosol pentamidine 60mg every 2 weeks, with an Acorn System 22. The patients had all experienced an episode of PCP 2.5 months (± 4) before start of treatment. Time from AIDS diagnosis to start of prophylaxis was 1 - 22 months (mean 7.4).
Results: The patients were treated for 1 - 22 months (mean 8.4). No significant adverse reactions were seen.
Failing patient compliance in 2 patients, were followed by relapse of PCP. Of the remaining 43 patients, 2 mild cases of PCP occurred after 8 respectively 9 months of treatment. One were clinically suspected, one histologically verified.
The relapse rate of PCP per 100 patient months were 0.54% among patients treated with this regimen.
Conclusion: Pentamidine aerosol seems to be effective as prophylaxis against relapse of PCP in this regimen. Only mild side effects were observed. A controlled study comparing aerosol pentamidine with co-trimoxazole is in progress.

T.B.P.60 EFFICACY OF MONTHLY INTRAMUSCULAR PENTAMIDINE IN THE PROPHYLAXIS OF RECURRENT PNEUMOCYSTIS CARINII PNEUMONIA

Miller,Steven and Sifris,Dennis. HIV Clinic, Johannesburg Hospital, Johannesburg, South Africa.

Objective. To evaluate the efficacy of monthly intramuscular pentamidine in the prophylaxis of recurrent Pneumocystis carinii pneumonia (PCP) in pepple with AIDS.
Methods. Fifteen patients who have previously experienced at least one episode of PCP were enrolled in the study. Their ages ranged from 23 to 42 years. All had peripheral blood T helper/inducer cell counts of 400/mm^3. Three patients were receiving zidovudine 1200mg daily. Prophylaxis with cotrimoxazole was precluded in 13 patients because of hypersensitivity and in 2, because of severe leucopenia. Pentamidine isethionate (Maybaker) 200 mg was administered as a monthly intramuscular injection. Patients were prospectively assessed for adverse effects and recurrence of PCP.
Results. Duration of pentamidine prophylaxis has ranged from 6 to 24 months and there has been no recurrence of PCP. Nine patients have died from other AIDS-related conditions since enrollment. Pain at the injection site for 24 to 48 hours was reported by all subjects. One patient developed a sterile abscess following the injection. Hypotension and hypoglycaemia were not documented.
Conclusions. 1) Monthly intramuscular pentamidine isethionate provides effective prophylaxis for recurrent PCP. 2) Side effects are generally minor. 3) Monthly intramuscular pentamidine is more cost effective than weekly aerosolised pentamidine. 4) Intramuscular pentamidine is easy to administer and should be considered where there are no facilities for nebulisation.

T.B.P.61 PHARMACOKINETICS OF AEROSOLIZED PENTAMIDINE IN AIDS PATIENTS BEING TREATED FOR ACUTE PNEUMOCYSTIS CARINII PNEUMONIA.

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OBJECTIVE: To study the pharmacokinetics of aerosolized pentamidine in AIDS patients who are receiving treatment for mild episodes of Pneumocystis carinii pneumonia.
METHODS: Seven patients received investigational treatment with pentamidine (600 mG/day over 30 min) via the Respigard II nebulizer. Serial blood specimens were obtained from each patient on 3 occasions (days 1, 14, and 21). Serum pentamidine concentrations were measured by high-pressure liquid chromatography.
RESULTS: Maximum concentrations were 14.4 ± 5.3 nG/mL in samples obtained 1 to 5 minutes after completion of the dose. The rate of disappearance from serum was rapid and serum concentrations were undetectable 45-60 minutes after each inhalation treatment. There was no difference in the magnitude of the peak concentrations between day 1, day 14, and day 21 of therapy.
CONCLUSION: No serum accumulation of the drug was noted over the 21 day period of treatment. Urine concentrations are needed to better characterize the pharmacokinetic parameters of inhaled pentamidine.

T.B.P.62 COMMUNITY STUDY OF THE EFFICACY OF INHALED PENTAMIDINE ON THE PREVENTION OF PNEUMOCYSTIS CARINII PNEUMONIA - CONTINUING EXPERIENCE.

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Of the 150 patients receiving inhaled pentamidine prophylaxis to prevent Pneumocystis carinii pneumonia (PCP) reported last year, 56 are now deceased. None of these patients died of PCP. Four patients have had recurrent PCP. Those who have developed recurrent PCP have tended to have multiple mild episodes. Five patients have developed pneumothoraces while on this regimen, all after having at least one episode of PCP. Two of these patients required surgical intervention. None of the patients have developed clinically significant side effects from the inhaled pentamidin such as hypoglycemia, pancreatitis, or impairment of renal function. Serial spirometric determinations have shown no deterioration during the course of prophylaxis, although some of the patients did have self-limited deterioration in pulmonary function during acute infectious exacerbations. We conclude that inhaled pentamidine is effective prophylaxis in preventing recurrent PCP.

T.B.P.63 INHALED PENTAMIDINE AS PRIMARY PROPHYLAXIS IN A HIGH RISK GROUP - CONTINUING EXPERIENCE

Weisman J; Paulson, YJ; Rogolsky, E; Rothman, P; Scarsella; Hitt, S; Eppolito, L; Boylen, CT. LAC-USC Medical Center, GH 11-900, 1200 North Street, Los Angeles, CA 90033, U.S.A.

We have given inhaled pentamidine prophylaxis to 250 patients who are in a high risk group for PCP with T_4 counts below 400. These patients have received 150mg of inhaled pentamidine bi-weekly from 6 months to 21 months. None of the patients have developed pneumocystis pneumonia in this time interval. None of the patients have developed hypoglycemia, impaired renal function, or pancreatitis from their prophylaxis. Pulmonary function studies have been obtained at periodic intervals and no deterioration has been seen in spirometric values. No pneumothoraces have developed in this group. We conclude that primary prophylaxis with inhaled pentamidine in this high risk group appears to offer significant promise without apparent risk. We believe that further controlled studies of primary prophylaxis urgently need to be done in these seriously immuno-compromised patients.

T.B.P.64 COMPARISON OF NEBULISER EFFICIENCY FOR AEROSOLISING PENTAMIDINE

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St. Stephen's Hospital, London, England.

Objectives To determine which is the most efficient nebuliser system when used to aerosolise 300mg of Pentamidine isethionate (May & Baker Ltd.) in terms of droplet size, aerosol output and nebulisation time.
Methods The following brands of nebuliser were assessed: Acorn System-22 (Medic-AID Ltd.) with and without Mizer attachment, Respigard II (Marquest Medical Products) and Fisoneb (Fisons Corp.). Four models of each brand of jet nebuliser were tested at flow rates of 8L/min., the Fisoneb was tested at maximum setting. Droplet size was assessed using a Malvern Instruments 2600HSD laser particle and droplet analyser - aerosol output was assessed by spectrophotometry of solution remaining within the nebuliser. The nebulisation time was also recorded.

Results	Flow Rate	MMD(um)	%<5.0um	Amount <5um	Neb time(min)
ACORN	8L/min	2.5	74.6%	143.6mg	15.5
ACORN+MIZER	8L/min	3.9	63.1%	ND	ND
RESPIGARD II	8L/min	1.2	96.3%	127.3mg	18.2
FISONEB	-	4.7	56.3%	82.7mg	4.0

Conclusions The Respigard II nebulisers produced the greatest amount of small droplets but aerosolised the least amount of drug. The Acorn aerosolised the largest amount of drug of sufficient droplet size to achieve alveolar deposition.

T.B.P.65 EFFECT OF AEROSOL CHARACTERISTICS ON PULMONARY DEPOSITION OF PENTAMIDINE

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Objective. An evaluation of pulmonary delivery of aerosol pentamidine relating alveolar deposition and side effects to droplet size profile of nebuliser.
Methods. In a single blind crossover study, 9 patients with AIDS and stable respiratory status received 150 mg radiolabelled pentamidine isethionate from A) Respirgard II nebuliser (Marquest) B) Respirgard II nebuliser with inspiratory baffle removed and C) Acorn System 22 nebuliser (Medic Aid). In 6 patients an Acorn nebuliser modified by addition of an inspiratory baffle (one-way valve insert, Inter-Surgical) was studied (D). Alveolar deposition (24 hour whole lung retention of radioactivity), incidence of cough and breathlessness and pulmonary function were measured. Droplet size profiles from the nebuliser systems A-D were characterised and expressed as % droplet mass < 2 um (P2), mass median diameter (MMD) and maximum droplet size (dmax).
Results. Droplet size profiles (P2, MMD, dmax) were A) 78.9, 1.0 um, 6.9 um, B) 50.5, 1.7 um, 19.3 um C) 39.6, 3.4 um, 25.3 um and D) 72.8, 1.0 um, 8.0 um. Alveolar deposition was directly related to P2 and incidence of cough and breathlessness proportional to dmax. Insertion of an inspiratory baffle into the Acorn System (D) markedly improved alveolar deposition of pentamidine and reduced adverse airway effects.
Conclusion. Optimisation of droplet size profile from nebulisers can enhance alveolar targeting of pentamidine.

T.B.P.66 LOW PCP RELAPSE RATE USING HIGH DOSE (300mgs) NEBULIZED PENTAMIDINE PROPHYLAXIS BUT POOR LONG TERM SURVIVAL.

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OBJECTIVE : To assess the effectiveness of high dose Nebulized Pentamidine on Pneumocystis Carinii Pneumonia (PCP) incidence and whether preventing PCP affects the long term survival in AIDS patients.
METHOD : 94 patients received Nebulized Pentamidine 300mgs fortnightly on a primary or secondary prophylactic basis over an 18 month period. The number of episodes of PCP and number of deaths from HIV were recorded over this period.
RESULTS : Of 47 patients on primary prophylaxis, no episodes of PCP and 1 death were seen (average follow up 4.5 months). Of 47 patients on secondary prophylaxis, only one episode of PCP occurred (average follow up 6.1 months). However, of 29 patients who received greater than six months prophylaxis post PCP over a maximum follow up period of 18 months, 11 (38%) died of other AIDS complications. Average time to death was 6.8 months (range 2-16) after their pneumonia. None of the deaths were caused by PCP.
CONCLUSION : Although Nebulized Pentamidine at a dose of 300mgs/fortnightly is highly effective at preventing PCP, mortality rate post PCP still remains very high.

T.B.P.67

THE EFFECT OF INITIAL PENTAMIDINE SOLUTION VOLUME ON TOTAL PULMONARY DEPOSITION

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St. Thomas' Hospital, London, UK.

Objective. To assess pulmonary deposition of 50 mg pentamidine when dissolved in 3 or 6 ml solution.
Methods. Following pre-treatment with salbutamol 4 patients with AIDS inhaled 50 mg of nebulised pentamidine made up in a final volume of 3 or 6 ml with 99mTc human serum albumin added as a marker. Each patient received these dilutions from 2 nebulisers, System 22 Miser (S22M, Medicaid UK) and Respigard II (RII, Marquest) at a gas flow rate of 6 L/min. Pulmonary and non-pulmonary (oropharyngeal and gastric) deposition was measured for each dilution and each nebuliser using a gamma camera. Spirometry was recorded before and after each nebulisation.
Results. S22M produced greater deposition than RII for both the 3 and 6 ml dilutions with deposition completed in 10 min and 30 min respectively. For both systems, the 6 ml dilution prolonged pulmonary deposition, reduced adverse effects and increased final pulmonary deposition by over 50% compared with the 3 ml dilution.
Conclusion. The larger volume delayed dynamic deposition but significantly increased total deposition within the lungs. It was preferred by patients but a longer treatment period was necessary.

T.B.P.68

PROPHYLAXIS FOR PNEUMOCYSTIS CARINII PNEUMONIA (PCP): A COST-EFFECTIVENESS ANALYSIS.

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Objective: To determine the cost-effectiveness of primary prophylaxis for PCP in HIV-infected patients.
Methods: Based on T4 lymphocyte count (<200, 200-400, >400) and prophylaxis with trimethoprim-sulfa (TS), aerosol pentamidine (AP), or nothing (NOPRO), we modeled the annual risk of PCP or other AIDS-related complications, and estimated average life expectancies (LE), costs, and marginal costs per year of life saved ($/YLS) with TS or AP. Baseline estimates from the literature and hospital charges when T4<200 included: efficacy of prophylaxis (90%), cost of treating PCP ($6000), probability of AIDS in the first year (30%), probability of PCP if AIDS develops (70%), complication rate of TS (50%).
Results:

	NOPRO	TS		AP (VS NOPRO)		(VS TS)
T4 COUNT	LE	LE	$/YLS	LE	$/YLS	$/YLS
<200	2.2	4.4	$2,300	4.8	$9,900	$50,000
200-400	5.0	5.6	$6,700	5.7	$41,000	$202,000
>400	5.9	6.1	$20,000	6.1	$155,000	$606,000

Results were minimally affected by clinically reasonable changes in estimates. Prophylaxis with dapsone, depending on its efficacy and toxicity, may be as or more cost-effective than TS.
Conclusion: Primary prophylaxis for PCP with TS is more cost-effective than most widely accepted treatments for many diseases. In contrast, AP is more costly than these treatments, except in the highest risk group (T4<200).

T.B.P.69

AEROSOLIZED PENTAMIDINE AS CHRONIC SUPPRESSIVE THERAPY FOR *P. CARINII* PNEUMONIA IN A HETEROGENEOUS AIDS POPULATION

Rodriguez, Kassandra; Deziel, P; Fischl, M. University of Miami School of Medicine, Miami, Florida, USA.

Objective. To evaluate efficacy and safety of aerosolized pentamidine (Pentam) in a non-selected group of AIDS patients who were unable to receive trimethoprim-sulfa (THP/SMX) for *P. carinii* pneumonia prophylaxis.
Methods. A retrospective medical record review of all patients who received aerosolized Pentam at clinic for a minimum of 10 wks and who were not actively enrolled in any experimental protocols from October 1987 through October 1988. Patients were stratified according to type of HIV disease and looking at zidovudine and use of bronchodilators as independent variables.
Results. 124 patients received aerosolized Pentam of whom 97 were evaluable.

Stratification of Patients with Breakthrough Rate

	# pts.	# breakthroughs	%
1° Prophylaxis	28	0	0
2° Prophylaxis	69	10	14
Multiple PCP Episodes	15	4	26
Kaposi's Sarcoma	30	2	6.6
Overall	97	10	10
Use of Bronchodilators	32	4	12.5
Use of Zidovudine	55	7	12.5

Conclusions. Even though bronchospasm was documented in 30% of patients, this was overcome by use of bronchodilators in all cases. No other systemic adverse reactions were documented. Aerosolized Pentam appears to be effective and well tolerated in patients who are intolerant of THP/SMX.

T.B.P.70

Aerosolized Pentamidine (AP) Prophylaxis for Pneumocystis carinii pneumonia (PCP) in a Boston community health center.

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Objective: To describe the first year's experience with AP treatment(tx) for PCP prophylaxis in a community health center(CHC). Methods: Descriptive and statistical analyses. Results: 150 mg of AP have been administered every 2 weeks via Respigard II nebulizer starting 1/88 to 64 pts. 50 are still in the program--none have died and no relapses were seen in those followed > 1 month. 14 changed providers or moved out of town. Mean age = 37 (range 25-54). 32 had prior PCP, 26 CDC IV non-AIDS, and 6 with other AIDS diagnoses. 20% pre-treat with Alupent. Side effects include metallic taste in mouth in approx. 50% of clients, and asymptomatic post-tx hypotension in 25% of clients. For 40 pts. seen > 1 month, there was an aggregate of 200.5 client months of tx (mean = 5.0 months). 13 have been treated > 6 months. All are on AZT therapy; 2 on AL-721 too, 6 also on acyclovir. Of these 13, 3 have had bacterial pneumonias during AP, one of them X3, all of which have responded to rx. Reimbursement for AP includes 59% third party payors, 25% Medicaid, and 16% self payors. A 10% failure rate in the Respigard II nebulizer system has been noted (leaks, valve sticking). Conclusion: That a CHC setting provides a stable environment for providing AP tx which is well tolerated.

T.B.P.71

PROPHYLAXIE SECONDAIRE DE LA PNEUMOCYSTOSE PULMONAIRE PAR LA PENTAMIDINE EN AÉROSOL

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La pneumocystose pulmonaire (PNP) représente l'infection opportuniste inaugurale chez 65% des patients atteints de SIDA et met en jeu le pronostic vital chez un quart d'entre eux. Les taux de rechute après un premier épisode atteignant 35% à 6 mois et 60% à 12 mois, une prophylaxie secondaire paraît indispensable; le cotrimoxazole exposant à des effets indésirables dans 50% des cas, d'autres prophylaxies sont à l'étude dont la pentamidine en aérosol.
Patients et méthodes: 35 patients sous AZT bénéficient d'un aérosol de mésylate de pentamidine (4 mg/kg) tous les 15 jours sur un nébuliseur ultrasonique de Vilbis; 26 d'entre eux sont traités depuis plus de 6 mois. Il s'agit de 25 hommes et 1 femme d'âge moyen 37 ans (26 à 69) dont 25 homosexuels et 1 transfusée. Résultats: L'observance des aérosols est bonne chez les 26 patients; leur tolérance est parfaite chez 19/26 (toux: 6, bronchospasme: 1, neutropénie:14 , manifestations systémiques: 0). 3/26 patients ont rechuté à 6 mois (11,5%, intervalle de confiance à 95% 4-20%). Discussion: La toxicité des aérosols paraît nulle. La méthodologie reste mal standardisée (appareillage, posologie, répartition pulmonaire). Dans la littérature, après 6 mois d'AZT sans autre traitement prophylactique, le taux de rechute de PNP est de l'ordre de 19% ; en prophylaxie secondaire, les aérosols semblent donc apporter un bénéfice modéré chez les patients sous AZT. Conclusion: Les aérosols de pentamidine semblent faire preuve d'une efficacité modérée en prophylaxie secondaire de la PNP du SIDA dans les 6 premiers mois; leur bénéfice reste à comparer à celui d'autres traitements prophylactiques.

T.B.P.72

SINGLE AND MULTIPLE DOSE PHARMACOKINETICS (PK) OF REDUCED DOSE (3 MG/KG) INTRAVENOUS PENTAMIDINE

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Objective: To investigate the single-and multiple-dose PK of reduced dose intravenous pentamidine in AIDS patients with *Pneumocystis carinii* pneumonia (PCP).
Methods: Serial plasma and urine pentamidine concentrations (HPLC) was measured in 6 previously reported patients with normal or near-normal renal function who received 3 mg/kg/day of intravenous pentamidine as a 2-hour timed infusion. Concentration-time data were fit to 2-and 3-compartment (2c or 3c) models with the Prophet Computer Resource.
Results: Plasma concentration (mean ±SD) at the completion of infusion, and at 1,6 and 16 hours following completion of infusion were 221 ± 85.5, 16.6 ± 6.8, 4.0 ± 1.6, and 1.4 ± 2.3 mg/ml. First dose PK parameters are summarized in the table:

	Parameter				
Model	Vol 1 (liters)	VSS (liters)	AUC (mcg hr/ml)	Clearance (1/h)	$T^1/_2$ (h)
2c	66.5±38.3	542±357	513±145	392±102	5.1±3.6
3c	56.5±24.0	140±6.2	924±343	236±38.7	93.6±36

On day 5 (n=4), 7 (n=3), 11 (n=3), 12 (n=2), 13 (n=2) and 18 (n=1) the mean (+SD) plasma concentrations were 10.3 ± 10.1, 24.6 ± 12.2, 34.5 ± 5.3, 48.3 ± 32.9 and 69.6 ng/ml.
Conclusion: The true elimination half-life of pentamidine is long (approximately 4 days) and daily dosing leads to progressive plasma accumulation even in patients with normal or near-normal renal function

T.B.P.73 Nebulized Pentamidine in the primary and secondary Prophylaxis of PcP

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Although AZT significantly prolongs the survival time after the first PCP episode it does not influence the occurrence of opportunistic infections (OI) principally. Of 185 patients treated with AZT in Frankfurt. 32 (17%) developed PCP. In 12 cases. PCP first occurred under AZT. PCP is the most common OI also under AZT; as a consequence. PCP prophylaxis. aimed at preventing or reducing the occurrence of PCP. is required.

We therefore perform an open study to assess efficacy and tolerance of nebulized pentamidine as primary or secundary PCP prophylaxis. One group of patients additionally gets Fansidar 2 tablets/wk as CNS-toxoplasmosis prophylaxis. Pentamidine loading dose is 200mg on 4 following days. maintanance dose is 200mg every 2 weeks. nebulized with Respigard II.Up to now. 63 patients have enroled in the study. 30 of them had PCP prior to pentamidine prophylaxis. Indication for inhalation prophylaxis was a T4 cell count <150/ l and AZT treatment.

Results: After a median observation time of 230 days. no patient under pentamidine developed PCP. 20 patients developing PCP during this period did not take pentamidine.

In the mentioned dosage. the agent was well tolerated. Systemic side effects were not observed. Because of heavy cough. 2 patients additionally needed a broncho-dilatator.

T.B.P.74 EFFICACITE' ET SURETE' DE LA PROPHYLAXIE AVEC PENTAMIDINE PAR AEROSOL DANS DES TOXICOMANES E.V. ITALIENS ATTEINTS DE SIDA, EN THERAPIE AVEC ZIDOVUDINE.

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Objectif. Prophylaxie des premières crises et des récidives de PCP dans les toxicomanes atteints de SIDA.

Methode. Du mars 1988 jusqu'à aujourd'hui 15 patients toxicomanes italiens atteints de SIDA pratiquent la prophylaxie par aerosol de pentamidine en traitement ambulatoire, 6 patients ont commencé depuis plus de 12 mois, 1 patient est mort par une première crise de PCP au 9^{me} mois de prophylaxie, 8 parmi eux sont en traitement jusqu'à aujourd'hui depuis 2-6 mois, 1 patient a suspendu la prophylaxie parce qu'il est atteint d'une démence qui l'invalide. Tous les patients sont traités avec zidovudine au dosage de 600/1200 mg/die. 4 patients ont présenté avant la prophylaxie une episode de PCP. La pentamidine est administrée au dosage de 4 mg/kg/séance. Les séances sont bimensuel au cours du premier mois, en suite mensuel.

Conclusion. La PCP arrive dans plus de 60% des patients atteints de SIDA. Dans les patients sans prophylaxie on croit qu'elle arrive dans le 31-41% des patients dans les premières 24 semaines depuis la première crise de PCP. L'efficacité et la sureté de la Pentamidine par aerosol a été prouvée. Les concentrations pulmonaires sont plus grandes dans les poumons que dans le foie et les reins. Cette sorte de distribution empêche l'apparition des effets indésirables. Selon les premiers resultats de notre étude on n'a pas des effets indésirables; au contraire on a demontré de façon évidente une frequence plus pétite de PCP, soit des premiers épisodes, soit des rechutes dans les toxicomanes atteints de SIDA.

T.B.P.75 PROPHYLAXIS FOR PNEUMOCYSTIS CARINII PNEUMONIA (PCP) WITH AEROSOL PENTAMIDINE (AP) OR ORAL DAPSONE (OD) IN PATIENTS WITH AIDS OR SEVERE ARC.

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St. Vincent's Hospital, New York, N.Y. USA.

Objective: To evaluate and compare the efficacies and toxicities of AP and OD in the prophylaxis for PCP in patients with AIDS or severe ARC.

Methods: Since November 1987, 141 patients were enrolled and randomized to two treatment arms: AP (100mg every 2 weeks, delivered under supervision with a Pulmosonic nebulizer (DeVilbiss), MMAD 3.5 microns), or self-administered OD (100mg biweekly). Randomization was stratified into groups with prior PCP (n=76), no previous PCP (n=30), severe ARC (n=35). Relapse rate of historical controls is approximately 35% at 6 months.

Results: Mean length of follow-up was 26 weeks in AP arm and 20 weeks in OD arm. Of 118 patients evaluable, 65 were on AP and 53 on OD; 23 patients withdrew voluntarily, were lost to follow-up or expired prior to the first 6-month endpoint. Sixty percent of patients in each group were on AZT. Relapse rates were not significantly different for either drug in any group: Fisher's exact test: P>0.05

	Entire Group	s/p PCP	<1 mo.*	>1 mo.*	no PCP	ARC	AZT
Relapse Rate							
OD	6%	14%	12%	32%	0	0	10%
AP	9%	14%	5%	20%	0	8%	13%

*Interval from last episode PCP to onset of prophylaxis.

Transfusion requirements were similar in both groups and improvement in diffusion capacity occurred in 81% (AP) and 100% (OD) after 6 months. Bronchospasm occurred in 15% patients on AP, and rash requiring discontinuation of Rx, occurred in 7.5% of patients on OD.

Conclusion: Oral Dapsone and aerosol Pentamidine are both effective prophylactic agents for PCP with similar rates of relapse and low rates of complications.

T.B.P.76 PNEUMOTHORAX IN PATIENTS RECEIVING AEROSOL PENTAMIDINE FOR *PNEUMOCYSTIS CARINII* PNEUMONIA PROPHYLAXIS.

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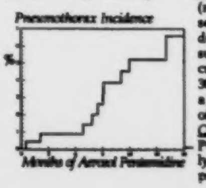
Objective: To determine the incidence of pneumothorax in patients on aerosol pentamidine for prophylaxis against *Pneumocystis carinii* pneumonia (PCP) in high risk HIV infected patients.

Methods: 408 patients were randomized to treatment with either 30mg q2w, 150mg q2w or 300mg q4w of aerosol pentam (AP) stratified into groups: prior PCP (PCP, n=256); Kaposi's Sarcoma (KS, n=56); or ARC and other AIDS diagnoses (OT, n=116). AP was delivered with a Marquest Respigard II nebulizer (particle MMAD=1.42 microns). Pneumothorax was prospectively documented as a component of study follow-up.



Results: Mean follow up in ongoing patients was 301 days (range 190-347). Thirteen episodes of pneumothorax were observed two of which were complications of invasive procedures. Three episodes were bilateral and seven patients had subsequent episodes. All but one patient had prior PCP. 4 occurred on the 30 mg q 2 week, 7 on 150 mg q 2 week and 1 on 300 mg q 4 week. Kaplan-Meier estimates of incidence showed a roughly linear trend in the group post PCP with an incidence of 1.4% at 6 months and 5.2% at 12 months.

Conclusion: Pneumothorax is a well recognized late sequelae of PCP. The lack of dose response and occurrence almost entirely in men post PCP suggests that aerosol pentamidine is not a primary factor.

T.B.P.77 AZT-AEROSOL PENTAMIDINE VS AZT ALONE IN LONG TERM AIDS SURVIVORS: A RETROSPECTIVE CASE-CONTROL SURVIVAL ANALYSIS.

SD Nightingale, SM Pounders, RS Ferguson, JD Jockusch. Parkland Memorial Hospital, Dallas, TX, USA.

40 of our 609 AIDS patients a) had PCP, b) survived >365 days after PCP, c) received AZT, and d) were started on aerosol pentamidine (AP), 300 mg q month, >365 days after PCP. Each was matched to a member of a control group of 41 patients who fit a), b), and c), but never received AP. Potential controls were all controls who had survived as many days as the case had survived before the case began AP; the control chosen was the one whose 1st PCP date was closest to that of the case. Case survival was evaluated from the day AP was begun. Control survival was calculated from the day after PCP its matched case was begun on AP.

We began AP in June 1988 and offered it to all AIDS patients thereafter. No other factor appeared to influence which of our patients became cases and which controls.

16 cases survived > controls, 4 controls survived > cases, and in 20 cases censored values made survival indeterminate (chi-square 14.4, p<.001). Actuarial survival on AP of the cases was 87% at 90 and 82% at 180 days vs 82% at 90 and 10% at 180 days for the controls (Wilcoxon p<.025,log rank p<.001).

Within the limits of the retrospective case-control method, the data suggest that AP can significantly prolong life in AIDS patients on AZT who have survived an episode of PCP by > 1 year.

T.B.P.78 DOUBLE-BLINDED RANDOMIZED TRIAL OF AEROSOL PENTAMIDINE FOR SECONDARY PROPHYLAXIS OF *PNEUMOCYSTIS CARINII* PNEUMONIA.

Leoung, Gifford S.*;Montgomery, A.B.**; McGinty, E.*; Feigal, D.W. *and the *LyphoMed* Consortium Investigators.
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Objective: To determine the safety and efficacy of aerosol pentamidine for *Pneumocystis carinii* pneumonia (PCP) prophylaxis in AIDS patient after first episode PCP.

Methods: 243 patients within 6 months after first episode PCP were randomized to 30mg or 150mg every 2 weeks of aerosol pentamidine (AP) via the Marquest Respigard II nebulizer (particle MMAD=1.42 microns) at 7 centers.

Results: 4 patients were disqualified for not meeting inclusion criteria, 2 for medication violations and 1 was never treated. After 9 months of enrollment with a mean follow up of 4.67 months, of the 236 PT on trial, 10 have had recurrent PCP with 2 deaths. 4 died from other causes, and 4 were too ill from other causes to continue. There were 2 episodes of pneumothorax; one associated with a PCP relapse. Systemic side effects are prospectively monitored at two month intervals. One patient discontinued therapy for thrombocytopenia.

Conclusions: Aerosol pentamidine is well tolerated and is associated with a low rate of early recurrence of PCP in high risk patients started shortly after first episode PCP. Systemic complications occur infrequently and extrapulmonary pneumocystosis has not been observed.

T.B.P.79

IS UPPER LUNG DEPOSITION OF NEBULISED PENTAMIDINE IMPROVED BY INHALATION LYING DOWN?

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Objective. To determine whether inhalation of pentamidine in the supine posture improves deposition in the upper zones.
Methods. Following salbutamol pre-treatment, 9 patients with AIDS inhaled 50 mg nebulised pentamidine mixed with 37 MBq 99mTc human serum albumin in the supine and sitting positions. To allow supine aerosol inhalation, 2 nebuliser systems, System 22 Mizer (S22M, Medicaid UK) and Respigard II (RII, Marquest) were modified by adding 150 ml tubing between nebuliser and mouthpiece. Pulmonary and non-pulmonary pentamidine deposition was measured when inhaled via the unmodified and modified apparatus by dynamic and static scanning using a gamma camera. For each patient a 133Xe equilibrium scan was obtained in both postures to correct upper to lower zone deposition ratios for relative lung volume.
Results. Absolute pulmonary deposition in mg (total [T] and right upper zone [RU]) is shown in the table for each nebuliser in each position:

Posture		S22M		RII	
		unmodified	modified	unmodified	modified
Sitting	[T]	2.78±0.42	1.35±0.23	1.53±0.31	1.87±0.16
	[RU]	0.38±0.27	0.16±0.04	0.18±0.04	0.22±0.03
Supine	[T]	–	1.49±0.27	–	2.36±0.35
	[RU]	–	0.19±0.04	–	0.29±0.05

In the sitting posture, modification of the systems reduced drug deposition using S22M (p<0.05). Total pulmonary deposition was not changed by lying down but the upper to lower zone ratio (corrected for lung volumes using the 133Xe counts) was increased.
Conclusion. Modification of S22M reduces its efficiency and is not recommended. The largest upper zone deposition was observed using an unmodified S22M in the sitting position. Using RII in the supine position increased upper zone deposition.

Diagnostic : Analyse de flux cytométrique et RCP
Diagnosis: Flow Cytometric Analysis and PCR

T.B.P.80

QUANTITATION OF HIV 1 PCR PRODUCTS BY SOLUTION HYBRIDIZATION WITH 125I-DNA PROBES.

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Objective: Polymerase chain reaction (PCR) amplified sequences are usually evaluated by spot or Southern blot hybridization or gel electrophoresis of PCR products after restriction enzyme treatment. A novel solution hybridization assay was used as a convenient, sensitive and quantitative method for detection of HIV-1 DNA and RNA following amplification by PCR.
Methods: The PCR product of a 680 base pair segment of the gag region was hybridized in solution with a high specific activity, single stranded 125I-DNA probe. The reaction was then applied to a gel column to separate hybrids from free probe in a single elution step. The hybridization assay itself has a sensitivity of $6x10^{-20}$ moles and is quantitative over 3.5 orders of magnitude in target concentration.
Results: The quantitative solution hybridization assay of DNA PCR products routinely detected 1-5 HIV-1 infected cells in $2.5X10^5$ uninfected cells. HIV DNA was detected in 28/28 anti-HIV positive patients (including asymptomatic, acute and AIDS stages) and in 0/18 negative controls. The frequency of HIV infected cells in AIDS patients ranged from fewer than 9 (4% of patients) to more than 400 (13% of patients) per 10^6 mononuclear cells.
Conclusion: These methods may be useful in monitoring DNA and RNA levels during anti-viral therapy.

T.B.P.81

DETECTION OF HIV-1 WITH POLYMERASE CHAIN REACTION IN RELATION TO RESULTS OF VIRUS CULTURE

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Objective. To compare the sensitivities of the polymerase chain reaction (PCR) and cultivation in detecting HIV-1.
Methods. PCR was performed using primers pairs with location 1551-1578 and1639-1665 in the gag gene and location 7801-7820 and 7923-7942 in the env gene on specimens from HIV-1 culture-positive or negative patients in different stages of infection.
Results. There was no complete agreement between the results of PCR and cultivation. Thus, some patients were repeatedly negative by PCR in spite of the fact that cultures yielded infectious virus. Conversely, PCR was positive in two subjects, who had symptoms indicative of HIV-infection, but were HIV-1 seronegative and culture negative. Specimens from HIV-1 seropositive persons, infected in Europe or USA, were more frequently positive by PCR than samples from individuals infected in Africa.
Conclusion. Detection by PCR of HIV-1 sequences in th gag and env region of the genome seems to be useful for the demonstration of HIV-1 infection in both seropositive and seronegative subjects. Because of possible strain differences the selection of primers is crucial for interpretation of results.

T.B.P.82

FAILURE OF THE POLYMERASE CHAIN REACTION (PCR) TO DETECT VIRAL HIV-1 DNA BY AMPLIFICATION OF A GAG SEGMENT IN HEMOPHILIACS WITH HIV ANTIBODIES.

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*Pennsylvania State University, Hershey, PA, **National Cancer Institute, Bethesda, MD, ***Frederick Cancer Institute, Frederick, MD, U.S.A.

Objective. To detect HIV DNA by PCR in multi-transfused hemophiliacs at high risk for HIV infection.
Method. A 115 base pair segment of the gag region of HIV was amplified by PCR and analysed by the rapid hybridisation method (probe-shift assay) described by Kumar et al (AIDS Res and Human Retrovirus, in press).
Results.

	PCR Pos.	PCR Neg.
HIV Antibody Pos. n=6	3*	3
HIV Antibody Neg. n=16	3	13
HIV antibody Seroconversion n=7		
Pre-conversion (5/7 tested)	3*	2
Post-conversion (6/7 tested)	3	3

*Two PCR pos. patients were also p24 antigen positive
Conclusion. PCR using a single probe and one set of gag region primers failed to detect HIV DNA in 50% of seropositive hemophiliacs. The use of short term culture of lymphocytes, additional probes, and multiple samples of cell lysates may improve detection. Definitive diagnosis of HIV infection in hemophiliacs may require a combination of immunological and molecular approaches. (Supported by NCI Contract NO1-CP-85649)

T.B.P.83

MULTIPARAMETRIC FLOW CYTOMETRIC ANALYSIS (LYMPHOCYTE P24-FCA) ALLOWS RAPID QUANTITATION OF ACTIVE HIV-1 INFECTION IN PERIPHERAL BLOOD CELLS

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*The M. S. Hershey Medical Center, The Pennsylvania State Univ., Hershey, PA; and **Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL, USA.

Objective. To quantitate active HIV-1 infection rapidly (<24 hrs) in asymptomatic, HIV antibody positive, serum HIV p24 antigen negative homosexual men.
Methods. Lymphocyte p24-FCA was used to quantitate active HIV-1 infection in peripheral blood cells. The assay is based on binding of monoclonal antibody specific for p24 core protein; thus, only cells with actively replicating HIV are detected and results expressed as % p24 positive cells. Viral isolation was by standard coculture methods.
Results. Forty-one samples from 36 individuals were stratified by lymphocyte p24-FCA (range: <0.1-13.6%). (1) All (10/10) samples with lymphocyte p24-FCA >1.0% were positive by virus culture; only 2 of the remaining 31 samples were virus culture positive. (2) Neither monocyte nor granulocyte p24-FCA correlated with virus culture. (3) Lymphocyte p24-FCA did not correlate with % or number of CD4+ or CD8+ lymphocytes. (4) Serial samples from one individual showed an increase over 2 wk from 0.3% to 6.0% concomitant with conversion to virus culture positivity.
Conclusion. Lymphocyte p24-FCA allowed rapid (<24 hrs) monitoring of HIV-1 replication in seropositive, asymptomatic serum p24 antigen negative individuals and may be a valuable tool in monitoring antiretroviral therapy.
(Supported by USA NIH HLBI NO1-HB-67023 Project #221924 and AI25915).

T.B.P.84

USE OF FLOW CYTOMETRIC ANALYSIS (LYMPHOCYTE P24-FCA) TO EVALUATE ACTIVE INFECTION IN FEMALE SEXUAL PARTNERS AT HIGH RISK FOR HIV-1 INFECTION

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Objective. To monitor active HIV-1 infection rapidly (<24 hrs) in female sexual partners of multitransfused HIV-1 antibody positive hemophiliacs.
Methods. Multiparametric flow cytometry detected peripheral blood lymphocytes bearing HIV-1 major core protein p24 (lymphocyte p24-FCA). Thus, actively infected cells were quantitated and results expressed as %p24-positive; lymphocyte p24-FCA results >1.0% correlated with positive viral culture.
Results. (1) Of 15 samples from antibody(-) women, all had lymphocyte P24-FCA values ≤0.2%; partners of 4 of these women had AIDS. (2) Four antibody(+) women had lymphocyte p24-FCA values of 0.1, 0.2, 1.1 and 1.7%. (3) Serial samples 5 months apart (0.1%, 1.7%) were available for 1 woman, whose sexual partner died of AIDS. Further evidence of active infection within months of lymphocyte p24-FCA testing included the birth of a son who died of AIDS at <1 yr. Her CD4+ lymphocyte counts were stable in the 300-500/mm^3 range and she remained serum p24 antigen(-). (4) The lymphocyte p24-FCA result of 1.1% derived from another woman whose partner was persistently p24 antigen (+). Her CD4+ lymphocyte counts remained stable in the 200-300/mm^3 range and she remained serum p24 antigen(-).
Conclusions. Lymphocyte p24-FCA was used to assess active HIV-1 infection rapidly when other measures of infection remained stable.
(Supported by USA NIH HLBI, NO1-HB-67023 Project #221924, NCI NO1-CP-85649).

T.B.P.85 MONITORING THE ACCURACY OF THE TOTAL LYMPHOCYTE COUNT TO IMPROVE THE ABSOLUTE CD-4 COUNT

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Objective. To improve the accuracy of the total lymphocyte count, a key part of the absolute CD-4 lymphocyte count.
Methods. The white cell differential was determined using the Becton Dickinson FACSCAN with Simulset Software and Simultest Reagents (BD), microscopically on Wright-Geimsa stained smears (manual), and by electronic impedance on the Sequoia-Turner Cell Dyn 2000 (SQ) on a clinic-based HIV positive population.
Results. BD lymphocyte percentages were lowered when additional wash steps, vortex mixing, or aggressive aspiration (Asp) was used in cell preparation.

MEAN % LYMPH	SQ	BD	MANUAL	MAN-SQ (%)	MAN-BD (%)
Wash/Vortex/Asp	34.1	26.2	35.2	1.1 (3.1)	9.0 (25.6)
Vortex/Asp	36.2	33.8	39.2	3.0 (7.6)	5.4 (13.7)
Neither	37.7	37.4	39.4	1.7 (4.3)	2.0 (5.1)

Twenty-one room-temperature ACD whole blood specimens held for 0, 24 and 48 hours gave a mean percent lymphs of 36.8, 34.9 and 37.8 respectively, compared with 34.8 for EDTA.
Conclusion. With best technique, lymphocyte percentages from the FACSCAN, impedance, and manual methods are comparable. Monitoring all three methods insures good recovery from lymphocyte preparation methods. If processing delays occur, ACD is a superior anticoagulant for lymphocyte phenotyping.

T.B.P.86 WHERE LIES THE TRUTH ? METHODOLOGICAL INFLUENCE ON THE DETERMINATION OF CD4 AND CD8 LYMPHOCYTE SUBPOPULATIONS.

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Objective. The number of CD4-positive lymphocytes in the peripheral blood of HIV-infected patients is an important prognostic parameter. However, the results of CD4 determinations from different laboratories are often not comparable. One of the reasons might be methodological differences.
Methods. We compared three different methods used to measure lymphocyte subpopulations:
- M1: Separation of mononuclear cells on a density gradient (Lymphoprep™, Nycomed), and staining with FITC-labeled monoclonal antibodies against CD4 and CD8 (Becton-Dickinson).
- M2: Whole blood was double-stained with FITC-labeled anti-CD4 and PE-labeled anti-CD8 monoclonal antibodies (Simultest™, B-D), and red cells were lysed with a one step lysing reagent (B-D).
- M3: Whole blood was double-stained with FITC-labeled anti-CD4 and PE-labeled anti-CD8 monoclonal antibodies (Coulter), and red cells were lysed with a three step lysing procedure on a Coulter Workstation™.

In all three methods the labeled cells were measured with a cytofluorometer (EPICS PROFILE™, Coulter). Results were compared using a linear regression model.
Results. M1 and M2 were compared with blood from 57 HIV-infected patients and from 29 healthy blood donors. CD4 values established with M2 were only 80% of the values determined with M1. Correlation coefficient (r) was 0.90. A retrospective comparison of the means of 500 consecutive CD4 determinations by M1 with 500 consecutive measurements by M2 in HIV-infected patients resulted as well in a similar difference. CD8 values correlated less well (r=0.79) but, in contrast to CD4, were about 10% higher if determined with M2 than with M1.
M2 and M3 were compared with blood from 36 HIV-infected patients and from 20 healthy blood donors. CD4 values measured with M3 were 25% higher than M2-determined values (r=0.95), which makes them comparable with M1-determined values. CD8 values, however, were again about 10% higher with M3 than with M2, moving them further apart from M1-determined values.
Conclusion. Methodological effects on CD4 (and CD8) values are substantial and have to be considered when comparing different studies. A simple explanation for the observed differences could not be found.

T.B.P.87 FLOW CYTOMETRIC METHODS FOR HIV SEROLOGY AND ANTIGEN QUANTITATION USING RECOMBINANT HIV ENVELOPE (ENV-9) PROTEIN

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Objective: Flow cytometric (FC) methods were developed as potentially improved alternatives to enzyme-linked immunosorbent assays (ELISA) for the detection of HIV specific antibodies, and for the quantitation of HIV proteins.
Methods: Recombinant HIV envelope (ENV-9) protein was covalently coupled to 2.39um caboxylated polystyrene microspheres by carbodiimide mediated reactions and served as the solid phase antigen for both the FC serologic assay and for the FC antigen competition assay. The primary antibody probe for both assays was affinity-purified, biotin-conjugated goat anti-human IgG, while the fluorescence probe was FITC-avidin.
Results: The evaluation of forty four human sera by FC and ELISA revealed a high level of correlation (coefficient of correlation = 0.874) between FC mean channel fluorescence and ELISA endpoint titer. The FC antigen competition assay detected less than 50 picograms of recombinant HIV envelope protein.
Conclusion: The results of the FC HIV antibody detection assay and the FC HIV antigen competition assay demonstrate the potential usefulness of flow cytometry as an alternative method for the quantitation of HIV antibodies and detection of HIV antigens in infected cells.

T.B.P.88 IDENTIFICATION AND QUANTITATION OF HIV INFECTED CELLS IN PERIPHERAL BLOOD FROM AIDS PATIENTS BY FLOW CYTOMETRY

McSharry, James*; Echols, R.*; Stevens, R.** and Lehman, J.* *Albany Medical Center, Albany NY and **New York State Department of Health, Albany NY.

Objective: To develope a rapid method for quantitating the amount of HIV antigen in HIV seropositive patients. Methods: After obtaining informed consent, peripheral blood was taken from patients attending the AIDS Clinic at the Albany Medical Center. The mononuclear cells were isolated by centrifugation onto ficoll-hypaque, fixed in 90% methanol, incubated with monoclonal antibody to p24 antigen as the primary antibody and then with FITC - conjugated goat anti mouse IgG (Fab') as the secondary antibody. The cells were then treated with RNAse to remove RNA and then with propidium diiodide to determine the cell DNA profile. The stained cells were then analyzed by flow cytometry. Controls consisted of peripheral blood mononuclear cells obtained from HIV- seronegative patients with normal blood counts. Results: Flow cytometric analysis of treated mononuclear cells revealed that HIV-seronegative patients have essentially no p24 antigen- positive cells whereas HIV-seropositive patients had significant numbers of p24 antigen- positive cells. The % positive cells correlated with the CDC criteria for clinical staging of the disease in that patients in stage II had fewer p24 positive cells than those in stage III and stage IV. Furthermore, in all cases tested, and at each stage of the disease, the p24 antigen-positive cell was of the monocyte/macrophage lineage on the basis of size as determined by light scatter and adherence to fetal bovine serum coated petrie dishes. Conclusion: These results suggest that flow cytometry can be used as a rapid, quantitative system to determine the antigen status of HIV-seropositive patients which may be useful as an indicator of disease progression.

T.B.P.89 STATISTICAL ANALYSIS OF FLOW CYTOMETRIC DATA: A NON-PARAMETRIC APPROACH

Lacouture, Yves; Cardno, T; Tsoukas, C. Flow Cytometry Laboratory, Montreal General Hospital, Montreal, Quebec, Canada.

Objective: To evaluate non-parametric approaches to the statistical analysis of T cell subsets. The enumeration of CD4 positive lymphocytes is currently considered essential for monitoring the course of HIV infection. Lymphocyte subsets are furthermore dependent variables used to enroll patients in clinical trials and to evaluate outcomes of treatments. Despite the practical importance placed on quantitating T cell subsets little attention has so far been placed on the statistical methods used for analysis.
Methods: Flow cytometric data was obtained on 100 HIV seronegative volunteers and 200 HIV seropositive patients with varying clinical stages of HIV disease. Dual staining of cells with monoclonal reagents conjugated to either fluorescein or phycoerythrin were used to identify T helper, suppressor, inducer, cytotoxic, NK and activated cells.
Results: The observed distribution of flow cytometric data did not follow a Gaussian probability function and traditional parametric methods were inadequate for analysis. Percentile ranges and absolute median deviation were used instead of standard deviation as dispersion indices; median and mode instead of mean as localization indices. These statistical estimators provided a cleaner view of the skewed distribution of the data (presented using exemplar distributions). A non-parametric test, the Mann-Witney U-test, was noted to be useful for hypothesis testing.
Conclusion: Although statistically less powerful the non-parametric hypothesis testing leads to improved reliability in flow cytometric data analysis.

Diagnostic : Détection des antigènes
Diagnosis: Antigen Detection

T.B.P.90 ANTIGENEMIE VIH AU COURS DE LA PRIMOINFECTION

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**Service de Dermatologie, CH La Grave, Toulouse, FRANCE.

Objectifs. Etudier la précocité de l'antigénémie lors de la primoinfection Il a été écrit qu'elle pouvait précéder la séroconversion de 34 mois(Ranki A. Lancet 87;ii:589) ou de quelques mois (Goudsmit J.Lancet 87;i:317- Allain JP Lancet 86;ii:1233) mais ces résultats sont controversés (Courouce AM,Lancet 87;ii:1025).
Méthodes.
Détection, titrage de l'antigénémie p24 (technique Abbott) et confirmation par neutralisation réalisée sur des sérums recueillis 2 à 14 mois (moyenne : 9 mois) avant la séroconversion observée chez 19 patients homosexuels.
Résultats.
-Aucune antigénémie n'a jamais été détectée avant la séroconversion, toutefois nous n'avons pas disposé de sérum dans le mois précédant la séroconversion.
-Au moment de la séroconversion une antigénémie a été observée chez 15 sujets Elle a disparue en 1 mois dans 11 cas, en 3 mois dans 4 cas.
-Une antigénémie a été observée chez un patient un mois seulement après la séroconversion, elle a disparu en 3 mois.
Conclusion. L'antigénémie n'est donc pas un marqueur sérologique précoce et fiable de l'infection VIH; accompagnant la séroconversion, elle est fugace, inconstante, parfois retardée.

T.B.P.91

PRODUCTION AND CHARACTERIZATION OF HUMAN IMMUNODEFICIENCY VIRUS ANTIGENIC DETERMINANTS AND THEIR USE IN DIAGNOSTICS OF AIDS

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With a view to have immunodiagnostic kits for detection of AIDS in humans we obtained bacterial strains expressing recombinant proteins which include amino acid sequences of the main antigenic determinants of human immunodeficiency viruses (HIV). The spectrum of expressed antigenic determinants overlaps their variability among different HIV isolates. The content of the expressed recombinant protein in cell lysates amounts to 30-50% that enables one to use the synthesized antigens for immunological reactions without further purification. Using a large panel of sera taken from AIDS patients interaction of the recombinant antigens with anti-HIV antibodies was statistically analysed.

T.B.P.92

SENSITIVITY OF FIVE COMMERCIAL HIV-ANTIGEN DETECTION METHODS.

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OBJETIVES.- To present data about the perfomance of commercial -- kits for HIV - antigen detection by testing with a panel of sera and infected cell-culture supernatants.

METHODS.- To build our evaluation panel we have selected antibody positive sera which didn't show any reactivity for anti-CORE antibodies by the CIA -RA (ENVACOR HIV-1, Abbott) method.

The chance of a serum to be antigen reactive is higher than if it was entCORE positive.

The antigen detection methods used in this work have been: Abbott HTLV-III Antigen EIA, Du Pont p24 CORE Antigen ELISA, ELAVIA AgI (Diagnostics Pasteur), Coulter HIV Ag assay and Vironostika HIV Antigen (Organon).

The sensitivity study was completed by setting up the end-point dilution in cell-culture supernatants for each method.

RESULTS.- We have found relevant differences of sensitivity by testing the sera panel and the dilutions.

CONCLUSIONS.- We think that our study may give information about the antigen detection ability of five commercial Kits. This could be an additional approach in order to decide which HIV antigen detection kit might be selected.

T.B.P.93

USE OF TRITON-X IN THE HIV ANTIGEN ASSAY TO ASSESS THE PRESENCE OF INFECTIVE HIV.

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Objective. Compare the performance and significance of the current HIV antigen (HIV Ag) capture assay to a modification using Triton X-100 to disrupt potential whole viral particles in the samples.
Methods. Serum plasma samples were tested neat or in the presence of 0.5% Triton X-100 according to previously described methods (Lancet 1986, 2, 1233). In some cases, results were compared to the capacity of plasma to infect stimulated normal peripheral blood lymphocytes.
Results. In 36 samples from 7 patients collected at close interval pre and post seroconversion, 11 samples were HIV Ag + in the presence and 7 in the absence of Triton. All 5 HIV Ag + samples tested were infectious in culture while 3 of 10 HIV Ag- were infectious. In 140 seropositive samples (49 asympcomatic, 41 ARC and 50 AIDS) 52 and 47 were HIV Ag + in the presence or absence of Triton, respectively. This additional sensitivity seemed to correspond to the disruption of whole virions since in 18 samples where HIV plasma culture was performed, all 15 positive culture samples were positive with the Triton treated HIV Ag assay.
Conclusion. The treatment of samples for HIV Ag testing with Triton X-100 inactivated infective HIV and improved the assay sensitivity by increasing the amount of antigen available to capture. The good correlation betweer culture infective plasma and positive result of Triton treated HIV Ag as suggested that the presence of HIV Ag reflected active viral replicatio

T.B.P.94

EVALUATION OF TWO HIV ANTIGEN ENZYME IMMUNO ASSAYS ON EUROPEAN AND AFRICAN SERA

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Objective: To compare the performance of two HIV antigen capturing enzyme immunoassays (EIA) (Abbott and Innogenetics for the detection of free HIV antigen in human serum).
Methods: Two hundred seventy anti-HIV positive (51 African, 219 European), and 42 anti HIV negative sera were screened with the HTLV III antigen EIA (Abbott) and the Innotest HIV antigen (Innogenetics distributed by Organon Teknika and Wellcome). Reactive samples were tested for confirmation with a neutralisation assay of the respective manufacturers.
Results: Initial screening yielded 49 sera reactive in the Abbott and 66 sera reactive in the Inno test. Fourty-one samples were reactive in both assays. Eighty-eight percent (36/41) of the samples reactive in both assays were confirmed with the Abbott test while 98 percent (40/41) were confirmed with the Inno-test. Three out of the 8 excusively Abbott reactive samples and 13 out of the 25 exclusively Innogenetics reactive sera were confirmed. Antibodies to p24 (Abbott HIV1 anti core EIA), were absent or of very low level in the discrepant antigen reactive sera. All of these patients, except one, which was stage 1, were classified as having ARC or AIDS. We therefore presume that regardless the assay the confirmed samples are true HIV antigen positive sera. The HIV antigen seropositivity in the African and European sera was respectively 5.9 % (3/51) and 24.2 % (53/219) (p = 0.006). Among the African sera 64.7 % had ep24 levels higher than ratio 10.0 (OD cut off/OD samples) while this was only the case in 17.8 % of the European sera ($p < 10^{-6}$).
Conclusion: We obtained more HIV antigen confirmed positive results with the Innotest HIV antigen EIA. This observation can perhaps be explained by a higher sensitivity of this test or by its capability to capture a wider range of HIV antigens. Our results confirm that HIV antibody positive sera from African patients contain less often free HIV antigen, possibly because of a higher production of anti p24 antibody.

T.B.P.95

LACK OF CORRELATION OF P24 ANTIGENEMIA WITH CLINICAL STATUS OR PERIPHERAL BLOOD T4 LYMPHOCYTES (PBT4) IN WOMEN WITH HIV INFECTION.

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Objective. To determine the relation between p24 antigenemia. PBT4. and clinical status in women with HIV infection. Methods. 24 HIV-seropositive women were periodically evaluated for 24 months. with monitoring of clinical status and PBT4. and monthly determinations of serum p24 antigen (p24Ag) in individuals with antigenemia. Results. In 14 asymptomatic (AS) women (mean age 27). mean PBT4 count was 787 ± 127 (SEM). In 5 women (mean age 34) with AIDS-related complex (ARC). mean PBT4 was 191 ± 60 (SEM). In 5 women (mean age 35) with AIDS. mean PBT4 was 60 ± 24 (SEM). 3 individuals (1 AS. 1 ARC. 1 AIDS) had persistent p24 antigenemia. In the AS individual. mean p24Ag was 63 pg/ul: mean PBT4 was 862. In the person with ARC. mean p24Ag was 130 pg/ul: mean PBT4 was 194. In the women with AIDS. mean p24Ag was 78 pg/ul: mean PBT4 was 170. Each antigenemic women has been clinically stable during the past 12 months. The individual with AIDS had one brief hospitalization for perineal herpes: the other two antigenemic women had no limitation of activities of daily living. Conclusions. These data confirm a highly significant correlation between PBT4 and clinical status. but fail to show correlation between persistent p24 antigenemia and either clinical status or PBT4 counts in these 24 HIV-positive women.

T.B.P.96

CORRELATION OF HIV CORE ANTIGEN, ANTIBODY AND IMMUNE COMPLEX LEVELS IN SERA OF HIV-INFECTED INDIVIDUALS

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Objectives. To measure the relationship between the presence of HIV core-anti-core (core IC) and env-anti-env (env IC) immune complexes on the one hand, and the amounts of free core antigen, free core and env antibodies on the other. Methods. Levels of core IC and env IC were measured by the method of Ujhelyi et al (AIDS,1,161,1987). HIV antigen was detected by a sandwich ELISA assay, free core and env antibodies were measured by the ENVACOR test. Sera of HIV-infected individuals containing core IC and/or env IC (18/40) were selected for the study. Results. Free core antigen was found in 8/18 samples. Free env antibodies were present in all sera tested, free core antibodies were found in 12 samples. Core IC and env IC were detected in 11 and 14 samples, resp., in 9 sera both types of complexes could be detected. The presence of core IC were associated with a decreased titre of free core antibodies (13.3±25.5 vs 110.0±32.3, p=0.01) and increased incidence (7/11 vs 1/7, p=0.05) of free core antigen. Conclusion. Formation of core-anti-core immune complexes in HIV-infected individuals is due to the increase of the antigen load and binding of antigen to the specific antibody.

T.B.P.97

DETECTION OF HIV-1 P24 ANTIGEN IN SERUM WITH A NEW MONOCLONAL EIA

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Objective. To evaluate a new 4 hour EIA for the detection of HIV-1 p24 antigen in serum samples.
Methods. We compared a new monoclonal antigen enzyme-immunoassay (EIA) from Dupont (DP) with a widely used commercially available EIA from Abbott (AB) for the detection of HIV-1 p24 antigen in 203 sera: 99 sera from confirmed HIV-1 antibody seropositive patients (HIV+), 28 from HIV-1 antibody seronegative patients with autoimmune disease (AUT), and 76 from HIV-1 antibody seronegative normal patients (NL). Sera were processed as recommended by the respective manufacturers except that they were run in single wells because of limited sera quantities. Two cut off values for the new EIA,DP, were evaluated: a) 0.1 + mean optical density (O.D.) of control negative sera (CNS) supplied in the kit, and b) 0.08 + mean O.D. of CNS. Confirmatory tests were run on AUT and NL samples that were either DP or AB positive.
Results. Analyzing the data with DP cut off O.D. values of 0.1+ mean O.D. of CNS 19% (19/99) of HIV+ were positive by both DP and AB, 4% (4/99) were positive by DP and not AB, whereas 4% (4/99) were positive by AB but not DP. 4 and 1 of AUT were falsely positive by DP and AB respectively. Of the 76 NL sera 2 were falsely positive by DP and 4 by AB. However using a DP cut off value of 0.08+ mean O.D. of CNS resulted in 20% (20/99) of HIV+ being positive by both DP and AB, 3 being positive by AB only and 8 by DP only.Results of AUT and NL groups didn't change. DP O.D. values tended to be higher than AB.
Conclusion. There was no statistically significant difference in sensitivity and specificity of DP and AB when sera were tested. However, DP in this study tended to have higher O.D. values than AB and at a O.D. cut off of 0.08 + mean CNS DP tended to pick up more positives in the HIV+ group. Further studies with this short (4 hr.) EIA are warranted.

T.B.P.99

Specificity of HIV antigen capture assays

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Objective: To evaluate the specificity of two HIV antigen capture assays with antigens obtained from several pathogens.
Methods: The Abbott HTLV-III antigen EIA and Organon Vironostika HIV antigen Micro-ELISA systems were tested with antigens obtained from: a) Viruses: dengue, hepatitis A, B and delta, herpes simplex type 2, HIV-1, HIV-2, HTLV-1, measles and yellow fever; b) Bacteria: Salmonella typhi and Staphylococcus aureus; c) Fungi: Aspergillus fumigatus, Histoplasma capsulatum, Paracoccidioides brasiliensis and Candida albicans; d) Protozoans: Plasmodium falciparum, Trypanosoma cruzi and Toxoplasma gondii; and e) Helminths: Schistosoma mansoni.
Results: All but HIV-1 and HIV-2 were negative (below cut off values). In the Organon assay (cut off = 0.063) the mean value of optical density of HIV-1 and HIV-2 were 1.638 and 0.434 respectively. In the Abbott assay (cut off = 0.136) the mean values were 1.537 for HIV-1 and 0.447 for HIV-2.
Conclusions: The results suggest that although the assays tested are very specific for immunodeficiency viruses, not reacting with pathogens associated with several endemic diseases, they do not definitively discriminate between HIV-1 and HIV-2.

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T.B.P.101

COMPARISON OF ASSAYS FOR THE DETECTION OF HIV-I ANTIGEN

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Objectives: To evaluate the sensitivity of 4 commerically available assays for the detection of HIV-I antigen in HIV-I antibody positive blood samples.
Methods: Sera or plasma were received by MML as part of research protocols for HIV-I antigen testing. Samples were first tested with the Abbott antigen assay. Samples which were repeatedly reactive in the Abbott test and confirmed by neutralization were considered positive for HIV-I antigen. All samples (Abbott positive or negative) were subsequently tested with the ENI, Dupont, and Coulter assays for HIV-I antigen. Testing was performed at MML with strict adherence to the instructions in the package insert for each kit. Abbott antigen negative samples, which were repeatedly reactive in either the ENI, DuPont, or Coulter kits, were confirmed as true positives using the neutralization reagent from the appropriate manufacturer. The sensitivity of the kits was ranked according to the number of confirmed positive samples. Samples which were repeatedly reactive but could not be neutralized were considered to be false positives.
Results: The rank order of the sensitivity of the assays was ENI (overnight) ≫ Coulter ~ DuPont (overnight) ~ ENI (short) ≫ Abbott (overnight).
Conclusions: There was a difference in the ability of commerically available tests to detect HIV-I antigen in HIV-I antibody positive blood samples. The most sensitive test appears to be the Electro-Nucleonics assay (overnight format).

T.B.P.98

SPECIFICITY OF HIV-1 P24 ANTIGEN CAPTURE ASSAY AS VIRAL GROWTH DETERMINANT IN TISSUE CULTURE FLUIDS (TCF).

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OBJECTIVE: To determine whether neutralization (blocking) assay for specificity of HIV-1 P24 antigen capture assay in TCF is required.
METHOD: HIV-1 isolation from blood cells of homosexual men were carried out in two MACS virology laboratories. Cocultivation of patients PBMC's with normal PHA-P stimulated lymphocytes were monitored for HIV-1 growth by P24 antigen capture assays for four weeks. Two different commercial Kits (Abbott and Dupont) were used. A standard curve was used to determine the concentrations (conc.) of P24 in pg/ml. All samples reactive at two timepoints were re-tested in the presence and absence of anti-P24 to confirm the specificity of the assay. Various conc. of P24 were analyzed for specificity of antigen capture reactions and percent neutralization.
RESULTS:

P24 Conc.	< 200 pg/ml		200 - 600 pg/ml		> 600 pg/ml	
	* N/Total	**(X̄%N)	* N/Total	**(X̄%N)	*N/Total	**(X̄%N)
Center A	26/26	100%	11/11	81%	14/14	93%
Center B	30/30	95%	30/30	100%	30/30	94%

* N/Total = Neutralized/Total, **(X̄%N) = Mean Percent Neutralization

All of the 141 TCF samples reactive for the second timepoint neutralized. Percent neutralization was not notably different at various conc. of P24.
CONCLUSION: HIV-1 P24 antigen capture assay does not need to be neutralized when performed on the second reactive sample of TCF.

T.B.P.100

HIV-ANTIGENS: PREVALENCE AND CORRELATION WITH CLINICAL EVOLUTION IN AN HIV-INFECTED FLORENTINE COHORT

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Aim: Research and follow-up of HIV-antigens positivity (Ag+) in HIV-infected subjects with respect to their clinical stage.
Methods: 206 HIV-infected patients (pts.) where screened for HIV-antigens with ABBOTT kit (included a confirmatory test by neutralisation).In 124 pts., all without AZT treatment during follow-up, we repeated the test every 4-6 months. At this moment the mean period of observation is 19 months (range 6-36). 10 more Ag+ AZT recipients were tested every 30 days for HIV-Ag while being treated.
Results: The Ag+ pts. were 1 on 51 in group II (CDC '87), 9 on 64 in group III; 13 on 38 in group IV no AIDS and 35 on 48 AIDS pts. (IVC1 & IVD). In our open cohort we enrolled: 10 pts. of group IVC1; 23 of IVC2/IVA; 53 of III and 38 of II. All the AIDS pts. have been constantly found Ag+. At this moment in other pts. we observed an evolution of the disease in 38 pts., 17 of whom were Ag+, while only 9 on 82 stationary pts. were Ag+ (p<0,001).We refer also on the level of HIV-Ag during the AZT tretment.

These data, thought supporting the specifity of the test, do not warrent its sensitivity as tool for monitoring disease progression.

T.B.P.102

COMPARISON OF THE ORGANON TEKNIKA CORPORATION HIV ANTIGEN ASSAY WITH SIX COMMERCIALLY AVAILABLE HIV ANTIGEN TEST KITS.

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Objective. The Organon Teknika Corporation (OTC) HIV Antigen Assay is a monoclonal antibody based, direct sandwich enzyme immunoassay for detection of HIV-1 p24 core antigen. The test utilizes 100 ul reaction volumes and can be performed in 2.5 hours. The ability of the OTC test to detect HIV-1 p24 antigen and crossreact with HIV-2 antigen was compared to that of 6 HIV antigen assays available as research only tests.
Methods. Sensitivity panels were prepared from the DuPont HIV-1 p24 standard, HIV-2 lysate, and 3 clinical samples. Also, 10 positive clinical samples, 8 borderline reactive in the OTC assay, were included as undiluted test samples. All reactive samples were confirmed positive by neutralization. The commercially available tests included 4 that utilize overnight incubation and 2 with total incubation times of 3 and 2.5 hours.
Results. The OTC assay and 3 commercial tests detected 10 pg/ml HIV-1 p24. Two tests detected only 40 pg/ml HIV-1 antigen. The OTC HIV Antigen Assay was the most sensitive for HIV-2, detecting 0.5 ng/ml viral lysate. The commercial tests ranged from a detection limit of 2 to >512 ng/ml HIV-2 lysate. Of 11 members in the clinical sample sensitivity panel, OTC detected 8 samples while the other tests detected from 1 to 7 members. One overnight commercial test detected 8 of the 10 OTC positive clinical samples while the other tests detected only 4 or less.
Conclusion. These results indicate the OTC assay, the most rapid, non-amplified monoclonal based HIV Antigen test developed to date, has equal or greater sensitivity to HIV-1 and HIV-2 than current commercially available kits.

T.B.P.103 Prognostic Significance of HIV-antigenaemia in AIDS.

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Objective: To assess the the correlation of HIV-antigenaemia with mortality in AIDS patients.

Materials & methods: Serum samples from the first 157 AIDS patients at Hvidovre Hospital were analyzed using a HIV recombinant antigen enzyme immunoassay (Abbott Laboratories).

Results: One-hundred fifty-one patients had available serum samples from the time of the AIDS diagnosis. Of these 84 (56%) were HIV-antigen positive and 67 (44%) were antigen negative.

Among the HIV-antigen positive AIDS patients, there was a significant correlation between high HIV-antigen level and short survival. No significant difference was found in overall mortality and length of survival between the group of HIV-antigen positive and the group of HIV-antigen negative. These findings were due to the mortality distribution in the group of HIV-antigen negative patients. This distribution showed two peaks; one shortly after diagnosis and one approx. 1 year after the time of diagnosis.

Conclusion: HIV-antigen level in AIDS patients at the time of diagnosis has a prognostic value in patients with detectable HIV-antigenaemia. The mere presence of detectable HIV-antigen at the time of diagnosisis is not a prognostic marker.

Diagnostic : Infection par le VIH-2
Diagnosis: HIV-2 Infection

T.B.P.104 EVALUATION OF A SYNTHETIC PEPTIDE EIA FOR DETECTION OF ANTIBODIES TO HIV-1 and HIV-2

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Objective. To evaluate a synthetic peptide EIA(Enzygnost Anti-HIV 1+2) for detection of antibodies to HIV-1 and HIV-2 by use of a 4 peptide mixture (2 from HIV-1 gp41, 1 from HIV-1 gp120 and 1 from HIV-2 gp41) as antigen and to compare the assay with Abbott's recombinant HIV-1 EIA and/or Pasteur's Elavia 2 (reference methods).

Results. 202 HIV-1 positive Swedish sera, 75 HIV-1 positive high risk sera from Tanzania and 108 HIV-2 positive sera from Guinea Bissau were all reactive in Enzygnost as well as in the reference methods (sensitivity 100%). Among 77 sera containing autoantibodies and 999 other HIV-negative sera from Sweden 2 sera were repeatedly reactive in Enzygnost and Abbott resp, (specificity 99.8%). Of 48 sera which had been falsely reactive in Abbott only 1 was repeatedly reactive in Enzygnost. Analysis of 14 sera from 5 individuals with early HIV infections showed that the reactivity in Enzygnost-anti-HIV 1+2 was higher than in in the Abbott recombinant EIA. Thus Enzygnost may detect some seroconversions earlier than the Abbott assay. This may be due to stronger antibody binding, as could be demonstrated by comparative testing of serially diluted anti-HIV positive sera. Analysis of 503 Tanzanian blood donor sera of which 40 were positive showed 100% sensitivity in Enzygnost. Establishment of cut off values for the African sera and further specificity tests remain to be done but so far the specificity seems to be above 95%.

Conclusion. The sensitivity of Enzygnost anti-HIV 1+2 was 100% for detection of antibodies to both HIV-1 and HIV-2.

T.B.P.105 APTITUDE D' UN TEST RAPIDE POUR HIV ET DE TESTS D' AGGLUTINATION A DETECTER DES ANTICORPS ANTI-HIV2 AU SENEGAL.

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Objectif: Evaluer l'efficacité de tests d'immunofixation sur membrane (DOT-Blot) et d'agglutination conçus pour HIV1 au Sénégal, pays où circule à la fois HIV1 et HIV2.

Méthode: 2000 prélèvements sanguins de donneurs de sang, de personnes à haut risque, et de patients suspects de SIDA ont été testés par HIVCHEK (Dupont, USA). Tous les positifs, les indéterminés, et 10% des négatifs ont été testés en double en RETROCELL (Abbott) et en SERODIA-HIV (Fujirebio, Japon). Ces tests ont été réalisés sur le terrain dans 6 centres au Sénégal. Tous les sérums ont aussi été testés par ELISA en HIV1 et HIV2, puis les positifs par Western-Blot HIV1 et HIV2.

Résultats: Cette étude est en cours et sera achevée en janvier. La sensibilité pour la détection des HIV2 sera étudiée ainsi que la spécificité des 3 tests.

Les résultats provisoires montrent une bonne répétabilité des tests:

Nbre de serums	Hivchek +	Hivchek répété +	Retrocell + Serodia +	Retrocell - Serodia -	Retrocell douteux Serodia +
1005	31	31	27	2	2

Conclusion: Les nouveaux tests de dépistage du HIV qui sont simples, rapides, et économiques et ne nécessitent pas un équipement spécial vont pouvoir faciliter grandement le dépistage dans les pays en voie de développement. Cependant, il est urgent que ces tests comprennent des antigènes multiples.

T.B.P.106 HIV INFECTION IN CANADA

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Infection with the retrolentivirus HIV-2 is common in specific regions of West Africa. Infection by HIV-2 in North America had been limited to a single case, a patient from New Jersey. We now describe the first three cases of HIV-2 infection in Canada. All were from an endemic area in West Africa and two were asymptomatic. Sera from all 3 were positive on HIV-1 EIA screen tests (Dupont and Genetic Systems) but displayed a conspicuous absence of antibody to the gp41 transmembrane protein of HIV-1. HIV-2 specific immunoblot demonstrated reactivity to the p36 (env) and p25 (gag) determinants. Serum from both patients reacted strongly with HIV-2 infected cells but not uninfected controls or HIV-1 infected cells by immunofluorescence. Identification of an HIV-2 positive person from an endemic area is not surprising but does require that a continued vigilance be maintained for the spread of this virus into the Canadian population.

T.B.P.107 HTLV-I ANTIBODY PREVALENCE IN PATIENT POPULATIONS IN ZAIRE: ANALYSIS OF WESTERN BLOT (WB) PATTERNS

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Objective. To determine the prevalence of antibody to HTLV-I and the distribution of WB reactivity in different Zairian populations.

Methods. 1064 Zairian sera were tested by HTLV-I ELISA (DuPont) and repeatedly reactive samples were tested by HTLV-I specific WB (DuPont). A positive WB had gag (p19, p24) and env (gp 46), reactivity or had at least three specific antigen bands including both p19 and p24. An indeterminate (IND) result did not meet the above criteria but had reactivity to at least p19 or p24, with or without other bands present. RIPA analysis of sera will be performed on ELISA reactive sera without WB env reactivity.

Results: Sample	HTLV-I (+) WB		HTLV-I (IND) WB	
All sera (n=1063)	65	(6.0%)	68	(6.4%)
All Prostitutes (810)	49	(6.9%)	37	(4.6%)
HIV (+) Prostitutes (288)	20	(6.9%)	11	(3.8%)
HIV (-) Prostitutes (515)	25	(4.8%)	24	(4.7%)
HIV (-) Factory workers (125)	6	(4.8%)	13	(10.0%)
HIV (-) Rural workers (88)	74	(8.0%)	9	(10.2%)
HIV (-) TB Patients (90)	3	(3.3%)	7	(7.8%)

Gag plus env bands were found in 44 (4.1%) of 1063 sera. p19 and p24 bands were present in 67 (6.3%) of 1063 sera.

Conclusion. A relatively high prevalence of HTLV-I WB reactivity was observed in several Zairian populations ranging from 3.3% to 6.9%. In this study HTLV-I reactivity did not correlate with HIV-I serostatus.

T.B.P.108 HIV-1 AND HTLV-1 PREVALENCE IN AFRICAN AND EUROPEAN POPULATIONS: A COMPARISON OF 3 HTLV 1 ANTIBODY ASSAYS

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Objectives: Determination of the prevalence of antibodies against HIV-1 and HTLV-1 in sera collected in urban and rural areas of Zaire, Kenya and Belgium. Comparison of 3 assays for the detection of HTLV-1 antibody.

Methods: 2029 sera of African (Zaire, Kenya) or European (Belgium) origin were screened for HIV-1 and HTLV-1. Three screening assays for detection of HTLV-1 antibodies were used as HTLV-1 EIA (Dupont) HTLV-I Vironostika EIA (Organon) and the Serodia ATLA (Fujirebio). Sera were tested for anti-HIV antibodies with the HIV Vironostika (Organon). Repeatedly reactive samples were confirmed with WB (HTLV-1 or HIV). The WB was interpreted positive if both gag and envelope antibodies were present.

Results: Populations at different risk: (A: prostitutes, B: non-prostitutes; C: AIDS suspects; D: TB patients and E: gay men) were included in this study. HTLV-1 and HIV prevalences in the different groups were respectively: Kinshasa: A: 6.4 % - 37.8 %; C: 4.2 % - 79.8 %; D: 0.5 % - 39.6 %; Equateur: A: 8.1 % - 17.7 %; B: 1.3 % - 5.9 %; Nairobi: A: 0.8 % - 59.2 %; B: 1.7 % - 1.7 %; Antwerp: E: 0.3 % - 3.7 %. After comparing the HTLV-1 assays, we found 1715 sera negative in all three assays. On 355 sera, which were reactive in at least one kit, WB was performed. 36 % of these sera showed an indeterminate (IND) WB result. Sensitivity and specificity of the different brands were respectively: 79.4 % - 98.4 % (Dupont), 77.8 % - 96.4 % (Organon) and 86.1 % - 94.6 % (Fujirebio) (IND WB results was not included).

Conclusions: The HTLV-1 prevalence depended mainly on the geographical region and less on the population tested. There was no significant correlation between HIV-1 and HTLV-1 infection. The 3 HTLV-1 assays had comparable performances. However, in a substantial number of cases the WB result was not interpretable.

T.B.P.109

HIV2 infection in 2 european haemophiliac patients.

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We reported HIV2 infection, recently diagnosed, in 2 european patients with haemophilia A.
The first patient is a 16 year old french boy, with moderate (2%) factor VIII deficiency. He received cryoprecipitates since 1978. In 1980 he developed a persistent generalized lymphadenopathy. The second patient is a 12 year old portuguese boy. Before 1982 he was treated in Portugal with cryoprecipitates and total blood transfusions. He has been living in Luxembourg for 6 years. He was asymptomatic until 1988 when he presented with a zoster infection.
In the both patients, HIV1 Elisas, (Elavia 1, Diagnostics Pasteur, DP and Abbott EIA) were positive. HIV1 WB (New LAV Blot 1, DP) was unconclusive with only reactivities on the gag-pol antigens. Diagnosis of HIV2 infection was assessed by Elavia (Elavia II, DP) and by WB showing strong reactivities on the glycoproteins of HIV2: gp140, gp105, gp36. Sera were also tested by a dot assay using HIV2 transmembrane synthetic peptide and by RIPA (CEM-HIV2$_{ROD}$). From the peripheral blood lymphocytes (PBL) of the second patient a cytopathic HIV2 strain was isolated. PCR using HIV2 LTR env and pol primers detected HIV2 DNA in the fresh mononuclear cells from the PBL.
In these 2 patients, without any other risk factor except haemophilia, we diagnosed HIV2 infection. Studies of the blood donors are under investigation. This observation demonstrates the need of screening all the european haemophiliac patients for the detection of HIV2 antibodies.

T.B.P.110

DETECTION OF HIV-1 IN CULTURED PERIPHERAL BLOOD LYMPHOCYTES FROM HIV-SEROPOSITIVE HEMOPHILIACS.

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Objective. To assess HIV-1 replication in cultured peripheral blood lymphocytes (PBLs) of HIV-seropositive hemophiliacs.
Methods. PBLs isolated from 48 HIV-seropositive hemophiliacs were cultured for two weeks *in vitro* following stimulation with PHA and IL-2. Cultured PBLs were assessed for HIV by reverse transcriptase (RTase) assays, *in situ* hybridization (ISH), indirect immunofluorescence (IIF), and gene amplification by the polymerase chain reaction (PCR).
Results. Cultures which were positive by IIF were also ISH positive. A subset of cultures (N=11) was positive for RTase and negative by IIF and ISH. Three patterns of RTase activity were observed; maximums at day 2 (n=4), day 7-10 (n=4), and day 13-15 (n=3). A subset (N=8) of seropositive hemophiliac cultures were PCR positive for HIV proviral gag-region sequences in the absence of evidence for HIV replication in cultured PBLs by other techniques. We are currently assessing RTase-, IIF-, ISH-negative cultures by PCR utilizing LTR- gag-, pol-, and env-region oligonucleotide primers.
Conclusion. PCR gene amplification detects HIV infection in cultured PBLs which are negative by other techniques. RTase is more sensitive than ISH on cultured PBLs and RTase patterns may correlate with numbers of circulating infected PBLs. Supported by National Health and Welfare (Canada).

T.B.P.111

THE EFFECTS OF PHORBOL ESTER(TPA) AND IODO-DEOXYURIDINE(IUDR) ON THE ISOLATION AND DETECTION OF HIV FROM SEROPOSITIVE INDIVIDUALS

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OBJECTIVE: To determine if treatment of lymphocytes from HIV seropositive individuals with TPA or IUDR, prior to in vitro culturing would enhance virus recovery and/or increase the rate of isolation of HIV.
METHODS: Peripheral blood lymphocytes (PBL's) from HIV seropositive individuals at different stages of infection (4 ARC and 3 AIDS) were isolated on Ficoll-Hypaque gradients, treated for 24 hours with TPA (40 ng/ml) or IUDA (100 ug/ml) and then placed in culture with donor lymphocytes. At 7, 14 and 21 days the cultures were assayed by the Reverse Transcriptase assay for the presence of HIV.
RESULTS: In the five cases that were successful in virus isolation, the prior incubation of PBL's with TPA from HIV seropositive individuals augmented virus isolation in one case. IUDR enhanced isolation attempts in three, while in one patient both TPA and IUDR inhibited virus isolation, while in another neither augmented or inhibited virus isolation.
CONCLUSIONS: Prior treatment of PBL's with either TPA or IUDR can lead in some cases to dramatic increases (6-10 fold) in viral replication during standard isolation protocols. However, this augmentation is not universal suggesting in fact that the patient's own lymphocytes may be able to control viral replication in vitro or the ability to activate latent virus with these compounds varies dramatically from patient to patient.

T.B.P.112

T-CELLS VERSUS MACROPHAGE FOR ISOLATION OF HIV FROM BLOOD.

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Objective: To compare T-cell cultures versus macrophage cultures for isolation of HIV from patient peripheral blood mononuclear cell (PBMC's).
Method: PBMC's were obtained by density gradient fractionation of heparinized blood from 48 staged HIV seropositive and from 13 seronegative but HIV-exposed persons. Approximately 10^6 cells were cocultured with: (A) PHA and IL-2 stimulated unfractionated target normal donor PBMC's, and either (B) CSF-1 stimulated target adherent normal donor PBMC's, or (C) purified elutriated monocytes.
Results: Isolation frequencies from seropositive patients (T-cell vs adherent and elutriated monocytes) were: Stg 1 patients, 3/5 vs 1/2 and 1/3; Stg 2 patients, 18/25 vs 3/6 and 12/19; Stg 3 patients, 11/14 vs 5/10 and 2/4; Stg's 4-6, 4/4 vs 3/4 (not performed using elutriated monocytes). The overall isolation rate for seropositive patients was 75% on T-cells and 56% on macrophages. When both culture systems were used concurrently, at least one culture was positive in 83% of the specimens. T-cell cultures became positive earlier (mean = 11 days) than did macrophage cultures (mean = 21 days). None of the cultures from 13 seronegatives were positive.
Conclusion: HIV is readily rescued from PBMC's of seropositive persons in cultures of either T-cells or macrophages, irrespective of the stage of illness.

T.B.P.113

FREQUENCE D'ISOLEMENT DU VIRUS HIV DANS LE SANG ET LES SECRETIONS VAGINALES DE FEMMES SEROPOSITIVES.

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****Chef des services cliniques, Institut Alfred Fournier, Paris

Objectifs : 1- Confirmer les chiffres à propos des pourcentages d'isolement du virus dans les sécrétions génitales, vérifier l'efficacité du Chlorure de Benzalkonium in vivo, comparer le taux de virus circulant chez les femmes séropositives asymptomatiques et symptomatiques.
Matériel et méthodes : deux groupes de femmes ont été constitués :
- groupe 1 : 24 femmes séropositives asymptomatiques, enceintes, qui viennent pour une IVG. 15 ont seulement été retenues.
- groupe 2 : 10 femmes séropositives symptomatiques (6 ARC, 4 SIDA). Le virus est isolé à partir de lavages vaginaux effectués avec 5 ml de milieu de culture, entre le 7e et le 20e jour après les règles pour les femmes du groupe 2, avant et après application d'un gel dosé à 0,1 % de Chlorure de Benzalkonium. Les liquides de lavage et le sang de la patiente sont mis en co-culture avec 10^6/ml lymphocytes humains normaux, stimulés depuis 3 jours par la PHA. Le liquide de lavage, après application du produit, est dilué à 10^{-1}, 10^{-2}, 10^{-3} et 10^{-4}. La positivité est établie par l'observation de l'effet cytopathique et le dosage de P24.
Résultats : Dans le groupe 1, le taux d'isolement est de 26,7 % dans le sang et 13,3 % dans les liquides de lavage des mêmes. Dans le groupe 2, le taux d'isolement dans le liquide de lavage a été de 37,5 % donc significativement plus élevé que dans le groupe 1. Les liquides dilués entre 2 $x10^{-1}$ et 2 x 10^{-2} conservent un pouvoir inhibiteur sur une culture de HIV 1 entretenue en CEM, contenant 22 ng/ml de P24.
Conclusions : Le taux d'isolement du virus HIV a été bien inférieur chez les femmes asymptomatiques, et est deux fois moins fréquent dans les sécrétions que dans le sang, ce qui est en accord avec la littérature. Le Chlorure de Benzalkonium garde, au bout de 4 heures, une activité anti virale importante (20 à 200 fois) ce qui est en faveur d'un pouvoir protecteur.

T.B.P.114

DEVELOPMENT OF A SENSITIVE MICROASSAY FOR THE MEASUREMENT OF RELATIVE NUMBER OF LYMPHOCYTES INFECTED WITH HIV.

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Objective. To determine the relative number of HIV-infected lymphocytes by a sensitive micro-cell dilution procedure.
Methods. Serial dilutions of patients' lymphocytes (10^2-10^5) were cocultivated with $1x10^6$ PHA-stimulated normal cells in 24-well microtiter plates in the presence of 20% FCS and 5% IL-2. Production of HIV was measured by the antigen capture test after two weeks of cocultivation.
Results. HIV was isolated from patients' lymphocytes in a concentration dependent manner. HIV was isolated from as few as 1000 cells from an AIDS patient and from 10,000 lymphocytes from an asymptomatic man. The microassay was compared with a standard HIV culture method for the isolation of HIV from 10 AIDS patients and 22 asymptomatic men. Results indicate that both of these procedures have comparable sensitivity for the isolation of HIV. Frozen patients' lymphocytes also showed positive virus culture in microassay. However, the sensitivity of HIV isolation was somewhat lower when frozen cells were used.
Conclusion: The micro-cell dilution assay provides a simple, inexpensive, sensitive and quantitative measurement for the number of HIV-infected lymphocytes. Since the microassay uses only $2\text{-}3x10^5$ patients' lymphocytes, the assay is also most suitable for HIV isolation from HIV-infected infants or from AIDS patients with extremely low T cell counts. Micro-cell dilution assay can be applied to measure the efficacy of an antiviral drug on the relative number of HIV-infected lymphocytes in a clinical trial. This microassay is a candidate measure for following the quantitative antiviral effect of a drug.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

T.B.P.115 REFLEXIONS SUR L'ISOLEMENT DU VIH DANS UNE UNITE DE VIROLOGIE HOSPITALIERE

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Objectif. Dégager les enseignements (comparaison avec d'autres paramètres, intérêt) de plus de 400 mises en culture du VIH.

Méthodes. Plus de 400 mises en culture de cellules mononucléées du sang circulant ont été effectuées chez plus de 200 sujets (patients suivis dans le cadre d'un protocole thérapeutique, enfants nés de mères infectées, cas de contamination douteux avec autres paramètres négatifs .../...). Le virus a été détecté dans le surnageant des cultures cellulaires par mise en évidence de la protéine p24 du VIH 1 et d'une activité RT. D'autres paramètres biologiques ont été appréciés (antigénémie VIH 1, nombre de lymphocytes TCD_4 .../...) au moment de la mise en culture.

Résultats. Plus de 200 souches de VIH 1 ont été isolées (efficience = 50 %) ; on peut tirer les enseignements suivants :

- Une antigénémie VIH 1 positive est pratiquement toujours associée à un isolement viral.
- On peut isoler le virus chez des sujets dont le nombre de lymphocytes TCD_4 est effondré au moment de la mise en culture.
- Le virus peut être réisolé chez des patients recevant de l'AZT depuis plusieurs mois.
- L'isolement viral demeure une technique de choix pour l'établissement d'un pronostic chez les enfants nés de mères infectées.
- Dans un cas, nous avons isolé le VIH 1 chez un sujet dont les autres paramètres sont demeurés négatifs.

T.B.P.116 DUAL SEROLOGIC REACTIVITY FOR HIV-1 AND HIV-2 IN ABIDJAN

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Objective. To assess the spectrum of serologic reactivity of HIV infected patients in Abidjan; assess the predictive value of ELISA for HIV-1 and HIV-2 infection; and examine dual serologic reactivity by peptide ELISA and polymerase chain reaction (PCR).

Methods. 927 hospitalized patients repeatedly reactive by ELISA for HIV-1 and HIV-2 will be confirmed by virus-specific Western blot (WB). A subset of these were tested by type-specific synthetic peptide ELISA (Pepti-LAV 1-2) and had lymphocytes collected for PCR and virus culture.

Results. Of 927 patients repeatedly reactive by ELISA (543 thus far tested by WB), 19% are HIV-1 only; 8% HIV-2 only; and 74% both HIV-1 and HIV-2. Of specimens dually reactive on ELISA, 81% were dually reactive on WB, 16% HIV-1 only, and 0.25% HIV-2 only. While 46% HIV-1 only and 57% HIV-2 only reactive specimens were confirmed by the appropriate WB, 97% of dually reactive specimens were reactive on HIV-1 and/or HIV-2 WB. Thirty-four specimens dually reactive on ELISA will be tested by PCR. On peptide ELISA, 19/34 (56%) were reactive only to HIV-1; 6/34 (18%) HIV-2 only; and 6/34 (18%) remained dually reactive. On WB alone, 28/34 (82%) of these specimens were considered dually reactive. Serologic results will be compared with those of PCR and virus culture.

Conclusion. In hospitalized patients in Abidjan, dual reactivity on whole virus ELISA is 97% predictive of WB confirmed HIV infection.

T.B.P.117 STANDARDIZATION OF HIV COCULTURE ISOLATION TECHNIQUES IN MULTICENTER CLINICAL TRIALS.

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Objectives. To evaluate and effect improvements in the isolation of HIV from PBMCs by laboratories participating in multicenter clinical trials as part of the AIDS Clinical Trials Group (ACTG)/NIAID/AIDS program.

Methods. Monthly coded whole blood samples are sent by the VRL to ACTG labs for culturing. After an initial evaluation period (7 months), the labs were ranked by their ability to isolate virus. A consensus HIV isolation protocol was developed after comparing the methods and materials used by labs that consistently isolated HIV to the methods employed by labs having difficulty isolating the virus.

Results. Critical factors in the isolation procedure include volume of patient blood processed, centrifugation parameters used to recover PBMC, use of fresh (vs frozen) normal donor PBMC, concentration of PHA-P in donor stimulation medium, use of natural (vs recombinant) IL-2, time interval before addition of PHA-stimulated donor cells to patient PBMC, ratio of donor to patient PBMCs, concentration of cells in coculture, and weekly addition of fresh PHA-stimulated donor cells to coculture. The inclusion of polybrene and anti-alpha interferon in the stimulation or coculture medium did not improve isolation efficiency. Since the introduction of the consensus protocol, labs with poor performance status have shown a significant improvement in their ability to isolate HIV.

Conclusion. Achieving equivalent efficacy in isolating HIV from PBMC by the ACTG labs will permit the introduction of more sophisticated virologic end point cell culturing techniques for evaluating various antiviral treatment protocols.

T.B.P.118 TISSUE CULTURE AND P24 METHODS OF HIV DETECTION COMPARED AND CORRELATED WITH DEMOGRAPHIC DATA IN SYMPTOMATIC ARC PATIENTS

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Objective. To compare two methods of HIV detection in symptomatic ARC patients and to correlate the results with demographic data.

Method. A baseline blood sample was collected from each of 152 symptomatic ARC patients entering a multicenter, phase III trial of AZT. It was transported overnight and processed by two methods: (A) by standard cocultivation techniques and sampling the culture weekly for 4 weeks by antigen capture; (B) by directly measuring p24 levels in the plasma by standard antigen capture. Results were compared with demographic data.

Results. Method A detected HIV in significantly more patients than Method B did (41 vs. 7%). Method A was positive more often for (a) patients younger than 35 vs. those older (53 vs. 40%), (b) patients with T4 counts between 200-299 vs. 300-500 (53 vs. 37%), (c) patients who were anergic vs. those responsive to skin tests (50 vs. 37%). There were no significant differences for sex, race, risk group, or hospital. For the comparisons done, there were also no significant differences for culture time to positive or for absolute p24 levels. Methods A and B correlated in 62% of the patients but not in 38%; statistically, this is no better than could be achieved by chance.

Conclusion. Tissue culture is a more sensitive measure of HIV than is plasma p24 in this patient group, especially in those who are younger, anergic, and have the lower T4 counts. The tests may be measuring different stages of viral replication.

T.B.P.119 SENSITIVITY OF U.S. FDA LICENSED HIV-1 ENZYME IMMUNOASSAYS FOR DETECTION OF HIV-2 ANTIBODIES

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Objective. To determine the efficacy of testing for antibodies to human immunodeficiency virus (HIV) type 2 by screening with FDA licensed HIV-1 enzyme immunoassays (EIAs).

Methods. West African sera were tested for antibodies to HIV-1 and HIV-2 with EIAs employing both viral lysate and synthetic peptide antigens and with HIV-1 and HIV-2 Western blots. Based on these results, 55 HIV-2 sera, 39 HIV-1 sera, and 48 sera equally reactive with HIV-1 and HIV-2 immunoassays were selected for testing with U.S. FDA licensed HIV-1 antibody EIAs (see table).

Results. The percentages of sera that were positive by each EIA test are presented in the following table:

SERA	Ortho	ENI	Organon Teknika	Abbott Lab.	DuPont	Gen. Sys.	Cell. Prod.
HIV-2	60.0%	67.3%	70.9%	81.8%	87.2%	90.9%	90.9%
HIV-1	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
HIV-1/2	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Conclusions. Sera from HIV-2 infected individuals will be detected by HIV-1 EIAs at a rate ranging from 60.0% to 90.9%, depending on the test used. Screening the blood supply with HIV-1 EIAs will not detect all HIV-2 infected units.

Diagnostic : contrôle de la qualité et techniques rapides
Diagnosis: Quality Control and Rapid Techniques

T.B.P.120

EVALUATION D'UN TEST DE DETECTION RAPIDE DES SUJETS SEROPOSITIFS POUR HIV 1 ET HIV 2.

(F. CATALAN, A. MILOVANOVIC, T.D. LY) - Institut Alfred Fournier - Paris

Objectif : Evaluer la sensibilité et la spécificité d'une technique ELISA rapide sur membrane de nitrocellulose, contenant deux spots de peptides recombinants, l'un correspondant à un épitope de la Gp 41 pour HIV 1, l'autre à un épitope de la Gp 105 pour HIV 2.

Méthodes : un groupe de patients séropositifs (technique ELISA Organon et Dupont de Nemours), confirmés par Western blot (New blot Pasteur et/ou Dupont de Nemours) a été sélectionné parmi les patients suivis pour leur séropositivité (TCD4, TCD8, Beta-2-glycoprotéine, dosage des immunoglobulines, etc...) (163 patients) a permis d'étudier la sensibilité.
L'autre groupe (110 patients) a été constitué de patients séronégatifs par les techniques précédentes et aucun ne contenait d'antigène. Dix sérums de patients africains ayant une infection à HIV 2 , isolé, ont été inclus. Le test a été effectué à partir de sang total recueilli sur EDTA.

Résultats : 7 sérums, adressés pour suivi de séropositivité, ont été trouvés négatifs dans toutes les techniques, infirmant donc cette séropositivité.
Aucun résultat discordant n'a été relevé. Les 10 sérums HIV 2 n'ont répondu qu'au spot HIV 2. La sensibilité et spécificité ont été de 100 % dans ce cas.

Conclusion : Ce test rapide (cinq minutes), pouvant s'adapter à toutes les situations expérimentales, permet avec une sensibilité et spécificité excellentes, de préciser l'infection HIV1 et/ou HIV2, alors que les deux virus montrent une grande homologie, tout au moins dans les protéines du core.

T.B.P.121 PROFICIENCY IN PERFORMING HIV P24 ANTIGEN EIAS AND COMPARABILITY OF RESULTS IN A MULTICENTER QUALITY ASSURANCE PROGRAM

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Objectives. To reduce the variance for within laboratory performance of HIV p24 antigen EIAs and to achieve comparability of data between laboratories when different commercial assays are used.
Methods. AIDS Clinical Trials Group (ACTG) labs participating in multicenter clinical trials for the NIAID/AIDS Program use commercial HIV p24 antigen EIA kits with standardized reference material and QC samples supplied by the Virology Reference Laboratory (VRL). Proficiency is examined with coded panels consisting of various concentrations of p24 antigen in either serum or medium.
Results. Prior to the introduction of uniform reference samples, median within laboratory variance was 21% on coded panel serum samples and 30% for medium samples. HIV p24 antigen recovery for EIA kits from different manufacturers ranged over more than an order of magnitude. To lessen the effect of kit variations and to increase the comparability of data between laboratories, a centrally supplied reference standard for preparing a standard curve and QC check samples (0 and 100 pg/mL in serum or medium) are used in each assay. After the introduction of a uniform standard, 30 of 38 participating ACTG facilities exhibited within laboratory variance of less than 15% for results on proficiency panel samples.
Conclusion. The use of centrally supplied uniform reference materials and continual proficiency testing is essential for obtaining comparable and reliable data from laboratories in multicenter clinical trials.

T.B.P.122 IS A VIROLOGY QUALITY ASSURANCE (QA) PROGRAM ESSENTIAL FOR MULTICENTER CLINICAL TRIALS?

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Objective. To establish a strong QA program which will monitor virology labs participating in multicenter AIDS clinical trials sponsored by the NIH.
Methods. HIV isolation from PBMC using cocultivation techniques and HIV p24 antigen quantitation by EIA.
Results. In 1988, monthly evaluation of 30 labs revealed that only 13 (43%) were consistently able to isolate HIV from PBMC of coded blood samples at least 80% of the time. To remedy this, all centers were polled concerning their PBMC recovery and culture techniques. Data from fully certified labs were compared to data furnished by labs with poor performance credentials, and a consensus protocol for HIV isolation was formulated. Since this protocol was introduced, a significant improvement has occurred in those labs that did not meet minimum performance standards. During the same period, proficiency in performing HIV p24 antigen EIAs and comparability of different commercial assays were evaluated. Coded proficiency panels consisting of various concentrations of viral lysate in serum or medium were tested and the data analyzed. The results indicated, that to reduce the amount of in-house variance and to achieve comparability among labs using kits from different manufacturers, a QC correction factor and a centrally supplied reference standard to prepare standard curves were needed.
Conclusion. Validation of assay results is essential if comparability and uniformity of data is to be achieved in multicenter clinic trials. This can be accomplished through the use of an independent QA program that assesses all aspects of quality control. Such a program also can be used to identify and correct performance deficiencies in individual laboratories.

T.B.P.123 WESTERN BLOTS: INDETERMINATE RESULTS AND LOT-TO-LOT VARIABILITY IN ADULTS AT LOW RISK FOR HIV-1 INFECTION

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Objectives. To examine the reproducibility of the Western blot (WB) and the prevalence of indeterminate WBs in individuals at low risk for HIV infection.
Methods. As part of a multicenter AIDS vaccine trial, 158 healthy adults at low-risk for HIV infection by questionnaire and with negative hepatitis B serology were tested by: Abbott HIV EIA, Abbott HIV EIA Antigen and Biotech/Dupont WB. Lymphocyte culture and polymerase chain reaction (PCR) for HIV were performed on cells from 114 and 78 volunteers, respectively. Follow-up serum specimens were collected after 4-12 months from 41 volunteers. The reproducibility of the WB was assessed by testing paired serum samples using kits of the same and different lots.
Results. Of 158 adults who were HIV-negative by all other assays, 68% had negative and 32% had indeterminate WBs. This indeterminate rate was higher than the 15% expected ($p<0.01$). Individuals with negative or indeterminate WBs were of similar race, sex, and age. The number of bands per individual ranged from 1 to 5 ($\bar{x}$ = 2.2 bands); 87% had an intensity less than the weak positive control and the rest were of equivalent intensity.

Lot-to-lot variability of WB results was noted. When 30 paired sera of individuals with indeterminate WBs were run in different lots, the reproducibility of a negative or indeterminate result was 60% and of identical band patterns was 40%. When these specimens were tested in the same lot, there was 97% concordance in interpretation and band patterns. When paired sera from 11 individuals with negative WBs were tested in different lots, there was 73% concordance in interpretation and band patterns. No positive WBs were identified. The most frequent bands corresponded to gag (p17, 24, 55) and pol (p51, 66) proteins. The most common band, p24, was present in 88% of indeterminate WBs. Its reproducibility was 74% using different lots and 92% using the same lot.
Conclusion. The prevalence of indeterminate WBs among HIV-negative individuals was 32%. This high rate and the lot-to-lot variability underscore the need for more specific tests to detect HIV infection. We caution against the use of the WB as an initial screening test.

T.B.P.124 DETECTION OF ANTIBODIES TO HIV-1 BY A RAPID, PEPTIDE-BASED IMMUNOASSAY

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Objective. To develop a rapid (10 min) synthetic peptide-based immunoassay for the accurate detection of antibodies to HIV-1 for diagnostic purposes.
Methods. A synthetic peptide representing a highly conserved immunodominant region of gp 41 was adsorbed to latex beads which were subsequently spotted onto a nylon membrane. The membrane was incorporated into a plastic molded device containing an absorbent pad. Serum or plasma diluted 1:10 was filtered and applied to the membrane, washed with buffer, and the immunochemical reactions were visualized by the sequential dropwise addition of enzyme-anti-Ig conjugate and chromogenic substrate. The large antigen surface area and sample flow-through allow for extremely rapid immunochemical binding kinetics, which effects immunoconcentration of the anti-HIV-1 immunoglobulins.
Results. This assay detected anti-HIV-1 antibodies in:
1) 0/1187 normal blood donor sera
2) 0/123 patients' sera with potentially interfering substances
3) 0/79 immunoblot negative/whole virus EIA positive sera
4) 0/209 immunoblot atypical/whole virus EIA positive sera
5) 164/164 immunoblot positive/ whole virus EIA positive sera
Therefore, 100% sensitivity and 100% specificity were calculated using immunoblot as the reference method.
Conclusion. This peptide-based assay, which in this study is as sensitive and specific as immunoblot, represents a useful diagnostic test which is easily and rapidly performed.

T.B.P.125 A SIMPLIFIED 5 MINUTE STAINING PROCEDURE FOR HIV WESTERN BLOTS USING PROTEIN-A COLLOIDAL GOLD.

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Objective: To develop a rapid and simple staining procedure for HIV Western Blots which requires no equipment.
Methods: Western Blot analysis has been used to confirm test results of ELISA based screening tests for HIV antibodies. The Western Blot strips are now commercially available, but the staining procedures available are still lengthly (several hours to overnight incubations) and complex, requiring extensive hands-on time. Frequently equipment and staff to run this sophisticated procedure are not available, especially in third world countries. Furthermore, thre are situations in which a more rapid confirmation is desired. In the last meeting, we described a 5 minute membrane based screening test (HIVCHEK™) which used Protein-A colloidal gold to visualize the captured HIV antibodies. The test had been extensively evaluated by several centers and has been shown to perform well. We have further developed the chemistry and a method which can accomodate commercially available Western Blot strips into a convenient confirmatory test. The entire procedure can be completed in 5 minutes without the need for accurate volumetric pipetting or the need for equipment such as shakers or incubators.
Results: The procedure is being evaluated using Western Blot strips from several different manufacturers. Initial results indicate that it is suitable for most strips. Full details of the technique and protocol will be presented at the conference.

T.B.P.126 UTILITY OF A RAPID ANTIBODY ASSAY FOR DETECTION OF HIV-1 INFECTION IN PATIENTS ATTENDING AN EMERGENCY DEPARTMENT

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Objective. To evaluate the reliability, sensitivity and specificity of the Genetic System HIV-1 rapid antibody detection immunodiagnostic assay (RADIA) compared to ELISA and Western blot among patients in an emergency medical care setting.
Methods. Sera from 500 patients attending an inner-city emergency room (ER) were evaluated for HIV-1 seropositivity by a synthetic peptide based assay called RADIA (Genetic Systems). This assay uses microparticles coated with a synthetic peptide representing an immunodominant region of gp41. Sera that tested positive were scored according to color intensity and repeated duplicate. All sera were analyzed by ELISA (Organon) and any sera reactive by either ELISA or RADIA were confirmed by Western blot (WB).
Results. The RADIA test system required no special skills or equipment. Results for 10 specimens could be determined in approximately 10 minutes. Of 500 ER patients, ELISA and WB analysis detected 25 (5.0%) antibody positive patients and 3 patients with indeterminate WB. RADIA detected all 25 patients positive sera and one specimen that was WB negative, for a sensitivity of 100% and specificity of 99.79%. RADIA did not detect 2 samples that were indeterminate by WB (p31, gp160; gp160), but did detect one sample that ELISA negative and WB indeterminate (p24).
Conclusion. In this population, RADIA demonstrated a high sensitivity and specificity for detection of HIV-1 infection comparable to ELISA and WB testing. The assay was extremely rapid and versatile providing initial HIV-1 serologic results within 10 minutes.

T.B.P.127 EVALUATION OF A RECOMBINANT HIV-1 ENZYME IMMUNOASSAY (EIA) IN PATIENTS ATTENDING AN EMERGENCY ROOM AND A SEXUALLY TRANSMITTED DISEASE CLINIC

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Objective. To evaluate the reliability, sensitivity and specificity of the Syva Microtrak Recombinant HIV-1 EIA compared to a commercially licensed EIA and Western blot.
Methods. 2000 patients attending an emergency room and sexually transmitted disease clinic were tested for HIV-1 seropositivity using a recombinant HIV-1 EIA (Syva). This EIA uses genetically engineered gp41 and gp120 and p24 gene products of HIV-1 expressed in E. coli. After purification, all immunologically detectable bacterial proteins were removed. All sera were also analyzed by EIA (Organon) and sera which were repeatedly reactive by either assay were confirmed by Western blot (Dupont).
Results. The Syva Microtrak HIV-1 EIA procedure was easy to perform with short in-cubation times and color-coding of reagents to lessen the chances of error. In assessing HIV-1 seropositivity in the two populations, the Organon EIA and Western blot detected 119 positive and 5 indeterminate samples. The Syva EIA detected all 119 positive samples with no false positive samples. Compared to Western blot, the assay had a sensitivity of 100% and a specificity of 100%.
Conclusion. Use of the Syva Microtrak Recombinant HIV-1 EIA for detection of HIV-1 infection in these populations proved to be highly reliable with excellent sensitivity and specificity compared to a licensed EIA and Western blot.

T.B.P.128 DETECTION OF ANTI-HIV ANTIBODIES WITH SYNTHETIC PEPTIDES USING A 3 MINUTES RAPID TEST

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Objective : A 3 minutes immunofiltration ELISA device using synthetic peptides derived from the transmembrane glycoprotein of HIV1 and HIV2, was optimized for the detection and the distinction of anti-HIV antibodies in serum or whole blood samples.
Methods : The assay involved synthetic peptides coated on a membrane with one spot of HIV1 peptide, one spot of HIV2 peptide and one internal control ring. A diluted specimen is filtered through the reactive membrane. Anti-human Ig peroxidase conjugate substrate is added. The result is read visually. Results are recorded as positive if one or two blue dots and the peripheral blue ring appear on the membrane. Results are recorded as negative if the blue ring appear only.
Results : To evaluate HIV1 peptide, 280 sera positive for anti-HIV1 antibodies were tested. 276 were reactive with the HIV1 peptide (sensitivity = 98,9 %). 441 negative sera and 18 false positive sera in ELISA (with core reactivity) were negative (specificity = 100 %).
To evaluate HIV2 peptide, 46 anti-HIV2 sera were tested. All were reactive with this peptide (sensitivity = 100 %). Of 647 negative and 18 false positive sera, no reaction was observed (specificity = 100 %).
Conclusion : Target HIV is a sensitive and specific rapid test which can be performed handly for the screening and the typing of anti-HIV antibodies. After the evaluation of 991 sera, the sensitivity of the test is 99,45 % and the specificity is 100 %. We thank Dr. Ph. Poulesty.

T.B.P.129 USE OF A PEPTIDE-BASED, RAPID IMMUNOASSAY FOR THE DETECTION OF ANTIBODY TO HIV-1

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Objective: To investigate the utility of a peptide-based, rapid immunoassay for detecting anti-body to Human Immunodeficiency Virus Type 1 (HIV-1).
Methods: 1595 samples were tested by a rapid immunoassay based on a synthetic peptide found in the conserved region of the viral transmembrane glycoprotein, gp 41 and by a whole-virus immunoassay. Repeatably reactive samples were also tested by Western blot (DuPont).
Results: Results of the tests were interpreted according to the package insert of each test.

Rapid Immunoassay	Microtiter EIA	Western Blot	Number of Samples
Negative	Negative	Not Tested/Neg	1383
Positive	Positive	Positive	101
Negative	Positive	Indeterminate/Neg	86
Negative	Negative	Indeterminate	21
Positive	Negative	Indeterminate/Neg	3
Positive	Positive	Indeterminate	1

Conclusion: The sensitivity and specificity of enzyme immunoassays and blot kits marketed for detection of antibody to HIV are greater than 99%; however, when a low prevalence population is tested a high percentage of the reactive samples are false positives or blot indeterminate. Preliminary results indicate that a peptide-based test may be useful in distinguishing samples which are false positive by EIA or indeterminate by Western blot.

T.B.P.130 COMPARISON OF SERUM AND PAPER-ABSORBED FINGERSTICK BLOOD SAMPLES FOR DIAGNOSIS OF HIV INFECTION IN INTRAVENOUS DRUG USERS.

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Objective. To determine whether the results of HIV ELISA and immunoblot (IB) assays on paper absorbed (PA) fingerstick blood are equivalent to that obtained with serum specimens.
Methods. Paired specimens of venous blood serum and fingerstick blood absorbed and dried onto S&S 903 collection paper were obtained with consent from 393 clients using a walk-in anonymous counseling and testing service for intravenous drug users. The paired serum and PA specimens were tested by ELISA (Genetic Systems) and the Miniblot® IB procedure.
Results. The same group of 66 IB-confirmed ELISA-positive clients was detected by examining the serum and the PA specimens. The IB band patterns in the 66 paired specimens were identical. By ELISA 18% of sera (72/393) and 19% of PA specimens (76/393) were repeatedly reactive, and the relative strength of ELISA reactivity in the paired specimens was virtually identical (r=0.94). A slightly higher ELISA mean background with PA specimens (45% of the cutoff vs 27% for serum) resulted in 10 non-IB confirmable ELISA positives in contrast to 6 for serum.
Conclusion. PA specimens, as compared to serum, provide for equivalent sensitivity and specificity in ELISA and IB assays for HIV antibodies. Moreover, the PA method is superior in convenience, safety, transport, and processing--all of which are advantages for serosurveys and screening programs, especially when venipunctures are problematic.

T.B.P.131 THE ANTI-HIV TESTING BY QUICK TESTS AND A COMPARISON WITH A STANDARD ENZYME METHOD

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To provide rapid but sensitive and anti-HIV specific testing we have compared HIV check (DuPont), gelatin particle agglutination (Fujirebio) tests with our routine enzyme immuno assay (EIA - Wellcome) used for routine testing of 60,000 donations per year.
Initial screening consists of: 3 Western blot positive donor sera, 5 'tricky' samples (P24 and/or P55 bands) and healthy donor sera (40). In the second phase 5 Western blot positive sera were diluted and run in parallel. All tests were carried out according to the manufacturers' instructions.
Results:

		TESTS		
Initial screening		HIV-check	Fujirebio	EIA
	HIV pos (n= 3)	All pos	All pos	All pos
	Tricky (n= 5)	All neg	All neg	All neg
	Normal (n=40)	1/40 pos	All neg	All neg

In the rapid HIV check test all the positive samples were clearly identified and tricky sera remained negative. Fujirebio is at least 3-fold sensitive in end point dilutions (16002 vs 2048 in EIA). HIV check is fairly quick (30') having a high sensitivity and specificity (1/40 initial non-specific reaction) Fujirebio showed very high specificity and sensitivity, and seems adapted to rapid testing.

T.B.P.132 A SIMULTANEOUS UNIDOT QUICK TEST FOR DETECTION OF HIV-ANTIBODY AND HBs ANTIGEN FOR BLOOD SCREENING.

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Objectives: The developing countries are in urgent need of an easy and economical screening test for HIV-Ab and HBsAg for use in parallel with other assays in order to eliminate false negatives/positives. This test detects, at the same time, HIV-Ab and HBs-Ag using whole blood, plasma or sera.

Methods: HIV-Ab and HBs-Ag was spotted in each well of a 96-well test card. The card is placed in a tray. Add 1 drop of undiluted specimen to the well. Incubate at room temperature for 10 minutes. Was the card with buffer shaking the tray for 10 seconds. Discharge the buffer and repeat operation for 3x. Add enough conjugate to the tray to completely immerse the card. Wait 10 minutes at room temperature. Pour off the conjugate and wash 3 x. Add color developer and incubate for 10 minutes. Pour off the solution and wash the card with water and read. The reaction is positive when the spot is colored.

Results: 480 clinical specimens of AIDS and hepatitis patients or suspected and normal donors were tested. Sensitivity was 99% and 100% of specificity when compared with other tests efficiency of the test = 99.5%.

Conclusion: This test is a very useful tool for screning, repetition or emergency situations.

T.B.P.133 FIELD EVALUATION OF IMMUNOBINDING AND AGGLUTINATION TESTS FOR HIV

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Objective. To evaluate one rapid test as a screening test for HIV and two agglutination tests as supplemental tests for HIV in field laboratories in 3 countries in Africa.
Methods. The HIVCHEK (Dupont, USA) was evaluated as a screening test with the SERODIA-HIV (Fujirebio, Japan) and RETROCELL (Abbott, USA) being evaluated as supplemental tests. A total of 6,000 specimens were tested in 24 laboratories in Kenya, Ghana and Senegal. Thorough, standardized training in these techniques was provided to all technicians.
Results. Sensitivity and specificity of the tests will be determined and compared with those of ELISA and Western Blot. Inter and intra country differences in test performance will be examined and reported.
Conclusion. With proper training the newly developed tests for HIV antibody can perform well in laboratories lacking specialized equipment. The use of these assays for screening and confirmation would facilitate blood donor screening in developing countries.

T.B.P.135 CONFIRMATION OF HIV INFECTION WITH A LINE IMMUNE ASSAY (INNO-LIA) USING WHOLE BLOOD IMPREGNATED FILTER PAPER DISCS

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Objectives. To evaluate the use of whole blood collected on filter paper in the INNO-LIA, a newly developed "second generation" HIV antibody confirmation test.
Methods. From each of 40 HIV+ subjects blood samples were collected in 4 different ways: anti-coagulant free capillary (1) and venous (2) whole blood as well as heparinized (3) whole blood were collected on Whatman 3MM Chr filter paper. In addition cell-free serum (4) was collected and kept frozen at -20°C until use. Blood impregnated filter papers were air dried, placed in a sealed plastic bag and stored at 4°C for at least 2 weeks prior to testing. Punched filter paper discs (6 mm) were eluted in 1 ml PBS supplied with 0.1% caseine, 0.2% Triton and 0.1% NaN_3. The same buffer was also used to dilute serum (1/100). The presence of antibodies against gag (p24 and p17), pol (endonuclease), env HIV-1 (gp41) and env HIV-2 (gp36) was assessed in the INNO-LIA according to the instructions of the manufacturer.
Results. The three different methods of sample collection on filter paper gave identical results which matched the results of a 1/100 dilution of serum. No selective loss of signals was observed with the paper discs as compared to the serum samples. Samples from patients with HIV-2 infection could easily be discriminated from subjects with HIV-1 infection and were in accordance with Western blot findings.
Conclusion. Whole blood impregnated filter paper can successfully be used to confirm infection with HIV when used in the INNO-LIA. This is of special interest in field studies where filter paper blood can easily be obtained and transported.

T.B.P.137 RAPID, MANUAL SCREENING TEST (HIVCHECK(TM) FOR ANTIBODIES AGAINST HIV-1 AND HIV-2

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Objective. To develop an easy-to-use test that would simultaneously screen for antibodies against both viruses. Ultimately, to facilitate screening in developing nations and small labs in developed countries.
Methods. A number of peptides and recombinant proteins have been evaluated to sensitize the widely accepted HIVCHEK(TM) assay to HIV-2 only samples.
Results. The sensitivity of the original HIVCHEK(TM) assay to HIV-2 only samples has increased from approximately 30% to 100% in the populations tested. In these HIV-2 populations, samples can be diluted and still detected as positive on this modified HIVCHEK(TM) assay. In a preliminary study in France and Portugal, the modified HIVCHEK(TM) assay correctly identified all 15 samples from patients known to be infected with HIV-2. Detailed data from more extensive evaluations now in progress in Europe and Africa will be presented.
Conclusion. Antibodies to both viruses can be simultaneously screened for when a proper selection of antigens is made. Sensitivity and specificity remain excellent. Use of antigens from the envelope regions of the viruses' genomes as the antibody capture reagents have provided an excellent method of achieving this sensitization.

T.B.P.134 USE OF AGGLUTINATION ASSAYS AS SUPPLEMENTAL TESTS FOR ANTIBODY TO HIV

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Objective. To evaluate two agglutination assays for antibody to HIV as supplemental tests in field laboratories in Kenya.
Methods. A particle agglutination test SERODIA-HIV (Fujirebio, Japan) and a hemagglutination test RETROCELL (Abbott, USA) were evaluated for use as supplemental tests in comparison with the Western Blot. Seven laboratories in Kenya participated in the study. Serum from 2,000 blood donors, persons at high risk and suspected AIDS patients were initially screened by the HIVCHECK (Dupont, USA). All positive specimens and 10% of the negatives were then tested by SERODIA-HIV and RETROCELL. At the reference laboratory, duplicate samples were tested by ELISA. All samples positive by any test and 10% of the negatives were tested by Western Blot. Each test is being evaluated for sensitivity, specificity and usefulness in these field laboratories.
Results. With thorough training these tests can readily be performed in laboratories without sophisticated equipment. Data on sensitivity and specificity will be presented at the conference.
Conclusion. The agglutination tests do not require expensive equipment or highly trained staff and are more economical than the conventional supplemental tests used in HIV testing. These tests offer an alternative to the Western Blot technique as well as their intended use as screening tests.

T.B.P.136 A RAPID COLORIMETRIC EIA FOR DETECTION OF ANTIBODY TO HIV-1

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Objective. To develop a rapid, sensitive and specific colorimetric enzyme immunoassay for the qualitative detection of antibody to HIV-1 in specimens.
Methods. A simple, 10 minute colorimetric screening test was developed using Murex SUDS test cartridge and proprietary microfiltration EIA method.The test incorporates immunoaffinity purified HIV-1 antigen and synthetic peptide. A mixture of specimen and solid phase capture reagent is incubated 3 minutes at room temperature. Mixture is dispensed into a SUDS cartridge and unbound material is removed by addition of wash reagent to cartridge. Enzyme antibody conjugate is added to the cartridge and is allowed to incubate at room temperature for 3 minutes. Unbound conjugate is removed by addition of wash reagent to the cartridge. Following a 2 minute substrate development step, result is read from the bottom of cartridge. A distinct blue color indicates a positive test.
Results. Of 1316 specimens examined, 669 were negatives and 647 were positives. Observed sensitivity and specificity were 100% and 99.7%, respectively Positive predictive value was 99.7%. Negative predictive was 100%.
Conclusions. Murex SUDS HIV-1 antibody test provides an easy method for the detection of antibodies to HIV-1 and a total test time of approximately 10 minutes. Precision pipetting, specialised instrumentation and extensive training are not required.

T.B.P.138 MULTIPLE USE OF A SINGLE HIVCHEK(TM) DEVICE FOR SCREENING FOR HIV-1 ANTIBODIES.

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Objectives. To provide developing nations with the capability of using HIVCHEK(TM) to screen for HIV-1 antibodies by reducing the cost/sample tested. Maintain the simplicity and ease-of-use of the assay technique.
Method. Several techniques for regenerating the HIVCHEK(TM) device were evaluated so that a device may be reused with several samples. In the preferred protocol, only one more reagent addition step is required to regenerate the device.
Results. As reported earlier, HIVCHEK(TM) is a very accurate, (sensitivity =98.6, specificity=98.8) rapid test for the detection of antibodies to HIV. To make the assay even more useful in developing nations, a HIVCHEK(TM) device can be regenerated after a negative sample has been assayed on a device. This is best performed by washing the device with an acid solution prior to performing the assay another time on the same device. A single device can be used with a negative sample and still detect a weak positive sample on the subsequent test. The acid wash will not eliminate a visibly detectable positive spot on a device with the first sample. Further detailed results will be provided.
Conclusions. By reusing a device several times, the cost/sample analysed is significantly reduced thereby making the HIVCHEK(TM) assay significantly more affordable in developing nations. This regeneration of a device minimally impacts on the use of the HIVCHEK(TM) assay by clinicians.

T.B.P.139 A PARTICLE-AGGLUTINATION ASSAY FOR ANTI-HIV-1 IN DEVELOPING COUNTRIES

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Objective. To evaluate the efficiency of a rapid and easy-to-use assay for HIV not requiring specialized equipment. There is an urgent need for this test in developing countries.
Methods. A particle-agglutination(PA) test (Serodia-HIV,Fujirebo,Inc.,Japan) was evaluated for screening of HIV antibodies in a panel of 504 frozen sera from high-risk individuals and in 250 blood donors. Results were compared with ELISA (Abbott) and confirmed by W.B.(Dupont) and/or IF.
Results. Out of the 205 HIV-1-positive-confirmed sera, the PA detected 198. In 7 sera the reaction was equivocal(±) but, as suggested by the manufacturer, it was scored positive. This gives a sensitivity of 100%. When we tested a panel of sera from blood donors, we observed a 95.1% specificity. The test had produced a considerable amount of false positive results.
Conclusion. In our hands, this assay showed to be very sensitive. Although specificity was not the one assumed by the manufacturer, it seems the test is suitable for use in blood banks in developing countries. Still, we have some doubts about its use with frozen sera from high-risk groups. Repeatedly frozen sera could give false positive reactions which should be avoided.

T.B.P.140 EVALUATION OF A NEW RAPID SCREENING ASSAY FOR HIV ANTIBODIES

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Objective. To describe the efficiency of a very rapid test (less than 15 minutes), suitable for use in developing countries.
Methods. The "HIVCHECK" test(Dupont) was evaluated using 94 frozen sera from high-risk individuals and containing 56 sera HIV-1-positive by EIA(Abbott), confirmed by IF,ENVACORE(Abbott) or W.B.(Dupont), and 38 HIV-1-negative sera. Fresh serum from 50 blood donors was also evaluated.
Results. Out of 56 frozen sera repeatedly positive by EIA, the new test only detected 53, which gives a sensitivity of 93.3% and a specificity of 98.7%. When frozen and thawed samples were excluded and we considered only fresh-blood sera, the sensitivity of the test was 100% and the specificity, 98%. Although some frozen samples were processed as recommended by the manufacturer, they were not correctly absorbed to the paper and considered undeterminate. Some fresh sera were kept at 4°C for 1 week; we found 100% concordance of results between the first and the 1-week-later assays. There were no doubtful results and all the sera absorbed perfectly well to the filter.
Conclusion. The "HIVCHECK" is an excellent method to be used in developing countries, where there is a need for a rapid and simple method with no additional costly equipment. This is a preliminary report, but it seems this test works very well with fresh sera and, on the contrary, there is a lot of difficulties with sera that have been previously frozen. Apparently, sera can be shipped long distances unfrozen, at 4°C, without alteration of results.

T.B.P.141 EVALUATION OF LABORATORY PERFORMANCE OF ENZYME IMMUNOASSAY TESTS FOR HIV-1 ANTIBODY

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Objective. To evaluate laboratory performance of human immunodeficiency virus type 1 (HIV-1) antibody enzyme immunoassay (EIA) tests, the screening test primarily used in the United States to detect infection by HIV-1.
Methods. A panel of 22 samples was mailed in May 1988 to 1,309 laboratories enrolled in the Centers for Disease Control's Model Performance Evaluation Program (HIV-1 antibody testing is the specific application being used to develop this program.) The panels consisted of both single donor and pooled donor samples. Not all laboratories received the same 22 samples; 33 different lots of samples were actually used. All samples were provided in blind duplicates. The HIV-1 antibody reactivity levels varied from negative to weakly reactive to positive. In addition to providing sample analysis data, laboratories also provided information describing their laboratory and testing practices.
Results. Enzyme immunoassay results were reported by 1,201 laboratories; 48 percent were hospital laboratories, 18 percent blood banks, 16 percent independent laboratories, and 11 percent public health laboratories. Most of the laboratories (80 percent) reported only EIA test results; that is, they did not perform confirmatory testing. By manufacturer, 63 percent of the laboratories used a kit from Abbott; 9 percent used Genetic Systems; 9 percent, DuPont/Biotech; 8 percent, Organon; 6 percent, Ortho; and 4 percent, Electronucleonics. For the negative samples, the percentage correctly interpreted ranged from 74 percent to 100 percent and for the strong positive samples, from 98 to 100 percent.
Conclusion. Screening for HIV-1 antibodies is performed well by most laboratories in a variety of settings. Nonspecific matrix effects and weak HIV-1 antibody reactivity are the causes of some of the observed performance problems.

T.B.P.142 Results of CDC's Model Performance Evaluation Program for HIV-1 Antibody Testing

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Objective. To track trends in testing, to characterize HIV-1 testing laboratories and evaluate their performance, to document changes in performance and impact on public health, to evaluate emerging technology, and to identify possible sources of error and intervention strategies.
Methods. A combination of comprehensive demographic questionnaires and performance evaluation surveys were used to obtain lab descriptive data and test results. Questionnaires requesting information on lab type, personnel, workload, and testing procedures were mailed to labs in May and October 1988. Shipments of 22 samples per lab were mailed in February, May, and September of 1988. Results were tabulated and analyzed. Summary reports were returned to the participants.
Results. About 1400 laboratories are enrolled in this voluntary program. Both lab descriptive data and test results were usually provided by a high percentage of the labs (typically >90%). Enzyme immunoassay (EIA) results were reported by about 1200 laboratories; Western blot (WB) by about 250, and immunofluorescence by about 70. Results were compared by method and test manufacturer. Problems were identified with some commercial EIA kits with some samples. Need for standardization of WB test was apparent.
Conclusion. No serious performance problems were detected. Data will be used to develop a profile of labs which perform high quality testing. Continued operation of the program is required to monitor rapidly changing technology and applications.

T.B.P.143 CENTERS FOR DISEASE CONTROL MODEL PERFORMANCE EVALUATION PROGRAM: RESULTS OF THE WESTERN BLOT AND INDIRECT IMMUNOFLUORESCENCE TESTS FOR DETECTION OF HIV-1 ANTIBODIES

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Objective. To evaluate, through mailed sample panels, the performance of laboratories that test for human immunodeficiency virus type 1 (HIV-1) infection and to track changes or trends in Western blot (WB) and indirect immunofluorescence (IIF) testing through these periodic performance evaluations.
Methods. Panels containing 22 serum samples obtained from confirmed HIV-1 antibody-positive and antibody-negative donors were sent in May and September 1988 to the approximately 1,400 laboratories enrolled in a voluntary performance evaluation program.
Results. Among the 1,215 laboratories that returned results after testing the May performance panel samples, 229 (18.8%) and 71 (5.7%) laboratories reported WB and IIF results, respectively. Among the 1,185 laboratories that returned results after testing the September performance panel samples, 240 (20.2%) and 67 (5.6%) reported WB and IIF results, respectively. Eleven WB kits (commercial and in-house) were used by the laboratories in both surveys; whereas, 75% of the results were reported with five commercial kits. Six IIF kits (commercial and in-house) were used in both surveys. Little difficulty was demonstrated by the majority of the laboratories in reporting interpretations for the strong positive and true negative samples for the WB and IIF. Some laboratories reported viral specific bands for true negative samples; whereas, other laboratories reported negative interpretations for positive samples that contained viral specific bands. Some laboratories experienced difficulty in IIF result interpretation for samples that showed low reactivity in the enzyme immunoassay.
Conclusion. While no specific trends in WB or IIF were observed, the data suggested that future survey samples are needed for continued evaluation of laboratory performance.

T.B.P.144 *QUALITY CONTROL FOR ANTI HIV TESTING. THE EXPERIENCE OF ZAMBIA.*

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Objective; The availability of various anti HIV commercial kits and the concern for valid results calls for the establishment of a panel of well defined sera for evaluation of test kits. For quality control purposes, a panel of sera was assayed for anti HIV using various kits in two laboratories.
Methods; Sera from 17 adult Zambian patients suspected to have AIDS were tested at Ndola, Zambia and Basle, Switzerland, for anti HIV. The following kits were used: Wellcozyme VK50/51 (Wellcome), Enzygnost-micro (Behring), Roche and HIV EIA and the Western Blot (W.B). An assay used to investigate the presence of peroxidase inhibitors, suggested by the Wellcome Research and Development Laboratory, was performed as a check on the Wellcozyme.
Results; Thirteen out of the 17 sera produced the same results in both laboratories on all the kits. The remaining 4 were repeatedly positive on the Wellcozyme in Ndola but negative in Basle, and negative on all other tests kits including the confirmatory test (W.B) in both laboratories.
Comments and Conclusion; The difference in results of the 4 sera may be due to (a) the presence of factors in sera that inhibit the peroxidase conjugate or (b) batch to batch variation of the peroxidase conjugate. It is suggested that (1) such discrepancies in results from biological kits may occur and require both internal and external quality control; (2) laboratories have a panel of well defined sera for the evaluation and monitoring of batch to batch variation of kits and reagents.

Pédiatrie : VIH
Pediatrics: HIV

T.B.P.145 PROBLEMS ENCOUNTERED IN HIV SEROLOGY

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Objective. With over 150,000 specimens submitted for HIV serology, we have encountered and described a number of difficult cases and situation which can lead to erroneous results and/or diagnosis.
Method. The problems ranged from simple specimen misidentification to complex situations including: the contamination of a negative serum by a minute quantity of positive serum (by submitting laboratories), carryover from positive to negative wells in the test procedure, detection of passive antibodies due to the administration of HIV seropositive immune globulin; interpretation of indeterminate results; cases of apparent sero-reversion, and failure of standard procedures to detect HIV antibodies in infected individuals.
Results. Mechanisms have been installed to detect the above mentioned situations, including: double verification of tube and requisition identification, requests for whole blood rather than serum samples, careful scrutiny of confirmatory test results for weakly-reactive or unusual results, justification of HIV results with clinical and risk group information provided by physicians and requests for follow-up specimens.
Conclusion. Laboratories must remain aware of the potential for erroneous results to occur and of the serious consequences of inaccurate results for the patient and the community at large.

T.B.P.146 ENHANCED CARDIAC FUNCTION IN PEDIATRIC HIV INFECTION.

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Objective. Fifty four pediatric patients with HIV infection underwent detailed, serial echocardiographic evaluation (n=133) of cardiac function as part of a natural history study. Methods. The M-mode shortening fraction was used to assess left ventricular (LV) function, end-systolic wall stress (ESWS) to measure afterload, and the relation between rate-adjusted velocity of fiber shortening and ESWS to evaluate contractility. This load-independent index allowed determination of contractility despite changing heart size and blood pressure. Results. At initial evaluation 50% of patients had hyperdynamic LV function, generally associated with enhanced contractility and reduced afterload. During follow-up of up to 57 months, function decreased to normal or subnormal in 69% of patients with hyperdynamic function initially. In contrast, function or contractility did not normalize in any patient presenting with reduced function and contractility. Hyperdynamic LV function was noted on one or more exams in 36 patients, irrespective of stage of disease or route of infection. This group included all patients with documented high-grade ectopy (n=4), sudden unexplained death (n=1) and 4/5 patients with evidence for cardiac or neural mononuclear infiltrate at autopsy. A change to enhanced LV function was observed in patients with previously normal function who developed mononuclear infiltrative disease of other organ systems. Unusual heart rate and blood pressure variability as well as exaggerated heart rate and blood pressure responses to medications were seen in these patients. These findings as well as autonomic function testing in selected patients are consistent with enhanced sympathetic tone. Conclusion. Hyperdynamic LV function is a common finding in early pediatric HIV infection, is often associated with autonomic instability and mononuclear infiltrative disease, and may be a marker for arrhythmia or sudden death.

T.B.P.147 MORTALITY IN CHILDREN WITH AIDS: AGE AT DIAGNOSIS AS RISK FACTOR

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Objective. To compare mortality in children diagnosed as AIDS in the first year of age (group I), vs those diagnosed above one year (group II).
Methods. The study was performed at two public hospitals in New York City on sixty two patients with perinatal HIV infection, admitted from 1984-1988 and followed for 1-50 months (mean 18 mo). All mothers except three were intravenous drug abusers. The majority of patients in group (G) I were symptomatic in the first six months of life. The G consisted of 42 patients, 14 blacks (b) and 28 Puerto Ricans (PR), 21 males (m) and 21 females (f). G II comprised 20 patients, 13 b and 7 PR, 12 m and 8 f, ranging in age from 12.5 to 72 months (mean 17 mo).
Results. Mortality was significantly higher in GI vs GII: 42% vs 5%, P=0.006. No significant sex and race differences were found in GI (52% mortality in f, 33% in m, 50% in b and 39% in PR), but mortality was higher in b f than b m (80% vs 33%). The majority of patients died of pneumocystis carinii pneumonia (PCP). In GII only 1 PR f died.
Conclusion. Infants with perinatal HIV infection who become symptomatic at an early age have a high mortality rate and females seem more at risk. Long term follow-up is needed to establish mortality rates in older infants and children.

T.B.P.148 ISOLATION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) FROM CEREBRAL TISSUE AND CHARACTERIZATION OF ITS BIOLOGICAL PROPERTIES

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Objective. To report the detection and isolation of HIV from the cerebral tissue of two perinatally infected children, 2 and 3 years old, with neurologic dysfunction.
Methods. Electron microscopy (EM), histology, and cell culture.
Results. Neuroradiographic evaluation of both children revealed marked cerebral atrophy. At postmortem examination, both brains showed encephalitis, cortical atrophy and decreased myelin. EM examination of the white matter of the brains revealed areas with myelin and cell degeneration. In these areas, infection of oligodendrocytes with HIV was inferred based on the presence of typical virion surface budding and HIV-like particles in the endoplasmic reticulum of these cells. Cocultures of normal donor PBMCs with 1 x 10^7 neural cells from these infected children yielded evidence of HIV infection as manifested by the expression of HIV p24 antigen in culture supernatants. These neural viral isolates readily infected T, B and monocyte cell lines, e.g. Jurkatt, MT-04, Raji, U937, HL-60 and THP-1, as determined by the detection of HIV p24 antigen in culture supernatants. The neural viral isolates were not cytotoxic for these cell lines.
Conclusion. These data suggest that HIV is associated with the neuropathology observed in the brain of infected children.

T.B.P.149 CUTANEOUS MANIFESTATIONS OF PEDIATRIC HUMAN IMMUNODEFICIENCY VIRUS INFECTION

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Objective To describe the varied cutaneous manifestations of HIV infection in children.
Methods One hundred and twenty-two children with HIV infection were examined as part of a dermatologic consultation service at three area hospitals. Skin biopsy and culture were performed as necessary.
Results We have developed an overview of the various cutaneous manifestations of pediatric HIV infection, and of the natural history of these disorders. There is no single cutaneous disease that is pathognomonic for HIV infection during childhood. The cutaneous manifestations of HIV disease in children are primarily fungal, bacterial, and viral infections. These include recalcitrant oral and cutaneous candidiasis, cellulitis, severe herpes simplex and herpes zoster, and unusual dermatophytoses. All of these manifestations are distinguished by their severity, frequency of recurrence, and poor treatment response. We have also seen patients with a severe atopic dermatitis, widespread flat warts, drug eruptions, chronic varicella-zoster infection, and unusual patterns of leukocytoclastic vasculitis.
Conclusion Familiarity with both the common and unusual patterns of cutaneous disease in the HIV-infected child can aid in early diagnosis, and in the treatment of opportunistic infections.

T.B.P.150 CLINICAL SPECTRUM OF HUMAN IMMUNODEFICIENCY INFECTION IN CHILDREN LESS THAN 4 MONTHS OF AGE.

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The early recognition of children with infection due to Human Immunodeficiency Virus (HIV) may permit intervention strategy such as nutritional supplementation, prophylactic antimicrobial therapy, or experimental antiretroviral therapies. We report on 11 HIV antibody positive (ELISA and Western Blot) who presented with clinical signs and symptoms before 4 mos. of age. The earliest diagnosis was made at 1 mo. of age in 1 child with thrombocytopenia at birth, who developed hepatosplenomegaly (HSM). 4 additional children presented before 2 mos. of life; 2 with proven PCP requiring mechanical ventilation, and 2 with axillary adenopathy and poor weight gain. 2 of the 11 children had the diagnosis established before 3 mos. of age; 1 with failure to thrive requiring nightly nasogastric tube feeding and axillary adenopathy, and 1 with developmental delay and presumed PCP. 4 of the 11 children presented before 4 mos. of age: HSM and lymphadenopathy (1), recurrent sepsis (1), suspected PCP pneumonia (1) and adenopathy (1) were the presenting signs. Of the 11 cases, 10 had mucocutaneous candidiasis by exam or history prior to 2 mos. of age, and 7 of the children had significant adenopathy at presentation. In 7 of the 10 children, IgG was already greater than normal. Ultrasound in 1 child revealed echo densities in the basal ganglia in the absence of neurologic findings. Children have been followed for a median of 6 mos. (range 1-46) since diagnosis. 3 of the 11 children developed a progressive encephalopathy resulting in death. All 3 were Haitian; illness in 2 of the 3 was complicated by infection with CMV, and none of the 3 had significant adenopathy.

T.B.P.151 HIV ACTIVATION BY COFACTORS: P-24 ANTIGENEMIA AFTER INJECTIONS OF SOLUBLE ANTIGENS IN CHILDREN WITH AIDS.

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OBJECTIVES: To monitor P-24 antigenemia (Ag) following repeated KLH injections and to correlate Ag with the clinical and immune status of patients.
METHODS: The study was conducted in HIV positive immunodeficient symptomatic children, asymptomatic adults, HIV negative children and adults. KLH was injected at 0 and 14 days. P-24 antigen (Abbott) was measured at 0, 14, 28 days and results were expressed after neutralization. Lymphocyte sub-populations, mitogen and KLH responses, anti-KLH antibodies by ELISA and PFC were measured at 0, 14, 28 days.
RESULTS: 29 individuals of which 13 were HIV positive were injected with KLH. P-24 Ag (units/ml) present in 3 of 10 children did not rise after injections. None of the 7 remaining children developed P-24 Ag. All met criteria for pediatric AIDS and were immunodeficient (mean T-cell:3384 ± 1946, CD4: 441 ± 462, CD8: 1037 ± 656), had depressed mitogen responses and no significant antibody responses to KLH. In asymptomatic HIV positive mothers, injections were associated with the appearance of P-24 Ag in 2 cases, and increase in P-24 Ag in 1 case. They had low normal T-cell count, low CD4 (9.7% ± 2.2)and CD8 (52.5% ± 9.1). Mitogen responses were generally normal, antibody response to KLH was partly abolished. No significant change in lymphocyte sub-populations was noted during the study.
CONCLUSION: Injection of soluble antigens may trigger P-24 antigenemia and this seems to be limited to asymptomatic moderately immunodeficient individuals. The clinical relevance of these findings requires further study.

T.B.P.153 PNEUMOCYSTIS CARINII PNEUMONITIS (PCP) IN CHILDREN WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV-1) INFECTION.

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Objectives: To determine the clinical course and outcome of children with HIV-1 infection and PCP.
Methods: Hospital charts of 19 HIV-1 infected children diagnosed with PCP between January, 1983 and December, 1987 were retrospectively reviewed.
Results: Eighteen children had perinatally acquired HIV-1 infection and one acquired infection in the neonatal period through blood transfusion. There were eleven females and eight males. Seven of these children presented with PCP as their first manifestation of HIV infection. The median age of onset of PCP was 5 months with a range from 3-60 months. Diagnosis was made by demonstration of the organism in specimens from endotracheal aspirates (8), bronchoalveolar lavage (6), biopsy (4), and autopsy (1). Elevated IgG levels and depressed numbers of T helper cells were the most common immune abnormalities present at diagnosis of PCP. All children required oxygen therapy. Eight patients were intubated and received assisted ventilatory support for a mean time of 11 days. Median survival post-PCP was 10 months (range 1-53 months) for patients not requiring intubation and 1 month (range 1-11 months) in intubated patients. All but one of the children have died.
Conclusion: The early age of onset and the high mortality and morbidity associated with PCP in children emphasizes the importance of early recognition of infants at risk and indicates a role for PCP prophylaxis.

T.B.P.155 BRONCHO-ALVEOLAR LAVAGE TO EVALUATE PULMONARY STATUS IN THE HIV INFECTED CHILD.

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Bronchoalveolar lavage (BAL) is widely accepted in the adult AIDS patient. We have been among the first to initiate it's routine use in children.
Patients and Methods : Among 1500 pediatric BAL performed from 1981 to 1988, 79 concerned 50 HIV positive children (32 M, 18 F, aged 5 m to 12 y, 29 Blacks, 20 Caucasians, 1 Asian). Cases entered the following groups of the CDC Pediatric AIDS classification : P-2, Subclass A : 9, P2, Sub-class C (LIP) : 20, P2-Subclass D1 : 21, including 11 Pneumocystis Carinii (PC).
Results : BAL was fully successful in demonstration of pathogens : PC (11) CMV (6) mycobacteria (5) fungi (3) measles (1). High cellularity, high number of macrophages (Ma) and CD8 lymphocytes (Ly) per ml, increased spontaneous and stimulated H2O2 liberation by Ma are a constant feature of all groups. Opportunistic infections are associated with a high number of polymorphonuclears (PMN) never present in LIP. LIP's BAL profile is highly evocative : cellularity superior to controls (1100 x 10^3/ml vs 230 x 10^3/ml) as well as to others HIV cases (500 x 10^3/ml), elevated number of Ly (400 x 10^3/ml vs 20 x 10^3 in controls and 100 x 10^3 in other groups) absence of PMN are constant findings.
Conclusion : 1) BAL is efficient to investigate lung pathogens in children. 2) Active alveolitis is a constant finding in symptomatic HIV infected children (class P-2) regardless of pulmonary pathology. 3) LIP cases BAL profile is highly evocative of diagnosis

T.B.P.152 NATURAL HISTORY OF LYMPHOID INTERSTITIAL PNEUMONIA (LIP) IN PERINATAL HIV-1 INFECTION

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Objective: To review the natural history of LIP in pediatric AIDS focusing on the clinical, radiological and immunological parameters.
Methods: From January 1981 to February 1988, 48 cases of LIP were diagnosed among 172 cases of perinatally HIV-1 infected children. Charts were reviewed retrospectively. X-rays were reviewed by the same radiologist. 100% of the children were black.
Results: Radiologically, LIP developed at a mean age of 16 months. Chronic lung disease with oxygen dependency and clubbing occurred in 20%. The reticulonodular pattern on chest x-rays cleared in 6%. Physical examination revealed lymphadenopathy 100%, hepatomegaly 98%, splenomegaly 83%, parotitis 73% and failure to thrive in 69%. Common infections were recurrent pneumonia 98%, Bacteremia 69%, recurrent otitis media 69% and recurrent diarrhea 50%. Opportunistic infections were less common. Mean level of IgG at onset of LIP was 4421 gm% (20 patients). AbsT4 levels at less than 1000/uL were seen in older patients at a mean age of 5 years. 10% died at a mean age of 34 months. Those who died often had concurrent opportunistic infections and significantly elevated IgG mean 6124 gm%.
Conclusion: LIP is often associated with lymphadenopathy, hepatosplenomegaly, failure to thrive, parotitis, recurrent pneumonia, bacteremia and recurrent otitis media. Opportunistic infections are rarely associated. Mortality is significantly decreased as compared to overall Pediatric AIDS mortality of 57%.

T.B.P.154 ADRENAL DYSFUNCTION IN PERINATAL HIV INFECTION.

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OBJECTIVES: To study the hypothalamic-pituitary-adrenal axis in children with perinatal HIV infection.
METHODS: The study was performed at a public hospital in New York City on 12 patients aged 4 months to 7 years (mean=31.6 mos). There were 8 Hispanics, 4 blacks, 7 males and 5 females. All mothers were intravenous drug abusers. Laboratory evaluations included: baseline cortisol and ACTH, cortisol response to cortrosyn and overnight metopirone inhibition.
RESULTS:

	Baseline cortisol mcg/dl	ACTH-stim cortisol mcg/dl	Baseline ACTH pg/ml	Post-meto cortisol mcg/dl	Post-meto 11-deoxycortisol mcg/l
1.	17.1	28.7	>250000	16.3	17.3
2.	37.0	75.7	25	10.0	573.0
3.	7.7	39.2	11.0	10.9	70.5
4.	35.0	47.0	<10	28.3	97.0
5.	<2.6	41.2	13.0	3.3	144.5
6.	14.9	47.7	23.0	----	-----
7.	19.1	42.6	<10	27.0	128.0
8.	40.8	53.0	----	----	-----
9.	20.8	47.6	----	----	-----
10.	8.9	25.4	----	----	-----
11.	9.9	40.2	----	----	-----
12.	12.3	29.2	<10	13.7	pending

CONCLUSION: Though the majority of patients (72%) demonstrated normal adrenal function, a significant number (28%) had abnormal function manifested by a blunted response to ACTH, abnormal hypothalamic regulation or as yet unexplained elevated ACTH levels.

T.B.P.156 UNUSUAL MORTALITY FROM PNEUMOCYSTIS CARINII PNEUMONITIS (PCP) DURING EARLY INFANCY: PRIMARY, NOT REACTIVATION OF INFECTION?

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Objective. Is PCP in early infancy universally fatal? If so, what are the differences in the onset, course, and mortality compared to older children?
Methods. From 1984 to 1989, over 110 infants and children with HIV have been seen at 3 hospitals. PCP was confirmed in 15 children, from tracheal washings (3), lung biopsy (2), or at autopsy (11).
Results. 13/15 children were 6 months or younger. 13 previously healthy infants were thriving well. Associated physical findings included oral thrush (12), hepatosplenomegaly (10), generalized lymphadenopathy (7), and persistent fever (13). They presented with acute respiratory illness which rapidly progressed to respiratory failure. Course in older children was more protracted. Antimicrobial therapy with TMP/SMX and/or Pentamidine was initiated in 14/15 children. Despite early and aggressive therapy, 11/13 infants expired at first presentation. One surviving infant died at 11 months of age. Both of the older children are alive 1 and 2 years after PCP. Interestingly, lung biopsies in both the older children also showed lymphocytic interstitial pneumonitis (LIP).
Conclusion. PCP in early infancy can be a rapid and invariably fatal illness, primary infection, not reactivation of latent infection. Prospective studies of antimicrobial prophylaxis of PCP may show the greatest benefit in first year of life.

T.B.P.157 SEROPREVALENCE OF HIV INFECTION IN AN URBAN PEDIATRIC POPULATION

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Objective. To evaluate seroprevalence to HIV in children in a large, urban community with a high incidence of AIDS and drug abuse.
Methods. We conducted an anonymous, blinded serosurvey on discarded blood samples from children aged 2-8 years who presented to outpatient and community-based outreach clinics served by our pediatric teaching hospital between 1/87 and 12/88. Demographic information from the surveillance study was compared to that obtained on age-matched patients, who were HIV tested for clinical indications. Perinatally acquired HIV and sexually contracted disease was controlled for by limiting the enrollment age to 2 - 8 years, respectively.
Results. 4120 specimens were tested, 58% (2367) from males and 42% (1753) from females. The overall sample had a mean age of 4.79 ± 2.0 years. 4111 or 99.8% were nonreactive by EIA and 9 (.2%) were repeatedly reactive. Western blots confirmed 5 of the 9 EIAs for a seroprevalence of 1.2/1000; 3 were indeterminate, 1 was negative. All 5 blot positive specimens were from black children, age 2.2-8.6 years ($\bar{x} = 5.24 \pm 2.9$), 1 male and 4 females from 5 clustered zip codes, while the 3 indeterminants were from black males with an average age 4.95 ± 1.8 years. Although the Emergency Room (ER) accounted for 30% of total specimens, 63% of positive or indeterminate specimens were from the ER. There were no positive specimens (0/51) among age matched children tested for clinical indication during outpatient/ER visits during the same time interval.
Conclusion. HIV infection is present in 0.12% of urban children; a major source of identification is by presentation in the ER. Sequential analysis will define trends in the spread of HIV over time.

T.B.P.158 HIV INFECTION AND PEDIATRIC AIDS IN SEMI-RURAL DABOU PROTESTANT HOSPITAL (IVORY COAST)

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Within a year (Feb 87-Jan 88), 293 suspected cases of pediatric AIDS based on Bangui criteria and/or with severe malnutrition were tested for HIV-1 and HIV-2 by ELISA and then western blot. 75 (25.6%) had confirmed antibodies to HIV: 63 (21.5%) exhibiting HIV-1 reactivity, 4 (1.4%) HIV-2 reactivity and 8 (2.7%) double reactivity. No difference in symptom frequency was observed between these sub-groups.

Mothers of 68 positive children were also tested. In 48 cases (71%) , the child infection probably originated from seropositive mother ; in further 10 cases the mothers were positive but the children were transfused, so the origin of infection remained problematic ; in 4 children, the origin of infection remained unknown as their mothers were seronegative and the children did not receive transfusion.

The study of 100 sequential cases of pediatric severe malnutrition showed 14 cases of HIV positivity: 11 HIV-1, 2 HIV-2 and 1 HIV-1+2. The testing of 95 corresponding mothers showed that 19 were positive (12 having a seropositive child, but 7 a seronegative one). Two children with seronegative mothers had been contaminated by blood transfusion.

Among 83 HIV positive children, 11 died during hospitalization, 14 were moribond at their discharge from hospital and 19 could be followed-up. Among those, one died within 10 months after diagnosis, 4 had an unfavorable evolution, but 14 exhibited improvement during a follow-up period of 3 to 6 months.

T.B.P.159 MATERNAL DRUG ABUSE AND PERINATAL HIV SEROPOSITIVITY

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Objective. Assess the prevalence of HIV seropositivity (+) in infants of drug abusing mothers (IDAM) delivered at Bronx-Lebanon Hospital.
Methods. In a six month period in 1988, HIV antibody was studied by Elisa and confirmed by Western blot in 101 IDAM with maternal consent. All infants were examined and maternal and neonatal data were compared in the HIV+, HIV- infants and non IDAM control infants.
Results. In 1982, 3.1% of newborns were IDAM (75/2437) compared to 12.8% (365/2806) in 1988, (p <.0001). A 19.8% (20/101) incidence of HIV+ was higher than a 6% (5/84) in the non IDAM normal newborns (p <.01). As expected, the HIV (+) rate was higher in the 15 IV IDAM than the 86 non IV IDAM (50% vs 14%) (p<.001). There were no significant differences in race, maternal age or mode of delivery in the HIV+ and HIV- groups. Lack of prenatal care was similar as was the incidence of maternal syphillis. Maternal smoking, alcohol and drug used were also similar in these groups. Gestational age (37.5 vs 37.5) birth weight (2394 vs 2458), LBW rate (60% vs 53%) and SGA infants (30% vs 16%) and microcephaly (HC<10%: 20% vs 11.1%) were not significantly different in the above groups, though they differed from the general population (p<.001).
Conclusion. No neonatal factor were identified which could be attributed to HIV seropositivity. Decreased GA and BW and increased incidences of LBW, SGA, and microcephaly may be due to maternal drug abuse, not HIV. Maternal IV drug abuse is a significant risk factor for HIV seropositivity. However, 60% of HIV mothers did not have any history of IV drug abuse. This suggests that heterosexual contact plays a significant role in the HIV transmission.

T.B.P.160 DIFFICULTIES ENCOUNTERED IN INFORMING THE PARENTS OF NEWBORNS OF HIV TESTING RESULTS IN AN URBAN COMMUNITY.

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Objective: To evaluate maternal compliance in infants at risk for HIV infection.
Methods: Bronx Lebanon is located in the South Bronx, an area highly endemic for HIV infection (4-5% of pregnant women are HIV infected). Maternal consent is routinely sought to screen newborns whose mothers had identified risk factors for HIV. An appointment is scheduled for two weeks later to discuss the test results. Missed appointments are pursued by telephone calls and certified letters. Older children at risk, identified during hospitalizations, well child care or from outside sources are also screened with parental consent. All identified children are to be followed in an immunology clinic.
Results: Appointments to receive testing results were attended by only 32 of 114 mothers. These include 29 (29%) of the 101 HIV negative newborns and 3 of 13 (23%) infants with positive HIV serology in spite of multiple attempts to contact these mothers. In contrast, 21 of 23 (90%) of the older HIV infected children have been compliant with medical follow-up.
Conclusion: In this urban community, the rate of success in communicating HIV testing results to mothers of neonates is poor once that infant is discharged in spite of the mothers granting informed consent. A more rapid reporting of results and informing the mother prior to discharge may improve compliance with medical follow-up.

Pédiatrie : histoire clinique
Pediatrics: Natural History

T.B.P.161 CLINICAL & IMMUNOLOGIC FEATURES ASSOCIATED WITH PEDIATRIC HIV INFECTION IN LOS ANGELES COUNTY, CALIF.

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Objectives. To gain insight into the clinical and immunologic spectrum of pediatric HIV infection using data from a Los Angeles County (LAC) active surveillance program.
Methods. An active surveillance system for cases of pediatric HIV infection began in 3/88. Using clinical and lab data from medical records, HIV infected children were classified using the latest CDC classification system and according to whether they had immunologic abnormalities.
Results. As of 12/30/88, LAC had 139 cases of pediatric HIV infection. Fifty (36%) had AIDS, 38 (27%) had symptoms but not AIDS, 33 (24%) were asymptomatic, and 18 (13%) were indeterminant (children <15 mos. without virologic evidence of infection). About half of these cases (excluding the indeterminants) had immunologic data available. AIDS and non-AIDS cases differed on all immunologic features. Among the AIDS cases, 76% had a T4 cell count $<400/mm^3$, 100% had a T4/T8 ratio <1.0, 60% had a lymphocyte count $<3000/mm^3$, and 46% had a total serum immunoglobulin level >2500 mg/dl. Although less prominent, many non-AIDS cases had abnormalities as well; 66% had abnormal T4/T8 ratios, 38% had increased immunoglobulins, 23% had abnormal T4 counts, and 7% had abnormal lymphocyte counts.
Conclusion. The spectrum of clinical illness and immunologic abnormalities among HIV infected children is great. Continued surveillance and follow up will better define the natural history of HIV infection in children with regard to clinical and laboratory parameters.

T.B.P.162 NEWARK PERINATAL COHORT NATURAL HISTORY PROGRESS REPORT.

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Objective. In 3/87 a study of infants (INF) born to HIV infected mothers (M) at a large hospital in Newark was initiated to define the rate of perinatal transmission of HIV and the natural history of these INF.
Methods. HIV+ M who delivered INF are invited to participate. INF are prospectively monitored every month x6mo, then every 2mo x6 mo, and every three months thereafter. Clinical, immunologic, serologic and retrovirologic data are collected at specified intervals.
Results. Forty seven INF born to 44 M were enrolled 3/87-1/89. Mean age of M = 29.7 yr (16-38); 93% black, 5% hispanic, 3% white; 80% were IV drug users and 20% acquired HIV by sexual contact. At delivery 84% were asymptomatic, 10% ARC and 10% AIDS. Mean gestational of INF = 36.5 wk (29-40); 19 were <36 wks and 6 were SGA. There were 29 INF that were followed for >9 mo. Five INF were considered HIV infected: 3/5 had +HIV cultures, 2/3 had HIV symptoms and died at 5&7 mo, 3/3 had +PCR; 2/5 had +P 24 Ag CSF, both are well and one had +PCR and 1 + PCR. Of the remaining 24 INF, 8 are considered non-infected while 16 are well but indeterminant. One of these infants died at 2 mo of complications of prematurity. Seven of 8 PCR assays on this group were negative and one positive at 15 mo on a presumed non-infected 17 mo INF.
Conclusions. While it is premature to determine transmission rate, it is significant that 93% of INF in this cohort followed >9mo have remained asymptomatic. In general there was concordance between PCR and other parameters of infection.

T.B.P.163

44 HIV-EXPOSED NEWBORNS - CLINICAL, VIROLOGICAL, AND IMMUNOLOGICAL FOLLOW-UP.

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Objective. Since 1984 infants and children with typical HIV-associated symptoms are cared for in Munich's University Children's Hospitals. Until now 44 newborns with intrauterine/perinatal HIV-exposition only from Bavaria are followed up in a national multicenter study. The aim of this investigation is to define the transmission rate from mother to child, the factors influencing manifestations of AIDS, and to evaluate the benefit of prophylaxis and therapy with immunoglobulins and zidovudine.

Methods. Infants are followed up in intervals of three months beginning at delivery. In addition to maternal HIV-antibody-status, we try to accumulate further virological and immunological data of the mother as they occur during pregnancy. Children with proven HIV-infection receive monthly infusions of standard-immunoglobulin in a dose of 400 mg/kg bw. Those with full blown AIDS are treated with immunoglobulin plus oral zidovudine (3,5 mg/kg bw qid).

Results. Data of the mother's pregnancy are available for 15 out of the 44 children. Four mothers had definitive viremic episodes (p24- antigen, virus-isolation) during pregnancy. Of all others only HIV-Ab-positivity was known. 15 children lost their HIV-antibodies and remained clinically and immunologically healthy. In 15 other children the HIV-infection could be confirmed. 5 of them died of AIDS, 7 receive prophylactic immunoglobulin-infusions, 3 are treated with immunoglobulines plus zidovudine (Retrovir^R). Two of the zidovudine-recipients had neurological symptoms which improved upon therapy. The third child fell ill with a pneumocystis carinii pneumonia which could successfully be treated. In 14 children, younger than 15 months of age and HIV-Ab-positive, HIV-infection could not be ascertained so far. Clinical symptoms, virological results and immunological parameters of all patients will be presented in detail.

Conclusion. With cautious interpretation of our data the transmission rate is 40 %. A suspected correlation between proven viremia during pregnancy and HIV-transmission to the child should be confirmed by more frequent virological tests of the mother during her pregnancy. Infants with confirmed HIV-infection may benefit of the immunoglobulin-prophylaxis since this medication seems to suppress bacterial and viral infections and possibly decreases HIV-replication. Immunological parameters could not be influenced by this therapy.

T.B.P.164

EVOLUTION OF A SERIE OF 23 CHILDREN SEROPOSITIVES TO HIV.

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MATERIAL AND METHODS: We present 23 children, 13 males and 10 females, whose ages range from 7 days to 11 years old. In 2 cases, the infection was acquired through blood transfusion. The other 21 children were infected from 19 mothers with positive HIV antibodies. Only 17 mothers wereDAVP and the other 2 acquired the infection by heterosexual contact. We determinate HIV antibody by ELISA, IFI and W.blot and Ag P_{24} by capture ELISA methods. The follow up varied from 2 to 16 month.

RESULTS: In accordance with CDC classification, the children are included: 10 in Po class, 3 in P_1 class and 10 in P_2 clas. Among the 21 cases infected through their mothers, in 4(19%) the HIV antibody have become negative before reaching 15 month old. Seventeen of them (81%) persist with positive HIV antibodies, and 10 of the 17 show sympthoms. Only 1 of 3 children included in P_1 class shows immunological alte ration. All of the 10 sympthomatic cases are receiving treatment with gammaglobu lin and antibiotics prophylactically to reduce recurrent infections, and 8 of them are receiving Zidovudine also. Clinical evolution is favourable in 62% of the ca ses and stationary in the rest. Only 1 child has died because of a pneumonia caused by Adenovirus.

CONCLUSIONS: 1) In our serie, the persistence of positive antibodies in children over 15 months old who were infected by their mothers is 81%. 2) In contrast to other adult studies, in our cases only 13% of the infected children are asym-pthomatic. 3) Our mortality rate is 4.5%. 4) Despite of having become negative HIV antibodies in serum, it's necessary to maintain a close watch on these children to exclude HIV infection definitively.

T.B.P.165

NATURAL HISTORY OF PEDIATRIC HIV INFECTION

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Objective: To investigate the natural history of HIV infection in children born to seropositive mothers.

Methods: Children born to HIV positive mothers in high risk groups were evaluated clinically, serologically and virologically every two months. Neuromotor assessment and evaluation of mental development were also performed.

Results: 104 children have been studied over the last 4 years. 91 were born to IVDA mother, 6 to partner of IVDA. 46 children, negative for virus who became seronegative (mean age 11.5, range 6-18) were classified as not infected. Using CDC criteria 30 children resulted infected: 2, positive both for viral culture and PCR, became seronegative and are clinically and immunologically well. 28 were "indeterminate". Considering only the 63 children followed up from birth and older than 15 months, the prevalence of HIV infection is 23.8%. 9 out of the 15 infected children (60%) followed up from birth developed symptoms, all of them in the first year of life; 4 died of AIDS. Hypergammaglobulinemia and T4/T8 ratio<1 were found in all but 2 symptomatic children (one of whom had hypogammaglobulinemia and the other died of AIDS at 4 months). 5 of the 7 children showed immunological alterations before the onset of any symptom. All but one asymptomatic children do not show any immunological alteration.

T.B.P.166

HUMAN IMMUNODEFICIENCY VIRUS-1 (HIV-1) INFECTED INFANTS: ASSOCIATION OF LABORATORY PARAMETERS AND CLINICAL OUTCOME.

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Objectives: To determine the rate of HIV-1 maternal to infant transmission in a population-based prospective study, and to assess factors predictive of clinical outcome in infants born to HIV-1 seropositive mothers. Methods: The infection status of 60 infants was determined by virus isolation and comparison of HIV-1 antibody titers from sequentially collected sera. Virologic, immunologic, and clinical data from uninfected and infected infants of seropositive women and offspring of matched seronegative controls were compared using logistic and multiple regression analysis for factors predictive of outcome. Results: Twenty of 60 (33%) infants are HIV-1 infected by virus culture (19) or persistent antibody (1). The mean enrollment age for infected (5.5 mo.) and uninfected infants (5.1 mo) was similar. Comparison of mean birth wgt., gestational age, and initial hemoglobin, absolute lymphocyte #, CD11, CD8, CD4, CD4/CD8 ratio, IgG, IgA, IgM, and antibody titers found significant differences between the 2 groups for absolute lymphocyte #, CD11, CD4, IgG, and IgA. All HIV-1 infected infants had immunologic abnormalities and 10/14 (70%) had clinical disease by 18 mo. of age. Median followup of the 40 uninfected infants was 11.5 months (range 5-24). All uninfected infants of seropositive mothers were clinically and immunologically similar to age-matched controls. Conclusion: Positive viral cultures, persistent HIV-1 antibody, abnormal levels of IgG and low CD4 counts are associated with infection and clinical disease in infants born to HIV-1 infected mothers.

T.B.P.167

SEVEN YEAR FOLLOW-UP OF HIV INFECTION IN NEONATAL TRANSFUSION RECIPIENTS

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Objective. To extend the observations on the natural history of HIV infection in a cohort of neonatal transfusion recipients now 6-9 years of age.

Methods. The cohort consists of 39 children infected with HIV through transfusions as neonates.

Results. 13/39(33%) children died at a mean age of 50 mo; 26/39 (67%) children are alive at a mean age of 84 mo. Of the 26 living children, 17 are asymptomatic meeting the following CDC classifications: P1A=11 patients, P1B=6. The remaining 9 are symptomatic, classified P2A=6, P2C=1, P2D=2. Thus, 44% of our cohort of children infected through transfusion as neonates remain asymptomatic at a mean of 7 years although 1/3 of them are severely immunocompromised. An additional 18% have non-specific symptoms and only 8% have had opportunistic infections or lymphoid interstitial pneumonitis. The mean age of both the symptomatic and asymptomatic groups is 84 months.

Conclusion. In our 7th year of follow-up, AIDS has developed in 8% and severe immunologic deterioration occurred in 13% of our seropositive patients. Still, 44% of children infected with HIV through transfusion as neonates remain asymptomatic at a mean of 7 years.

T.B.P.168

CLINICAL CHARACTERISTICS OF PEDIATRIC AIDS BELOW AND ABOVE ONE YEAR OF AGE

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New York Medical College, New York, USA.

Objective. To compare the clinical features of children who became symptomatic and were diagnosed as AIDS below one year (group I) vs those above one year of age (group II).

Methods. The study was performed at two public hospitals in New York City on sixty two patients with perinatal HIV infection, admitted from 1984-1988 and followed for 1-50 months (mean 18 mo). All mothers except three were intravenous drug abusers. Group (G) I comprised 42 infants, 14 blacks (b) and 28 Puerto Ricans (PR), 21 males (m) and 21 females (f). The majority became symptomatic in the first 6 months of life. G II consisted of 20 patients, 13 b and 7 PR, 12 m and 8 f, ranging in age from 12.5 months to 72 months (mean 17 mo). Features compared included: lymphadenopathy, failure to thrive (FTT), pneumocystis carinii pneumonia (PCP), lymphoid interstitial pneumonia (LIP), recurrent infections, hepatosplenomegaly, persistent mucocutaneous candidiasis, dermatitis (seborrheic or atopic), chronic parotid swelling, opportunistic infections, CNS abnormalities, nephropathy and cardiopathy.

Results. PCP and candidiasis were significantly more frequent in GI than II: 42% vs 5% resp 50% vs 10%, P=0.005. LIP and chronic parotid swelling were more frequent in GII than I (65% vs 47% resp 10% vs 2%). There were no significant sex or race differences between groups. In GII FTT was significantly more frequent in m vs f (66% vs 12%, P=0.02).

Conclusion. The very young infant has the same clinical manifestations of AIDS as the older one, except that PCP and persistent mucocutaneous candidiasis are more frequent in the former and LIP in the latter.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

T.B.P.169 NATURAL HISTORY OF PEDIATRIC AIDS, 1988

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Objective. To assess mortality data as it relates to pattern of initial presentation among symptomatic HIV infected children.
Methods. The Central New Jersey Pediatric AIDS Group has followed 65 infants and children born to HIV infected mothers, since 1983; 29 of these were in the CDC-P_2 category and represent almost 50 child years of followup. Thirteen symptomatic (P_2) children were enrolled into an open IVIG therapeutic trial.
Results. Recognition of maternal HIV antibody positivity at, or prior to, delivery occurred in only 5 infants. The presentation patterns of the symptomatically HIV infected children are summarized below:

Pattern of Presentation	Number	Mean Age at Diagnosis	Mortality	Mean Age Currently	Mean Age at Death
Overwhelming Pneumonitis prior to 6 mo. of age	9	4 (mo.)	67%	12 (mo.)	6 (mo.)
Failure to thrive, opportunistic infections	12	7 (mo.)	58%	27 (mo.)	19 (mo.)
Lymphoid interstitial pneumonitis	7	19 (mo.)	15%	58 (mo.)	75 (mo.)
Thrombocytopenia purpura	1	4 (mo.)	0%	28 (mo.)	-

In the IVIG treated group, mortality was 38%, and in the untreated group 56%. The median overall survival time of all P_2 children is 75 months but only 9 months for those infants presenting with overwhelming pneumonitis. Five out of six of the infants who died were infected with PCP or CMV or both.
Conclusion. Potential benefit of early diagnosis and preventive therapy among children acutely presenting with overwhelming pneumonitis needs evaluation.

T.B.P.170 HIV INFECTION IN CHILDREN: PRONOSTIC FACTORS FOR THE PROGRESSION OF THE DISEASE.

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Hôp. Bicêtre: U292*; U56**; Hôp. Necker: paediatric immunology*;virology**;Paris, France.

- Some infected children have a rapid evolution. We determine the clinical outcomes related to an early death. We look whether the 1° biological tests have a pronostic value on these outcomes.
- 94 HIV1 infected children all born to HIV positive mothers were followed at Necker Hospital (Paris). They were referred because of HIV related symptoms (P2A in 75% of the cases) at a median age of 10 months. The 1° biological check-up was performed at the time of the 1° visit. The median follow-up at Necker is 15 months; 4 children are lost to follow-up. A Cox model and a Log-rank test have been used for the multivariate analyses.
- clinical outcomes related to an early death: a lymphocytic pneumonia or a bacterial infection are not related; an opportunistic infection (OI) and a severe encephalopathie (Enc.) are:

	nb	age at outbr. (median)	% survival at 3 years (±SD) if event present	absent	p
IO	28	7	40 (±12)	97 (±1.5)	< .001
Enc.	16	9	32 (±14)	92 (±3)	< .001

Both events are also closely related to each other. The 28 children (30%) with an IO and/or an Enc. have a much higher risk of dying rapidly than the others.

biological check-up performed at 1° visit; the pronostic tests on these outcomes are:

- a T4 cells count below 500/mm3	RR = 6.1 [2.1-18]
- the absence of antibody against HIV p25 and/or p18	RR= 5.5 [1.8-16]

The in-vitro proliferation of lymphocytes is closely related to the previous tests.
- In conclusion, the first biological check-up of symptomatic children yields strong prognostic information, leading to discriminate early in life the group of children characterized by a more rapid progression.

T.B.P.171

T.B.P.172 LONGITUDINAL EVALUATION OF IMMUNOLOGIC AND VIRAL MARKERS OF HIV INFECTION IN CHILDREN :CLINICAL CORRELATION.

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Objective.To determine the proportion of HIV infected newborn to HIV Ab+newborn and define changes of immunologic and viral markers that correlate with disease stage,to determine predictive pronostic markers of HIV infection in children.
Methods.We studied 35 HIV+ children born to HIV+ drug abuser mothers,ELISA(EIA) WESTERN BLOT(WB) 19 males and 16 females,from birth to present age. 24,6 months (4-61).Analytical determinations were done every 3-6 months.Specific antibodies for HIV have been measured by EIA and WB assays: HIV P-24 antigen has been measured by EIA;viral isolation has been attempted by co-culturing peripheral blood mononuclear cell (PBMC). CD4 and CD8 were also measured.Clinical stage was evaluated.
Results.Actuarial curve of negative seroconversion of HIV Ab stabilized about 50% after 21 months of age.Thirteen out of 35 children became seronegative between 9 and 21 months of age. 5 out ofthe 13 children after 15 months old.At present,14 out of 22 seropositive children are included into P2 clinical stage.Children into P0 stage showed P-24 Ag and co-culturing PBMC negatives while the 50% of children in P-2 stage showed positive P-24 Ag and 33% co-culturing PBMC positive.Decrease CD4 counts and CD4/CD8 rate were found in P1 and P2 stages.
Conclusion.Some children may become seronegative after 15 months of age.P-24 Ag and viral isolation demonstrated high specifity.The detection of P-24 Ag correlated with advanced clinical and immunological stage of HIV infection.

T.B.P.173 LONG-TERM FOLLOW-UP OF INFANTS BORN TO INTRAVENOUS DRUG USERS OF KNOWN HIV SEROSTATUS IN THE BRONX, N.Y.: CLINICAL & LAB PARAMETERS

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Objective: To study the natural history of HIV infection in infants born to HIV seropositive (HIV+) and seronegative (HIV-) intravenous drug users.
Methods: Sixty-one infants of women attending a methadone maintenance program participated in a long-term HIV natural history study and had serial tests of HIV antibody (Ab), viral culture (Cx), p24 antigen (Ag), T-cell subsets, PCR, physical exams, and were monitored for clinical illness, growth and development.
Results: Median follow up was 80wks for 31 infants of HIV+ mothers and 73wks for 30 infants of HIV- mothers (range: birth to 162 wks).

Table: Clinical Status and Lab Results of Infants of HIV+ Mothers at Last Follow Up

		n	Ab+	p24 Ag+	Cx+	PCR+	mean T4	mean T4/T8
Asymptomatic (ASX)		23	7/23	1/16	0/10	0/10	2987	2.04
HIV-Related Illness	(SX)	5	2/5	1/4	0/2	0/3	980	1.70
AIDS		3	2/3	2/3	2/3	3/3	881	1.26

Of SX infants, 4/8 (50%) had lost Ab by 69 wks, while 16/23 (70%) ASX infants had lost Ab (Western Blot) by 77wks. SX infants presented with clinical illness at a mean age of 25 wks. Six of eight mothers of SX infants vs 8/23 mothers of ASX infants were CDC class III or IVC2 at delivery, and had 3rd trimester T4/T8 ratios <1.0 (p<.01). Upper respiratory infection, otitis media and gastroenteritis occurred with equal frequency in infants of HIV+ and HIV- mothers.
Conclusion: Infants who developed AIDS had lab evidence of infection. Lab studies did not distinguish ASX infants from those with non-AIDS HIV-related illness, making clinical assessment over time the strongest indication of HIV infection.

Pédiatrie : développement neurologique
Pediatrics: Neuro-Development

T.B.P.174 EARLY CNS SIGNS IN INFANTS WITH PERINATALLY-ACQUIRED HIV INFECTION.

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Objective: Identify early manifestations and progression of HIV-related CNS involvement in infants with perinatally-acquired HIV infection.
Methods: Prospective study of infants born to HIV+ women. Controls are infants born to high risk but HIV- women (IVDA, substance abusers or sexual partners of HIV+ or IVDA males). Standard neurologic examinations and Bayley Scales of Infant Development (BSID) are adminstered at 3 month intervals.
Results: Currently, 19 infants are in the HIV+ group; 25 in the control group. In the HIV+ group 9 are >1 yr of age (13-24m). Four have variable degrees of CNS dysfunction manifested by poor head control, abnormalities of tone & reflexes, deviations from the normal rate of acquisition of developmental milestones &/or declining scores on the the BSID. No infant has lost milestones. Five have normal neurologic exams. Of the HIV+ infants <1 yr. of age, 4 have abnormal exams (6-11m). In the control group, 18 are >1 yr. of age (12-20m); 1 is delayed & 1 had motor findings. Of the 7 <1 yr, (7-11m), 3 have abnormal exams. Varying degrees of irritability, tremulousness & tonal abnormalities were noted in the neonatal period in both groups; this may reflect in utero drug exposure.
Conclusion: Infants with congenital HIV infection may manifest early CNS dysfunction. Signs are frequently subtle and may occur prior to or concomitant with systemic illness. In this series 42% of HIV+ infants were affected compared to 20% of controls. As more infants are enrolled into the study longitudinal follow-up with correlation of neuroimaging, neurophysiologic, virologic and immunologic status, should help determine the eventual neurologic course (static, plateau or progressive) and factor(s) predictive of progressive CNS disease.

T.B.P.175

BEHAVIORAL CHANGES IN CHILDREN WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION. Lifschitz, Marta; Hanson, C.; Wilson, G. and Shearer, W.T., Baylor Col. of Med., Houston, Tx, USA.

Objective. Common neurological manifestations in HIV-infected children include acquired microcephaly, developmental delay, and pyramidal tract signs. This is a report of behavioral changes in two HIV-infected girls.
Method. Longitudinal assessment included complete immunological profile, head imaging by CT scan or MRI, and neurodevelopmental examinations.

Results.	Patient #1	Patient #2
Age last evaluation	4 4/12 year	5 7/12 year
Source, HIV stage	Transfusion, P-1 A	Maternal, P-1 A
Serology	(+) EIA, W. Blot	(+) EIA, W. Blot
IgG, mg/dL	2420	2850
Head imaging	Normal	Normal
McCarthy GCI score	97	90

The neurodevelopment of patient #1 was consistently average but she had onset of behavioral problems at age 3½ yrs. A conduct disorder as per DSM-III R criteria was diagnosed based on fire-setting x 4, deliberate destruction of other's property, and physical abuse to people. Patient #2 showed delayed development at 3 yrs., however, at 5 7/12 yrs. intellectual functioning was low average with a deficit in visual-motor-perception. Distractibility was first noted after 3 yrs. and has progressed to attention deficit hyperactivity disorder (ADHD by DSM-III R) responsive to Ritalin.
Conclusion. Behavioral dysfunction in children with HIV infection may be an early manifestation of CNS involvement. These preliminary observations may be relevant for treatment planning and indicate the need for inclusion of systematic behavioral along with neurodevelopmental assessment.

T.B.P.177

AIDS-RELATED PERIPHERAL NEUROPATHY IN CHILDREN AND YOUNG ADULT HEMOPHILIACS

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Objective: To assess the occurrence of peripheral neuropathy in HIV positive children and young adult hemophiliacs.
Methods: A cross sectional study was conducted. Nineteen infants and children and 8 young adult hemophiliacs, all HIV positive were examined by a pediatric neurologist for clinical evidence of a peripheral neuropathy. Seven of the children , all on an AZT protocol, and 2 of the hemophiliacs had clinical AIDS.
Results: No clinical signs or symptoms of peripheral involvement were seen in any of the 27 patients (additionally, electrodiagnostic studies (EMG/NCV) were performed on two of the children and were normal).
Conclusion: The absence of a peripheral neuropathy in children and young adult hemophiliacs contrasts greatly with its occurrence in 35% of adult homosexual AIDS patients. This lack of neuropathy correlates with the absence of a specific autoantibody described in patients with HIV-related peripheral neuropathy (accompanying abstract).

T.B.P.179

NEUROPSYCHOLOGICAL PROFILE OF CHILDREN WITH SYMPTOMATIC HIV INFECTION PRIOR TO ANTI-RETROVIRAL TREATMENT.

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Forty-nine children with symptomatic HIV infection, ranging in age from 6 months to 13 years 10 months were evaluated with an age-appropriate neuropsychological test battery prior to entry on anti-retroviral treatment protocols at the Pediatric Branch, NCI. Children were tested when they were afebrile and free from acute infection. Twenty of these children had been perinatally infected (PERI; Mean age= 2.3 yrs) and were younger than the remaining 29 patients who were infected through contaminated blood or blood products (TRANS; Mean age= 8.1 yrs). Patients were also divided according to whether they had evidence of encephalopathy (ENCEP; eg loss of developmental milestones and/or positive neurologic or head CT findings) or not (INTACT).

Although a somewhat higher incidence of encephalopathy was found in the PERI as compared to the TRANS group (60% vs 31%; p > .10), analysis of the intelligence data indicated only a small, non significant difference in IQ (p> .10) between these groups. On the other hand, ENCEP patients had significantly lower IQ's (p< .001) than the INTACT patients. Infact most of the variance between the PERI and TRANS groups was accounted for by the different incidence rate in encephalopathy. The WISC-R IQ subtest profile in older patients revealed weaknesses often associated with Attention Deficit Disorder.

Analysis of the IQ equivalent scores for all patients on the Vineland Adaptive Behavior Scales, a semi-structured interview administered to the child's parent of primary caregiver once more indicated no significant differences (p> .20) between the PERI and TRANS patients. Again ENCEP patients had significantly lower IQ equivalent scores (p< .001) than INTACT patients.

Correlations between cognitive variables and hematologic, neurologic, and immunologic measures indicated the relation between observed behavior and physical status.

Complex methodological and sampling issues affect studies comparing PERI to TRANS patients. Due to differences in age, different standard IQ tests need to be administered to younger (~PERI) as compared to older children. Patients and family were screened for participation in treatment protocols at NCI, which could have led to selective sampling. Nevertheless, within our sample and with the available assessment methodology no strong indications were found of a more devastating effect of perinatal HIV infection on neuropsychological development.

T.B.P.176

NEUROLOGIC SYMPTOMS AS THE INITIAL PRESENTATION OF HIV INFECTION IN PEDIATRIC PATIENTS

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Objective. To describe the variability in the acute presentation of neurologic disease in children with previously unrecognized HIV infection.
Methods. Retrospective review of all military-dependent children who were diagnosed with HIV at WRAMC in the past 5 years.
Results. Twenty patients with HIV infection, P-1 or P-2, were seen at WRAMC since 1983. Initial clinical presentation with neurologic symptoms as the presenting complaint occurred in 3 patterns, as represented by the following 3 patients. One child with unrecognized perinatal HIV developed fever, stupor, and CSF pleocytosis at age 4 months, and was diagnosed as having CNS toxoplasmosis. Another child with perinatal HIV had regression in developmental milestones within the first 15 months of life, consistent with HIV encephalopathy. Later, he developed rapidly progressive neurologic deterioration and died of EBV-induced primary CNS lymphoma. A third child with transfusion-acquired HIV was considered well until age 4 years when he then began to develop ataxia, spasticity, loss of speech and fine and gross motor skills, and regression of cognitive functions.
Conclusion. CNS manifestations of HIV disease in children may vary from slowly progressive encephalopathy to rapidly deteriorating processes that include opportunistic infections and CNS tumors. Physicians who care for children should consider HIV in the differential diagnosis of any child who presents with neurologic symptoms of undetermined etiology.

T.B.P.178

PSYCHIC DEVELOPMENT OF CHILDREN BORN TO HIV INFECTED ITALIAN MOTHERS.

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Objective: To investigate the influence of environmental conditions quality of mothers-child relationship and HIV infection status on psychic development of children born to HIV infected Italian mothers.
Methods: Psychic development (DA) of children born to HIV positive mothers is evaluated 3-monthly using: 1) development scales (Brunet-Lezine, Bailey) 2) psychodinamic observation of mother-child interaction. The development is considered abnormal when the difference between chronological and developmental age is more than 3 months. The mother-child relationship was classified as "adequate", "partially adequate" or "inadequate" according to a qualitative scale. Social data are evaluated with a special score: 0=deprived; 1=partially deprived-desorganized; 2=fair.
Results:are stratified according to the clinical status of the children (CDC criteria).
Results: 85 children were studied; 42 not infected, 24 infected, 19 indeterminate. There is no significative correlation between infection status and development χ^2 (p=0.98). In both infected and not infected patients there is a correlation between a low DA and inadequate mother -child relationship and a deprived/desorganized environment.
Conclusions: These findings suggest that the development of the children is more correlated to the socio-economic situation and to the quality of the relationship than to the clinical status

T.B.P.180

NEURODEVELOPMENTAL ASSESSMENT OF CHILDREN WITH SYMPTOMATIC HIV INFECTION.

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OBJECTIVE. To assess the neurodevelopmental outcome of 30 children with symptomatic HIV infection.
METHOD. Thirty children attending Pediatric AIDS Clinic at University Hospital have received neurodevelopmental evaluation as part of their clinical care. Infants under 30 months of age were evaluated on the Bayley Scales; those over 30 months on the Stanford-Binet Intelligence Scales, the Peabody Motor Scales, and the Purdue Peg Board. The Gordon Diagnostic System was used to test attention in children over 4.
RESULTS. The mean age of the children in this sample is 22.5 months with two-thirds of the sample under 30 months of age. Sixty-three percent have been diagnosed as having AIDS. Only 3 or 10% are functioning within normal limits. All three are less than 15 months of age. However, all of the rest of the infants under 15 months of age were severely cognitively impaired. Thus being young with this disease does not preclude developmental disability. Over half of the children were mentally retarded; 60% showed severe motor delays or a specific motor deficit. One-third of the children were functioning in the borderline range of intelligence. The two school-age children were in this range and had a learning disability.
CONCLUSION. While the neurodevelopmental sequelae of HIV infection are severe, these children are living and entering school and will require special education.

T.B.P.181

DEVELOPMENTAL ABNORMALITIES MAY OCCUR BEFORE OTHER CLINICAL MANIFESTATIONS OF PERINATALLY-ACQUIRED HIV INFECTION: A COHORT STUDY OF 119 ZAIRIAN CHILDREN BORN TO SEROPOSITIVE MOTHERS

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Objectives. To prospectively evaluate cognitive, motor and neurologic development of infants with perinatally-acquired HIV infection (PI).
Methods. Three groups of children have been followed since birth. Group I consisted of 25 children with HIV(+) mothers and PI(HIV IgG at age 12/18 months or clinical AIDS). Group II had 93 non-infected children with HIV(+) mothers. Group III had 61 control children with HIV(-) mothers. Biannual Bayley Scale of Infant Development testing complemented monthly neurologic examinations.
Results. Mean Bayley Scores in children without AIDS signs/symptoms at the time of developmental testing

	Age 6 months		Age 12 months		Age 18 months	
	PDI	MDI	PDI	MDI	PDI	MDI
Group I	99	93	91	94	92	89
Group II	113	106	99	104	103	97
Group III	111	106	102	107	106	102
(p value)	(NS)	(.01)	(.01)	((.01)	((.01)	((.01)

(PDI=Psychometric Developmental Index; MDI=Mental Developmental Index)
(p values reflect Chi-square for trend for Gps I to III)
Fifteen percent of Gp I children and 4% of Gp II developed a neurologic abnormality during the first 18 months of follow-up (p=.06). Hypotonia was present in all 4 Gp I children with neurological disease. Other Gp I neurologic abnormalities included movement disorder, convulsive disorder and postural abnormality.
Conclusions. Developmental abnormalities may be the first sign of PI. These findings were noted as early as the age of 6 months and continued to be observed through the age of 18 months.

T.B.P.182

NEUROCOGNITIVE FUNCTIONING AMONG INFANTS EXPOSED PERINATALLY TO HIV

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Objective. The Fagan Test of Infant Intelligence (Fagan), a promising visual recognition memory test predictive of later mental retardation in high-risk populations, was selected for use in a prospective study exploring cognitive, developmental, and neurological aspects of pediatric HIV infection. This paper reports on our preliminary findings.
Methods. The Fagan was administered cross-sectionally to 19 infants at either six, nine or twelve months of age, along with Bayley, neurological exam, and laboratory studies. Subjects were the offspring of HIV+ Haitian mothers with no history of IV drug abuse.
Results. The sample yielded a mean Fagan novelty preference of 58.4% (SD=6.4). Two groups displayed attentional problems. Three infants were unable to maintain attention sufficiently to complete the task. Of those completing the task, four displayed abnormal visual recognition memory (novelty < 54%). The results of the Fagan testing are outlined below:

	HIV+	HIV-	Indeterminate	Total
Failed or incomplete Fagan	3	0	4	7
Passed Fagan	1	1	10	12

The HIV+ infants who failed the Fagan showed a consistent CNS involvement on the neurological exam and the Bayley. The one HIV+ infant who passed the Fagan also had normal neurological and Bayley findings. However, of the HIV indeterminate infants who failed the Fagan there was a lack of other abnormalities, with the exception of one infant who has a suspect Bayley.
Conclusions. Three of four infants with perinatally-acquired HIV infection exhibited decreased cognitive functioning as assessed with the Fagan, and consistent with deficits in neurological and developmental functioning. Further descriptive studies based upon infant habituation, memory and cognitive functioning are warranted.

T.B.P.183

NEURODEVELOPMENT IN CHILDREN WITH HIV INFECTION ACQUIRED FROM NEONATAL BLOOD TRANSFUSION

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Objective. The purpose of this report is to examine the neurodevelopmental course of children who acquired HIV infection as Neonatal transfusion recipients.
Methods. Neuropsychological batteries were administered to 16 HIV positive children and to a control group of 33 HIV negative children who also received neonatal blood transfusion. Serial assessments were conducted 8 months apart by a psychologist who was uninformed as to the HIV status.
Results. Scores on two batteries indicated that the HIV positive children were similar on most neuropsychological measures to the HIV negative group as long as 4-9 years after transfusion. The two groups did not differ in their overall intelligence. Deficits were observed in the HIV positive group in measures of school achievement, memory, and fine motor performance. There were no neurodevelopmental differences between the clinically asymptomatic, P1 (N=11) and the symptomatic, P2 (N=5) groups.
Conclusion. A high level of cognitive functioning may be maintained in children who acquired HIV infection as neonatal transfusion recipients. Neuropsychological deterioration observed was primarily in memory, attention, and fine motor behavior. Subtle differences in cognitive functioning may be an early manifestation of encephalopathy in HIV infected children.

T.B.P.184

DIVERGENCE OF ONSET OF NEUROLOGIC AND IMMUNOLOGIC IMPAIRMENT IN INFANTS BORN TO HIV SEROPOSITIVE MOTHERS

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Objective. To compare the onset of neurologic impairment with the onset of immunologic dysfunction in a prospective study of perinatally infected infants.
Methods. Peripheral blood samples from 16 infants born to HIV-infected mothers were obtained during serial follow-up visits. HIV antibody was determined by ELISA and Western Blot. Lymphocyte subsets were determined by flow cytometric analysis of dual-color stained samples using whole-blood lysis methodology. Standard neurologic examinations were conducted at 3 month intervals.
Results. Three of 16 infants were both neurologically and immunologically normal through 2-7 months follow-up. Of 8 infants with neurologic impairment ranging from mild developmental delay to severe cognitive and motor defects, 5 showed early immune dysfunction reflected in decreasing T4/T8 ratios and low total T cells. Two of 3 infants with early neurologic dysfunction not accompanied by immune defects, developed immune abnormalities later. Five infants had normal neurologic exams, but showed immune dysfunction, including hypogammaglobulinemia, decreased total T cells, increased B cells, and decreasing T4/T8 ratios. Three infants remain serologically negative at 12-18 months, including the hypogammaglobulinemic child.
Conclusions. Neurologic dysfunction can precede, or occur in the absence of, immunologic impairment in infants born to HIV-infected mothers. Conversely, infants can show severe immune dysfunction with totally normal neurologic exams.

T.B.P.185

PATTERN OF NEUROLOGICAL ABNORMALITIES IN INFANTS AT RISK OF DEVELOPING AIDS.

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Objective. To identify the onset and nature of neurological abnormalities in infants at risk of developing AIDS.
Method. The offspring of women at risk of developing AIDS- drug-abusers and Haitians- were examined neurologically at birth, then 3-monthly in the first year of life and 6-monthly afterwards, by 2 neurologists blinded to their serological status. Twenty-three with persistent abnormalities were found.
Results. Twenty-two infants showed varying degrees of speech delay, from 9 months to 2 years of age. Fourteen had abnormal hand function over 6 months to 1½-2 years of age. Eleven had persistent primitive responses, 6 being grasp reflexes. Of the 23, 6 are definitely infected, 7 have seroconverted, while 10 have HIV-negative mothers. The abnormal findings were noted in all 3 groups.

	Speech Delay	Abnormal Hand Use	Persistent Primitive Responses	Developmental Delay	Tone/Reflex Abnormalities
Infected	6	4	3	4	5
Seroconverted	6	5	3	3	3
HIV-negative	10	5	4	4	5

Conclusion. It has not been possible to establish a pattern of neurological abnormalities in infants at risk of developing AIDS, compared to their controls, nor is there any difference in the ages of onset. However, so far, only one child has shown any deterioration or loss of established functions.

T.B.P.186

NEUROLOGICAL MANIFESTATIONS IN PERINATALLY HIV INFECTED CHILDREN. A PROSPECTIVE STUDY

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Objective: To study the neurological manifestations in children born to HIV positive mothers.
Methods: All children born to HIV positive mothers in high risk groups are clinically and neurologically evaluated at birth and at 3 monthly intervals. The Brunet-Lezine scale is administered to all children 30 of age and Terman Merril test to the older patients every 3 months. The infected children only undergo CT scan, EEG, CSF study every year of earlier if clinically requested.
Results: Currently 15 children (median age 15.5 range 3-30 months) are infected, 42 are not infected (median age 24 range 9-39 months) 18 are indeterminate (median age 6.8 range 1-13). 4 of the infected children died of AIDS: 2 without any sign of neurological involvement, 1 had a progressive encephalopathy and 1 a primary brain limphoma. Isolated "soft" neurological signs (iperreactive reflexes, asymmetry of tone, unilateral upgoing toes)often transitory, were found in 5 out of the other 11 children and in 11 out of 42 not infected ones.(X^2, p)0.05). None of the infected patients had CT scan abnormalities nor developed microcefaly. We also compared the developmental score obtained at the last evaluation in infected and not infected children. The mean score in the infected was 82.22 and in the not infected 93.15 (p)0.05 Mann Whitney test).
Conclusion : Our preliminary results suggest that neurological and developmental abnormalities do not occur early in the course of vertical HIV infection.

T.B.P.187

EXPRESSION NEUROLOGIQUE GRAVE ET PRECOCE CHEZ UN NOUVEAU-NE INFECTE PAR LE VIRUS VIH.

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Objectif. Mise en évidence d'une infection par le virus VIH 1 chez un prématuré de 34 semaines né de mère positive (stade III CDC) qui présente une symptomatologie neurologique complexe, immédiate, d'évolution rapidement fatale.
Méthode. Les diverses investigations ont été centrées sur : - la neurologie (EEG, scanner cérébral, IRM ; EMG, examen anatomo-pathologique du cerveau, de la moelle et du muscle), - la virologie : sérologies VIH : Elisa (Pasteur), Western-Blot (D de Neumours), Ag p24 (Abbot) ; culture du virus et PCR.
Résultats. L'évolution rapidement fatale (J30) dans un tableau d'hypotonie globale peut faire évoquer soit une myopathie, soit une asphyxie périnatale et a permis de réaliser les examens suivants : - anatomo-pathologiques : au niveau du SNC (lésions ischémiques diffuses) ; - tests VIH : les examens sérologiques sont peu contributifs (sang, LCR) et seule la culture du virus sur les différents tissus et la mise en évidence par PCR ont apporté la preuve de l'infection.
Conclusion. La responsabilité respective du virus VIH et de l'anoxie-ischémie est discutée.

Pédiatrie : transmission verticale et infection par le VIH dans les pays en voie de développement
Pediatrics: Vertical Transmission and HIV Infection InDeveloping Countries

T.B.P.188

INCIDENCE OF OPPORTUNISTIC INFECTIONS IN 196 CHILDREN WITH SYMPTOMATIC AIDS IN KINSHASA

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Objective: To describe the incidence and variety of opportunistic infections in children with AIDS in Kinshasa, Zaire.
Methods: We examined 196 infants and children, one month to 12 years of age, hospitalized with symptomatic AIDS. HIV ELISA and Western Blot tests were positive for each patient.
Results: 127 (65%) children presented with opportunistic infections as follows: 82 (42%) with oral candidiasis, 33 (17%) with cutaneous mycosis, 17 (28%) out of 60 children tested, with tuberculosis, 12 (6%) with herpes simplex, 4 (2%) with mixed oral and cutaneous mycosis, 3 (1.5%) with herpes Zoster and 1 (.5%) with cryptococcal meningitis. It is interesting to note that children over 2 years of age had more opportunistic infections then infants and that Herpes Zoster and cryptococcal meningitis were absent in the infant group.
Conclusion: Oral candidiasis in older children is an important finding suggestive of AIDS. Herpes Zoster and Herpes Simplex, rare in our pediatric population, are being observed with increasing frequency in patients with AIDS. Extensive cutaneous mycosis has been invariably associated with AIDS. Tuberculosis is emerging as an important opportunistic infection in AIDS in Kinshasa. The incidence and variety of opportunistic infections in children in Zaire have different aspects from those found in children in the United States.

T.B.P.189

PERINATAL TRANSMISSION OF HIV INFECTION IN UGANDA: 0-34 MONTHS FOLLOW-UP

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Objective: To determine the rate of HIV transmission from HIV seropositive expectant mothers to their infants and the morbidity and mortality characteristics of such children.

Methods: 87 babies born to HIV seropositive mothers and 64 babies born to seronegative mothers were followed clinically and serologically from birth - 34 months. The HIV status was determined by ELISA and W/Blot studies.

Results; All the study neonates and none of the controls were HIV seropositive at birth. The seroprevalence among the study infants declined to 35% by 15 months and 18.9% by 26 months. During the first year 11 children (14% in the study group died: failure to thrive (FTT) 5, acute gastroenteritis 2, measles 2, meningitis 1, pneumonia 1. Only 1 child (2%) in the control group died of pneumonia. During the 2nd and 3rd years, 2 children died in the study group: Aspiration pneumonia 1, FTT 1: One child in the control group died of poisoning. The remaining children in both groups who have been followed up have responded to immunization, although there is more morbidity among the study group.

Conclusions: 1. The rate of vertical transmission was about 20-30%. 2. Children born to HIV Seropositive mothers have higher infant morbidity and mortality rates compared to controls. 3. Immunization was found to be beneficial in both groups of children.

T.B.P.190

PEDIATRIC HIV INFECTION AT GAFFREE & GUINLE UNIVERSITY HOSPITAL. EPIDEMIOLOGIC, CLINICAL AND SURVIVAL CHARACTERISTICS.

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** Federal University of Minas Gerais (U.F.M.G.) and FIOCRUZ (RJ)

Objectives: To investigate epidemiologic and clinical characteristics and to estimate survival time following initial symptoms among HIV infected children.
Methods: We evaluated 14 HIV infected children seen at Gaffrée & Guinle University Hospital in Rio de Janeiro, Brazil, from Jan.1984 to Dec. 1988. HIV laboratory diagnoses were performed by ELISA and Indirect Immunofluorescence. Clinical classification was based on CDC pediatric case definition. Survival parameters were estimated by product-limit function (Kaplan-Meyer).
Results: Among the 14 children evaluated 8 (57,1%) were perinatally acquired and 6 (42,9%) were blood transfusion related. Mean age at onset of symptoms was 33 months (2 - 108); 11 (78,6%) were males and 3(21,4%) females; 10(71,4%) were white and 4(28,6%)non-white. Maternal risk factors for the perinatally acquired infection were: 5(62,5%) IVDU; 2(25%) blood transfusion and 1(12,5%) bisexual partner. The clinical manifestations observed were: 8(57,1%) secondary infections diseases, 7(50,0%) non-specific findings, 1(7,1%) progressive neurologic disease and 1(7,1%) other diseases. Among 8 children (5 blood transfusion, 3 perinatal), with clearly defined onset of symptoms, 4(50%) had died by Dec 1988. Mean and Median were respectivelly 32,7 ± 8,1 months and 48 months. For the 5 transfusion related cases mean survival was 39,6 ± 10,6 months (median = 48 months) while for the 3 perinatal cases it was 9 ± 2,3 months (median = 11 months).
Conclusions: 1) There is a greater proportion of cases due to blood transfusion, as compared to other countries; 2) Maternal risk factors among the perinatal cases are similar to those reported in other studies; c) Mean survival time is smaller among the perinatal cases as compared to the blood transfusion.

T.B.P.191

KAPOSI'S SARCOMA IN 4 AFRICAN PEDIATRIC CASES

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Objective. To describe Kaposi's sarcoma (KS) in african pediatric cases.
Methods. 4 cases of KS occuring in children have been documented.
Case report N°1. A 8 month-old male african infant was hospitalized for chronic mild diarrhea and disseminated lymphadenopathy. He also had fever, cough, weight loss, herpes-like stomatitis and hepato-splenomegaly. A dozen of black-violet or dark brown skin nodules were present. The presence of antibodies to HIV-GP110 was detected by Western blot. Pathological examination of a lymph node a skin nodule confirmed the diagosis of KS. The lymph node showed lymphoid follicles with lage germinal center and mitotic activity and vascular hyperplasia. The pathological aspect are compatible with a KS at an early stage,with the special infiltrative aspect of AIDS-related KS. Histology of the skin showed vascular hyperplasia and proliferation of spindle cells, with large number of adjacent lymphocytes.
The evolution of the disease was fatal within 2 months. The peculiar aspects of the other 3 cases will be described.
Conclusion. This first pediatric case of KS was typical of the serie of four cases who were refered to the pediatric ward in one year.

T.B.P.192

STANDARDIZED ASSESSMENT OF PSYCHOPATHOLOGY IN AN HIV SAMPLE

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Objective. To assess psychopathology using standardized clinical assessment measures in an HIV community sample.
Methods. The psychopathology of 198 gay and bisexual men, predominantly white, well-educated community volunteers was assessed with standardized measures. The Structured Clinical Interview for DSM-III-R was used to evaluate current and past psychiatric disorders. A structured interview guide was used to administer the Hamilton Depression (HDS) and Anxiety (HAS) Scales.
Results. Only 23% of the 119 HIV+ subjects had a current diagnosis; 16% was the corresponding figure for the 79 HIV- subjects. 8% of the HIV+ subjects and 6% of the HIV- subjects, respectively, had a current Mood Disorder. Average HDS scores were 4.3. for the HIV+ group and 3.2 for the HIV- group ($p=0.057$). Average HAS scores were 4.0 for the HIV+ group and 3.0 for the HIV- group ($p=0.076$). High levels of past but not current drug and alcohol use disorders were diagnosed.
Conclusion. These rates do not support early reports of high levels of depression in HIV+ gay men. However, these early studies used unstructured clinical interviews, interviews conducted by lay persons, and simple severity rating scales. More recent studies using structured assessment measures and clinical evaluations, have reported similar findings to ours. Thus, at least in our cohort, a diagnosis of HIV positivity does not necessarily entail severe psychological distress.

T.B.P.193

CLINICAL BEHAVIOUR OF 13 MEXICAN PEDIATRIC PATIENTS INFECTED BY THE HUMAN IMMUNODEFICIENCY VIRUS

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Objective.- To know the transmission mechanisms and the clinical evolution of the pediatric population infected by the HIV.

Methods.- We studied pediatric patients infected by the HIV from newborn to 13 years old according the Centers for Diseases Control critaria, From january 1985 to december 1988 .

Results.- We detected 13 patients; 10 male and 3 female. We found 7 hemophiliacs patients. Three patients had history for only one transfussion, and other one patient with multiple transfussion. One patient had history of the perinatal vertical transmission milk. The Disease was symptomatic in 12 patients and asymptomatic in other. In the present, 11 patients have development AIDS, and 6 was died. Clinical picture was the following: generalizate lymphadenopaty (13), fever (10), weigth loss (9), severe or recurrent infections (8), protacted diarrhea (7), hepatosplenomegaly (6), gastrointestinal bleeding (3), pneumonia (7), candidiasis (6), sepsis (5), cryptosporidium infection (5), gyardia infection (5), skin herpes infection (3), mumps infection (2), scabies infection (2) and middle ear infection (2).

Conclusión.- The principal mechanism of transmission was blood transfussion or its products; Almost all patients have development AIDS and the 46% had died.

T.B.P.194

PEDIATRIC AIDS: RISK FACTOR DISTRIBUTION AT HOSPITAL EMILIO RIBAS SÃO PAULO - BRAZIL

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Objectives.Pediatric AIDS is being recognized in increasing number of children in our city. Since 1985, the 3rd Inpatients Unit of Hospital Emilio Ribas has been following children with positive epidemiological data for HIV infection. Up to November/88, 89 children younger than 10 years of age were enrolled. All of them fulfill the latest CDC criteria for pediatric AIDS. This report describes the risk factor distribution for the HIV infection in these patients. Methods. It was considered as risk factors:infants born into HIV soropositive mothers and children infected by blood transfusion and/or derivatives. All children and mothers were submitted to a double-Elisa, passive hemmaglutination (Salck-EIE-HIV and Quick HAP-HIV) and Western blot tests (biotech Du Pont Western blot kit). All the children are followed monthly for clinical and laboratorial examination and the ones classified as P-0 are submitted to new tests at the age of 8 and 15 months. Results. Vertical Transmission (71.9%) Maternal risk factor: I.V. Drugs 12(13.5%); high risk sexual activity 14(15.7%); I.V. Drugs and high risk sexual activity 29(32.6%); blood transfusion 1(1.1%); ignored 8(9.0%). Non Vertical Transmission (28.1%):blood transfusion recipient 14(15.79%); hemophiliacs 6(6.75%) and child's history unavailable 5(5.6%). Conclusion. The majority of our children got the HIV infection vertically, as it is observed in other countries. The association of drug-adiction with high risk sexual activity is the main factor for the maternal infection. The number of hemophiliacs in our cast is low because there is another center (Hemophiliacs Center) in our city that follows the majority of the infected hemophiliac children.

T.B.P.195

VALEUR PREDICTIVE DU STATUT CLINIQUE ET BIOLOGIQUE DE MERES HIV + SUR CELUI DE LEURS ENFANTS.

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Objectifs. Evaluer l'influence du statut maternel à l'accouchement sur une éventuelle contamination des enfants.
Méthodes. Le statut clinique, la virémie, le nombre de CD4 ont été mesurés parmi 25 femmes HIV + (20 HIV1, 5 HIV2) à l'accouchement. L'évolution clinique et sérologique et la virémie (V) ont été déterminés chez leurs 27 enfants.
Résultats. 1) La contamination de l'enfant ne dépend pas de la symptomatologie maternelle :

	Enfants infectés, V+				Pas d'infection prouvée*, V-	
Statut mère	SIDA	ARC	LAS	AST	LAS	Asymptomatique (AST)
SIDA : 2	-	-	-	-	-	2
ARC : 9	5	1	-	-	1	2
LAS **: 12	1	-	2	1	2	8
AST : 2	-	-	-	-	-	2

* Age moyen = 22 mois ; $3 < 15$ mois, sérologie +, AST; $14 > 15$ mois. sérologie -. ** syndrome lymphadénopathique. 2) Treize femmes ont eu une virémie : 7 sont V+, leurs 7 enfants sont V- ; 6 sont V- ; 5 de leurs enfants sont V- et 1 est V+. 3) 8 femmes avaient des CD4 < 400 : elles ont 8 enfants dont 5 sont V+; 14 avaient des CD4 > 400 : elles ont 14 enfants dont 2 sont V+, ($p < 0{,}05$).
Conclusions. 1) le statut clinique et virologique maternel à l'accouchement n'est pas prédictif du statut virologique et de l'évolution clinique des enfants.2)Le Nb de CD4 de la mère semble être un facteur prédictif significatif.

T.B.P.196

CRYPTOSPORIDIUM SP AND ISOSPORA BELLI INFECTIONS IN PEDIATRIC PATIENTS

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Objective.It is known that Isospora belli and Cryptosporidium sp are protozoa very frequently associated with acute self limited diarrheal illness in children and young adults. This evolution is not observed among immunocompromised individuals. This report shows the prevalence of Cryptosporidiosis and Isosporosis in pediatric patients with positive sorological anti-HIV tests. Methods. From January/87 to November/88, 25 children varying from 10 months to 10 years were analysed. All of them fulfill the pediatric AIDS criteria (CDC-1987): 4(16.7%) P-0; 1(4.2%) P-1 and 20(79.1%) P-2. All these patients have been followed-up monthly and had fecal samples collected for Cryptosporidium sp and Isospora belli screen. (One daily sample for 3 consecutive days). Results. Parasites were recovered from 13(52%) patients in the group analysed. Cryptosporidium sp isolate was recovered from 10 children (40%) and Isospora belli isolate from 2 patients (8%). Both parasites were recovered from one patient (4%). The recovery of Isospora belli was always associated with diarrheal illness at the moment of the diagnosis, whereas only one of the patients with Cryptosporidium sp presented diarrhea. All the other children with Cryptosporidial infection reported constipation.
Conclusion. Despite of being a tropical country we think that the prevalence rate of Cryptosporidium is higher than what is described in the scientific literature. In patients with Cryptosporidial infection, the main symptom related was constipation, unlikely what is observed among adults.

T.B.P.197

NATURAL HISTORY OF AIDS IN CHILDREN OF AFRICAN ORIGIN SEEN IN BELGIUM: EVIDENCE FOR TWO PATTERNS

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Objective: To describe the diseases indicative of AIDS in children of African origin seen in Belgium.
Methods: The children of African origin with at least one disease indicative of AIDS according to the latest CDC-case definition were selected.
Results: Fourty-four children met the inclusion criteria (male/female ratio = 1). Three (7 %) had a history of blood transfusion in Africa, the others were presumed to be born to an HIV infected mother. Following diseases indicative of AIDS were diagnosed: bacterial infections (n = 24), LIP/PLH complex (23), PCP (10), HIV encephalopathy (9), Candida albicans (5), herpes simplex (1), disseminated BCG (1), HIV wasting syndrome (1), HIV related cancers (1). Thirteen children (25 %) are known to have died, 9/13 before the age of 12 months, all the others (4/13) after the age of 78 months. Thirty-one (77 %) were still alive when last seen (mean age 36 months, median 29 months, range 5-104 months). Twenty children (45 %) had only LIP/PLH complex and/or bacterial infections when last seen (mean age 48 months, median 44,5 months, range 8-103 months, mode 40-49 months), whereas 24 children (55 %) had "true" opportunistic infections and/or HIV encephalopathy and/or HIV related cancers when last seen (mean age 29 months, median 11.5 months, range 4-126 months, mode 0-9 months).
Conclusions: Our data suggest that the natural history of HIV infection in African children is characterized by at least two patterns: one group of infants and younger children with rapid onset, a more severe expression of the disease and poor prognosis, and a second group of older children with later onset, a more chronic expression (only LIP/PLH complex and/or bacterial infections) but with potential poor prognosis after several years of evolution.

T.B.P.198 PERINATAL TRANSMISSION OF HIV-1: IS A DECREASED CD_4 CELL COUNT PREDICTIVE?

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Objective. To investigate possible immunologic, virologic and/or clinical factors which might correlate with perinatal transmission of HIV-1. Methods. Pregnant HIV+ women were followed prenatally and postpartum with testing for immune function, HIV-1 in peripheral blood, and P_{24} Antigen (Ag). Infants were considered infected (+) if they had a + blood culture, and/or + Polymerase Chain Reaction (PCR), ± signs and symptoms. Equivocal infants (E) had equivocal culture results,and/or an equivocal PCR. Uninfected infants (-) had - cultures, - PCR, no signs and symptoms, and no HIV-1 Ab at 15 months. Results. Preliminary data are available on 16 mothers and 15 infants (1 mother had twins, 2 are still pregnant.) Overall, 3/15 infants (20%) were +, 1/15 (7%) was E (further results pending) and one is - but shows cortical atrophy suggestive of HIV-1. No mother had a + P_{24} Ag; 3/16 had + blood cultures resulting in one + infant, one - infant, and one due 6/89. Clinical signs and symptoms in mothers did not appear to correlate with perinatal transmission, but decreased maternal CD_4 cells did:

Pair #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CD_4	209	221	235	272	284	298	304	363	417	466	531	587	674	862	947	1185
Infant	- *	+	+	- **	+	-	due 6/89	-	E	-	-/- ***	-	-	due 2/89	-	-

* sibling died of AIDS ** cortical atrophy in infant *** twins

Conclusions. Preliminary results from this small sample show a decreased CD4 cell count as the only correlate to perinatal HIV-1 transmission. If substantiated by continued study of more mother-infant pairs, this may be of value to HIV+ women deciding whether to initiate or continue a pregnancy.

T.B.P.199 PULMONARY INFECTIOUS COMPLICATIONS IN PEDIATRIC AIDS PATIENTS.

De Paula, Marinella Della Negra; Janini, M.; Queiroz, W.; Hughes, V.; Rodriguez, C.; Lorenço, R.; et al. Hospital Emilio Ribas, São Paulo, Brazil

Objective. Infectious pulmonary processes are very common among HIV infected children. This report shows the etiologic agents more frequently associated with pulmonary disease among our children. Methods. From January/86 up to November/88, 42 children aged from 2 months to 10 years were followed monthly. All of them fulfill the latest CDC pediatric criteria. When there was any suspect of pulmonary disease they were submitted to radiologic and bacteriologic tests (culture of: blood, gastric contents, sputum, pleural effusion, etc.) In many patients the etiology was not confirmed, but supposed by the clinical examination and terapeutic proof. Results. Twenty-seven (64.3%) of the children developed a pulmonary disease. Four children (9.5%) had Pneumocistis carinii pneumonia. In all of them the diagnosis was based on clinical and radiological aspects and terapeutic proof. Twenty-five (59.5%) of the children had, at least, one bacterial pneumonia and the agents more frequently found was S. aureus and S. pneumoniae. Fourteen (33.3%) of the patients had pulmonary tuberculosis. Ten of these patients had gastric contents collected and Mycobacterium tuberculosis was isolated in 7 cases. One of them had acid-fast bacili isolated from liver biopsy.All the 14 had improvement with standard terapeutic. Conclusion. The incidence of pneumocistosis and bacterial pneumonias in this report is compatible with the medical literature. The incidence of tuberculosis seems to be greater than what is described. We believe that this high indicence is due to the high prevalence of tuberculosis in our country.

T.B.P.200 Perinatal and Heterosexual Transmission Through HIV-Positive Women

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Since 1984, we have examined HIV-infected women and their partners in order to gain information on infectiosity, perinatal & heterosexual transmission rates, and possible relations between these factors. 44 Women examined in this period had born a total of 47 children since their HIV infection. 10 children are positive for HIV, 31 are negative for antibodies and direct virus identification; in 6 cases, HIV status is still questionable. A comparison between the group of women having infected their children and those not having transmitted the virus, shows no difference regarding immunological parameters, stage of HIV infection, tests for lues, CMV, and HBV. Of the women having infected their children, 60% were HIV stage 2a (Frankfurt classification); 40% were 2b with a median T4 cell count of 430 (27-984), the median ratio being 0.56 (0.03-0.92), duration of infection being 1-6 years. Out of 44 women, 33 women's partners are known and were tested for HIV: 16 are positive, 18 are negative for HIV. In no case had the man been infected by his HIV-positive female partner; also women having infected their children did not infect their partners.

Conclusion: Regarding immunological status, HIV stage at first examination, and tests for CMV, lues and HBV, there was no difference between mothers of infected, and mothers of non-infected children. The women having infected their children were immunologically good. This allows the conclusion that infection of children is also possible at an early stage of the mother's infection.

T.B.P.201 Immunological,serological and clinical evaluation of HIV pos. pregnant women in relation to vertical transmission of HIV.

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Objective To evaluated the prevalence of vertical transmission of HIV in relation to immunity,HIV related diseases and viral replication in their mothers.

Methods 23 HIV pos.pregnant women(6 IVDA;13 ex-IVDA;3 partners of HIV)have been clinically evaluated and tested for HIV circulating antigen(p24 Ag,Elisa, Abott),antibody(p24 Ab,W.B.,Du Pont)and lymphocyte subset(monoclonal antibodies,Ortho).Their children have been followed bimounthly with clinical, serological and immunological evaluation.CDC classification for paediatrics and adult HIV infection was followed.

Results 5 women were affected by ARC(CD4+mean 390.4S.D.±152.4).1 was p24Ag positive.Their infants were:2 AIDS,1 not infected(anti HIV neg.after 15th m), 2 P0. 7 women were affected by LAS(CD4+ mean 537.28 S.D.±253.1).Their infants were:1 AIDS,1 P1,4 P0,1 not infected(anti HIV neg.after 15th m.). 11 women were asymptomatic (CD4+ mean 607.2 S.D.±260.1).1 was p24Ag positive.Their infants were:1 AIDS,8 P0 and 2 not infected(anti HIV neg.after 15th m.).

Discussion These preliminary results show the importance to followed clinically,serologically and immunologically the HIV pos.women and their children for almost two years from delivery.

T.B.P.202 CLINICAL AND SEROLOGIC PROSPECTIVE STUDY IN INFANTS BORN FROM HIV SEROPOSITIVE MOTHERS.

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Objective: To evaluate the serological and clinical evolution of newborns (NB) from seropositive mothers.

Methods: 70 NB were clinically controlled monthly and serologically (HIV-Ab, HIV-Ag) each two months.

Results: At birth all NB showed IgG Ab against HIV-1 with a mirror pattern in Western Blot (WB) when compared with the mother's serum.
83% of NB with a follow up >10 months turned to a seronegative state in 10 ± 2 months (range 6-14) without clinical symptoms. These seronegative sera were controlled by ELISA and WB, antigaenemia was never detected.
Five infants developed AIDS (P2) and three were in P1 stage in a follow up of>15 months. AIDS diagnosis in four cases was assessed before age of 12 mths
Detection of antigaenemia indicates a poor clinical prognosis.
Mother's serum of patient that developed AIDS before age of 3 mths lacked reactivity against p17.

Conclusion: The rate of maternal-infant transmission was observed in 19% of infants with a follow up > 15 months. Serological monitorization of NB by WB and levels of antigaenemia is very useful to predict diagnosis and clinical evolution.

T.B.P.203 OPHTHALMIC MANIFESTATIONS OF HIV INFECTION IN AN AFRICAN PEDIATRIC POPULATION.

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HIV infection in adults is associated with a wide variety of ophthalmic manifestations. The purpose of this study was to investigate the spectrum of ophthalmic involvement in a pediatric HIV seropositive population.

Methods. All seropositive children attending the department of pediatrics of the Centre Hospitalier de Kigali were referred to the ophthalmology department of the same institution for a routine ophthalmic examination. This included inspection of the outer eye, motility testing, and fundoscopy after dilatation. Children with normal findings had follow up examinations every six months, while those with a pathologic eye exam were seen more frequently. Hundred and ten HIV infected children were followed over a three year period.

Results. Sixty three (57%) children exhibited some form of ophthalmic involvement during the study period. Involvement of the peripheral retinal vessels either in an active form (retinal perivasculitis) or in a cicatricial phase (perivascular sheathing) was the predominant finding. Cotton wool spots, the most common ocular manifestation of HIV infection in adults, were almost absent in these children. Decreased lacrimation indicative of lacrimal gland pathology was another common finding (see table).

Ocular findings	No. of children (%)
Perivasculitis and/or sheathing	52 (44%)
Decreased lacrimation	22 (20%)
Microvascular abnormalities	9 (8%)
Chorioretinitis	6 (5,4%)
Retinal haemorrhages	2 (0,8%)
Cotton wool spots	1 (0,9%)

Conclusion. The picture of ophthalmic manifestations of HIV infection in children is quite different from that in adults.
Although a biological explanation for the observed differences seems likely (immaturity of the immunological system in children), the possibility that our study group is not representative of all HIV seropositive children should be born in mind (survivor bias). We are currently participating in a prospective study on the vertical transmission of HIV in order to document the ophthalmic involvement associated with this infection in a cohort of children to be followed from birth till age 3.

T.B.P.204

ANTHROPOMETRIC MEASURES IN A COHORT OF CHILDREN BORN TO HIV+ WOMEN IN KINSHASA, ZAIRE.

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Objectives. To determine the prevalence and correlates of wasting and stunting in a cohort of children born to HIV+ women.
Methods. Monthly weights, heights and illness experience (diarrhea, pneumonia, fever) were collected on 366 children born to HIV+ women and 513 children born to HIV- women. Weight-for-height (wasting) and height-for-age (stunting) indices were computed using National Center for Health Statistics standards. Data on maternal factors, including socioeconomic status(SES) were also collected.
Results.

	HIV+ mother		HIV- mother	p value
	Infected	Not infected		
7 Months	N=97	N=259	N=494	
% Stunted	15.5	6.8	5.5	0.002
% Wasted	4.1	1.9	1.0	0.08
12 Months	N=81	N=259	N=501	
% Stunted	19.3	7.3	6.0	0.0001
% Wasted	16.3	11.2	4.8	0.0001

Other independent correlates of wasting and stunting at 12 months include low SES (p=0.0000) and multiple illnesses (p=0.0000) and low birthweight (p=0.0000). Infected children stunted at 12 months had higher mortality at 18 months than non-stunted (38% vs. 6%, p=0.002).
Conclusion. Stunting in conjunction with HIV infection may place these children at high risk of premature mortality.

T.B.P.205

HIGH HIV-ASSOCIATED INFANT MORTALITY CORRELATES WITH POOR POST-PARTUM MATERNAL HEALTH: 18 MONTHS FOLLOW-UP OF 477 CHILDREN(CH) BORN TO HIV(+) MOTHERS(MO) IN ZAIRE

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Objectives. To determine mortality/1000 live births and associated postpartum maternal risk factors in CH with perinatally-acquired HIV infection(PI).
Methods. Infant cause of death and maternal factors predictive of PI and infant mortality were prospectively determined during the 18 month postpartum period in 3 groups of CH and their MO. Group I had 120 CH with PI (HIV IgG at age 12/18 months or clinical AIDS) and 70 HIV(+) MO. Group II had 357 CH without PI and 70 HIV(+) MO. Group III had 390 control CH without PI and 70 HIV(-) MO. CH were investigated in a prospective cohort study and MO in a nested case-control study.
Results. Child mortality rates and prevalence of maternal factors by group

CHILD MORTALITY (Prospective cohort study)	GpI	GpII (P)	GpIII (P)
Infant mortality rate(through age 12 mos.)	225	188 (<.01)	39 (<.01)
Total mortality rate(through age 18 mos.)	358	204 (<.01)	42 (<.01)
Cause-specific mortality(through age 18 mos.)			
Diarrhea(DIA)	183	48 (<.01)	8 (<.01)
Pneumonia(PNEU)	75	25 (<.01)	2 (<.01)
Meningitis	33	20 (<.05)	5 (<.01)
Measles	25	8 (<.01)	5 (<.01)
MATERNAL FACTORS (Nested case-control study)			
Clinical AIDS(%)	40%	19 (<.01)	9 (<.01)
Tuberculosis(%)	13%	3 (<.05)	1 (<.01)
Hospitalized(%)	26%	10 (<.01)	1 (<.01)
Infant dying(%)	31%	7 (<.01)	3 (<.01)
Mother dying(%)	9%	12 (NS)	0 (<.01)

(p values are for comparison of Gp I with Gp II and Gp I with Gp III)
Conclusions. CH born to symptomatic HIV(+) MO had high mortality rates, particularly from DIA and PNEU, during the first 18 months of life. MO of CH who died appeared more infectious in the perinatal period and/or less able to optimally care for their CH in the postpartum period.

Pédiatrie : Immunologie
Pediatrics: Immunology

T.B.P.206

PERINATAL IMMUNE FUNCTION IN OFFSPRING OF HIV SERONEGATIVE WOMEN AT RISK FOR AIDS.

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Objective. To examine possible association of maternal immune function on the immunologic function of infants ≤ 6 weeks old.
Methods. Substance abusing women at risk for HIV infection and their infants ≤ 6 wks. old were tested for their immune function. Patients were excluded if HIV infected. Lymphocyte phenotyping was performed on Ficoll-Hypaque prepared mononuclear cells (MNC) and examined by 2-color flow cytometry. Standard PHA stimulated blastogenesis was assayed using cultures of 10^5 MNC per well cultured for 72 hrs. in the presence of 1 or 0.25 ugm PHA.
Results. Significant, possibly maturation dependent, differences in the % of CD4 (p=.043) and CD8 (p=.002) cells was observed between infants and their mothers. CD4/CD8 ratio was 1.6±0.6 in mothers and 3.6±1.9 in infants. A significant correlation existed between the Leu 19 bearing lymphocytes (an NK subpopulation) of the mother and infant (p=0.014, corr. coef. 0.7438, n=10) with a mean % Leu 19 of 11.5±5.7 for mothers and 9.8±5.3 for infants.

PHA response was significantly different between mothers and their infants at 1 ugm (p=.005) and 0.25 ugm (p=.009). Despite the differences, a significant correlation existed between infant and mothers' response at 0.25 ug (p=.004, corr. coef. 0.7, n=17).
Conclusion. Correlation between the infant and maternal immune function suggests an influence of the prenatal maternal environment on the infant immune function, irrespective of HIV infection. Further examination of the interaction between mother and infant immune function is needed.

T.B.P.207

ADCC IN HIV-1 INFECTED CHILDREN

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Objective. To determine the prevalence of antibodies directing gp120 specific antibody-dependent cellular cytotoxicity (ADCC) within a cohort of HIV-1 infected children.
Methods. Sera from 35 HIV-1 infected and 10 seronegative children (ages 1 mos-13 yrs) were evaluated for ADCC directing activities in a series of 6-hr ^{51}Cr release assay using normal donor lymphocyte effectors and gp120 coated CEM.NKR (natural killing resistant) targets.
Results. ADCC activity was detected in 71.4% of the pediatric sera tested. The mean percent specific lysis was 17.2% - approximately half the level seen among infected adults. Among children with ADCC activity maximal lysis occurred between a serum dilution of 1:200-1:2000 (mean titer 1:950). ADCC activities varied little among 9 of 10 children followed over one year. One infant with vertically acquired HIV did not develop ADCC activity until 12-17 months of age. Minor trends were noted in relation to ADCC activity correlated with age and mode of acquisition. ADCC did not differ significantly when divided by CDC pediatric disease classification.
Conclusion. ADCC directing HIV-1 specific antibodies are present in nearly 3 of 4 infected children. Levels of ADCC, though highly variable, are considerably lower than adult levels suggesting a possible rationale for passive antibody therapy in infected pediatric patients.

T.B.P.208

LONGTERM-FOLLOW UP OF IMMUNOLOGIC PARAMETERS IN HIV-EXPOSED INFANTS

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Introduction: Infants with ARC or AIDS following vertically acquired HIV-infection develop severe B- and T-cell defects.The longterm follow-up of immunologic parameters was studied in vertically HIV-infected versus HIV-exposed infants, who became HIV-Ab negative and were otherwise healthy.
Methods: Since 1985 35 children could be evaluated clinically, serologically, virologically and immunologically in regular intervals. The following immunologic parameters were explored: Total number of CD4, CD8, CD20 positive cells, stimulation with Phytohaemagglutinin (PHA), OKT3, Pokeweed Mitogen (PWM), Staphylococcus aureus protein (SAC) and different antigens (Mumps, Tuberculin, Vaccinia, Streptolysin O, Tetanustoxoid). The infected group included 15 infants; 12 children lost HIV-Ab and are clinically healthy and in 8 children the infection is still uncertain.
Results: The total number of CD4 positive cells in HIV infected children younger than 20 month without AIDS is comparable to the CD4-cell-count in HIV-Ab negative children. This number decreases in older infected children and in children with AIDS, despite IVIG-therapy. Pathologic stimulation data of PHA and OKT3 correlates with the course of CD4 cell numbers and CD4/CD8 ratio. The stimulation with PWM and particularly SAC seemed independent of CD4 cell count. PWM stimulation in infected children is already low when CD4-cell-counts are still normal. However, when CD4-cell counts are low, stimulation data of all mitogen are pathologic. The antigenic stimulation could not be demonstrated either in HIV-infected nor in HIV-Ab negative infants under the age of 20 months.
Conclusion: Both asymptomatic HIV-infected infants and HIV-exposed infants, who became HIV-Ab negativ have normal immunological functions in the first 20 month of their life. Then in HIV-infected infants a progressiv immunological deterioration develop despite therapy with i.v. immunoglobuline.
With cautious interpretation of our data PWM-stimulation seems the earliest immunologic marker for HIV-infection.
For routine immunological surveillance of asymptomatic HIV-exposed children quarterly determination of the CD4/CD8-Ratio is sufficient.
(With support of the BMJFFG, Titel 1502/[illegible] and the BMAS Titel 71)

T.B.P.209

HIV-SPECIFIC IMMUNE RESPONSES IN CONGENITAL HIV INFECTION.

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Objective: To investigate HIV-specific immune responses in infants and children with congenital HIV infection.
Methods: Diagnosis of HIV infection was made in 7 children by viral isolation. HIV-specific antibody-dependent cell-mediated cytotoxicity (ADCC) was studied in all of the children using an EBV-transformed lymphoblastoid cell line (BLCL) infected with recombinant vaccinia (vac) virus vectors expressing HIV envelope glycoproteins (env) as target cells. HIV specific cytotoxic T-cell (CTL) responses were studied in five of the seven children using B LCL's infected with recombinant vac expressing HIV env or gag proteins as target cells and freshly-isolated autologous lymphocytes as effector cells.
Results: ADCC antibodies directed against env were detected in five of the seven children (titers 1:100 to 1:100,000). These antibodies were detected as early as one month of age and as late as sixty months of age. Progression from asymptomatic to symptomatic infection has occurred despite sustained ADCC titers in these children.

All five children tested demonstrated CTL responses against both the gag and env proteins (vac alone 4.9%, vac/gag 11.6% and vac/env 21.4%).
Conclusions: Active HIV-specific ADCC and CTL responses can be detected in congenitally-infected children may be important in the immunopathogenesis of HIV infection.

T.B.P.210

HIV INFECTION IN INFANTS: NATURAL HISTORY AND OUTCOME

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Objective. To deterine the natural history and outcome of HIV infection in infants.

Methods. 35 children born to seropositive women were followed from birth to 18 months. Physical exam and laboratory data were collected at 2,4,6,9 and 12 months of age. Nine of these children were confirmed infected by increasing IgG against HIV; 6 children were documented by the presence of IgM against two or more antigen classes of HIV. The remaining 20 children served as non-infected controls.

Results. The IgG seroconverters developed unusual degrees of adenopathy by 2 1/2 months, skin disease at 3 months, splenomegaly by 4 months, hepatomegaly by 5 1/2 months, and neurologic and laboratory abnormalities by 6 1/2 months of age. These findings were significantly different from the non-infected children. Although the IgM seroconverters showed increased adenopathy, neurologic abnormalities and skin disease, none of these abnormalities were significantly more frequent than in controls. All of the IgG positive children fell within P2 classification by 12 months of age, 4 developed AIDS. Only 1 of the IgM seropositive children fell in the P2 category.

Conclusion. Children who develope IgG against HIV within the first year of life appear to have a worse prognosis than those who are solely IgM seropositive. This suggests that isolated IgM seropositivity is a good prognostic indicator in HIV infected children.

T.B.P.212

SERUM INTERLEUKIN 2 RECEPTOR (sIL-2R) LEVELS IN NEONATES BORN OF HIV-INFECTED MOTHERS: PRELIMINARY RESULTS

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Objective. To state whether sIL-2R levels present any difference between infected and non-infected neonates.

Methods. sIL-2R serum samples were quantified using an ELISA method (T Cell Science) in the 7th and 14th month in 13 neonates born of anti-HIV positive mothers. IgG anti-HIV (ELISA,Abbott; Western Blot, WB-DuPont), IgM anti-HIV (WB-DuPont) and p24 Ag (ELISA,DuPont) were tested. Children who became seronegative were considered as non infected children (all asymptomatic, persistently IgM anti-HIV and p24 Ag negative) (n=5). Symptomatic or immunodepressed children (n=5), asymptomatic and immunocompetent IgM anti-HIV and/or p24 Ag positive at any age (n=3) were considered infected.

Results. sIL-2R levels were quite comparable in the 7th month between the two groups (2392±901 versus 2781±897). In the 14th month sIL-2R levels were decreased in all 5 non infected children and increased in all 8 infected children (mean: 1602±433 versus 3485±1370).

Conclusions. These preliminary data seem to indicate a possible correlation between sIL-2R variable levels and the serological and clinical status of children studied.

T.B.P.214

IMMUNOLOGICAL ABNORMALITIES IN HIV INFECTION BY VERTICAL TRANSMISSION

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The first risc for AIDS in Spain is drudaddiction and the number of cases by vertical transmission is 2,6 % of the total.

Immunological abnormalities are very severe in children infected during pregnancy or perinatally,and early diagnosis is important to stablish therapeutic protocols to avoid progression of the disease.

We have studied the synthesis of lymphokines (IL-1,IL-2 and γ-IFN) and the production of Ig "in vitro"in a group of 15 HIV + children (4 m.to 4 y.old in order to define the mechanism involved in the immunodeficiency,mainly of the antibody response,that conditions the high frecuency of bacterial infections demoentrated in these patients.

Lymphocyte subsets,Ig and Ig G subclasses and antibody levels,and lymphocyte response to mitogens were studied in all patients with standard method Lymphokines were measured in PBL culture supernatants after stimulation with LPS/ 24 h.(IL-1) and PHA/ 48 h.(IL-2 and γ-IFN) with ELISA and RIA methods respectively.Production of Ig "in vitr" was quantitated on supernatants of PBL cultures stimulated with PWM/12 days.

Synthesis of Il-1 is very high,included in the unstimulated cultures, but IL-2 and γ-IFN decreases more rapidely during evolution ofthe disease. Although hypergammaglobulinemia is a common feature of these patients we have detected 2 cases of Hypogammaglobulinemia and poor antibody response and low Ig G_2 levels in half of the cases.

New therapeutic protocols with lymphokines must be considered.

T.B.P.211

PERINATAL TRANSMISSION OF HIV - INDICATORS OF INFECTION

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Objective: To define the natural history of vertically acquired HIV infection and to elicit methods for early diagnosis.

Methods: Forty nine index infants born to HIV seropositive mothers have been followed up for a median duration of 27 months, together with 24 control infants of HIV seronegative mothers.

Results: Clinical signs and symptoms were non-specific, and seen in both index and control children. Significantly more index children showed persistent lymphadenopathy (23% vs 0% $p<0.05$) and recurrent respiratory infections (30% vs 9% $p<0.05$). Laboratory abnormalities were non specific and also seen in both index and control children. Within index children, four had proven HIV infection (HIV Ab, Ag and culture positive) while 37 over the age of 18 months were presumed uninfected on clinical and laboratory criteria. In the infected children, hypergammaglobulinaemia was detected as early as six months, often before the onset of clinical signs or symptoms. With progression of disease, other useful laboratory markers were T4 lymphopaenia and thrombocytopenia.

Conclusion: In the absence of specific clinical criteria for diagnosing HIV infection, a useful early laboratory marker is hypergammaglobulinaemia; while T4 lymphopaenia and thrombocytopenia occur with disease progression.

T.B.P.213

SERUM NEUTROPHIL ANTIBODIES IN CHILDREN WITH HIV INFECTION

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Objective: To determine the prevalence of serum neutrophil antibodies (NA) in children with HIV infection and the relationship of NA to neutropenia in these patients. Methods: Serum was obtained from 18 HIV-infected children, 9M, 9F, 1 to 7 years of age (mean 3.5 ± 1.5). 3 were asymptomatic (P-1), 6 had ARC (P-2A,F) and 9 had AIDS (P-2B,C,D). Neutrophil (N) counts were calculated from routine blood counts. IgG and IgM NA were detected with an indirect immunofluorescent assay. N from normal donors were incubated with patient serum, labelled with FITC-goat anti-human-IgG or -IgM, and analyzed with a FACScan® automated flow cytometer. A test serum was considered positive if a definite fluorescent peak shift was observed on the histograms generated with N from 3 donors. Normal donor sera are negative for NA with this assay. Results:

	P-1 (3)	ARC (6)	AIDS (9)
N count	2090 ± 632	3142 ± 1412	4529 ± 4039
+ IgG NA	3	5	6
+ IgM NA	3	6	7

Two patients had neutropenia, 1 had negative IgG NA and 1 had negative IgM NA. There was no correlation between reduced N counts and positive or negative NA assays. Conclusions: IgG and IgM NA were detected in most HIV-infected children. The presence of NA was not related to clinical status or N counts.

T.B.P.215

IMMUNOGLOBULIN E (IgE) IN CHILDREN WITH ADQUIRED IMMUNODECIENCY SYNDROME (AIDS).

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Serum IgE levels are increased in some congenital T cell deficiencies and autoimmune disorders. IgE synthesis is regulated by cooperation between T helper and B cells. Patients infected by Human Immunodeficiency Virus (HIV) show an early increase in serum IgG and IgA, indicating and B-cell polyclonal activation.

To determine IgE role in HIV infected children, we have measured serum total IgE (PRIST, paper immunosorbent test), normal control .values between 0.4 and 90 ui/ml, (m± 2sd), in two groups of children. 1/ In 20 HIV seropositive asymptomatic children, older than 15 months. 2/ In 17 AIDS children, P-2 status (CDC 1987).

In the first group a variable increase of immunoglobuline G and A was found, with normal serum levels of IgE. In the second group of children, serum IgG levels were between 2000 and 7000 mg/dl, IgA 200-500, and IgE level were normal, less than 90 ug/ml, in all children but one. There out of 17 AIDS patients showed hypersensitivity reaction against milk proteins, studied by specific IgE and skin test.

In conclusion, the pattern of T-cell disoder produced by HIV infection does not usually increase serum IgE levels. First type immune reactivity is preserved in HIV infected children.

Pédiatrie : marqueurs
Pediatrics: Markers

T.B.P.216

EARLY DETECTION OF HIV INFECTION IN CHILDHOOD.

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It is unclear the fiability of the anti-HIV detection in children from HIV-seropositive mothers, as the maternal antibodies and the p24 antigen (HIVAg) remain in children for a mean time of 9-10 months. For this reason is necessary to develop new diagnostic techniques for the early identification of the current HIV infection in these children. With this purpose we have studied the presence of HIV-DNA in PBMC from 17 children (mean age: 14.8 ± 8.1 months; range: 1-35 months) born from anti-HIV positive mothers, and we have compared it with the anti-HIV detection by Western-blot and serum HIVAg by EIA. HIV-DNA was detected in 10 µg of total DNA isolated from the PBMC, by slot-blot hybridization using a ^{32}P-HIV-RNA probe.

Anti-HIV was found in 11/19 (61%) of the children, circulating HIVAg was present in 2/18 (11%) and HIV-DNA in 4/18 (22%) of them. Out of the 4 HIV-DNA positive cases, 2 children (13 months each) presented anti-HIV but the HIVAg was undetectable, 1 child had anti-HIV and was also HIVAg positive, while in the remaining child (15 months) these markers were negative. All of them were asymptomatic.

In conclusion: 1) The absence of HIV-DNA in children under 1 year old could indicate that these children do not have HIV infection and the anti-HIV antibodies are from their mothers. 2) HIV-DNA detection allows the rapid diagnosis of HIV infection in asymptomatic children even without other viral markers. However, these preliminary results will be completed with a dynamic study in a wider population.

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T.B.P.218

IgG SUBCLASS CONCENTRATIONS AND ANTIBODY LEVELS TO BACTERIAL TOXOIDS IN CHILDREN WITH HUMAN DEFICIENCY VIRUS (HIV)

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Infection with HIV leads to a combined immunodeficit. As a result of polyclonal B-cell activation there is a significant increase in the serum immunoglobulin levels. The specific humoral immune response is, however, usually impaired. We have investigated to what extent the levels of IgG subclasses undergo change as a result of HIV-infection. - In the period from January 87 to January 88 we carried out an investigation of immunoglobulin subclasses in a total of 27 children exposed to HIV. Of these children 14 had proven HIV-infection, 13 (aged over 15 month), who had been previously HIV-antibody positive, have remained negative up till the present time and have shown no clinical and immunological signs of HIV-infection. No patient was given intravenous IgG therapy before or during the investigation. The immunoglobulin, diphtheria and tetanus antibody levels of our patients were compaired to a healthy control group of 120 children of different ages. - IgG subclasses were determined by radial immunodiffusion, antibody levels to tetanus (TT) and diphtheria (DT) toxoids by enzyme immuno assay. Levels below 0,1 IE/ml were considered not to be protective for both. - In the group of 13 previously HIV-antibody positive children (now HIV-antibody negative) normal IgG subclass levels were found. In contrast, 13 of 14 HIV-positive children showed a significant increase in serum IgG1 and IgG3; 2 of them additionally showed decreased IgG2 levels. - 8 of 10 HIV infected children showed protective antibody levels to TT and 3 of 10 to DT. All non infected children had protective antibody levels to TT, but antibody levels to DT were not protective in 4.

We conclude that IgG subclass abnormalities are a frequent finding in HIV-infected children especially a polyclonal increase in IgG1 and IgG3. Longitudinal observation is necessary to determine whether the development of an IgG2 subclass deficiency is an additional indication for intravenous immunoglobuline therapy. Supp.by Ministry of Health (BMJFFG, BMAS)

T.B.P.220

SEROLOGIC RESPONSE TO HIV INFECTION IN INFANTS.

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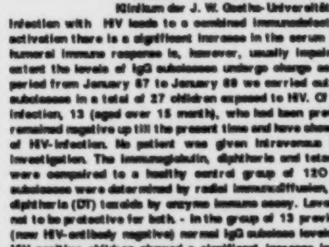
Objective. To document the antibody response to HIV infection in neonates.
Methods. Blood was collected from 35 children born to seropositive women at 2,4,6, and 12 months. Serum was assayed using the DuPont HIV ELISA and P24 assay. IgG and IgM Western Blots were run using strips from Organon-Technica and sequential addition of biotinylated anti-IgG (H+L) or IgM(u) followed by biotin-avidin HRPO, and then DAB.



Results. 7 children showed increasing anti-HIV IgG titer. Eleven children demonstrated IgM antibody against multiple antigens of HIV, 6 of whom showed only IgM isotype synthesis. P24 antigen was detected in 7 children. The 20 non-infected children had negative assays by 12 months.
Conclusion. The kinetics of loss of maternal antibody and the class specific anti-HIV antibody response are demonstrated in neonates.

T.B.P.217

DETECTION OF SPECIFIC IgM ANTIBODY BY RADIOIMMUNOPRECIPITATION ASSAY FOR EARLY DIAGNOSIS OF HIV INFECTION IN INFANTS

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Objective. To evaluate IgM-specific HIV antibody (Ab) by radioimmunoprecipitation assay (RIPA) in infants born to seropositive mothers as a tool for early diagnosis.
Methods. Sequential sera from 5 HIV-infected infants were analyzed by standard RIPA with protein-A Sepharose and by RIPA-IgM. For the latter, CNBr-activated Sepharose 4B was coupled with purified monoclonal Ab to human µ-chain. Sera were incubated with anti-µ Sepharose beads and washed. (^{35}-S)HIV antigen was then added. Bound proteins were separated by SDS-PAGE and revealed by autoradiography. Specificity of IgM reactions was tested after serum adsorption on IgG-coated beads or with anti-IgG serum.
Results. IgM Ab to gp 160/120 and p24 were detected in 15/21 sera from all 5 infants. Comparison of Ab patterns observed with standard RIPA and RIPA-IgM revealed that anti-HIV IgM appeared at 8 to 13 months of age, after disappearance of maternal Ab and paralleled *de novo* Ab synthesis. IgM Ab persisted for 26-30 months in 3 children. RIPA-IgM reactivity was still observed after removal of rhumatoid factor or IgG.
Conclusion. Detection of IgM-Ab did not allow early diagnosis of HIV infection in the first months of life. Further studies are required to determine the specificity of IgM reaction in older infants.

T.B.P.219

WESTERN-BLOT QUANTITATIF : SUIVI DES NOUVEAUX-NES VIH SEROPOSITIFS

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Objectifs. Etudier la cinétique des différentes spécificités Ac anti-VIH avec le Western-blot (WB) quantitatif chez un enfant né de mère séropositive.
Méthodes. Nous avons étudié une enfant née le 16.1.87 de mère séropositive, et qui à l'âge de 2 ans est toujours asymptomatique. Le WB quantitatif (Du Pont De Nemours) consiste en une lecture densitométrique des bandes réactives, permettant par l'obtention d'une courbe une quantification précise de chaque spécificité Ac; les résultats sont exprimés en intégrales représentatives de la surface des différents pics. Les titres d'Ac totaux (Elavia Diagnostic Pasteur) sont déterminés par comparaison de la densité optique de l'échantillon à celles d'une gamme étalon.
Résultats.

	Titres	Ac gp160	gp120	p66	p55	p51	gp41	p31	p24	p17
20.02.87	20000	4310	1214	2309	7250	1763	12770	10907	16127	18520
22.05.87	3000	3721	1928	859	604	1012	3719	3044	2639	1912
16.11.87	500	1350	276	276	0	0	0	0	851	537
10.01.88	100	531	0	0	0	0	0	0	0	0
23.09.88	100	0	0	0	0	0	0	0	0	0

Dès le 4e mois, la réactivité de toutes les spécificités Ac diminue, parallèlement à la diminution des anticorps anti VIH-1 totaux. A 1 an : les Ac anti VIH (ELISA) sont nuls; mais en WB quantitatif, les Ac gp160 persistent.
Conclusion. Ces données confirment la grande sensibilité du WB quantitatif.

T.B.P.221

THE USE OF ANTI-HIV IgM IMMUNOBLOT IN THE DIAGNOSIS OF NEONATAL HIV INFECTION : A REPORT OF 5 CASES.

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Chulalongkorn University Hospital, Bangkok, Thailand.

Objective. To evaluate the reliability of anti-HIV IgM immunoblot in the early diagnosis of HIV infection in babies of HIV-infected mothers.
Methods. Paired maternal and cord blood from 5 babies at Chulalongkorn University Hospital from HIV-infected intravenous heroin abusing mothers were studied. Anti-HIV IgM immunoblot was modified from Pasteur commercial kits by changing the enzyme conjugates to rabbit anti-human IgM, followed by peroxidase labeled avidin-biotinylated goat anti-rabbit IgG.
Results. All newborns were anti-HIV positive at birth due to the transplacental transfer of IgG antibodies as evidenced by the identical patterns on IgG immunoblot. Using commercial ELISA kit from Diagnostic Pasteur could not be detected in any mothers or babies at birth. Anti-gp160 IgM, anti-gp120 IgM and anti-p24 IgM were found 5, 2 and 4 cord blood specimens respectively. Paired sera from 3 mothers showed weakly positive anti-gp160 and anti-p24 IgM bands. At 2-month follow-up, 2 infants developed additionalanti-gp120 IgM bands. One infant has been followed for over 6 months. Her anti-HIV IgM bands disappeared and was replaced by weakly positive anti-gp160 IgG.
Conclusion. Our preliminary study indicates that immunoblot can be satisfactorily used anti-HIV IgM to detect early HIV infection in newborns. Our results indicate that transplacental HIV infection has occured in all 5 babies studied.

T.B.P.222 IS THE IgM ANTIBODIES STATUS A USEFUL MARKER TO ASSESS THE NEONATES CONTAMINATION BY HIV-1 ?

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Objective. Realisation of an early diagnosis of congenital or neonatal transmission in order to initiate an immediat therapy against HIV-1.
Methods. We tested IgM antibodies in 53 neonates born to intravenous drug abusers (N=45) heterosexually contaminated (N=7) and "unknown" mothers (N=1) using the Western-blot assay (Du Pont HTLV-III Western blot IgG). The test was performed at birth and/or during the clinical and biological follow-up of the neonates (mean:14,5 months). The test was considered positive when antibodies against the p24 protein were present. The results of the test were compared with the infants'parameters (clinical status, p24 antigenemia, anti p24 antibodies titers and IgG antibodies persistance beyond 18 months) and the mothers'parameters (clinical status and HIV-1 antibodies titers at the delivery).
Results. We could form 3 groups : the first included 28 children who where always IgM negative, the second group included 15 IgM positive children at a given time, and the third, 10 children with borderline results of the test at a given time. In the IgM positive group 9 children were diseased (class P2), 2 had borderline clinical status and 4 were healthy. Nevertheless, statistically significant difference was present between the number of IgM positive and IgM negative diseased children ($p < 0,02$ with IRWIN-FISHER Test).
Conclusion. The results indicate that the IgM screening may be useful as a supplementary marker in the assessment of the children contamination by the HIV-1.

T.B.P.223 ENUMERATION OF PERIPHERAL BLOOD ANTIBODY-SECRETING CELLS AS A DIAGNOSTIC AID FOR HIV INFECTION IN CHILDREN.

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Objective: To evaluate the enzyme-linked immunospot (ELISPOT) for diagnosis of HIV infection in symptomatic children and infants born to seropos. mothers.
Methods: The ELISPOT, using a gP41 recombinant protein, was applied to peripheral blood mononuclear cells (PBMC) obtained from 31 negative children, 28 children with ARC/AIDS, and 27 infants born to seropos. mothers between 1985 and 1988; EIA and p24 antigen assays were also obtained.

Results:

	#tested	#HIV ASC+	# HIV ASC-
A Children with ARC/AIDS	28	20 (71%)	8 (1 with agamma.)
B Infants born to seropos. mothers	27	6 (23%)	21
C Control children	31	0	31 (100%)

HIV ASC positivity ranged from 8 to 220 per 1 million PBMC. Of the 6 ASC+ children born to seropos. women (all still EIA+), one was ASC positive at 1 mo. of age, the earliest time of ELISPOT testing in all groups (A-C). When repeated in 3 infants, the assay was positive in all three, who are now symptomatic. A fourth ASC+ symptomatic infant had virus pos. amniotic fluid in utero. Of the 21 ASC- children, 15 have been repeatedly ASC- and 9 are no longer EIA+. All infants in group B have been p24 antigen negative.
Conclusion: This rapid (<24 h) assay, which can be performed on shipped or frozen cells, appears to be specific, although its sensitivity could be enhanced by methods under current study. The HIV ELISPOT could prove particularly helpful in the early diagnosis of HIV infection in children.

T.B.P.224 RECOVERY OF HIV FROM LYMPHOCYTES AND MONOCYTES OF SYMPTOMATIC HIV INFECTED CHILDREN.

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Objective. Correlation of immunologic and virologic findings with clinical status in perinatally HIV-infected children.
Methods. HIV antibody (Ab$^+$) and antigen (Ag$^+$) status was determined by commercial EIA procedures. CD4 and CD8 lymphocyte analysis was performed by a whole blood lysis procedure and analyzed by dual parameter flow cytometry. HIV co-culture was performed by adding peripheral blood mononuclear cells (MNC), purified lymphocytes, or purified monocytes to PHA-stimulated lymphocytes from HIV negative donors or allogeneic monocytes. Viral growth was detected by an antigen capture assay.
Results. Ten symptomatic children (3P2A, 7 P2B-F) ranging in age from 1.5 to 9.5 years were evaluated. Nine of ten were Ab$^+$ and seven of ten were serum Ag$^+$. Five of the ten patients had <300 CD4 cells/mm^3 while the CD4:CD8 ratio in nine of ten children was <0.35. Eight of ten individuals were culture positive by day three in the MNC as well as in purified lymphocytes. In contrast, co-culture of purified monocytes and allogeneic monocytes was still negative at 14 days.
Conclusions. Viral cultures were positive in the majority of symptomatic children with perinatal infection. The clinical stage of disease and immunological parameters did not correlate with viral isolation. It seems that at least in the early phase of culture, HIV grows more readily from lymphocytes.

T.B.P.225 NEOPTERIN - POTENTIAL EARLY MARKER OF PERINATAL HIV INFECTION

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Objective. To test the hypothesis that neopterin (N) levels can differentiate infected from non-infected infants and children of HIV-infected mothers.
Methods. N was determined by ^{125}I radioimmunoassay (DRG, Berlin) in 58 serum and/or EDTA plasma specimens from 40 children of HIV-infected mothers 1 to 39 mo of age and control specimens. ↑N was taken as >3 SD above adult mean.
Results. Mean N levels in ug/ml are shown by CDC diagnostic class at writing:

	N ± SD	n	n with ↑N
Probably not infected (HIV antibody negative)	6.3 ± 2.1	12	0
CDC P0 (indeterminate - HIV cultures pending)	9.9 ± 4.4	15	5 (15 ± 3 ug/
CDC P1A or B (infected - asymptomatic)	19 ± 4	2	2 ml)
CDC P2A (infected - "ARC")	8 ± 3	4	1 (11 ug/ml)
CDC P2B, C, and/or D (infected - "AIDS")	37 ± 19	7	7

N levels in replicate specimens obtained 3 to 9 months apart were usually (in 11 of 18 pairs) within one SD range (4.1 ug/ml) of replicate assays on the same specimen. In 4 HIV-infected infants and one infected 3 yr old, rises of 5 to 19 ug/ml were observed. In 2 infants, now antibody negative, falls of 6 to 8 ug/ml were observed. N levels were high (24 ± 11) in presumably normal umbilical cord sera, but appeared to reach adult levels by 1 mo of age. Urine N levels appeared to be less discriminatory than plasma levels.
Conclusion. The pilot data support the hypothesis for asymptomatic infants only, suggest that N levels may be useful in staging perinatal HIV infection, and indicate that a hypothesis (Clin Immunol Newsletter 9:197, 1988) that ↑N release occurs in primary HIV infection deserves investigation in infants.

T.B.P.226 HIGH PREVALENCE OF HIV-SPECIFIC IgA AND IgG-SPECIFIC IgM ANTIBODIES IN NEONATES OF HIV-POSITIVE MOTHERS.

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***Swiss Neonatal HIV Study Group, Department of Neonatology, Kantonsspital, St.Gallen, Switzerland

Objective. To analyse the specificity of Western blot (WB)-reactive IgM and IgA in cord bloods.
Methods. Cord blood of 21 babies of HIV$^+$ mothers was tested for HIV-specific IgM or IgA by WB. Preabsorptions of IgG with immobilised protein A or G were done to determine whether reactions were mediated by HIV-specific IgM or IgA, or by such antibodies bound to HIV-reactive IgG of maternal origin.
Results. Initial IgM reaction was present in 15 sera (71%). Removal of IgG showed that 80% of these IgM were directed against maternal HIV-specific IgG. IgA reaction was present in 10 sera (48%); absorption of IgG indicated HIV specificity in 8 (38%). Most IgA reaction was seen only after removal of bulk IgG. Absorption with immobilised protein G was better than with protein A. Antigen was present in 1/21, in a case negative for IgM or IgA.
Conclusion. Most HIV WB-reactive IgA are indeed HIV-specific; most HIV WB-reactive IgM are specific not for HIV, but maternal IgG.

T.B.P.227 PROSPECTIVE STUDY OF POLYMERASE CHAIN REACTION FOR EARLY DETECTION OF HIV INFECTION IN INFANTS BORN TO HIV ANTIBODY POSITIVE WOMEN

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OBJECTIVE. To determine the applicability of polymerase chain reaction (PCR) for early diagnosis of HIV infection in high-risk infants.
METHODS. All infants referred for prospective evaluation who were ≤3 months of age and born to HIV antibody positive women were studied. For PCR, amplifications using 2 distinct gag specific primer pairs were performed on crude PBMC lysates for 35 cycles. Hybridization in solution to a P32-labeled oligomer probe was followed by polyacrylamide gel electrophoresis and autoradiography. Specimens were tested at least twice with each primer pair. HIV culture was performed on all specimens by standard co-culture technique.
RESULTS. Thirteen infants were tested at a mean age of one month. Three infants were positive by PCR for every amplification. Only 2 of these were HIV culture positive. Three infants were equivical by PCR (<100% positive amplifications). All 3 were HIV culture negative. All 7 PCR negative infants were also HIV culture negative. No patient was HIV culture positive and PCR negative. All patients are well (mean age 7 months) and being followed.
CONCLUSIONS. PCR is applicable for the early detection of HIV infection in high-risk infants and appears to be more sensitive than standard co-culture technique. Long-term follow-up is essential to determine if PCR positive and equivical infants who are culture negative are truly infected or represent lack of specificity.

T.B.P.228

HIV p24 ANTIGEN ASSAY AS A DIAGNOSTIC/PROGNOSTIC TEST IN PEDIATRIC HIV INFECTION.

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Objective. To learn if HIV p24 antigen (Ag) detection tests can be used to diagnose infection in children or to select mothers at risk of transmitting infection.
Methods. We examined sera from a group of children born to HIV seropositive (HIV+) women as part of an ongoing prospective study of pediatric AIDS. We used a commercially available p24 capture immunoassay (Abbott) to screen 109 serum samples from 66 children; sera from 48 of their mothers were also examined. "Infection" was defined by CDC criteria.
Results. Nine of 66 children of HIV+ women and 3 mothers were Ag+. Seven of 8 infected children were Ag+, but only 12 of 19 individual samples were Ag+. One of 41 seronegative children was Ag+. When the incidence of antigenemia in mothers and children was compared we found that 9% of Ag- mothers had Ag+ children and that only 1 of 6 children who met CDC criteria for infection had an Ag+ mother. In 2 of 9 instances the inverse relationship between Ag and p24 antibody detected by Western blot did not exist. Antigenemia occurred at a higher rate in symptomatic/infected than in asymptomatic/uninfected children. The p24 Ag assay failed to identify 1 of 8 children with symptoms. Only 7 of 19 tests in symptomatic children were positive; thus, serial tests may be needed to identify an Ag+ patient.
Conclusions. The clinical utility of a single negative p24 test is low. It does not classify a child as uninfected and it does not predict a more benign disease course. A negative Ag test in a mother does not necessarily indicate that her child will be Ag-.

T.B.P.229

SEQUENCIAL IN PARALLEL STUDY OF HIV INFECTED MOTHERS AND THEIR CHILDREN SINCE THE NEONATAL PERIOD AGE.

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Objectives.Sequential follow up of HIV antibodies in mother-child pairs since birth and the analysis of the evolution of the bands against the different viral proteins by WB technique.
- Study of the potential usefulness of the P-24 Ag analysis as suggestive marker of neonatal infection.
- Confirm the existence of HIV virus in infants younger than 15 months by lymphocytes cultures.

Methods.Since january 1.988 we have studied 10 pairs mother-child,every 3-6 months since the first quarter of life. Serum samples were tested by different EIA methods,IFA and Western Blot, and P-24 antigen was detected by EIA.Viral isolation has been attempted by co-culturing peripheral blood lymphocytes.
Results.All the mothers are intravenous drug addicts and HIV+.All the children are asymptomatic in PO stage. In relation with the sequential analysis until now,4 children turned seronegative and in other four there was a gradual disappearance of the bands detected by WB.The final and conclusive data will be supplied at the end of the study now in progress.P-24 Ag was detected only in one mother whose child turned seronegative at the age of 12 months. Until now the virus isolation has been negative in all cases.
Comments.Perhaps could be possible to confirm the presence of HIV infection in the early 15 months of life by the serial analysis with WB of the sera of children of mothers HIV+ since birth,and bt the detection of P-24 Ag, although the final diagnostic at this age involve the virus detection, re [illegible] it is very useful the virus isolation from lymphocytes and the DNA detection.

T.B.P.230

COMPARISON OF THE ORTHO HIV RECOMBINANT ANTIGEN NEUTRALIZATION ASSAY AND DUPONT WESTERN BLOT FOR CONFIRMATION OF ELISA REACTIVE SERA FROM CHILDREN

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Objective. To compare the performance of the HIV Recombinant Antigen Neutralization Assay (RANA) (Ortho Diagnostic Systems, Raritan, NJ, USA) and the HIV Western Blot Kit (WB) (DuPont Company, Wilmington, DE, USA) as confirmatory tests of HIV ELISA repeatedly reactive sera from high-risk children.
Methods. RANA uses a pool of recombinant core (p24), polymerase (p31) and envelope (gp41) antigens for neutralization of HIV antibodies in ELISA positive sera. Dilutions of reactive sera were added to the antigen mixture and incubated for 16-18 hours at 37°C. The ELISA reactivity (Abbott HIV EIA, Abbott Laboratories, North Chicago, IL, USA) of each neutralized serum was determined and compared to an unneutralized control. A reduction in absorbance by ≥40% constituted a positive test. WB was performed and interpreted according to the manufacturer's instructions.
Results. All 34 study sera were positive by RANA (mean neutralization 72%), and 25 (74%) were positive by WB. Nine sera (26%) yielded indeterminate WB results. Of the nine, 6 were tested for HIV antigen (Abbott HTLV III Antigen EIA) and 4 were positive. None of the HIV ELISA repeatedly reactive sera collected from our high-risk population during the study period was RANA or WB negative.
Conclusion. RANA is a sensitive, objectively interpreted confirmatory test of HIV ELISA seropositivity in high-risk children.

T.B.P.231

A NOVEL HIV 1 EIA DETECTS IgG AND IgM ANTIBODIES IN ADULTS AND NEONATES.

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Objective.To study the utility of the Wellcozyme HIV Recombinant EIA in HIV Diagnosis, and in particular its ability to detect IgM antibodies in infants.
Methods. The EIA was initially evaluated on 4000 sera and 500 positive samples, including 12 sera from individuals at the beginning of sero-conversion. IgM antibodies were isolated by sucrose gradient centrifugation and their presence confirmed by Western Blotting.
Results. The assay's specificity is near 100%. No false positives were detected in the negative samples nor in 25 samples known to give falsely positive results in other EIA. All the positives samples were detected, including those from sero-convertors whose blots would not yet have been declared positive : presence of antibodies to P24 and GP160 or indeterminate, and a specimen in early sero-conversion for HIV 2. IgM was detected in 25/35 samples, and in the stored samples 1 of 2 infants known to have been infected perinatally (cord blood was IgM negative) but not in non-infected of infants of sero-positive mothers.
Conclusion. This EIA is specific ans sensitive - useful for detection of early sero-conversion in adults and neonates as well as for routine screening.

T.B.P.232

IgM MAY BE DIRECTED TO CONFORMATIONAL EPITOPES EARLY IN SEROCONVERSION TO HIV.

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Objective. To determine if the apparent insensitivity of a whole virus immunoblot (WB) to early anti-HIV IgM in seroconversion series is a function of conformation or mass of epitopes available in that format.
Methods. Anti-HIV detection by WB (DuPont) and a recombinant gp160, p24 immunoblot (rBlot) were compared using class-specific anti-human Ig conjugates. Parallel studies were performed with a rEIA using native or SDS,2ME-denatured proteins coated in equal amounts to 96-well plates.
Results.

ANTIBODY SPECIFICITIES IN EARLY BLEEDINGS

	DuPont WB strips		MicroGeneSys-rBlot	
Subjects	IgG	IgM	IgG	IgM
1	NONE	NONE	GAG	ENV
2	GAG	NONE	ENV	ENV
3	GAG	NONE	GAG,ENV	ENV
4	GAG,ENV	NONE	GAG,ENV	NONE

In general, O.D. values were lower for denatured than for native rEIA. In early bleeds of 3/4 subjects, the values actually fell below cut-off.
Conclusions. We demonstrated increased sensitivity of the rBlot vs the WB due to improved detection of the early IgM response with full-length native recombinant protein; more so ENV than GAG. The parallel rEIA study clearly showed that denaturation reduced signal strength. These results suggest that conformational epitopes may be important for IgM detection; epitopes that are lost in WB format. These observations may be important in improving early antibody detection and in evaluating vaccines.

T.B.P.233

HYPERGAMMAGLOBULINEMIA AND HYPOGAMMAGLOBULINEMIA AS MANIFESTATIONS OF HIV DISEASE IN PERINATALLY INFECTED CHILDREN

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Objective. Diagnosis of HIV infection in children born to HIV positive mothers can be complicated as a result of infant B cell dysfunction even after disappearance of maternal antibody. In our experience, 8% of children presenting with symptomatology consistent with HIV infection show negative or equivocal ELISAs and Western Blots.
Methods. To ascertain whether the absence of reactivity in HIV antibody tests in HIV infected infants was due to (1) an inability to produce immunoglobulin, or (2) an inability to form specific antibody responses, serum from each child was assayed for IgG concentration. Standard radial immunodiffusion assay was employed.
Results. Eight of 20 HIV infected but serologically negative children were found to be hypogammaglobulinemic. None of these yielded an unequivocal positive specific HIV antibody test on multiple drawings through 1 year of follow up. Thirty percent were found to have normal serum IgG concentration, and 15% were low normal; of these, 1 eventually seroconverted. Three were hypergammaglobulinemic. None of these have seroconverted for as long as 1 year of follow-up (up to 3 years of age).
Conclusions. Negative or equivocal antibody tests in children who are perinatally infected with HIV can be the result of at least 2 distinct manifestations of B cell dysfunction. Some children, despite their ability to produce IgG, are unable to mount a specific antibody response to HIV; others may also be hypogammaglobulinemic.

T.B.P.234 ASSOCIATION BETWEEN PLASMA HUMAN IMMUNODEFICIENCY VIRUS TYPE-1 (HIV) VIREMIA AND CLINICAL CLASS OF PEDIATRIC HIV INFECTION

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Objective. To develop sensitive virologic markers predictive of asymptomatic and symptomatic pediatric HIV infection.
Methods. Sequentially obtained samples from 12 HIV infected children as they progressed from CDC classification P1 to P2 and from 15 PO children were analyzed. Plasma or peripheral blood mononuclear cells (PMBC) from 3-5 ml of blood were cultured ≤28 d. P24 antigen (Ag) in culture supernatants or in plasma/serum was determined by EIA antigen capture (Abbott).
Results.

	Onset P1 Diagnosis		Onset P2 Diagnosis	
	Perinatal	Transfusion	Perinatal	Transfusion
n	6	6	5	2
Age mean (mo.)	8	96	12	82
range	0-18	74-132	2-36	80-84
PBMC	4/4	4/5	5/5	2/2
Plasma	0/4	0/5	5/5	2/2
Ag	2/4	2/4	5/5	1/1

All PO children remained asymptomatic, PBMC culture neg. and Ag neg.
Conclusion. HIV PBMC culture and Ag were highly sensitive (94%) for detecting infection. While Ag was associated with both P1 and P2 infection (p=NS). HIV plasma viremia was only associated with P2 infection (p=0.003). The association between plasma viremia and symptomatic stage of infection suggests there is an increased amount of replicating HIV associated with advanced clinical disease. Plasma viremia is a potential endpoint for evaluating both progression of disease and antiviral therapy in the pediatric population.

T.B.P.235 DETECTION OF HIV SEQUENCES IN CHILDREN BORN TO SEROPOSITIVE MOTHERS.

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Purpose: Early detection of HIV infection in children born to seropositive mothers is now possible utilizing the polimerase chain reaction (PCR).
Methods: PCR was performed on DNA extracted from PBMCs of children born to seropositive mothers as described by Saiki et al. using the SK 68 - SK 69 primers and the SK 70 probe, homologous to the HIV envelope. Clinical condition of the children were assessed following the criteria of Brunett-Lezine and Bayley, and by immunological and virological tests.
Results: 13 children have been followed from birth, all were born to seropositive IVDA mothers. All children were seronegative at the moment of DNA extraction. The loss of maternal anti-HIV Ab IgG occurred in 10-19 months after birth. None of the children was clinically or immunologically immunocompromised. The PCR was performed in 4 children (age 12-36 months) apparently healthy. Amplification of the envelope fragment identified by the SK 68 and SK69 primers occurred in all 4 cases.
Discussion: The PCR is an early diagnostic test for HIV infection in children and it can offered a precious tool as serological diagnosis is not possible in newborn children for several months after birth.

T.B.P.236 LYMPHOKINE AND IMMUNOGLOBULIN PRODUCTION IN VITRO IN NEONATES AND INFANTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION

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Objective. To assess early immune parameters in HIV+ neonates and infants.
Methods. Interleukin-2 (IL-2) was measured using an IL-2 dependent cell line (CTLL) after stimulation with PHA and augmentation with recombinant IL-2 in placental (Con 1) and infant (Con 2) controls and HIV+ neonates and infants. Immunoglobulin production after PWM stimulation and 7 day incubation was measured in affected children and described controls.
Results. HIV+ infants studied were Group 1, < 8 weeks (asymptomatic [n=4], coinfected with cytomegalovirus (CMV) [n=2]) and Group 2, > 1 year [n=16]. IL-2 results are reported as units/ml (mean±standard error).

	Group 1(asy)	Group 1(CMV)	Con 1	Group 2	Con 2
PHA [50ug/ml]	0.11± 0.09	2.0± 0.5*	0.17± 0.08	0.14± 0.12*	0.37± 0.16
IL-2[500u/ml]	1.33± 0.68*	Not done	5.57± 1.49	2.34± 1.49	5.10± 2.48

* p less than 0.05

IgM production after PWM and PWM+IL-2 stimulation was negligible in Groups 1 and 2 and Con 1 compared to adult controls. IgG production was high in 3 infants in Group 2 alone.
Conclusions. IgM production in vitro for HIV+ neonates and infants is not different than expected neonatal results. IL-2 production was decreased except in those infants with concurrent CMV. Monitoring IL-2 production with clinical correlation may detect subtle immune changes in HIV+ children.

T.B.P.237 EARLY DETECTION OF HIV-1 SEROCONVERSION IN INFANTS OF SEROPOSITIVE MOTHERS USING SERIAL DILUTIONS IN WESTERN BLOTTING.

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Objective. To determine if serial dilutions in Western blot (WB) assay can distinguish HIV-1 seroconversion from passively transferred maternal antibody (Ab) in infants born to seropositive mothers.
Methods. Sequential serum samples collected at 3-month intervals on 17 male and 9 female infants were tested by standard ELISA (ENI). Samples were also tested for HIV-1 Ab using serial dilutions of 1:100, 1:500 and 1:1000 in a standard WB assay (Biotech), and for p24 antigen (Ag) by EIA (Abbott). Polymerase chain reaction (PCR) was performed on lymphocytes from 22 infants.
Results. All infants were seropositive at birth by ELISA and WB assays. Among infants who later became seronegative (Sn), the mean age from birth to nonreactivity was 9.8 mos. Serial serum dilutions in WB demonstrated disappearance of significant maternal Abs with emergence of infant Ab patterns typical of seroconversion in 7/26 infants at a mean age of 7.4 mos. At this age no difference was observed in Ab reactivity using standard ELISA and WB assays between the 7 seroconverters and the remaining 19 infants whose sera were still reactive by standard WB assay (1:100 dilution), but who later became Sn. Among the seroconverters, p24 Ag was detected just prior to seroconversion in 4 infants. PCR was positive in only 3. Currently 1/7 has AIDS, 2/7 have ARC.
Conclusions. Serial serum dilutions in WB assay detected seroconversion in infants of seropositive mothers at an earlier age than standard ELISA and WB assays. P24 antigenemia preceded HIV seroconversion. PCR positivity did not correlate strongly with seroconversion in our study.

T.B.P.238 DETECTION OF SECRETORY ANTIBODIES TO HIV IN NEONATES

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Viral-specific, non-maternally derived secretory IgA (sIgA) antibodies have been demonstrated soon after birth in certain infections. SIgA to HIV antigens has been detected in infected adults. We collected serum and saliva from 21 children (ages 2 to 48 months) born to women at risk for HIV infection to investigate the presence of HIV-specific salivary IgA. HIV infection was ascertained by one or more of the following: a rise overtime in serum ELISA titre, development overtime of IgG antibody to new HIV antigens, positive p24 antigen or PBL culture, or demonstration of serum IgM by Western Blot (WB) to 2 or more different classes of HIV antigens. Saliva samples were assayed for HIV-specific antibodies using an IgA-specific WB. Saliva from 7 of 10 infected children, including one aged 6 months, demonstrated IgA class antibodies to HIV envelope antigens; 4 of the 7 also showed sIgA antibodies to other HIV antigens. The 3 sIgA negative infected children all demonstrated decreasing or absent serum IgM and IgG responses to HIV at the time of saliva sampling. Six of 6 children born to negative mothers were IgA negative. Five children (2 to 6 months) with indeterminant HIV status, born to infected mothers, showed no viral-specific sIgA, nor did they show serologic evidence of HIV infection. HIV-specific sIgA was detectable at 6 months of age and may prove to be valuable in the diagnosis of HIV infection in children born to infected mothers.

T.B.P.239 ANEMIA AND HYPERGAMMAGLOBULINEMIA IN INFANTS WITH PERINATAL HIV INFECTION

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Objective: To determine whether hematologic abnormalities or hypergammaglobulinemia are early indicators of HIV infection in infants born to HIV infected mothers.
Methods: Complete blood counts and immunoglobulin concentrations were obtained from 20 five to nine month old infants born to HIV infected mothers and who were either asymptomatic or had nonspecific clinical signs and symptoms. These laboratory values, as well as aspects of the clinical history, were compared between the 8 infants who eventually met CDC criteria for HIV infection and the 12 infants who seroreverted.
Results: A significantly lower mean hematocrit value (32.5) was found for the infants who later met CDC criteria for perinatal HIV infection compared to the infants who seroreverted (37.6). Elevated mean immunoglobulin levels were also noted in infected infants (infected: IgG = 2840, IgA = 399, IgM = 268; noninfected: IgG = 480, IgA = 27.3, IgM = 81). No aspect of the history could explain these differences.
Conclusion: Unexplained anemia or hypergammaglobulinemia in an infant with indeterminate (CDC class P-0) HIV status strongly suggests the presence of HIV infection.

T.B.P.240 ELISA (E) AND WESTERN BLOT (WB) PATTERNS AND A POSSIBLE MARKER OF SEROREVERSION (SR) IN INFANTS BORN TO SEROPOSITIVE (SP) WOMEN.

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OBJECTIVE: To describe HIV serological responses and to identify predictors of infection or SR in infants born to SP mothers.
METHODS: Pre and post-partum maternal sera, and infant sera collected at birth and at 3 months intervals, were frozen and later tested by E (Dupont) and WB (Organon-Teknika) against known controls.
RESULTS: Sera from 32 mother-infant pairs (infants' mean age: 20.5 mos; 6.9 specimens per child) were available. Generally, the infants' initial WB pat'erns reflected the mothers' prepartum. By clinical and lab criteria, 9/32 infants were infected; 8/9 had serially reactive (R) E, 1/9 became non reactive (NR) before developing AIDS. WB of infected infants showed fading of bands with subsequent increased reactivities and appearance of new bands. In 21 of the remaining 23 infants a NR E preceded a NR WB mainly due to fading but persistent anti-p24. In 4/23 (ages 15,18,19, and 24 mos) WB was equivocal. Seroreversion occurred in 14/19 before 15 mos, and 5/19 after 15 mos of age. Once E and WB became negative all infants remained negative. An anti-gp120 band was present in the maternal samples and the infants first WB in 14/19 (74%) seroreverters and in 2/9 (22%) infected infants($p \le 0.001$)
CONCLUSION: The presence of anti-gp120 detected late in pregnancy and in the newborn, may be a marker of subsequent seroreversion.

T.B.P.241 SEQUENTIAL WESTERN BLOT PATTERNS IN CONFIRMED HIV SEROPOSITIVE INFANTS

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Objective. To follow western blot patterns over time in confirmed HIV seropositive infants and compare loss of specific bands with the Centers for Disease Control classification of disease.
Methods. One hundred eighty-five serial serum specimens were collected at approximate 3 month intervals from 37 confirmed seropositive infants (<24 months of age) and tested for ELISA reactivity (Abbott HIV EIA, Abbott Laboratories, North Chicago, IL, USA), western blot (HIV Western Blot Kit, Dupont Company, Wilmington, DE, USA) and HIV antigen (Abbott HTLV III Antigen EIA). Each infant also was evaluated according to the Centers for Disease Control classification scheme for pediatric AIDS.
Results. Eight of the 37 infants (21.6%) became western blot negative during the study period, at a mean age of 16 months (range 12-23 months). Nine of the infants remained western blot positive; 3 of the 9 were HIV antigen positive. Twenty of the infants became western blot indeterminate; 6 of the 20 had class P2 disease, and 5 of the 6 were HIV antigen positive. Inconsistent western blot patterns were observed in these 5 infants over time and among infants.
Conclusion. Western blot indeterminant patterns are common in infants with HIV disease. Retention and/or disappearance of specific bands in serial western blots from confirmed HIV seropositive infants are not as prognostically useful as reported in adults. The definition of "indeterminant" may need to be redefined in infants with perinatally acquired HIV.

T.B.P.242 EVALUATION OF THE WESTERN-BLOT IgM TECHNIQUE SPECIFICITY

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Objective. Evaluation of the western blot IgM technique specificity.
Methods. During the virological screening of seropositive intravenous drug abusers women (N=67) and infants born to seropositive mothers (N=20) we investigated the IgM status by the Western Blot assay (Du Pont HTLV-III Western blot IgM). The test was considered positive when the presence of antibodies against the p24 protein could be detected. When the IgM antibodies were present, the specificity of the reaction was checked by comparing the results before and after elimination of the rhumatoid factor by the "RF Sorbent"(Behring Laboratory) and after the IgG-IgM separation by elution through DEAE cellulose micro-columns.
Results. Although IgM antibodies were detected in 35 serum specimens, the specificity could be tested upon 24 sera only. In 11 cases the obtained results were identical. In 13 cases the results were dissociated :
.3 sera were negative after the elimination of the rhumatoid factor that could give a false positive result with the two first techniques.
.9 sera were negative after elution through the micro-columns. The dilution of the specimens during this treatment could explain this negativity.
.1 serum was negative after both : the result obtained for the serum before treatments could probably represent a false positivity.
Conclusion. IgM antibodies were really present in 20 sera. Thus the specificity of the Western-blot technique is high (83,33 %) and it can be a useful test in the neonates follow-up.

T.B.P.243 MONITORING OF HIV ANTIBODY PROFILES BY RIPA AS A MEANS OF DIAGNOSING INFECTION IN INFANTS

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Objective. In an ongoing prospective study of HIV perinatal infection, radio-immunoprecipitation assay (RIPA) was evaluated for its ability to differentiate de novo synthesis from passively transferred antibody (Ab). RIPA was also compared with virus isolation and HIV antigen (Ag) detection for early diagnosis.
Methods. Fifty-two sera obtained at each visit from 9 asymptomatic mothers and 6 infants were tested for HIV-Ab by RIPA and for HIV-Ag with a commercial EIA. Isolation was carried out by co-culture of PBL with cord blood lymphocytes and was monitored by RT activity and HIV-Ag detection.
Results. Sera of 8/9 mothers revealed Ab profiles against all labelled HIV polypeptides by RIPA. Virus was isolated in 6/7 women. HIV-Ag was demonstrated in only one. Initial sera from infants did not show Ab profiles different from those of their mothers. Analysis of sequential sera obtained up to 9 months of age revealed decreased reactivity to selected polypeptides, indicating loss of maternal Ab. Virus was isolated from 3 symptomatic infants (at 14 d, 2 m and 5 m), but not from 3 asymptomatic ones. HIV antigenemia was observed in only one symptomatic infant.
Conclusion. Our preliminary results support that virus isolation is a more sensitive indicator of HIV infection than Ab or Ag detection. Comparison of Ab profiles in sera of women at birth and their offspring did not allow early diagnosis of HIV infection in infants.

T.B.P.244 EARLY DIAGNOSIS OF HIV-INFECTION IN CHILDREN BORN TO SEROPOSITIVE MOTHERS:CRITICAL EVALUATION OF NEW DIAGNOSTIC APPROACHES.

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Objective. Develop a protocol for early diagnosis in children born to HIV seropositive mothers. Correlation between diagnostic results and HIV infection status.
Methods. Children born to seropositive mothers were studied at birth and/or in the first months of life for the following parameters: 1)in vitro production of antibody, 2) antigenemia in sera, 3) virus culture assay, and 4) DNA amplification by polymerase chain reaction using specific primers for gag and env HIV genome.
Results. In a series of 101 children, 64 were repeatedly negative for all parameters and 18 were constantly positive; in 19 cases the results were discordant among different tests. More than one year follow-up of the negative children later confirmed that all, but one who developed AIDS at, 6 mos. of age, were not infected; 10 of the 18 positive children developed AIDS or AIDS related symptoms. Among the discordant cases, several patterns were observed, and the 4 parameters were variously positive and negative, in different combinations.
Conclusions. Analysis of the data provided the limits of the single diagnostic procedures, and also reflected the different status of HIV infection; interestingly, 2 asymptomatic seronegative, but HIV infected children, were identified.

T.B.P.245 INTERET DE LA MISE EN CULTURE SYSTEMATIQUE DU VIH CHEZ LES ENFANTS NES DE MERES INFECTEES

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Objectif. Comparer les résultats de la mise en culture systématique du VIH aux autres données biologiques et cliniques dans une cohorte prospective de 30 enfants nés de mères infectées.
Méthodes. Les cellules mononucléées du sang circulant d'enfants nés de mères infectées par le VIH 1 ont été systématiquement mises en culture et le virus VIH 1 éventuellement produit a été détecté par son activité RT et la présence de l'antigène de Core p24. Les résultats de l'isolement ont été confrontés aux données de l'antigénémie VIH 1, de la cinétique des anticorps anti-VIH 1 (ELISA et WB), de la numération des lymphocytes TCD$_4$, du dosage sérique des immunoglobulines et de l'état clinique.
Résultats. Nous distinguons deux groupes : l'un où l'isolement viral est négatif et dont les autres données biologiques et cliniques indiquent qu'il n'y a pas d'infection virale ; l'autre (≃ 30 % des enfants) où l'isolement est positif et corrélé par un ou plusieurs paramètres péjoratifs (antigénémie positive, augmentation des immunoglobulines, signes cliniques .../...).
Conclusion. L'isolement systématique du VIH chez les enfants nés de mères infectées demeure une technique de base indispensable à l'établissement d'un pronostic.

Pédiatrie : traitement du SIDA chez les enfants
Pediatrics: AIDS Treatment in Children

T.B.P.246 INFUSION OF ANTI P24 ANTIBODY RICH PLASMA IN TWO CHILDREN WITH PERSISTENT HIV ANTIGENAEMIA - A PILOT STUDY

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Objectives; To study the clinical and laboratory sequelae of passive immunotherapy with plasma rich in anti p24 antibody on 2 children with persistent HIV core antigenaemia and seronegative for anti p24 antibody.
Methods; Plasma was harvested as previously described (Lancet 1988 ii647-652). The 2 children aged 5 and 4, had a history of recurrent bacterial infections, failure to thrive and declining T4 lymphocyte counts. They were already receiving normal immunoglobulin infusions 200mg/kg every 3 weeks and one child had recieved zidovudine, but had discontinued because of recurrent myelosuppression. Anti p24 plasma was given at a dose of 2mls/kg 6 weekly.
Results; Both patients remained clinically stable, and T4 lymphocyte counts also stabilised. Antigen was undetectable 2 hours after completion of the infusion. The table documents the subsequent progress

Time post infusion	0	2hrs	2 days	1 wk	2 wks	3 wks	4,5 wks	6 wks
Core index (Abbott)	1,54	0,04	0,1	0,3	0,54	0,9	1,09	1,4
Antigen (Abbott)	>750	-	-	-	104	170	475	>750

Conclusion; Plasma rich in anti p24 antibody is effective in eliminating core antigen. However on this regimen no sustained loss of antigen was demonstrated. Further studies are required to define the optimum dosage and frequency of infusions to provide prolonged suppression of antigen, as it is likely that this will be necessary before clinical benefits become apparent.

T.B.P.247 DIDEOXYCYTIDINE (DDC) ALONE AND IN COMBINATION WITH AZT FOR CHILDREN WITH SYMPTOMATIC HIV INFECTION A PHASE I EVALUATION

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Objective: An agent that inhibits HIV replication without bone marrow suppression would be an important addition to the antiretroviral armamentarium. ddC, a dideoxynucleoside, like AZT, inhibits reverse transcriptase and is a chain terminator, but without apparent myelosuppression. In adults, ddC resulted in decreased P24 antigen and increases in CD4 counts but caused mouth sores, a rash, and at higher doses and longer courses, a painful peripheral neuropathy. The question is whether short courses of ddC could provide safe antiretroviral activity in children and whether it could be used with AZT.
Methods: In a Phase I study, we evaluated 4 dose levels of ddC: 0.015, 0.02, 0.03 and 0.04 mg/kg, orally, q6h, in children between 6 mos - 13 yrs old with CDC P2 HIV infection. At each dose level, ddC was given for 8 consecutive wks and then stopped. After a 30 d wash-out, a schedule of ddC (0.02 mg/kg/q6h) for 1 wk was followed by 3 wks of AZT (180 mg/m^2/q6h), with this alternating schedule then repeating thereafter. The goal was to maintain uninterrupted antiretroviral therapy while sparing AZT-related myelosuppression and ddC-related neuropathy.
Results: From 4/88-12/89, 15 children, ranging in age from 6 mos to 12 years were enrolled. 13/15 pts had not had any prior antiretroviral therapy, while 2 pts had received and benefited from AZT, but had developed dose-limiting neutropenia. During the 8 wks of ddC alone, no neutropenia or anemia was observed and 7/9 pts whose P24 antigen was elevated prior to ddC had decreases in P24 levels and 9/15 had increases in CD4 numbers. Age-appropriate psychometric testing was performed prior to ddC and at 8 wks. 3 pts with clinical encephalopathy prior to therapy showed improved affect and activity on ddC but this was not accompanied by increments in IQ scores over baseline. At the 0.04 mg/kg level, 3/6 pts developed a rash and 1 pt, at week 7 of ddC, complained of painful hands and feet, associated with mild swelling, but unaccompanied by changes in nerve conduction compared to pre-ddC testing and which resolved within 3 days. 7/15 pts developed mild mouth sores. After completing 8 wks of ddC, and the 30 day wash-out, pts began the alternating ddC/AZT schedule. Eleven pts are on this regimen and tolerating it well to date.
Conclusions: ddC has antiretroviral activity in children and appears safe for short intervals. Longer courses of ddC at lower dose levels, and schedules integrating ddC into combination regimens, deserve to be explored.

T.B.P.248 THE EFFECTS OF ENCEPHALOPATHY AND AZT TREATMENT ON THE SOCIAL AND EMOTIONAL BEHAVIOR OF PEDIATRIC AIDS PATIENTS.

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Estimates are that encephalopathy occurs in as many as 80% of pediatric AIDS patients. Evidence of improved CNS functions appears to be a sensitive indicator of the efficacy of pharmacological treatment. Therefore, it is important to further develop objective and systematic methods for monitoring behaviors reflective of encephalopathy. One such class of behaviors observed among pediatric AIDS patients, that has not been systematically studied, involves the impaired expression of appropriate emotional and social behaviors (e.g., flat affect, severely diminished inter-personal responsiveness, etc.). In order to explicate and quantify these behavioral manifestations of encephalopathy, a rating procedure was devised for describing the social and emotional behavior patterns of this patient population.

Since the behaviors observed in these children simulate well known psychiatric disorders, an item pool was derived from various behavioral disorders listed in the DSM-III. Staff members and parents rated 29 pediatric AIDS patients (approximate mean age of 5 years, 6 months) at baseline and again after 6 months of AZT treatment on 49 behavioral items using a Q sort format. Item analysis and factor analysis resulted in 5 robust scales. 1) autism, 2) depression, 3) hyperactivity and attentional problems, 4) irritability, 5) adaptive behavior. The mean inter-rater reliability for these scales was satisfactory.

Patients who were classified clinically as encephalopathic were rated before treatment as significantly more autistic, depressed and less adaptive than a group of non-encephalopathic patients. These differences generally disappeared after 6 months of treatment, leading to a statistically significant decrease in autistic and depressed behavior and an increase in adaptive behavior after 6 months of AZT treatment for the encephalopathic patients. All of the above findings were statistically significant for both staff members and parents with the magnitude of the findings being greater for staff members. There were a number of statistically significant correlations between the scores on the scales and concurrent hematological, immunological, and behavioral measures on these patients, particularly for the baseline assessments. These correlations help confirm the validity of the rating scales.

T.B.P.249 ELEVATED HEPATIC TRANSAMINASES ARE NOT ASSOCIATED WITH INCREASED ZIDOVUDINE TOXICITY IN CHILDREN WITH CONGENITALLY ACQUIRED HIV-1 INFECTION

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Zidovudine(AZT) has been implicated as the cause of acute hepatitis in some adults with HIV-1 infection. In addition, hepatic dysfunction may potentiate AZT bone-marrow toxicity by altering the metabolism of the drug. Children with elevated transaminases [5-10 x normal (nl)] may be excluded from clinical trials with AZT. We followed 9 children (5 females, 4 males, mean age 33 months) with congenitally acquired HIV-1 infection for evidence of liver dysfunction during therapy (180mg/m^2 of AZT po qid).

	AT ENTRY (# of Pts.)				AT FOLLOW-UP (# of Pts.)			
	nl	1-3x nl	3-5x nl	>5x nl	nl	1-3x nl	3-5x nl	>5x nl
Bili	8	0	0	1	9	0	0	0
AST	0	3	2	4	0	5	4	0
ALT	2	4	1	2	2	6	1	0

At follow-up (mean of 14.6 weeks,range 4-32), all patients had improvement or no change in transaminases. Two patients with markedly elevated levels (AST 10-18x nl; ALT 5-18x nl) improved during therapy. Hepatic dysfunction was not associated with AZT bone-marrow toxicity. We conclude that long-term AZT therapy does not appear to cause significant hepatic dysfunction in children. Children with moderately elevated hepatic transaminases may not be subject to increased AZT toxicity.

T.B.P.250 LONG-TERM TREATMENT OF SYMPTOMATIC HIV-INFECTION IN CHILDREN WITH ZIDOVUDINE

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Objektive. To evaluate clinical, immunological and virological effects of long-term therapy in children with zidovudine (ZDV).

Methods. 24 patients (pts) with Aids ranging in age from 1-20 years have been treated with ZDV orally in a dosage of 3.5 mg/kg (12 pts) every 6 hours for meanly 44 weeks (4 pts 5 mg/kg; 2 pts 7 mg/kg). 12 pts were HIV-infected perinatally (1-8 yrs), 2 by tranfusion (both 5 yrs), 10 by factor replacement for hemophilia (10 pts, 10-20 yrs).

Results. 20 children demonstrated clinical improvement (7 pts temporary) in the first wks of therapy for unspecific symptoms (CDC class P2A). Mild or transient improvement of neurological symptoms (P2B) occured in 7 of 8 children. Lymphoid interstitial pneumonia (P2C) in 5 children did not change, except one with concomittant steroid therapy. Frequency of bacterial infections (P2D2) have decreased in 4 of 6 pts, opportunistic infections (10 pts) recurred in 3 pts only. In opposite, Herpes infections (P2D3) (4 pts) did not change. 4 children died after 6-30 wks of ZDV treatment from different causes: 2 gastrointestinal bleeding, 1 cardiomyopathy and 1 severe encephalopathy.
CD 4 cell number rose transiently in 12 of 17 pts but decreased to pretreatment numbers after 20-28 wks. Lymphocytic mitogen stimulation improved only in a few cases transiently. HI-Virus has been cultured in 8 of 9 pts under ZDV therapy, while in 3 of 6 pts HIV-p24 Antigen no longer could be demonstrated. Nausea, muscle pain and restlessness appeared as adverse effects in 6 pts, while anemia and neutopenia occured each in 2 pts and both in 4 pts.

Conclusion. Though immunological and virological improvement in children treated with ZDV has been transient or mild, clinical symptoms remained clearly improved for a longer time.

T.B.P.251 CHORIORETINITIS RESPONDING TO AZT THERAPY IN AN INFANT WITH AIDS

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Introduction: Cytomegalovirus (CMV) chorioretinitis is exceptionally reported in children with AIDS (2 cases mentioned). In adults CMV chorioretinitis is known to respond only to Gancyclovir or Foscarnet therapy.
Case report: A six months old boy of African origin born to a known HIV seropositive mother was classified P2 ABCF. A routine fundoscopy of the left eye revealed a blurred optic disc in the right eye with hyperaemia, venous dilatation at the arcade, flame-shaped peripapillary bleedings and a large white patch extending from the optic disc to the macula along the superior vascular arcade. At the same time CMV was isolated from the urine. The right eye was normal. AZT was started at a dose of 3.5 mg/kg every 6 hours and high-dose (350 mg/kg) Sandoglobulin was given every month. After 4 weeks fundus examination under general anesthesia revealed nearly total cicatrisation of the lesion in the left eye. After 3 months follow-up no recurrence was observed. At 7 months the infant developed presumed PCP. Laboratory data are given in the table.

Table:	p24 AB ratio	p24 AG ratio	HIV culture	PCR	CMV urine
4 months	1.2	58.4	ND	ND	-
6 months	-	ND	+	ND	+
10 months	2.0	-	+	+	-

Conclusion: This case report suggests that AZT and high dose gammaglobuline should be tried first in HIV infected infants with chorioretinitis probably caused by CMV before highly toxic drugs like Gancyclovir or Foscarnet are used.

T.B.P.252

AZT THERAPY IN HIV INFECTED CHILDREN

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12 children (6 males, 6 females) aged 4 months to 12 years, with HIV infection in class P1 (1 case) or P2 (11 cases) (CDC 1987) were treated with zidovudine (20 to 28 mg/kg/die) every six hours for a mean of six months (range 2-6 months). Out of the study patient 12/12 were HIVp24Ag positive, 7/12 virus culture positive, 5/6 HIV specific IVAP (In Vitro Antibodies Production) positive. During AZT treatment a decrease, or an erratic negativization, of HIVp24Ag was observed; however, persistently negative values of HIVAg were never achieved. We didn't observe any increase in CD4+ lymphocyte count.

We did observe an improvement of general clinical condition with body weight gain (8/12); reduction of volume of lymph nodes (5/12), liver and spleen(4/12) decrease of bacterial and opportunistic infection episodes.

During treatment 2 children had nausea and vomiting and we had transiently to reduce the dosage.

We observed toxicity in 7/12 children. Toxic effect consisted in: i)increased ALT and AST serum levels (in only 2 cases we had to reduce the dosage) ii)anemia (3 patients required a blood transfusion) iii) leucopenia: in two children the PMN count fell below 1000/mmc and we had to reduce the dosage.

T.B.P.253

Zidovudine Treatment in Adolescent Hemophiliac Children with HIV Infection.

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Nine hemophilia children with HIV infection, mean age of 13.8-years-old (range 7.6 to 18.1 years), were treated with zidovudine (azidothymidine; AZT), dose 115 ± 14 mg/M^2/dose four times daily orally for 9.9 ± 3.6 months. Three children had acquired immunodeficiency syndrome (AIDS), 1 had AIDS-related complex (ARC), and 5 were asymptomatic. The patients' were known to be HIV infected for 3.7 years (range 1.4 to 5.7 years) prior to starting AZT. Prior to initiation of AZT, mean CD4 cells were 128 cells/mm^3, and after starting AZT were 432 cells/mm^3 at 3 months, 249 cells/mm^3 at 6 months, and 320 cells/mm^3 at 9 months, with 7 patients having increased CD4 cells >200 cells/mm3. However, in vitro lymphoproliferative responses to PHA, pokeweed mitogen, Candida albicans, and tetanus toxoid stimulations did not significantly improve after AZT therapy. Side effects related to AZT therapy were predominantly elevated ALT in 4 patients and neutropenia in 2 patients. These side effects responded to temporary cessation or dose reduction with the exception of 1 patient in whom AZT was discontinued due to severe neutropenia even at reduced doses.

In summary, AZT therapy was generally well tolerated and resulted in increased CD4 cell numbers though not T-cell function in 9 adolescent hemophiliac children treated over 6 to 12 months.

T.B.P.254

DISEASE PROGRESSION AND EFFECT OF ZIDOVUDINE (AZT) IN PEDIATRIC AIDS.

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Objective: To evaluate infants and children with presumed or established HIV infection and influence of AZT treatment.

Methods: 46 cases, age range 1 mo. to 8 years at presentation, of whom 32 had P1/P2 disease and 14 were in the P0 category were evaluated over a 4 year period. AZT, 360-720mg/m^2 was administered orally to 11 patients in P2 class (with CD4 and T cell counts <400/cmm) for periods of 0.5 to 13 mo.

Results: Of 14 P0 cases, definite HIV transmission occurred in 3 (23%). Asymptomatic infected and uninfected cases <6 mo. were indistinguishable by immunologic testing. 14 of 31 cases in P2 class have died, mainly with OI, at ages 3 mo. to 10 yrs. Progressive decline in CD4+ T cells and in T cell functions was seen in all P2 cases even without obvious evidence of disease progression. At time of death, CD4+ T cell depletion was most striking, as was the occurance of HIV antigenemia. Patients treated with AZT had increased appetite, sense of well being and minimal side effects (eosinophilia in 1 case). Demonstrable benefit was noted in 2 of 3 cases with thrombocytopenia refractory to conventional therapy. Although increase in CD4+ T cells was often transient, their progressive attrition appeared to be halted. In vitro HIV antibody secretion by patient lymphocytes became positive after initiating AZT in 2 previously negative cases.

Conclusion: In the natural course of HIV disease, immunologic attrition precedes clinical disease progression. In children, AZT has subtle clinical benefits, is minimally toxic and appears to slow down immunologic attrition.

T.B.P.255

OUR EXPERIENCE IN TREATMENT WITH ZIDOVUDINE IN CHILDREN.

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In October 87,we began a prospective study to evaluate the effectiveness of Zidovudine(ZDV)in the treatment of children suffering from AIDS.Selection parameters were:1)Children with viraemia or HIV antibodies and sympthomatic infection according to class P$_2$ of CDC for pediatric AIDS.2)To be older than 3 months and less than 12 years old.3)Hemoglobin>10gr/l.Leukocytes>2.000.Neutrophils>1000 and platelests>50.000.4)Creatinine<1.6.ALT<150U/l.No jaundice.5)Guardian's consent and authorization from clinical assays committee of the hospital.We present 8 children,5males and 3 females,whose ages range from 3½months to 11 years; two of them were infected through blood transfusions and the other 6 from their mothers who are DAVP and infected with HIV.We use the IV commercial form of ZDV and it's administered orally in a dosage of 28mg/k/d.We analyse the clinical, hematological and immunological responses to treatment.Virology tests were performed by ELISA, IFI, W. blot and capture Ag methods.

RESULTS:All cases have improved clinically,showing at the beginning a better appetite and nutritional status,and a decrease in number of recurrente infectious diseases.The tolerance has been excellent.We have observed a moderate decrease of hemoglobin,macrocytosis with normal values of vitamin B$_{12}$ and mild neutropenias.It hasn't been necessary in any case to reduce or withdraw medication.We have observed a decrease of values immunoglobulins in 3 patients.Two of the four children who presented a positive HIV Ag in serum showed a decrease in it's value during treatment.

CONCLUSIONS:1)All patients showed an excellent tolerance to ZDV without any hematological toxicity.2)We have noticed a decrease of the amounts of immunoglobulins and of P$_{24}$ Antigen in serum during treatment.3)Improvement in the quality of life.4)It's reasonable to supoose than this drug will be more effective in the less affected children,so we suggest the possible treatment in more precocicus stages of the disease.

T.B.P.256

SELENIUM DEFICIENCY AND CARDIOMYOPATHY IN MALNOURISHED PEDIATRIC AIDS PATIENTS

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Objective. To examine the relationship between selenium deficiency and cardiomyopathy in pediatric AIDS patients.

Methods. Echocardiograms and serum selenium values were obtained on 9 pediatric patients undergoing therapy with azidothymidine for symptomatic HIV disease. Cardiomyopathy was defined as ejection fraction less than 60% and/or left ventricular diastolic dimension greater than the 95th percentile for surface area. Patients were assessed for malnutrition using the Waterlow classification.

Results. Five of the 9 patients were selenium deficient (<80mcg/L). All 5 had protein calorie malnutrition with wasting and/or stunting by the Waterlow classification. Four of the 5 had evidence of cardiomyopathy with decreased ejection fraction and/or left ventricular dilatation. One of these five patients has had normalization of his serum selenium on supplementation with improvement in ejection fraction.

The four patients with normal serum selenium values had no evidence of malnutrition by the Waterlow classification. Two of these patients had evidence of cardiomyopathy by echocardiography.

Conclusions. Selenium deficiency is common in malnourished pediatric AIDS patients and may have a role in the pathogenesis of cardiomyopathy in this population. Additional studies are underway to determine the effect of selenium supplementation on cardiac function in these patients.

T.B.P.257

CLINICAL AND IMMUNOLOGICAL COURSE OF HIV-INFECTION IN HEMOPHILIAC AND PERINATALLY INFECTED CHILDREN PROPHYLACTICALLY TREATED WITH IMMUNOGLOBULINES CONTAINING HIGH TITERS OF ANTI-CMV, ANTI-EBV AND ANTI-HIV AND TIMING OF AZIDOTHYMIDINE MEDICATION.

A PROSPECTIVE LONGITUDINAL STUDY OF 61 CHILDREN

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In our clinic we care for 61 children consisting of 10 HIV-infected hemophiliacs or von Willebrand patients (up to 19 years) and 51 born to HIV-positive mothers (up to 5,5 years). 34 children are classified as P 1 and P2, 6 are classified as P 0 according to CDC-criteria, 21 were initially P 0 and considered not to be infected at the age of 15 months. Since the end of 1986 we conduct a prospective prophylactic intravenous immunoglobuline therapy (IVIGG), using preparations with high titers of anti-CMV, anti-EBV (Cytotect®; neutralizing Anti-CMV-titer: 50 U/ml). In case of continuous loss of HIV-antibodies (Western-Blot) we use IGG-preparations containing high titers of HIV-antibodies (all preparations are virus-inactivated by means of β-propiolactone/UV). During clinically highly symptomatic periods patients receive 400 mg/kg b.w. once or twice a week, after improvement 200 mg /kg b.w. once a week or every other week resp. We start IVIGG when clinical signs and symptoms of B-cell dysfunction e.g. increased incidence of bacterial infections, poor in vitro PWM- or SAC-lymphocyte-stimulation, low antibody response to diphtheria/tetanus vaccines and hypergammaglobulinemia are present. Children with unspecific symptoms like persistent diarrhea, parotitis, fever and growth retardation and children with reduced T-cell-function presenting as persistent oral candidiasis and/or frequent herpes infections are given IVIGG prophylactically in order to support their immune system by prevention of various viral infections and characteristic diseases of childhood. Depending on that we thus expect to reduce HIV-replication. Furthermore we add oral AZT (Retrovir®, 7-14 mg/kg b.w./die q.i.d.) in cases of onset of neurological symptoms, HIV-encephalopathy, opportunistic infections or rapid immunological deterioration. In patients with severe HIV-associated or AZT-induced neutropenia the usability of lymphokine GM-CSF is under investigation. In cases of severe CD4-lymphocyte deficiency (< 100 CD4-cells/mm^3) prophylaxis with co-trimoxazol (5 mg/kg b.w./d) or pentamidine-isethionate-inhalations (4 mg/kg b.w.) every other week successfully prevented pneumocystis-carinii-pneumonia. Until the conclusion of this study we have not observed symptoms classified as P 2 E (HIV-associated tumors). During 30 months of therapy we observed only two cases of opportunistic infections (children without pneumocystis carinii pneumonia prophylaxis) and only one case of lymphoid interstitial pneumonia. Except this case we did not see any EBV- or CMV-related infections including CMV-retinopathy and oral hair leukoplakia during this observation period. Neurological symptoms occurred in two cases and showed satisfactory remission under AZT-treatment. 8 of 19 treated children with IVIGG had no deterioration of CDC-classification in spite of declining immunological parameters. One hemophiliac and one intrauterine infected child died in a state of totally destroyed immunological function (for months no detectable absolute CD4-lymphocyte count and no B-cell function). 9 children showed a considerable clinical improvement. One of them who has been classified as full blown AIDS for 4 years is currently still without clinical symptoms despite zero CD4-lymphocytes and lacking in vitro-B-cell function since 15 month.

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Pédiatrie : Infection/néoplasie
Pediatrics: Infection/Neoplasia

T.B.P.258

EXPERIENCE WITH CENTRAL VENOUS CATHETERS IN PEDIATRIC AIDS

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Objective: Children with AIDS are at high risk for infection and malnutrition, frequently requiring prolonged venous access for antibiotics and nutritional support. We undertook this study to determine the course and complication rate of central venous catheters (Broviacs) when used in a pediatric AIDS population.

Methods: Retrospective chart review of 200 HIV infected children in Newark, NJ (1982-88).

Results: 23/26 children who received Broviacs had charts available for review and received 35 Broviacs. All 23 had CDC defined AIDS (85% with CD4 <400). Mean age at insertion was 28 mo. (10 wk - 11 yr). Mean duration of placement was 115 d (20-400) for a cumulative total of 4040 days. In 23/35 courses, children were able to go home, with family training and nursing support, for a mean duration of 72 d. There were no catheter related deaths. Nine Broviacs were removed for mechanical problems. Of all febrile episodes (55) evaluated during catheter placement, 21 documented catheter related infections occurred. Ten bacteremic episodes were successfully treated with Broviacs remaining (Organisms: 6 staph, 3 strep, 3 gram neg). Eight catheters were removed because of inability to clear the infection (Organisms: 3 candida, 3 staph, 3 strep, 1 gram neg). Of 3 local infections, one tunnel infection was successfully treated and 2 catheters were removed for exit site infections with pseudomonas. These 18 bacteremic episodes represent 4.5/1000 days of catheter use.

Conclusion: Our infection rate with Broviacs in children with AIDS (4.5/1000) compares favorably with previously documented infection rates in pediatric oncology patients (.5-7.5/1000). Broviacs can be safely used at home for outpatient antibiotics and nutritional therapy in this high risk population.

T.B.P.259

NEOPLASTIC DISEASES IN CHILDREN WITH AIDS: V. V. Joshi, E. M. Connor, F. DiCarlo, L. G. Epstein, J. M. Oleske. Departments of Clinical Pathology and Pediatrics, East Carolina University School of Medicine, Greenville, NC, USA and Children's Hospital of New Jersey, New Jersey Medical School, Newark, NJ, USA

Objective. To describe the incidence and types of neoplastic diseases (ND) in children with AIDS.

Methods. Biopsy (35 cases) and/or autopsy (18 cases) material from 102 HIV infected children.

Results. Seven cases showed ND. The risk factor in five of the cases was parental IV drug use. In 2 cases HIV was acquired via transfusion of blood or blood products. In 2 cases, ND was the first major evidence of HIV infection, in 3 it was part of a complicated course and in 2 it was found at autopsy. Following types of ND were present: 1) polyclonal polymorphic B cell lymphoproliferative disorder (PBLD) characterized by involvement of lymph nodes, spleen, kidneys, liver and particularly of lungs (brain was not involved) seen in 2 cases represented progression of pulmonary lymphoid hyperplasia/lymphoid interstitial pneumonitis. PBLD is considered as intermediate in biologic behavior between benign and malignant lymphoproliferations; 2) malignant lymphoma involving only the brain in 3 cases; 3) leiomyosarcomatosis of gastrointestinal tract (40 primary tumors extending from stomach to colon), with metastasis to lymph nodes, lungs and brain in one case; 4) Kaposi's sarcoma of skin of face, arms and groins in a child with transfusion acquired HIV infection.

Conclusion. HIV associated ND may be more common than previously recognized and may occur at any point in the symptomatic course.

T.B.P.260

SAFETY AND EFFICACY OF CENTRAL VENOUS CATHETERS IN PEDIATRIC AIDS PATIENTS

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Objective. To determine the safety and efficacy of central venous catheters (CVCs) in pediatric AIDS patients(pts).

Method. A retrospective chart review of children with CDC-defined AIDS (P2D) who had CVCs placed due to inadequate venous access.

Results. The medical records of 11 pts(7 male,4 female), ages 3 mos to 12½ yrs (mean≥47 mos) were reviewed. Risk factors included blood transfusions in 7 and perinatal exposure in 4 pts. Mean absolute granulocyte count(AGC) at the time of CVC placement was $3062/mm^3$, with 3 pts having an AGC of $< 1000/mm^3$. Mean CD4+ cell #'s were $243/mm^3$, with 10 pts having CD4+ #s $< 500/mm^3$. No morbidity or mortality was associated with the CVC operative procedures. Thirteen CVCs(9 double lumen, 1 single, 3 totally implanted) were placed for a total of 1812 CVC days(mean=139 days/CVC). The 13 CVCs were used for the following: parenteral nutrition-12; IVIG-11; blood products-12; other medicines-11; blood draws-11. Four episodes of CVC-related sepsis(in 3 pts) occured(.22 infections/100 CVC days) resulting in removal of 3 CVCs. Klebsiella, Enterobacter species and S. Epidermidis were isolated from individual CVCs. Three CVC occulsions(radiographically confirmed) occurred, 2 of which spontaneously resolved, 1 which required operative CVC revision.

Conclusion. The rate and types of CVC infection in children with profound HIV related CD4+ cell deficiency approximates that seen in pediatric oncology pts. CVCs proved valuable in pts requiring multiple therapeutic interventions.

T.B.P.261

HIV INFECTION (HIV) IN PATIENTS (PTS) TREATED FOR LEUKEMIA OR SOLID TUMOR, A PEDIATRIC ONCOLOGY GROUP (POG) STUDY

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Objective and Methods. A questionnaire was sent to POG institutions to enquire about (a) the number of pts infected by HIV among children treated for leukemia or solid tumors; (b) the impact of chemotherapy on the natural history of HIV; (c) the interaction between HIV and cancer; (d) and institutional attitudes regarding HIV testing and confidentiality.

Results. Ten of 74 responding institutions reported a total of 19 HIV infected pts (14 leukemias, 5 solid tumors; 12 boys, 7 girls; ages 10 mos-20 yrs). Thirteen pts were diagnosed off-therapy, 6 pts on therapy. Sixteen pts acquired HIV post-transfusion. Three pts with congenital AIDS developed B-cell leukemia before the age of two. A correlation exists between number of cases by institution and geographic HIV seroprevalence. The median interval between transfusion and diagnosis of HIV was 29 mos (range 5 wks-6 yrs); between transfusion and death was 30 mos (range 2 mos-8 yrs). 18/19 HIV+ pts developed AIDS, one remains asymptomatic. 12/19 have died (6 CR, 6 PD). Two pts are being treated with Ig or AZT.

Conclusion. (1) No true seroprevalence was available; (2) A correlation existed between HIV+, geographic area and number of transfusions; (3) HIV status appeared not to affect tolerance of chemotherapy; (4) the natural history was different from hemophiliacs but similar to other transfused pts; (5) Testing with consent form, counselling, follow-up and therapeutic guidelines is recommended for pts transfused in high seroprevalence areas.

T.B.P.262

VERY LATE ONSET OF GROUP B STREPTOCOCCAL SEPSIS IN INFANTS WITH HIV INFECTION.

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Objective. To describe characteristics of Group B streptococcal (GBS) disease in HIV infected children.

Methods. GBS disease was identified in 3/200 (1.5%) of HIV infected children diagnosed at the University of Maryland and NYU Medical Center. Charts were reviewed to describe clinical features, course, and outcome of GBS disease.

Results. GBS patients were 3.5, 5 and 5 months of age respectively. Each had evidence of HIV infection as well as immunologic dysfunction including low T-cell counts and poor mitogen responses. All had fever > 102F, elevated WBC's ranging from 10,000 - 20,000, and marked left shift. Two presented as meningitis with bulging fontanel, irritability, and seizures. Both had CSF pleocytosis and + CSF cultures for GBS. One presented with tachypnea, rales, apnea, and radiographic evidence of bibasilar pneumonia. The course of each patient was unusually complicated. All 3 responded to IV beta-lactams.

Conclusions. GBS disease (meningitis and pneumonia) occurred beyond the usual age of onset in these HIV infected children. Despite immunosuppression and severe GBS disease these patients mounted PMN cell responses and improved with beta-lactam antibiotics.

T.B.P.263

DIARRHEA AND ITS CONSEQUENCES IN HIV-INFECTED CHILDREN.

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Objective: To determine the incidence, etiology, and sequelae of diarrhea in children with symptomatic HIV infection.

Methods: Children with AIDS and ARC (n=16) were prospectively enrolled and serially evaluated. When a physician visit was made for diarrhea, a whole stool or rectal swab was examined for bacterial enteropathogens, protozoa (whole stool only), mycobacteria, viruses, and *Clostridium difficile* toxin.

Results: During the first 11 months of study, the incidence of diarrhea was 0.13 episodes per child-month, which is 2.6 times the incidence we have observed in seronegative children born to HIV-infected or high risk women (mean age 7.3 ± 5.7 mo.), and 7.2 times the incidence in inner city Baltimore children (mean age 7.9 ± 6.2 months). Four cases were hospitalized because of diarrhea, and one case with salmonellosis died. Two cases had recurrent (≥3 episodes/year) and one had persistent (≥14 days) diarrhea. Wasting (weight for height < 5th percentile) was seen in 4 children.

No. child-months after enrollment	143
Mean age at enrollment in mo.s	17.5 ± 10.7
No. of diarrheal episodes (DE)	18
No. patients (%) with DE	11 (61)
No. DE/child-mo. after enrollment	0.13
No. (%) DE with enteropathogen	7 (39)

*Includes 1 rotavirus, 1 *Salmonella*, 2 *Shigella*, 1 *Campylobacter*, 1 *Giardia*, and 1 *C. difficile* toxin.

Conclusion: Diarrhea is a major cause of morbidity in HIV-infected children and occurs at a rate that is 2-7 times higher than the reported incidence in uninfected children. A potentially treatable infectious etiology can be detected in almost 1/3 of all episodes.

T.B.P.264 BURKITT LYMPHOMA IN AN HIV-INFECTED CHILD

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HIV infection in children is infrequently complicated with malignacies: Kaposi sarcoma (less than 5%), a few cases of malignant brain lymphoma, one case of Burkitt lymphoma (BL) were reported. We describe BL in a 3-year-old white female, born to drug abuser seropositive mother, admitted because of fever, anorexia, increasing abdominal girth. HIV seropositivity, failure to thrive, enlanged lymphonodes, liver and spleen where evident when 3-month-old. Persistent interstitial pneumonia still the age of 18 months. During the next years policlonal hypergammaglobulinemia, reversed CD4/CD8 ratio and HIV seropositivity persisted (P2ACD)-1 according to CDC). On admission she was febrile, poorly nourished with dyspnea and generalized lymphadenopathy; her abdomen was protuberant and tender, liver margin at 11 cm, spleen 9 cm. WBC 13.700/ul (N 45%,L 50%,M 3%,E 2%), ESR 18 mm/hr, IgG 3210 mg/dl, IgA 218 mg/dl, IgM 282 mg/dl, CD3+ 78%, CD4+ 28%, CD8+ 54%. Serum was positive for HIV antibodies in ELISA and W. blot (p17-24-31-55-6651, gp 120-210). CMV was isolated from body fluids. Narcosis for brain scan (normal) caused severe hypertermia. US scanning: numerous massively enlarged porta hepatis (4.9 cm) and splenic lymphnodes. Examination of biopsy specimens of skin nodules changes consistent with BL. Combination chemotherapy (VCR, CYC, PDN, iv+it MIX) was started. Dramatic clinical improvement was evident within two week: abdominal circumference decreased by 11 cm and US scan showed disappearance of abdominal nodes. In case of massive abdominal distension in HIV infected children, most if some years after the onset of signs of illness, opportunistic lymphoproliferative neoplasia should be ruled out. If detected, it can be temptatively treated with specific chemotherapy with some advantage.

T.B.P.265 CHRONIC MUCOCUTANEOUS CANDIDIASIS IN PEDIATRIC AIDS

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Objective. To compare the indidence of persistent mucocutaneous candidiasis in patients diagnosed as AIDS in the first year of life (group I) vs those diagnosed later (group II).
Methods. The study was performed at two public hospitals in New York City on sixty two patients with perinatal HIV infection admitted from 1984-1988 and followed for 1-50 months (mean 18 mo). All mothers except three were intravenous drug abusers. The majority of patients in group (G) I became symptomatic in the first six months of life. The G consisted of 42 patients, 14 blacks (b) and 28 Puerto Ricans (PR) 21 males (m) and 21 females (f). G II comprised 20 patients, 13 b and 7 PR, 12 m and 8 f, ranging in age from 12.5 months to 72 months (mean 17 mo).
Results. Chronic mucocutaneous candidiasis was significantly more frequent in G I vs GII: 50% vs 10%, P=0.006. There were no significant race or sex differences between groups, but in GI b f were more often afflicted than PR f (60% vs 31%). Also in GI candidiasis was the sole initial manifestation in 5 patients (12%) and 3 of these (60%) died by four months of age. In GII candidiasis was found only in PR, with no significant sex differences (25% in m vs 33% in f).
Conclusion. In the very young infant with perinatal HIV infection chronic mucocutaneous candidiasis may predict early and severe morbidity. Long term follow-up is needed to elucidate its prognostic value in older infants and children.

T.B.P.266 OPPORTUNISTIC INFECTIONS AND MORTALITY IN AN URBAN PEDIATRIC POPULATION INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV)

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Objective. To define opportunistic infections (OI) that were most prevalent and linked with the highest mortality rate in an urban pediatric population.
Methods. 73 pediatric HIV patients followed up to 7 years (mean 2 years) were reviewed for evidence of OI (Centers for Disease Control, stage D-1).
Results. As in the adult population, pneumocystis carinii pneumonia (PCP) was the most frequently reported opportunistic organism with a high mortality rate linked to both a) clinical presentation with acute respiratory failure and b) co-infection with cytomegalovirus (CMV). CMV infection had the highest mortality rate with documented pneumonitis (3/5), hepatitis (1/5) and retinitis (1/5). Bacterial infections were not as common as in other reports.

OI	# of Patients	Mortality	Recurrence
PCP	9	66%	No
CMV	5	100%	No
M. Avium intracellularle	4	25%	No
Salmonella	2	0%	Yes
E. Coli	1	100%	No
Strep. pneumonia	1	0%	Yes
Candida Esophagitis	2	0%	No

Conclusion. The incidence of OI was 25% (18/73) with mortality high for PCP, CMV and gram negative sepsis (averaging 90%). Attention should be focused on early detection and intervention for OI. Protocols defining and standardizing therapeutic approachs to OI in children must be designed and implemented.

T.B.P.267 SPECTRUM OF INFECTIONS IDENTIFIED AT AUTOPSY IN PEDIATRIC AIDS

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Objective: To identify the spectrum and sites of infection in children dying of AIDS. Method: 33 children with full-blown AIDS have been followed at Childrens Hospital of Los Angeles; 22 have expired; 12 postmortem examinations revealed the following:

ORGANISM	# OF PTS	SOURCE	CLINICAL CORRELATES
P. carinii	7	lungs(L)	pneumonia(P)
Candida Spp.	5	L, pharynx, heart(H), blood(B), kidney, bladder, esophagus	P, thrush, esophagitis endocarditis, disseminated disease(DD)
Cytomegalovirus	5	H, L, pancreas, adrenal glands, thyroid, brain(Br)	P, DD, myocarditis, enterocolitis, encephalitis(E)
M. avium complex	2	B, L	P, sepsis(S)
Adenovirus	1	L, P, Br	DD, P, E
P. aeruginosa	1	B, L	S, P
E. coli	1	B, L, peritoneum	S, P, peritonitis
S. pneumoniae	1	L, meninges	P, meningitis
RSV	1	L	P

Conclusion: Multiple infectious agents may be responsible for a fatal outcome in children with AIDS. This indicates the need for a wide range of improved antimicrobial therapy for these children.

AZT SK/thrombocytopénie et autres traitements
AZT KS/Thrombocytopenia and Other RX

T.B.P.268 HEMATOLOGIC EFFECTS AND OUTCOME OF ZIDOVUDINE (AZT) THERAPY.

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Objective. To describe the hematologic effects and outcomes of zidovudine (AZT) therapy in CDC group III and group IV HIV-infected patients (pts).
Methods. 20 AIDS and 14 group IVa and group III (n=34) pts were enrolled in the open trial of AZT and follwed prospectively. Hematologic parameters studied included granulocyte count (GC ct), platelet count (PLT ct), hemoglobin (Hgb), mean corpuscular volume (MC), and lymphocyte (CD4 cts) counts.
Results. Of 34 pts enrolled, 7 are dead, 12 are off Rx., and 14 remain on Rx. Deaths were due to disseminated KS (1), recurrent PCP (2), progressive dementia (2), inanition (1) and lymphoma (1). Disseminated CMV (2), MAI (1) and stage IV lymphoma have developed in 4 pts continuing Rx. Serial CD4 cts demonstrated significant increases in 9/16 pts able to take 1200 mg/day of AZT. Pts. with CD4 cts < 100 cu/mm did not show increases to > 100 cu.mm. Progressive macrocytosis was seen in 31/34 pts. Pts. with starting Hgb < 14 g/dl were more likely to have significant decreases in Hgb on Rx ($p < .05$). GC cts varied but increases were noted when GC cts were low at start. PLT cts remained stable or increased slightly.
Conclusions. Zidovudine causes predictable macrocytosis and unpredictable anemia. GC and PLT counts may improve with suppression of active HIV infection. Opportunistic infections and malignancies continue to develop in patients taking zidovudine.

T.B.P.269 THROMBOCYTOPENIA IN HIV INFECTION

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Objective: to describe the incidence of thrombocytopenia in HIV positive pts., to assess the bone marrow lesions and the prognostic significance of thrombocytopenia in the AIDS evolution.
Methods: on Dec. 31, 1988, eighty-eight cases of thrombocytopenia were observed within a population of about 1000 HIV positive pts. at the 1° Division of Infectious Diseases Follow-up began about 30 months before with an average 21-month observation. Bone marrow biopsies from 32 thrombocytopenic anti-HIV positive pts. were observed at light and electron microscopy. The 19 group II pts. and the 13 group III pts. (CDC 1986) were initially all free from opportunistic involvement and neoplasms and required no medication. Platelets were less than 100.000/mmc; pts. were all drug-addicts with evidence of HBV infection in 28.
Results: bone marrow (b.m.) specimens revealed an increased number of megakaryocytes in 25 pts. with hypereosinophilia in 26 and plasmacytosis in 15; these lesions represented the main b.m. involvement. No evidence of granulomas or acid fast organisms was found. These data suggest a probable mechanism destroying blood platelets peripherally in the absence of bone marrow underproduction. At the present follow-up only two pts. undergoing a bone marrow biopsy evolved to full-blown AIDS.
Conclusion: 1) 9% of the HIV positive population presents thrombocytopenia as a clinical sign of early bone marrow involvement. 2) The main bone marrow alterations are characterized by an increased number of megakaryocytes with hypereosinophilia and plasmacytosis. 3) Thrombocytopenia has no unfavourable prognostic meaning in the evolution to AIDS.

T.B.P.270 PLATELET PRODUCTION IN HIV INFECTION - EVIDENCE FOR A COMPENSATED THROMBOLYTIC STATE ENHANCED BY AZT

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Thrombocytopenia(↓plt) is common in HIV infection, often due to marrow suppression 2° infection, drugs or infiltration. In the absence of these, some patients have ↓plts. associated with ↑plt.-associated IgG (HIV-ITP). Kinetic studies performed with ^{111}-Indium-labelled plts. in 12 patients with HIV-ITP (mean plt. ct. $49 \pm 32 \times 10^9$/L) revealed significantly shortened survivals (mean 97 ± 31 hr) compared to HIV non-infected controls (n controls) (mean 194 ± 11 hr)($p < .001$). Furthermore, total plt. production in HIV-ITP patients (TPP=Plt. ct.x90%xTotal Blood Vol./plt. surv.x %recov.) was suppressed (mean TPP=95×10^9plt/D) when compared to n controls (mean TPP=209×10^9 plt/D)($p < .001$). Treatment of 7 HIV-ITP patients with AZT at 200 mg q4H resulted in a rise in the plt. ct. which was associated with a slightly prolonged plt. surv.(mean plt.surv.=128 ± 44 hr) and a dramatic rise in TPP (mean TPP= 275×10^9plt/D). To further investigate, plt. kinetics were done in clinically stable non-thrombocytopenic HIV+ controls(n=11) and HIV+ controls on AZT (n=12). Platelet survivals in 63% of patients in both groups were significantly below normal (<2 S.D.), with TPP increased in 4/11 HIV+ controls compared to n controls. In HIV+AZT controls, TPP was significantly increased (mean=330×10^9plt/D, $p < .02$) compared to n controls. These findings suggest that HIV+ individuals with normal plt. cts. may be in a compensated thrombolytic state. AZT appears to have a nonspecific stimulatory effect on platelet production which may be useful in patients with HIV-ITP who have significant suppression of plt. production.

T.B.P.271 EFFECTS OF LONG TERM ZIDOVUDINE ON PLATELET COUNT.

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OBJECTIVE: To assess the long term platelet response of zidovudine following reports of short term beneficial effects in HIV related immune thrombocytopenia (ITP).

METHODS: 38 patients received zidovudine in standard doses with adjustments or stoppage for toxicity for >12 weeks (14 with AIDS and 24 others). 26 patients had normal platelet counts (NP) and 12 were thrombocytopenic (TP) pre-treatment, 5 with presumed HIV- ITP of whom 2 had counts <15 x 10(9)/1.

RESULTS: The median follow-up was 26 (range 12-54) weeks. Mean pre-treatment counts were 240 x 10(9)/1. for NPs and 91 x 10(9)/1. for TPs. Changes in platelet count from this baseline are given below (x10(9)/1.

Weeks Rx	Mean Plats(NP)	Change(NP)	(No.)	Mean Plats(TP)	Change(TP)	(No.)
8	295	+55	(26)	176	+85	(12)
16	238	- 2	(23)	166	+75	(11)
24	206	-34	(20)	139	+48	(8)
32	202	-38	(16)	129	+38	(7)

The fall in platelet count in NPs was significantly associated with the development of severe transfusion dependent anaemia (< 8 gms/dl., 5 patients, p<0.05) but not with risk group, clinical disease stage, occurrence or treatment of opportunistic infections.

CONCLUSION: In thrombocytopenics, zidovudine can produce a sustained platelet rise, and may prove to have a therapeutic role for the treatment of symptomatic HIV ITP.

T.B.P.272 Response to splenectomy for severe HIV-related thrombocytopenia in 10 drug abusers and pathological features of the spleens.

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Objective:To evaluate the response to splenectomy for severe HIV-related thrombocytopenia in a medium term follow-up and the pathological features of the spleens.

Methods:10 patients (all intravenous drug abusers -IVDAs-) with severe HIV-related thrombocytopenia (PLT <20x10^9/L) who failed to respond to standard steroid therapy and showed continuos significant bleeding, underwent splenectomy (mean follow-up: 7 months prior and 29 after surgery).Relevant data: M:7 F:3; mean age: 27; mean platelet count: 7x10^9/L. All spleens were examined macroscopically immediately after surgery. Multiple sections were stained with a panel of monoclonal antibodies.

Results:

Haemorrhages		Early response (*)	Late response (*)			m CD4 (**)		m CD8 (**)	
pre	post	>100	>100	>50	>25	pre	post	pre	post
10/10	0/10	10/10	4/10	4/10	2/10	0.443	0.338	0.578	1.336

(*) : Plt x 10^9/L . (**) : x 10^9/L .

4 patients had a long lasting remission;the other 6 are in partial remission without bleeding. Two patients progressed from III CDC stage to IVC2, but none evolved to overt AIDS. No significant infection was observed early after splenectomy and during follow-up. The increase of CD8 levels was the only significant variation of the lymphocite subset after splenectomy. The mean weight of spleens was 251 gr.; the only findings wich seem to be peculiar are the "whorne-eaten" aspect of the follicles and the B-cell prevalence in the red pulp.

Conclusions:Splenectomy proved to be effective and riskless, in our experience, in the treatment of severe HIV related TP in IVDAs. The pathological picture of the spleens is essentially that of some degree of congestion with a pooling of platelets, associated with subtle modifications of T and B-cell compartments.

T.B.P.273 HIV-RELATED IMMUNE THROMBOCYTOPENIA : FOLLOW UP AND TREATMENT OF 132 PATIENTS

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Objective : Longitudinal study of HIV infected patients with thrombocytopenia (platelets$< 50 \times 10^9$/l).

Patients at initial evalulation : 132 patients (IV drug addicts : 56 ; homosexual men : 36, hemophiliacs : 23 ; others : 17). 56% belonged to CDC group II, 30 % to group III and 14 % to group IV, none had AIDS. CD4 cell count was$< 400 \times 10^6$/l in 41/115 (36 %). Serum P24 antigenemia was detectable in 11/75 (15 %).

Treatment : 34 patients received zidovudine (1 000 mg to 1 500 mg/day) for at least 12 weeks. 15 achieved a persistent increase in platelet counts. In most patients, other treatments such as corticosteroids and IV immunoglobulin gave only transient responses. Thus, splenectomy was performed in 38 patients with severe symptomatic thrombocytopenia and resulted in a persistent increase of platelet counts in 33 (87 %).

Follow up : Within a total follow-up of 2 987 months-persons (median : 21 months) from the diagnosis of immune thrombocytopenia, 11 patients have developed AIDS and 11 died. 10 patients were lost for follow up. AIDS-free survival was 90 % at 2 years, 79 % at 4 years and is expected to be 60 % at 5 years.No differences in AIDS-free survival were noted according to risk groups or splenectomy.

T.B.P.274 HIV - ASSOCIATED THROMBOCYTOPENIA (HTP), PLATELET - ASSOCIATED IMMUNOGLOBULIN (PAI) AND ZIDOVUDINE.

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OBJECTIVE. To establish the incidence, permanence and pathogenic role of PAI in HTP treated with Zidovudine, and in non-thrombocytopenic HIV-infected patients.

METHODS. PAI was determined by platelet suspension immunofluorescence test to 25 HIV-infected patients with normal platelet count and 8 HTP (<100 x 10 platelets/L). HTP group received treatment with Zidovudine (200 mg/q4h) during 16.6 ± 14 weeks and PAI was again determined after thrombocytopenia remission.

RESULTS. Follow-up of HTP showed initial and final platelet counts of 49000 ± 25840 (range 7000-12000/µL) and 196667 ± 104051 (range 32000-14000), p=0.004. There were no untoward haematological side effects. All HTP and 12 of 25 patients with normal platelets count showed PAI prior to therapy, and this situation stated unchanged after remission with Zidovudine. One patient developed thrombocytopenia of 6000/µL while under Zidovudine. Comparison between groups were:

	H T P / P A I +	NORMAL PLATELET COUNT	
		P A I +	P A I -
Homosexuals/Drugaddicts/Haemophiliacs	2/3/3	0/11/1	1/10/1
Age (years)	31 ± 10	29 ± 5	29 ± 6
AIDS and CRS case rate	12.5 %	42 %	36 %
CD4 count / µL	544 ± 300	600 ± 375	349 ± 285
Platelets / µL	49000 ± 25840	254000 ± 88000	254750 ± 86400

CONCLUSION. Zidovudine therapy appears highly effective to control HTP. The presence of PAI in that group is sensible but nonspecific. PAI may be present in every stage of HIV-infection and did non correlate with the degree of immunodefiency or with any specific group at risk,neither they disappeared with the remission of thrombocytopenia obtained with Zidovudine. Consequently, PAI pathogenic role remains unclear.

T.B.P.275 THERAPY OF HIV ASSOCIATED THROMBOCYTOPENIA

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Objective To assess the therapy of HIV associated thrombocytopenia

Methods A retrospective analysis of 111 HIV positive haemophiliacs showed 7 with thrombocytopenia $< 50 \times 10^9$/L. 4 patients were CDC II, 1 was CDC III and 2 were CDC IV. Their mean age was 26years(range 5-38), and the they had been HIV positive for a mean of 63 months (range 47-90 months) 5 forms of treatment was used, as in table 1

Results Table 1 illustrates the results A transient response occured when the platelet count returned to pre-treatment levels, a partial response occured when the platelet count was maintained between 50-100 x 10^9/L, and a complete response occured when the platelet count was maintained above 100 x 10^9/L

no. of pts.	THERAPY	RESPONSE	side-effects
4	IV g-globulin	1 nil, 3 transient	nil
2	steroids	2 partial	nil
3	zidovudine	1 nil, 2 complete	1 pancytopenia
1	interferon	1 complete	flu-like symptoms
2	splenectomy	1 partial, 1 complete	1 subphrenic abscess

Table 1

Conclusions IV gammaglobulin and steroids were useful in obtaining a short term response, but splenectomy is the final treatment for the asymptomatic patient in the long term, although not without risk Zidovudine is non-invasive and effective therapy and therefore particularly suitable for the haemophiliac. Interferon appears promising and may be an alternative to zidovudine, but further studies are required

T.B.P.276 LACK OF EFFICACY OF ON-LINE COLUMN-A-ADSORPTION IN TREATMENT OF HIV-ASSOCIATED ITP

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Objective. To determine the clinical efficacy of on-line CAA in restoring normal platelet count in patients with HIV-related ITP. Previous studies have demonstrated the value of off-line CAA in treatment of HIV-ITP.
Method. We treated 7 patients with ITP (platelet count range 18,000/cu mm to 85,000/cu mm, mean 39,000/cu mm) using an on-line IBM cell separator with Protein A column (Imre). Patients were treated 2-3 times weekly for a period of 3 to 5 weeks. Monitored parameters included platelet counts, platelet associated IgG and IgM, CICs, WBC and hemoglobin as well as physical examination and routine laboratory studies. Two patients with elevated platelet associated IgM in addition to elevated IgG underwent repeated plasmapheresis 2-3 times in addition to CAA.
Results. We observed modest increments (10,000-20,000/cu mm) in circulating platelets in 3 patients. But no dramatic or sustained increment was observed except for one patient whose count increased from 25,000/cu mm to 90,000/cu mm after CAA. No patient had post-treatment counts above 100,000/cu mm. There were no consistent changes in any of the other monitored objective parameters. Other than occasional rigors, no toxicities were observed. All patients noted a distinct subjective sense of improved well-being which was sustained after completion of CAA.
Conclusion. On-line CAA performed 2-3 times weekly for 3-5 weeks did not produce clinically meaningful increments in platelet count. Further work is needed to clarify the role of CAA in HIV-related autoimmune phenomena.

T.B.P.278 COMBINED STEROID-ZIDOVUDINE TREATMENT OF SEVERE THROMBOCYTOPENIA ASSOCIATED WITH HIV INFECTION.

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Objective: Assessment of the efficacy of combined steroid-zidovudine treatment in patients with severe thrombocytopenia and HIV infection.
Methods: Since June 1988 a therapeutic protocol of steroids and zidovudine has been in effect for patients with HIV infection and severe thrombocytopenia (platelets under 20.10^9/L). Six patients were included in this study. In 3 of them the condition was discovered in a routine blood analysis. The other 3 patients consulted for clinical manifestations related to thrombocytopenia (1 cerebellar hematoma and 2 hemorrhagic diathesis). All began treatment with steroids at a dose of 1 mg/kg/day of prednisone, except for the patient with cerebellar hematoma, who began with hydrocortisone 4 mg/8 hours. Seven days after the onset of treatment, steroids began to be tapered off and zidovudine 200 mg/8 hr was associated. Steroids were suppressed on day 15.
Results: All patients presented an increased platelet count at the onset of steroid treatment, with a mean of 86.10^9/l (range $40\text{-}180.10^9$/l). After suspending steroids and during early zidovudine treatment, there was a decline in platelet counts, with a mean of 20.10^9/l (range $10\text{-}40.10^9$/l). At 2 months there was a new rise in the platelet count, which persisted at 3 months in all patients. This rise continued at 6 and 8 months in the patients who were treated this long.
Conclusions: Combined treatment of 2 weeks ed prednisone and continuation with zidovudine indefinitely is a useful alternative in patients who have severe thrombocytopenia associated with HIV infection.

T.B.P.280 TREATMENT OF LYMPHOMAS (NHL) ASSOCIATED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV).

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Supported by INSERM

NHL-HIV have a poor prognosis related to both lymphoma and associated opportunistic infections (OI).In order to evaluate the place of intensive chemotherapy in a subset of patients with NHL-HIV.Pts were stratified in 2 risk groups.Group A:no OI and performance status < 2 (OMS);group B:performance status > 2 or existence of OI.In group A,pts were treated with an intensive regimen LNH 84(ASCO,898,1988).In group B pts received a low dose chemotherapy program associated with AZT 600 mg,Adriamycin 25 mg/m²,d1,VM 26 30 mg/m²d1,Cyclophosphamide 300 mg/m²d1,Prednisone 20mg/m²d1-5,Vincristine 1,4 mg/m² d15,Bleomycine 10 mg/m² d15.In case of CNS involvement in both groups,cranial radiotherapy 40 gy was used.47 pts were included in the study,23 are presently evaluable.Histology: diffuse large cell 12 pts,IBL 5 pts,Burkitt 9 pts,Kil 1 pt, unclassified 4 pts.In group A stage was:I 3 pts,II 2 pts,IV 12 pts.Bone marrow 5 pts.CNS 6 pts.B Symptoms 13 pts,bulky disease 4 pts.After induction 12 pts are in CR,3 PR,2 failures,3 deaths. Infection grade 2-3 was observed in 10 pts,4 pts already died form progressive disease.In group B:3 pts,2 died at the onset of treatment.Intensive treatment in NHL-HIV pts is feasible.Updated results will be presented.

T.B.P.277 EFFICACITE DE LA ZIDOVUDINE A FAIBLE DOSE DANS LE TRAITEMENT DES THROMBOPENIES LIEES AU VIRUS HIV.

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Objectifs : juger de l'effet et de la toxicité de la Zidovudine‡ à faible dose (2 gélules à 200mg q 8h), chez des patients asymptomatiques pour le virus HIV. Nous avons précedemment montré l'efficacité de la Zidovudine à dose classique (2 gélules q 4h) chez les patients SIDA et ARC. Une étude suisse contre placebo, retrouve les mêmes résultats. L'augmentation du taux des CD4 et la diminution de l'antigénémie HIV ont été observées pour des doses faibles de Zidovudine à 3 mois.
Méthodes : 8 patients asymptomatiques HIV+ (6 toxicomanes, 1 homosexuel, 1 transfusé) présentaient une thrombopénie isolée inférieure à 100000/ml. Le myélogramme confirmait l'origine périphérique de la thrombopénie. Les patients n'avaient ni hépatosplénomégalie ni trouble de la coagulation. La Zidovudine (2 gélules q8h) a été prescrite pendant 3 mois, suivie d'une fenêtre thérapeutique de 1 mois, puis reprise du même traitement.
Résultats : un taux de plaquettes supérieur à 100000/ml a été observé chez 7 patients, dans un cas les plaquettes ont augmenté mais restèrent inférieures à 100000/ml. Dans 5 cas la correction de la thrombopénie a été observé en moins d'un mois. A l'arrêt du traitement, 6 patients ont vu leurs plaquettes redevenir inférieures à 100000/ml puis remonter à la reprise du traitement. Aucune toxicité n'a été observée, les globules rouges et globules blancs restent stables le VGM a augmenté de 8fl. Conclusion : la Zidovudine à faible dose corrige les thrombopénies liées au virus HIV chez des patients HIV+, asymptoasymptomatiques, sans toxicité.

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Thérapie et évaluation clinique : sarcome de Kaposi et autres
Therapy and Clinical Evaluation: Kaposi's Sarcoma and Others

T.B.P.279 PHASE II STUDY OF ALPHA 2A INTERFERON (INF) ASSOCIATED WITH AZT IN PATIENTS (PTS) WITH AIDS RELATED KAPOSI'S SARCOMA.

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INF is the standard therapy for AIDS-KS and AZT has demonstrated antiviral activity in AIDS. 15 pts with AIDS-KS received alpha 2A INF (18 MU daily IM) associated with AZT 1200 mg orally (200 mg every 4 hs) daily. All pts had biopsy proven KS with a minimum of 2 measurable lesions. No pt presented a concurrent opportunistic infection and all had a performance status equal or below 1 (WHO), with a minimal 3 months life-expectancy. 11 pts had less than 400 T4 cells. Median age was 34 year-old (23-40). Risk factor for AIDS was homosexuallity in all cases. All pts were evaluable for toxicity and response. KS staging was : I = 10 pts; II = 4pts; III = 0 pt IV = 1pt. 8 out of 15 pts presented B symptoms (Krigel). Median duration of treatment has been 8 weeks (2-16 weeks). Clinical responses (PR + CR) were obtained in 11 pts (73 %) CR in 7 pts and PR in 4 pts. 6 pts responded between 4 and 4 weeks and the other 5 between 5 and 16. 3 pts remained stable and no pt developped progressive KS during treatment. Toxicity inclued mild flu-like symptoms in all pts during the first week and myalgia after the first month in 10 out of 15 pts (66 %). Leucopenia appeared after 4 weeks in 8 pts (53 %) associated with thrombopenia and anemia in 1 pt : AZT was reduced of 50 % and hematological status improved. This study shows high response rate with alpha 2A INF and AZT in AIDS-KS with tolerable toxicity.

T.B.P.281 CORRELATION OF EFFECTS OF INTERFERON-ALPHA IN AIDS-ASSOCIATED KAPOSI'S SARCOMA WITH SERUM LEVELS AND DOSE

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Objective. To study the relationship between the dose and blood levels of interferon-alpha (IFN) to responses to treatment of patients with Kaposi's sarcoma (KS).
Methods. We studied 37 patients with KS enrolled in studies of IFN therapy alone and in combination with zidovudine (AZT). Sera for determination of IFN levels were collected from the 15 patients receiving IFN alone in the morning after bedtime doses at regular intervals during the period of study and from the 22 patients on IFN+AZT 12 hours after their dose.
Results. In the IFN alone study 8/8 responders (R) had sustained blood levels of ≥100 international units (IU)/ml of IFN for 8 weeks or longer compared to 1/7 nonresponders (NR) (P=0.001). The R received doses of IFN ≥$10X10^6$ IU/day more often than NR (P=0.005). In the IFN+AZT study, 6/13 R and 0/9 NR had levels ≥100 IU/ml (P=0.02). R were more likely than NR to have been on ≥$10X10^6$ IU/day (7/13 versus 1/9, P=0.005). There was no correlation between dose of AZT given and response. There was a high correlation between IFN dose and blood level in both studies (P<0.001). In the two studies combined among patients with ≥200 CD4+ lymphocytes/mm^3 at baseline, the response rate of those with serum levels ≥100 IU/ml was 11/13 (85%) compared to 7/18 (38%) for those with levels <100 IU/ml (P=0.01).
Conclusion. The dose and blood levels of IFN achieved and maintained may be important factors in determining responses of KS.

T.B.P.282

EFFICACY OF HIGH DOSE (50 MU/M2) INTRAVENOUS RECOMBINANT INTERFERON ALFA-2-b (HD.IV.rIFNα(2b)IN AIDS RELATED KAPOSI'S SARCOMA.

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Objectives : From March 1987 to December 1988, an open study was performed to assess the efficacy of HD.IV.rIFNα(2b that was given 5 days/week, every other week, in the treatment of AIDS related Kaposi's sarcoma (AIDS/KS).

Methods : The KS stages were ranged according to the KRIGEL classification with a special reference to absence(A) or presence(B) of constitutional symptoms and to dissemination rate (1,2 or 3). The response criteria, after at least a 12 weeks long treatment, were defined as follow : Complete response(CR=eradication of all previously detectable disease). Partial response(PR=50% decrease or more, in the biperpendiculare size and in the number of skin lesions). Stable disease (SD=less than PR or less than 25% increase in the size of the lesions). Progressive disease(PD= more than 50% increase in the size or number of lesions). CR and PR allowed for objective response (OR), SD and PD for failure (F). Thirty-four patients were initially enrolled but 13 were excluded, because of a less than 12 weeks (11) treatment duration or association with AZT (2). The remaining 21 patients were all men : 15 homo- and 6 bisexuals ; age(y)= 4.2 ± 5.3(27-48) ; weight(kg)=64.7 ± 7.4(50-77) ; size (cm)=175.3 ± 4.9(164-185). The distribution of the KS stages was :I(5),II(10),III(4) and IV(2); A(17) and B(4) ; 1(1), 2(13) and 3(6).

Results : The mean treatment duration and daily dose were respectively 5.67 months ± 2.5(3-13.5) and 88.62 MU ± 4.63(75-100). The KS evolution was as follow :OR =10(CR =3 and PR =7) ; F =11 (SD =6 and PD =5), with a statisticly significant difference between the IA + IIA KS stages versus all the others(P 0.01) and between the IA+IIA+IIIA KS stages versus all the others(P 0.05). Two patients died from KS visceral localizations while rIFN seemed efficient on the skin lesions.

Conclusion : HD.IV.rIFNα(2b seems to be the most effective in the IA and IIA, KS stages while its use seems less usefull in more advanced stages.

T.B.P.283

HIV-ANTIGENEMIA IN PATIENTS WITH AIDS-RELATED KAPOSI'S SARCOMA (KS) TREATED WITH RECOMBINANT ALPHA-2a INTERFERON (IFN).

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OBJECTIVE To assess the link between HIV antigen (Ag) level and clinical response to IFN in KS.

METHODS 76 males, mean age 37.5, were treated for biopsy-proven KS with 18M units a day of IFN during a mean of 168±77 days. Ag was assessed before and during treatment, measured blind by the Abbott technique with concentrations calculated by linear regression (pg/ml). CHI² and t-test comparisons were performed.

RESULTS Before treatment, 49 pts were Ag positive (Ag-P) and 27 Ag-negative (Ag-N). The two groups groups were comparable in CD4 counts and clinical stage of KS. A complete response (CR) was observed in 52% of the Ag-N group but in only 29% of the Ag-P group. Evolutive disease was observed in 43% of Ag-P and 19% of Ag-N pts (Table I). Of the 5 Ag-N patients who had evolutive lesions, 4 became Ag-P. Overall, Ag levels were lower during IFN therapy (185pg/ml) than before (395.5pg/ml) (p 0.001). In the Ag-P group, the drop was significantly greater in pts with a CR, and 7 of the 9 pts who became Ag-N had a CR.

TABLE I

	COMPLETE RESPONSE	MODERATE RESPONSE	STABILIZATION	EVOLUTIVE DISEASE
Ag-N	[illegible]	[illegible]	3	[illegible]
Ag-P	[illegible]	7	[illegible]	[illegible]

p < [illegible]

TABLE II

RESPONDERS (%)	N (pts)	INITIAL Ag pg/ml	END TREATMENT Ag pg/ml	% DECREASE Ag	P
Complete R	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Moderate R	7	1330	[illegible]	[illegible]	[illegible]
Stabilization & Evolutive Disease	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CONCLUSION We demonstrate that KS is more likely to respond to IFN if initial HIV Ag is negative Pts who become positive during therapy are less likely to respond. Generally, in Ag-P pts, the Ag level drops during treatment; the % drop is proportional to the likelihood of a CR.

T.B.P.284

CHEMOTHERAPY WITH OR WITHOUT GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR (rGM-CSF) IN PATIENTS WITH AIDS-ASSOCIATED NON-HODGKIN'S LYMPHOMA (NHL).

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Objective: To determine whether rGM-CSF can reduce chemotherapy-induced myelosuppression in patients with AIDS-associated NHL.

Methods: Patients were randomized to receive CHOP (Cyclophosphamide $1g/m^2/d1$, Doxorubicin $40mg/m^2/d2$, vincristine 2mg, Prednisone $100mg/m^2/d1\text{-}5$) with or without rGM-CSF 10-15mcg/kg subcutaneously day 1-10.

Results: Six of the planned 20 patients were randomized. No patient had a prior AIDS diagnosis. Patients in the control group had higher mean T4 counts ($618/mm^3$) than those in the rGM-CSF group ($204/mm^3$). In 9 chemotherapy cycles administered to 3 patients without rGM-CSF, the mean nadir ANC was $1.06 \times 10^3/mm^3$ compared to $1.53 \times 10^3/mm^3$ in 3 treated with rGM-CSF. Two rGM-CSF-treated patients became neutropenic: Patient 1 had $ANC<1000/mm^3$ for 20 days at 7.5 mcg/kg GM-CSF, 12 days at 10mcg, and 5 days at 15mcg. Patient 2 had $ANC<1000/mm^3$ for 9 days at 10mcg and 4 days at 15mcg. After 3 cycles, a third rGM-CSF-treated patient had a mean 10 day ANC of $4.3 \times 10^3/mm^3$. HIV-related opportunistic infections were not observed. Hospitalization for fever and neutropenia complicated 2/3, 1/3, and 0/3 chemotherapy cycles in the 3 rGM-CSF-treated patients and 0/6, 0/2, and 1/1 cycles in the 3 control patients. Toxicities related to rGM-CSF included fatigue (1 patient), pericarditis (1), and thrombocytopenia (1).

Conclusion: Response to rGM-CSF administered with chemotherapy is variable. While severe neutropenia is not always prevented, its duration may be shortened. This trial is ongoing.

T.B.P.285

ADOPTIVE TRANSFER OF IMMUNITY TO RECALL ANTIGENS FOLLOWING ALLOGENEIC BONE MARROW TRANSPLANTATION (BMT) IN AN AIDS PATIENT WITH NON-HODGKIN'S LYMPHOMA (NHL)

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Objectives. We have previously shown that transfer of donor immunity can be reproducibly achieved after allogeneic BMT by boosting the BM donor before transplant and/or the recipient on the day of BMT. The present study was conducted on a 41 yo HIV-1 culture⁺ man with NHL who received combined modality therapy of allogeneic BMT plus azidothymidine (see separate abstract, this meeting). The main objective was to determine whether transfer of donor cell mediated and humoral responses to tetanus (TET) and diphtheria (DIP) toxoids could be attained in a patient in whose natural responses to these antigens had been ablated by HIV-1 disease.

Methods. Serum IgG was measured by nephelometry. HIV-1 antibody was measured by immunoblot and quantified by densitometry. TET and DIP antibody was measured weekly by ELISA. Antigen specific proliferating lymphocytes (ASPL) were measured weekly by ^{3}HTdR uptake. The BM donor was boosted i.m. with TET and DIP on day -8; the recipient with TET alone on the day of transplant.

Results. Before BMT IgG was elevated (1440 mg/dL) but TET and DIP antibodies were 10-fold lower than control reference values. TET and DIP ASPL were absent. After BMT, total IgG and HIV-1 antibody declined by half, consistent with clearance of host antibody. TET and DIP antibody rose >4-fold and were maintained above pretransplant levels. TET and DIP ASPL were detected 5 wks after BMT (>3000 CPM) and persisted until death from tumor relapse at wk 8.

Conclusion. These data indicate successful transfer of immunogen specific donor immunity and reconstitution of responses ablated by HIV-1 disease.

T.B.P.286

CARBON MONOXIDE DIFFUSING CAPACITY (DLCO) AS A PREDICTOR OF LUNG FUNCTION IN PATIENTS RECEIVING BLEOMYCIN FOR TREATMENT OF KAPOSI'S SARCOMA.

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Objectives: The purpose of this study was to evaluate the effect of Bleomycin-containing chemotherapeutic regimens on the pulmonary function in patients with Kaposi's Sarcoma (KS) associated with AIDS.

Methods: We evaluated 19 patients who had at least two sets of Pulmonary Function Tests (PFT's) one before and after receiving chemotherapy.In addition data was collected for other factors that can alter PFT's, including presence of pulmonary KS, prior lung infections, as well as lung infection during therapy. Two groups were identified; Group I receiving cumulative Bleomycin over 100 unit (mean 184 units) and the other, Group II receiving less than 100 units (mean 41 units). Both groups were comparable in all characteristic, stage of infection, and laboratory markers. PFT's studies included spirometry, lung volumes and diffusion studies. All patients were given prophylaxis against *Pneumocystis carinii* pneumonia (PCP).

Results: Two patients from Group I developed PCP while on study (17%), none from Group II. Analysis of PFT's revealed the only consistent alteration was that of DLCO ($P < 0.002$). A decline of 25-80% in the DLCO was seen in all patients in Group I.

Conclusion: 1. Cumulative dose of Bleomycin >100 is always associated with a decline in DLCO.
2. Patients with AIDS-related KS receiving Bleomycin should be monitored for pulmonary toxicity with DLCO, especially after receiving a cumulative dose of > 100 units.

T.B.P.287

REGRESSION OF KAPOSI'S SARCOMA (KS) FOLLOWING PROSORBA® COLUMN TREATMENTS.

Reed, David E.; Snyder, H.W., Jr.; Balint, J.P., Jr.; Jones, F.R. and the PROSORBA Clinical Trial Group. IMRÉ Corporation, Seattle, WA, USA.

Objective - To modulate immune system activity and induce regression of KS by removal of IgG and circulating immune complexes (CIC) from patient plasma.

Methods - A clinical trial of immunoadsorption of plasma was carried out with 23 patients who had progressive KS and had received no anti-tumor or anti-viral therapy. Patients received 12 treatments, consisting of adsorption of 250-2000 ml plasma, using the U.S. FDA approved PROSORBA® column over a 4 week period.

Results - Significant regression of KS was observed in 9 patients (6 PR and 3<PR). New lesions appeared in only 4 patients. Lesions developed a reddish halo, flattened and became lighter in color. Reduction in size was accompanied by central umbilication. Some lesions disappeared completely. Responses were seen in all stages of disease; one patient with Stage IV KS survived with stable disease greater than 4 years. Responses were associated with increases in NK cell activity, granulocytes, lymphocytes and T_H/T_S ratio.

Conclusion - Extracorporeal immunoadsorption of IgG and CIC is a beneficial new treatment modality for AIDS-KS.

T.B.P.288

ADVERSE REACTIONS WITH HIGH DOSE (90MU/M2) INTRAVENOUS RECOMBINANT INTERFERON ALFA 2b (HD.IV.rIFNα2b) IN AIDS RELATED KAPOSI'S SARCOMA.

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Objectives : From March 1987 to December 1988, an open study was performed to appraise the efficacy and the tolerance of HD.IV.rIFNα2b, that was given 5 days/week, every other week, in the treatment of AIDS related Kaposi's sarcoma (AIDS/KS).
Methods : The 34 initially enrolled patients were all men : 25 homo- and 9 bisexuals ; age(y)= 36 ± 7.8(22-55) ; weight(Kg)=62.3 ± 7.6(49-77) ; size(Cm)=173.6 ± 5.8(161-185). Ten patients experienced 1 or more opportunistic infections (OIs). According to the KRIGEL classification, with a special reference to absence(A) or presence(B) of constitutional symptoms and to dissemination rate (1,2 or3), the distribution of the patients was :I(7), II(15), III(7), and IV(5) ; A(21) and B(13) ;1(1),2(20) and 3(13). The mean treatment duration and daily dose were respectively 4.10 months ± 2.65(0.5-13.5) and 87.15 MU ± 4.8(75-100). All the adverse reactions were evaluated according to the OMS scale.
Results : During the study, 13 infections occured in 12 patients, 7 of them were in IVC1 or IVC2 status before treatment, with only 5 OIs in 5 patients, all in IVC1(4) or IVC2(1) status. Thirty patients presented 41 clinical side effects : fever(23) with 13 cases in form of flu-like symptoms (chills, malaise, myalgias, headache) ; psychological intolerance to the treatment(6) ; transient paresthesias(1) ; confusion and anxiety(2) ; anorexia(2) ; nausea and vomiting(2) ; non productive cough(1) ; conjonctival hyperhaemia(1) ; taste alteration(1); periorbicular pain (1), insomnia(1). Thirty patients presented 71 biological drug related toxicity signs : myelosuppression in 26 patients -leucopenia(22), neutropenia(23), anemia(10), thrombopenia(5)- ; mild hepatotoxicity in 7 patients - cytolysis(3), retention(6) - ; eosinophilia(1) ; amylasemia(1).
Conclusion : Adverse reactions conducted to discontinue the treatment in only 7 patients : psychological intolerance(6) and deep myelosupression(1).

T.B.P.289

HIGH DOSES OF INTERFERON ALFA 2-b IN KAPOSI'S SARCOMA

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The efficacy anf safety of Interferon alfa 2-b (Intron A) were evaluated in patients with AIDS related Kaposi's sarcoma (KS).
METHODS: from June 1986 to December 1988, 9 patients (8 homosexual or bisexual men and 1 drug-addict woman) were included in this trial. The mean age was 32 years (20-41 Yrs). The KS stages (Krigel et al.) were: stage I: 1 pt, stage II: 2 pts, stage III: 1 pt, stage IV: 5 pts. Highdose Interferon alfa 2-b (50 mu/SQM) was administered IV daily for 5 days every other week during at least 4 cycles (mean number of cycles: 14, range: 4-39).
RESULTS: following Volberding's criteria for response, a complete response (CR) was seen in 4 pts (44.4%), a partial response (PR) in 2 pts (22.2%) and disease progression on 3 pts (33.3%). All the CR were seen in stages I-II or III with less than 15 skin lesions and with a mean pretreatment CD4 cells count of 354 (93-663). The disease progressed in all the patients with stage IV B, presenting with lung and/or liver lesions with a mean pretreatment CD4 cells count of 85 (25-129).
The treatment was well tolerated in all patients with only fever and myalgia which required symptomatic treatment, without any dosage modification. In 7 pts the p24 antigen levels were monitored; 2 pts showed a 50% decrease in their p24 levels, 1 pt presented a persistent clearing in its level and in the other 4 pts the p24 levels remained stable with a dramatic increase in 1 pt before death.
CONCLUSIONS: high dose Interferon alfa 2-b is an effective and welltolerated treatment of AIDS related Kaposi's sarcoma with an antitumor and antiretroviral effect.

T.B.P.290

INTRALESIONAL VINBLASTINE (VELBAN) TREATMENT OF LESIONS OF KAPOSI'S SARCOMA

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Objective. To determine effectiveness and safety of using Vinblastine (Velban) therapy intralesionally into individual lesions of Kaposi's sarcoma.
Methods. Fifteen subjects with previously diagnosed Kaposi's sarcoma and positive HIV antibody tests were entered into the study. Lesions of Kaposi's sarcoma of any cutaneous surface (including oral mucosa) were injected with Vinblastine 0.1-0.4 mg/ml at intervals of two weeks. Injections continued for 5-8 treatments, or until desirable results were obtained. At each two-week visit, photographs were taken of five specific lesions. The lesions were evaluated for size, induration, and color. Both local and systemic side effects were rated on a scale of 1 to 5. A pretreatment CBC and SMAC were drawn, as well as a CBC at each visit to determine systemic effects from Velban therapy.
Results. Hematological safety data and photographic evidence of efficacy will be displayed.
Conclusion. Intralesional Velban is effective in reducing the size, color and induration of individual KS lesions with minimal systemic side effects. It is easily administered, and offers both the patient and provider an additional treatment modality for an emotionally difficult and often painful manifestation of HIV disease.

T.B.P.291

REMISSION OF KAPOSI-SARCOMA BY A COMBINED THERAPY WITH INTERFERON-BETA + AZT IN AN AIDSPATIENT

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We report the case of an HIV-1-infected patient with Kaposi-Sarcoma (KS), who was treated with human fibroblast interferon-beta (IFN-β, FIBLAFERON(R), Dr. Rentschler, Laupheim, FRG) + AZT (RETROVIR(R), Wellcome, Burgwedel, FRG).

The HIV-1-infection of the 25-years-old man is known for two years. He developped ARC with diarrhoea, night-sweats, relapsing infections of the respiratory system, p24-emia and drop of T4-counts and T4/T8-ratio. September '88 KS's of the larynx, gums, left temple, left shoulder and upper thighs appeared and were histologically verified.

IFN-beta-therapy was started with 2MU iv 3qw plus 1MU 3qw intralesional into the gum-tumors.
We noticed progression of the KS's three weeks after the beginning of the IFN-treatment.
Therefore the dosis was raised to 3MU iv 5qw plus 1MU sc 5qw into the gums.
The KS of the larynx was treated with radiatio (17 MeV) 8x 2Gy within 12 days.
From the very beginning of the IFN-treatment the patient got 4x 250 mg AZT/d in addition.

All lesions showed a complete and persistent remission after eight weeks of treatment.

Since December '88 the therapy is contined with 6MU IFN-beta iv 3qw.
No severe side effects were observed.
Since the beginning of the therapy there is an increase in T4-count and T4/T8-ratio and a decrease in β2-Microglobuline- and p24-titre, no change in other laboratory parameters.

T.B.P.292

INTERFERON ADMINISTERED INTRALESIONALLY IN SKIN, CONJUNCTIVA AND ORAL CAVITY LESIONS IN PATIENTS WITH AIDS-RELATED KAPOSI'S SARCOMA.

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The efficacy of interferon (IFN) in the therapy of AIDS related Kaposi's Sarcoma (AIDS-KS) seems to be dose-dependent. The concentration of massive doses of IFN in the tumoral lesions by intralesional injection seems to be a rational approach.

We have treated 9 male patients (average age 24 years, heterosexuals, drug addicts, anti-HIV seropositive, median OKT4/OKT8 0.75, without opportunistic infections) with skin, conjunctive and/or oral cavity lesions from AIDS-KS. Some lesions have been treated with IFN alpha 2b (from 3 to 5 millions of units 3 times/week for 4 weeks, according to the lesion volume), others with placebo.

All lesions treated with IFN cleared, while those treated with placebo did not. No relapse has been observed after an average of 12 months from treatment. Histological examination showed substitution of the IFN treated tumor nodules with fibrotic tissue.

The use of intralesional IFN therapy in AIDS-KS seems to be very useful, with mild adverse effects and it can be a valid alternative to chemotherapy in the disease localized in skin, conjunctive and oral cavity.

In our cases the activity of IFN seems to be local and related to the massive concentration of IFN in the tumoral lesion, where it explicates its antiproliferative activity at the best.

T.B.P.293

TITLE: **Assessment of the management of Kaposi's Sarcoma (KS)in AIDS patients.**

AUTHORS:: I.GARCIA-POLO,I.SANTOS,C.del ARCO,J.FRAGA,J.FERNANDEZ and A. NOGUERADO.
HOSPITAL DE LA PRINCESA,-M.INTERNA,UNIVERSIDAD AUTONOMA,MADRID-SPAIN.

OBJETIVES:To assess the usefulness of Zidovudine (ZDV) and Interferon (IF) in patients with KS associated to AIDS.
PATIENTS AND METHODS: 17 patients aged 24-44 years (mean 34,3), without previous oportunistic infection with histologically proven: KS. 7 patients received ZDV - only 0.200 mg/day) and 4 patients with more advance stages of the diseease. received also IF 30 MU/day. 6 patients received no therapy.
RESULTS: (Treated patients):

WEEK	IMPROVED	UNCHANGED	WORSE	DIED
4th (*)	1/11	8/11	2/11	0
12th(**)	3/9	2/9	4/9	0
24th(***)	1/8	2/8	5/8	2
48th	0/3	2/3	1/3	0
60th	0	1/1	0	0

(*)-Only two patients received IF from week 4.
(**)-One patient started on IF - from week 12.
(***)-One patient started on IF- from week 24.

CONCLUSIONS: Patients treated with ZDV remain stable or improve along the first four weeks (81%). some of them continue to do so up to the 12th. week (56%). A minority remain stable on the 24th. week (37,50%). IF does not add any benefits when added at high doses in advanced stages of KS.

Thérapie et évaluation clinique : ribavarine et autres médicaments
Therapy and Clinical Evaluation, HIV Ribavirin and Other Drugs

T.B.P.294 COMPARISON OF RIBAVIRIN VERSUS PLACEBO FOR PREVENTING THE PROGRESSION OF HIV INFECTED SUBJECTS FROM CDC STAGE III TO STAGE IV.

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OBJECTIVE. To compare the efficacy of ribavirin versus placebo to prevent the progression of HIV-infected patients from CDC stage III to stage IV.
METHODS. 131 HIV-infected patients (20% homosexuals, 64% drug addicts) on CDC stage III, and a CD4 cell count between 50 and 500 per mm3 were included in a double blind multicentric trial and randomly allocated to receive ribavirin (15 mg/kg) or placebo. The planned duration of the study was 12 months with an interim analysis at 6 months without opening the codes unless a significant difference in efficacy or toxicity were detected. The Student-t test, the chi-square test, life-table analysis and the Mantel-Cox test were used in the statistical analysis.
RESULTS. The 63 patients included in the study group A and the 68 included in group B had a similar age, sex, red, white and CD4 blood cell counts. In the interim analysis 12 (19%) of the 63 patients of group A progressed to stage IV (8 to stage IV-C2,1 to IV-A and 3 to IV-C1) versus 11 (16%) of the 68 patients of group B (3 to stage IV-C2,3 to IV-A and 5 to IV-C1). The difference was not statistically significant pooling together all patients progressing to stage IV or performing a separate analysis for those reaching the CDC stage IV-C1. Side effects were irrelevant in both study groups.
CONCLUSION. At the interim analysis performed at 6 months both ribavirin (15 mg/kg per day) and placebo were well tolerated but the progression rate to stage IV was not statistically different. The results of the final analysis at 12 months will be presented in the Conference.

T.B.P.295 DEXTRAN SULFATE IS POORLY ABSORBED AFTER ORAL ADMINISTRATION

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Objective. To determine whether dextran sulfate, a synthetic analogue of heparin with anti-human immunodeficiency virus activity *in vitro*, is absorbed after oral administration.
Methods. Volunteers were given an 1800 mg. oral dose followed forty-eight hours later by a 225 mg. intravenous infusion of dextran sulfate. Because dextran sulfate is an anticoagulant and the activated partial thromboplastin time (APTT) is a sensitive measure of its anticoagulant activity we measured changes in the APTT after each dose. We also measured plasma lipase activity because dextran sulfate causes the release of lipases into the plasma.
Results. After the oral dose the APTT's were indistinguishable from the normal variation in this assay over time. In contrast the mean peak APTT was prolonged 142 seconds after the intravenous dose. Because we have observed a linear relationship between the log APTT and the plasma concentration of dextran sulfate *in vitro*, we used this assay to calculate plasma dextran sulfate concentrations, and we used these values to determine the bioavailability of this drug. While the mean bioavailability was 0.7% (range 0-2.2%), this small percentage could not be distinguished from 0%. Lipase activities increased to 2.3 X baseline after the oral dose and >400 X baseline after the intravenous dose.
Conclusion. We conclude that dextran sulfate is very poorly absorbed after oral administration.

T.B.P.296 RIBAVIRIN DOSE ESCALATING PHASE I TRIAL IN PATIENTS WITH AIDS AND ARC

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Objective. To carry out an increasing dose phase I trial to find maximum tolerated dose of Ribavirin (RBV).
Methods. Patients in 3 arms, 1) AIDS no previous treatment; 2) ARC; 3) AIDS, AZT failures; were enrolled in a 6 month trial of RBV 800, 1200, 1600, or 2000 mg/d with a goal of 24 patient per dose regimen. Patients all had serum p24 ≥ 70 pg/ml at entry. Clinical status, serum p24, HIV culture, total $CD4^+$ cells were measured in all patients at 4 weekly intervals. Pharmacokinetic values were measured in plasma and RBC by radioimmunoassay.
Results. As of 2/1/89, 28 patients were enrolled in the trial. All were in dose range 800 and 1200mg/d. Patients with AIDS-no previous treatment (10), severe ARC (10), and AZT failures (8) are receiving drug. Main side effect has been a pruritic rash at 1200mg/d requiring lowering dosage in 4 patients. In 100 patient months 2 episodes of PCP, 1 HSV, 1 CMV and 1 candida infection have occurred. No anemia or granulocytopenia requiring transfusion has occurred. Serum p24 levels have decreased in 3 patients, but trends of all serum p24 values increase with time. $CD4^+$ cells have increased in 2 patients, but trend of all values is a decrease with time. Pharmacokinetic data on 800mg/d reveal a steady state plasma level of 10-14uM.
Conclusion. RBV at 800 and 1200mg/d is well tolerated and is less than MTD. No severe granulocytopenia anemia, or neuropathy has occurred. Patients are having few opportunistic infections but KS progresses. Patients are continuing to be followed for $CD4^+$ cell changes

T.B.P.297 PHASE I STUDY OF 2', 3' DIDEOXYINOSINE (ddI) GIVEN ONCE DAILY TO PATIENTS WITH AIDS OR ARC.

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Objective. To determine maximum tolerated dose (MTD), pharmacokinetics (PK) and efficacy of iv and oral ddI given once daily.
Methods. To date, 8 patients (6 men, 2 women) with AIDS (4) or ARC (4) were treated. Plasma and urine were collected after initial iv infusion and at steady state doses of 0.8 (1), 2 (5), 3.5 (2) mg/kg/d and after initial po dose and steady state doses of 1.6 (1), 4 (4), and 7 (2) mg/kg/d. Serial T4 lymphocytyes (T4L) and p24 antigen were studied.
Results. Pre-ddI T4L: mean = 106/mm3, range = 2-390/mm3. After 14 days of iv ddI, T4L rose in 4 pts, mean rise = 28/mm3, range= 10-57/mm3. After 2-16 weeks of po ddI, T4L rose in 3 pts, mean rise = 90/mm3, range 20-150/mm3. Pre-ddI: 2 p24 ag positive pts; no change on iv ddI; 1 on po ddI became p24 ag negative. PK data to follow. Hairy leukoplakia resolved in 2. Dose limiting toxicity: grade 2 cutaneous (1) and grade 2 hepatic (1). ddI was discontinued in 1 pt with HIV cardiomyopathy and EKG changes.
Conclusion. Daily ddI is well-tolerated in pts with AIDS and ARC with minimal toxicity. The MTD has yet to be established. Preliminary data suggest efficacy with increase in T4L. Pt accrual continues with further dose escalations.

T.B.P.298 EVALUATION OF MEGESTROL ACETATE TREATMENT IN AIDS

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Objective. To evaluate the components of weight gain associated with megestrol acetate therapy in cachexic males with stage IV HIV disease.

Methods. Ten males with a weight loss of 15-20% of usual weight due to late stage HIV disease were treated with megestrol acetate (80 mg, three times a day). Subjects were treated as out-patients. All patients were on concomitant therapy, (AZT ± PCP prophylaxis). Baseline data obtained pre-therapy included blood biochemistry and haematology, and food intake by dairy. Subjects had an anthropometric assessment as well as body composition analysis by bioelectrical impedance. Subjects were requested to complete questionnaires regarding quality of life assessment, and factors affecting food intake.

Results. Results for a mean period of 12 weeks therapy per subject will be discussed. In addition results of weight gain and more specific indicators of body composition are presented to indicate exactly how megestrol acetate affects nutritional status.

T.B.P.299 RECOMBINANT GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR (GM-CSF): LACK OF NEUROLOGICAL TOXICITY

Brew, Bruce J*; Keilp, JG*; Sadler, AE*; Krown, SE*; Anselmo, W*; Birnhak, L*; Sidtis, JJ*; Price, RW*; Bonnem, E**. *Memorial Sloan-Kettering Cancer Center, NY and **Schering Corporation, Kenilworth, NJ.

Objective: To assess the possibility of neurological toxicity of GM-CSF in neutropenic AIDS patients without dementia.
Methods: Patients enrolled in a phase 1 trial of GM-CSF as treatment for AIDS-related neutropenia were evaluated by quantitative neurological and neuropsychological assessment before and after each treatment cycle. GM-CSF was given by daily sc injection for 10 days followed by an 18 day rest period. Subsequent treatments were in 28 day cycles. Four patients were receiving concomitant azidothymidine (AZT). Patients with AIDS Dementia Complex (ADC) (Stage 1-mild, or greater) were excluded.
Results: Nine patients were evaluated: 5 were seen three times and one patient each was seen twice, four, five and six times. All patients at baseline had minor neurological signs such as eye movement abnormalities and slowing of limb movements (ADC Stage 0.5). None had cognitive complaints. No significant changes were seen in either the neurological or neuropsychological impairment scores.
Conclusions: Theoretical concerns have been expressed that GM-CSF might activate latent HIV-1 infection in macrophages and thereby lead to brain infection and ADC. However, this initial study found no evidence that GM-CSF exacerbated the minimal ADC-related neurological signs present at baseline, or led to ADC. These findings provide a basis for subsequent studies of GM-CSF and AZT in patients with ADC whose neutropenia precludes AZT.

T.B.P.300 OCCUPATIONAL THERAPY FOR PEOPLE WITH AIDS

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Objective. To maintain and/or improve functional independence and quality of life for HIV+/AIDS patients and their families. To be cost effective by decreasing frequency and length of hospital admissions and hours of home health care needed. Methods. Occupational therapy as a component of Rehabilitation Medicine, assists the psychologically and physically disabled individual/family in achieving independence and quality of life, via a variety of modalities. These include but are not limited to: 1) Compensatory strategies for performing Activities of Daily Living (ADL) (ie- one handed techniques, adapted equipment, ADL for the blind) 2) Ordering of bathroom equipment to assist family members in maintaining safety and ease of transfers. 3) Recommendation of wheelchair and positioning devices. 4) Building functional strength and endurance. 5) Teaching energy conservation to the patient with shortness of breath and fatigue. 6) Instructing in stress management skills. 7) teaching leisure skills to increase productive use of time. Patients are seen weekly at an outpatient center or as inpatients as need, and determined by therapist and psychiatrist. Results. Based on formal written evaluations, documented in the medical charts: Patients and families demonstrate an increased independence in ADL's as a result of increased knowledge and adaptive equipment as needed. Through such devices as an adaptive pillbox timer, patients no longer require a home health aide to administer or supervise medications. Drug users find purpose in creative projects. Families learn to mobilize weak and paralyzed patient safely. Conclusion. Occupational therapy as a discipline of rehabilitation medicine, helps people with AIDS and their families achieve quality of life and a greater level of independence. This service is cost effective as it decreases the need for home health care nursing and amount and length of hospital admissions...

T.B.P.301 SUPERVISED PHYSICAL EXERCISE LEADS TO PSYCHOLOGICAL AND IMMUNOLOGICAL IMPROVEMENT IN PRE-AIDS PATIENTS.

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Objective. The immunological and psychological effects of therapeutically supervised physical exercise in HIV-AB positive individuals were investigated in a randomized controlled prospective study.

Methods. Twenty-eight HIV-AB positive patients were stratified according to the Walter-Reed-Staging-Classification (Stages 1 through 4 were included). Fifteen subjects were randomly assigned to participate in one-hour physical exercise sessions twice a week over a period of 8 weeks. The exercise program was designed to develop endurance beyond threshold value of 4 mmol lactate. The control group of 13 patients did not receive exercise treatment.

Results. Within the first 4 weeks the number of CD4+ cells increased in 67% of subjects receiving therapy, as compared to 58% of the control group. CD4+/CD8+ ratio of the test group increased from 0.46 to 0.47 while the ratio in control subjects decreased from 0.49 to 0.43. In addition delayed cutaneous hypersensitivity reactions measured by recall antigens (Multitest Merieux) increased (from 12.8/2 to 16.2/3).There was a clear psychological benefit concerning reduction of anxiety and depression as well as build up of a group feeling. POMS, a psychological symptoms inventory, showed delayed, but strong correlation with changes in the immunological parameters.

Conclusion. These results demonstrate that carefully directed physical exercise can improve both immunological and psychological parameters in HIV-infected patients.

T.B.P.302 LONG TERM RIBAVIRIN TREATMENT

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Objective To evaluate clinical efficacy, safety and tolerance of long term ribavirin treatment.

Methods Four patients /pts/ /stage III-3 stage IVA-1/ were treated with 600 mg/day ribavirin orally. Number and ratio of CD4+ and CD8+ lymphocytes, serum levels of immunglobulines, neopterin and HIV p24 antigen were determined monthly as well as clinical assessments, clinical chemistry, haematology, parasitology and bacteriology were investigated.

Results Three pts were treated for 24 one for 13 months. The overall conditions of the pts improved, no serious infection of opportunistic disease were observed /the AIDS pt's cryptosporidial diarrhea stopped/ however oral hairy leukoplaky developed in two pts. CD4+ cell count and ratio stabilised in 3 pts and significantly elevated in one. Two pts had been and remained positive, one pt became HIV p24 antigen positive after 12 months and one pt was negative. The pts tolerated ribavirin treatment extreamly well, no side effects, not even anaemia were observed.

Conclusion Ribavirin might be of use in the long term treatment of pts in stage III. Neither adverse reaction, nor side effects have been observed.

T.B.P.303 A PHASE I STUDY OF THE SAFETY AND PHARMACOKINETICS OF SOLUBLE RECOMBINANT CD4 (rCD4) IN PATIENTS WITH AIDS AND ARC.

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Objective: To determine the safety and maximal tolerated dose of rCD4 and preliminary indications of antiviral effects of rCD4 in patients with AIDS & ARC.
Methods: A 2 center, phase I study with dose escalation and monitoring of the safety, pharmacokinetics, and clinical effect of rCD4 in 30 patients with AIDS or ARC.Six patients were enrolled at each dose level of 1,10,30,100, and 300 ug/kg.rCD4 was administered by a single intravenous(IV) infusion on day 1, followed by a 3 day wash out, then daily infusions for 10 days followed by a 1 week wash out, then infusions 3 times weekly for 8 weeks (11 wks total).
Results: No significant adverse effects have been noted in clinical, hematologic, or serum chemistry parameters.One patient developed borderline evidence of anti-rCD4 antibodies on day 37 that were not detected on subsequent determinations.No other instances of anti-CD4 antibody have been detected thus far. In those patients for whom follow up data is available the total T4 count was 115±95 at entry and 137±141 at 11 weeks of therapy.No individual exhibited a consistent sustained increase or decrease in total T4 count.Approximately 25% of individuals were p24 Ag(+) at entry.Follow up analysis of p24 Ag and viral isolation data are not complete.
Conclusion: IV administration of soluble rCD4 appeared to be well tolerated over the course of this study.Preliminary analysis has not indicated a significant change in total T4 count.Studies are being conducted with long term maintenance IV therapy as well as SC and IM administration.

T.B.P.304 ESSAI RANDOMISE CONTRE PLACEBO DE FORTES DOSES D'ACYCLOVIR (ACV) CHEZ LES PATIENTS HIV+

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Le but de cette étude était d'étudier l'influence de fortes doses d'ACV sur la progression de la maladie HIV de patients peu ou asymptomatiques sachant que 1-les infections aigues ou latentes à virus du groupe herpes augmentent in-vitro la replication du HIV et in-vivo aggravent le pronostic la maladie HIV: 2-de fortes concentrations d'ACV ralentissent l'apparition de l'activité HIV-transcriptase inverse et la formation de syncitia de mononucleaires infectés (Resnick,1986); 3-une étude pharmacologique préliminaire de l'ACV iv 30mg/kg a assuré l'obtention de concentrations seriques et rachidiennes très importantes.
Methodes: 30 patients CDCII ou III, 21 hommes 9 femmes, agés de 17 à 40 ans, ont été randomisés en 2 groupes parallèles, et ont recu pendant 4 mois une injection par semaine associée à 1 g po de probenecid soit d'ACV 30mg/kg soit de placebo en perfusion iv de 3h.
Resultats: une infection du groupe herpes est intervenue dans chaque groupe. Les résultats sont exposés tableau 1:

	T-helper/ul		T-suppr/ul		T-h/T-s		beta2 mg/l		
	avant	apres	avant	apres	avant	apres	avant	apres	**:p=0.25
placebo	865	678*	748	792	1.25	1.07**	2.5	3.1*	*:p=0.15
ACV	747	728	848	737**	1	1.06	3.25	3.5	

*:p=0.07

Conclusions: ACV iv 30 mg/kg 1/sem, bien toléré, semble ralentir la progression de plusieurs marqueurs de la maladie HIV: baisse des T4 et augmentation des T8. Ces résultats incitent à poursuivre les études en utilisant le desciclovir. En effet cette prodrogue de l'ACV bien absorbée par voie orale donne des concentrations seriques importantes

Thérapie et évaluation clinique : toxicité des médicaments contre le SIDA
Therapy and Clinical Evaluation, Toxicity of Drugs in AIDS

T.B.P.305

Crise d'épilepsie généralisée après l'absorption de Zidovudine à dose toxique (à propos d'une observation).

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L'absorption à haute dose de Zidovudine**** a été déjà décrite chez trois patients pour des posologies comprises entre 20 et 40G soit 100 à 200 gélules en une prise (1,2,4). Les effets cliniques et hématologiques observés semblent mineurs à court et à long terme.
Nous rapportons l'observation d'un patient ayant présenté une crise d'épilepsie survenant après la prise volontaire à dose toxique de Zidovudine***.
Un patient de 35 ans, homosexuel, était traité depuis février 88 pour une tuberculose ganglionnaire à BK ; ce traitement avait été arrêté début juin en raison de sa bonne réponse. La Zidovudine avait été prescrite dès février 88 à la dose de 400mg toutes les 4 heures. Ce dernier médicament a été arrêté le 6 juin à cause d'une neutropénie ; il sera repris le 12.07 à la même dose. Le lendemain le patient absorbe délibérément 180 gélules de Zidovudine (soit 36G), 4 heures après il présente une crise d'épilepsie tonicoclonique généralisée. L'examen postcritique ne retrouve aucun signe en foyer. Le FO est normal, la PL retrouve un NA+:132 mmol/ml CL95mmol/ml Glucose:3,40 Protides:0,56g/l avec 8 hématies et 15 leucocytes/ml.
L'antigène crytococcique, le VDRL et le TPHA sont négatifs sur le LCR. La culture restera négative y compris pour le BK. Le ionogramme sanguin et la calcémie sont normaux. Le scanner et l'IRM cérébrales ne montrent aucune anomalie. L'EEG est normal. Les paramètres hématologiques hépatiques et rénaux n'ont pas été altérés, le bilan immunitaire est resté identique avant et après cette intoxication (cf tableau). Ce patient n'a pas représenté de crises analogues depuis 6 mois et n'a jamais reçu d'anticonvulsivant, son état clinique est stable.
A la lumière de notre observation devant toute crise d'épilepsie chez un patient HIV+ traité par Zidovudine une prise toxique de ce médicament doit être recherchée de principe.

T.B.P.306

Effective Doses of AZT in HIV-ITP is Associated With Erythroid Hypoplasia.

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Idiopathic thrombocytopenic purpura (ITP) is not an uncommon finding in patients with HIV infection. The etiology of this thrombocytopenia remains unclear although immune complex disease has often been quoted as a contributory cause. Another possible mechanism is a defect in platelet production by HIV infected marrow cells. We report here a patient with HIV associated ITP (HIV-ITP) whose thrombocytopenia was successfully treated on three separate occasions with azidothymidine (AZT) with each remission episode being accompanied by the development of reticulocytopenia and erythroid hypoplasia. The patient, a HIV seropositive male, presented with lymphadenopathy, lymphopenia (CD4+ lymphs <0.3 x 10^9/L), thrombocytopenia (26 x 10^9/L), and a Hb of 141 Gm/L. There were no detectable platelet-associated IgG and a marrow aspirate showed adequate numbers of megakaryocytes. AZT was given at 1200 mgm/day and within 3 weeks the platelet count normalized but severe reticulocytopenic anemia developed. On discontinuing AZT, the anemia corrected but thrombocytopenia recurred. On two further occasions AZT at 600 mgm/day had no effect on the thrombocytopenia or on erythropoiesis. However, each time when the dose of AZT was increased to 1200 mgm/day thrombocytopenia remitted and anemia recurred. Due to this close association, both temporally and drug-dose related, we conclude that thrombocytopenia in this patient may have been due to HIV-associated marrow disease, with the effective dose of AZT being reflected in both the development of erythroid hypoplasia and remission of the thrombocytopenia. AZT may therefore be beneficial in HIV-ITP by alleviating peripheral platelet consumption and as well by a direct effect on the marrow.

T.B.P.307

VITAMIN B 12 SUPPLEMENTS IN PATIENTS TREATED WITH ZIDOVUDINE.

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Objective. To evaluate the efficacy of Vitamin B12 (Vit. B12) in the prevention of Zidovudine (Z) induced anemia.
Methods. AIDS or ARC patients (pts), receiving Z were randomized in 2 groups. One group was administered weekly injections of Vit. B12 (1000 mcg) as of the first week of their treatment. Both groups received folinic acid (calcium folinate 50 mg weekly, IM). Patients under chemotherapy, or previously transfused were excluded.
Results. 49 pts, (47 m., 2 f.), mean age 36 (±7 yrs), were included. At month 4, data were available for 24 pts(table 1), who were comparable for clinical HIV-status, initial total lymphocyte and T4 count and initial hemoglobin (Hb) level. Initial and mean Z dosage regimen and number of pts treated with Trimethoprim-Sulfamethoxazole were comparable in both groups. No difference was observed in Hb levels and MCV between the group receiving Vit. B12 and that which did not (table 2). Number of dose reductions as well as interruption of Z was also comparable in the 2 groups.

Table 1

	B12+	B 12-
n	11	13
AIDS/ARC	5/6	7/6
Initial dose: 1200 mg	6	5
600 mg	5	8

[illegible]

Table 2

	Initial value		Values at Month 4	
	Hb g/dl	MCV μm³	Hb g/dl	MCV μm³
Group I (B12+) n=11	13.4	91	12.0	109
Group II (B12-) n=13	12.6	95	10.8	114

Conclusion. This study indicates that Vit. B12 at 1000 mcg/week has no role in preventing anemia, usually macrocytic, which is a serious side-effect of Zidovudine.

T.B.P.308

TOXICITY OF ZIDOVUDINE (AZT) IN PATIENTS WITH AIDS

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Objective:To report the hematologic toxicity observed in 32 AIDS patients treated with zidovudine for a 3 month period.
Material:Thirty-two AIDS patients,fulfilling the CDC criteria for AIDS,received AZT at a dosage regim of 1200 mg/d.Hematologic evaluation was done each month or when symptoms appeared.All patients received concomitantly therapy with folinic acid (15 mg/d.) and B12 (100 ug/i.m./15d.).
Results:A hemoglobin reduction below normal or precedent values were observed in 15 patients (47%).Five patients (15%) had a reduction in hemoglobin level below 7.5 g/dl and were given red-cell transfusion.Neutropenia occurred in 17 cases (55%) being only below 700 per cubic millimeter in 3 (10%).Lymphopenia was present in 16 (50%).Platelet counts increased in many patients (64%) and only in 2 cases the numbers fell more than 50% from the base line.A table showing all results would be presented.
Discussion:In spite of supplying B12 and folinic acid we have observed hematologic toxicity in a high percentage of patients.The hematological toxicity led to interruption or reduction of the dosage in many patients.For severely affected AIDS patients initial treatment with low doses of AZT (600-800 mg/d.) should be assayed for demonstrating if such doses,associated with suppressive treatments for opportunistic infections,are as effective as the previous regims and may prolong the benefits related to AZT.Also it should be evaluated if increase of B12 dose diminishes the hematological untoward effects.

T.B.P.309

CORTICOTHERAPIE PROLONGEE D'UNE DERMATOPOLYMYOSITE A V.I.H.

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Objectif: L'intérêt et l'innocuité des corticostéroïdes à dose élevée et en cure courte chez les SIDA ayant déjà été démontrés, l'objectif est de décrire l'absence d'effet immunosuppresseur d'une corticothérapie au long cours lors de l'infection à VIH.
Méthode: observation d'un antillais de 22 ans ayant reçu de la prednisolone entre 20 et 40 mg par jour pendant 4 ans et demi pour une dermatopolymyosite grave, révélée en 1983 en même temps qu'une hépatite virale aiguë B associée à de la fièvre, des polyadénopathies cervicales et axillaires; le VIH 1 a été retrouvé dans un ganglion mais pas dans le muscle. Plus tard, les anticorps anti VIH 1 ont été détectés en Western-blot.
Résultats: L'hépatite B a guéri simplement. La dermatopolymyosite a totalement régressé sans insuffisance surrénale ni rechute à l'arrêt du traitement; le recul est de un an. Le patient est resté dans le groupe III de la classification CDC/OMS. Le taux de CD4+ a évolué entre 128/mm3 (1984) et 922/mm3 (1987). La bêta 2 microglobulinémie est restée à des taux voisins de 3 mg/l. L'antigène P25 est toujours resté négatif. Deux cultures de lymphocytes circulants, en janvier et en juin 1988, produisent du VIH 1.
Conclusion: Une corticothérapie de plus de 4 ans a guéri une dermatopolymyosite à VIH 1 (étiologie rare), groupe III, sans précipiter l'aggravation de l'immunodépression ni l'évolution vers le SIDA.

T.B.P.310

SUCCESSFUL RE-INTRODUCTION OF ZIDOVUDINE (AZT) AFTER AN ALLERGIC CUTANEOUS REACTION TO AZT.

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Allergic cutaneous reactions to AZT are uncommon and usually lead to definitive withdrawal of this drug. We report here a case of successful re-introduction schedule.

A HIV seropositive 29 year old male (heterosexual exposure) with an oral hairy leucoplakia had two relapses of subacute febrile meningitis unexplained by secondary pathogens or neoplasms. p24 was negative in blood and > 1000 pg in CSF. AZT was started (200 mg x 6 p.o/day) in January 1988.

After 14 days, a difuse pruriginous erythematous skin rash and periorbital oedema appeared. AZT was discontinued and cutaneous lesions disappeared within 24 H. The lesions can reasonably be ascribed to AZT for the following reasons : a) the plaques appeared after 14 days of treatment and no other drug was taken simultaneously. b) there was no previous history of skin rash. c) lesions disappeared rapidly when AZT was withdrawn. d) Human basophil degranulation test (HBDT) was positive with AZT. A third relapse of meningitis with radiculoneuritis induced us to re-introduce AZT by means of a schedule of gradually increasing doses per os : 100 ml x 3/day for 3 days ; the dose was increased by 100 mg/day until 1 200 mg/day. No adverse reaction was noted. Two months later HBDT became negative. In January 1989 no relapse of meningoradiculoneuritis occured and AZT therapy is well tolerated.

This observation shows that cautious reintroduction of AZT can be proposed for sensitive patients. However more experience with this regimen will be required before it is generally accepted.

T.B.P.311 ROLE OF P24 AG TESTING IN PATIENTS ON ZIDOVUDINE

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Objective. To examine the role of regular measurement of serum p24 antigen (ag) in the management of HIV infected patients (pts) on zidovudine (AZT).
Methods. From 1 June 1987, 95 pts (59 AIDS, and 36 ARC) have received AZT for 6-18 months, reviewed 2-4 weekly, and had monthly serum p24 ag estimations, measured by a solid phase sandwich immunoassay (Abbott Laboratories).
Results. At entry, there were 39 p24 ag positive (+ve) pts (25 AIDS, 14 ARC) and 56 p24 ag negative (-ve) pts (34 AIDS, 22 ARC). The follow-up period was a mean 56.1+18.7 weeks for p24 ag+ve pts, and 54.8+13.3 weeks for p24 ag-ve pts. Twelve p24 ag+ve pts became p24 ag-ve on AZT, while 27 remained p24 ag+ve. Twenty-five p24 ag-ve pts became +ve on AZT while 31 remained p24 ag-ve. There were 17 deaths and no significant difference in mortality between p24 ag+ve and p24 ag-ve pts. Thirty-three of the 39 p24 ag+ve pts developed further opportunistic infections (OI) (22 AIDS, 11 ARC) while 39 of the 56 p24 ag-ve pts had a further OI (23 AIDS, 16 ARC). There were significantly less OI in the p24 ag-ve group for AZT treatment periods up to 12 months. After 12 months there is no difference in OI between p24 ag+ve and p24 ag-ve patients. Eleven p24 ag+ve (6 AIDS, 5 ARC) and 20 p24 ag-ve (15 AIDS, 5 ARC) tolerated full dose AZT (>1000mg/day). Eight of the 11 p24 ag+ve and 8 of the 20 p24 ag-ve pts developed further OI. On reduced dose AZT due to toxicity, 25of 28 p24 ag+ve and 31 of 36 p24 ag-ve pts developed further OI. Eighteen of the initially p24 ag-ve pts became p24 ag+ve on full dose AZT.
Conclusion. The presence of serum p24 ag may predict outcome in patients treated with AZT for less than 12 months. Neither the predictive value of p24 ag nor the benefits of AZT persist beyond 12 months.

T.B.P.312 CHANGE IN BETA-2 MICROGLOBULIN (B2M) DURING ZIDOVUDINE (ZDV) THERAPY (RX) PREDICTS CLINICAL OUTCOME

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Objective. Determine if changes during ZDV Rx in CD4 lymphocyte number or any of 4 serologic markers of HIV activity predict clinical outcome.
Methods. Whole blood CD4 lymphocytes (CD4) and serum p24 antigen (p24 Ag), beta-2 microglobulin (B2M), neopterin (NPT) and p24 antibody (p24 Ab) were measured pre-Rx and serially during ZDV Rx in 39 AIDS and ARC patients (pts). We examined the association between change from baseline value of these markers during the first 8-12 weeks (wks) of ZDV Rx and clinical outcome 14-18 months (mos) after ZDV Rx was initiated.
Results. Among pts whose serum B2M *increased* during the first 8-12 wks of ZDV Rx, 9/11 had 1 or more serious events (SE) occur (death, life-threatening opportunistic infection, lymphoma) during 14-18 mos of follow-up; while among those whose B2M decreased, 10/28 had SE (p=.01, odds ratio [OR]=10.0). Neither increase in p24 Ag nor NPT, nor decrease in CD4 nor p24 Ab predicted SE (OR=.9-1.5). When controlled for underlying diagnosis (AIDS vs. ARC), B2M increase was still predictive of SE by bivariate logistic regression analysis (p=.02). Also, among pts whose B2M was in the normal range at wk 8 of ZDV Rx, 0/11 were moribund (Karnofsky performance status $\leq$ 60) or dead at 14-18 mos compared with 16/28 whose wk 8 B2M was elevated (p=.001).
Conclusion. Decrease or normalization in B2M during the first 8-12 wks of ZDV Rx was predictive of stable clinical status 14-18 mos after starting ZDV.

T.B.P.313 USE OF MULTIPARAMETRIC FLOW CYTOMETRY (LYMPHOCYTE P24-FCA) TO EVALUATE AZIDOTHYMIDINE THERAPY

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Objective. To evaluate in a cross-sectional study the effect of azidothymidine (AZT) treatment on levels of active HIV-1 infection in AIDS patients.
Methods. A new test, lymphocyte p24-FCA, based on multiparametric flow cytometry, was used to quantitate active HIV-1 infection of peripheral blood lymphocytes in <24h. Results were expressed as % p24 positive cells. The assay is based on binding of monoclonal antibody specific for p24 core protein; therefore, only cells with actively replicating HIV were detected. Viral isolation was by standard coculture methods. Other work has shown a correlation between viral culture positivity and samples with >1.0% positive lymphocytes.
Results. AIDS patients receiving AZT were compared to untreated AIDS patients using lymphocyte p24-FCA. Patients receiving AZT had a mean lymphocyte p24-FCA of 0.3% (n=26)(range <0.1-0.7) whereas untreated patients had values of 0.3, 1.7 and 16.4% (mean = 6.1%). One patient for whom treatment was discontinued increased from 0.1% to 0.9% in < one month.
Conclusion. Use of a rapid, quantitative test confirmed reduction of active HIV-infection by AZT in a small study. Lymphocyte p24-FCA should be considered for new studies evaluating antiretroviral agents.
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T.B.P.314 The inhibitory effects of AZT on HIV replication as determined by p24 antigen capture assays

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A Canadian multicenter study assessed the possible toxic effects of AZT (Zidovudine) in 72 HIV-1 infected individuals. In this dose-escalating study, the patients were initially treated with 600 mg of drug/day for 18 weeks, 900 mg/day for another 9 weeks and 1200 mg/day for another 9 weeks. A "washout" period of 6 weeks followed after which the drug was restarted at 1200 mg/day. During this study, both the levels of HIV p24 antigen detected by two commercial kits and the recovery of HIV-1 from cultured peripheral blood lymphocytes were measured. Twenty-two patients were HIV-1 p24 antigen positive during the study. Treatment with AZT even at the 600 mg/day regimen reduced the levels of circulating p24. In patients that were p24 antigen positive upon entry, treatment with the drug resulted in a sharp decrease in the levels of antigen which persisted for the treatment duration. During the 6 week washout the levels of p24 antigen rose. Drug was reinstituted at 42 weeks and the patients are being monitored to assess the effect of the washout/reinstitution on HIV p24. In those patients in which the level of p24 antigen rose during AZT treatment, there was an accompanying alteration in their antibody profile. The level of antibody to p24 relative to that of gp41 decreased as the p24 antigen increased. There was agreement between these observations and worsening physical condition.

T.B.P.315 THE EFFECT OF TREATMENT WITH ZIDOVUDINE ON IMMUNE SYSTEM DEFECTS EARLY IN THE COURSE OF HIV INFECTION

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Objective. To study the immune system effects and toxicity of zidovudine in patients with HIV infection and T4 lymphocyte counts between 200 and 400 cells/cu mm.
Methods. Patients were further evaluated by determination of HIV p24 antigen level, lymphocyte blastogenesis response to stimulation with the mitogen PHA, beta-2 microglobulin level, CBC, chemistries and zidovudine levels. Therapy was initiated with zidovudine, 200mgs q4H if HIV p24 antigen was detected, or 200mgs q6H if antigen was not detected. Laboratory studies were obtained every 3 months. Results in these patients were compared with patients who initially presented with T4 lymphocyte counts below 200 cell/cu mm. No other anti-viral medications were administered.
Results. 38 patients were in the early treatment group. T4 mean was 285 cells/cu mm baseline, 388 at 3M and 405 at 6M. Stimulation index with PHA mean was 34 baseline, 97 at 3M and 76 at 6M. HIV p24 antigen mean was 132 pg/ml baseline, 46 at 3M and 56 at 6M. Hct mean was 42.2% baseline, 39.0 at 3M and 40.7 at 6M, 1 patient received a transfusion. There were 28 patients in the late treatment group. T4 mean was 97 baseline, 136 at 3M and 98 at 6M. Stimulation index mean was 25 baseline, 53 at 3M and 51 at 6M. HIV p24 antigen mean was 121 baseline, 97 at 3M and 117 at 6M. Hct mean was 37.5 baseline, 34.7 at 3M and 37.8 at 6M, 9 patients received transfusions.
Conclusion. Earlier treatment of HIV infection, before advanced damage to the immune system occured, resulted in improvement of the immune system defects studied without the development of clinical disease or significant toxicity. Patients for whom therapy was initiated later in the course of HIV infection did not show this improvement. Earlier initiation of anti-viral therapy with zidovudine may halt the progressive immune destruction and improve defects in immune function in patients with HIV infection.

T.B.P.316 CUTANEOUS REACTIONS TO TRIMETHOPRIME-SULFAMETHOXAZOLE (TMP-SMZ) IN THE TREATMENT OF PNEUMOCYSTIS CARINI PNEUMONIA (PCP)

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Objective. To evaluate the prevalence, clinical morphology and course of cutaneous reactions to TMP-SMZ in the treatment of HIV-associated PCP.
Methods. Prospective clinical and morphological examination for untoward skin reactions in the treatment of 76 consecutive episodes of PCP in 61 patients (51 first manifestations), 25 relapses) with TMP (20 mg/kg) -SMZ (100mg/kg) per day.
Results.Patients with first PCP-episodes (group I) showed cutaneous rashes in 23% (12/51). Patients with recurrent PCP (group II) and the same therapy regimen in 56 % (14/25). Cutaneous eruptions (exanthema) occurred 10,7 days after the onset of therapy in group I and remarkably earlier (mean 7,5 days) in group II. In typical cases there was a non itching erythema, beginning in the patients face, extending in craniocaudal direction 2-4 days prior to exanthema.
In 77% exanthema consisted of disseminated small red macules with confluence and pruritus. 3 patients developed a maculopapular, 2 an urticarial exanthema and another 2 erythema multiforme (in 1 patient with progression to Stevens-Johnson syndrome).
TMP-SMZ therapy had to be stopped in 11/26 patients with cutaneous reactions.
Conclusions.Cutaneous eruptions in the treatment of PCP with TMP-SMZ are very frequent but not homogeneous. Besides probably toxic reactions (facial and truncal erythema) we observed urticarial, maculopapular eruptions and severe erythema multiforme. Simple erythema does not force to stop therapy when high doses of antihistamines are given. However, when mucosal lesions occur (Stevens-Johnson-syndrome, toxic epidermal necrolysis) TMP-SMZ therapy has to be stopped.

T.B.P.317

PRELIMINARY OBSERVATIONS ABOUT THE ADVERSE EFFECTS OF PEFLOXACIN IN THE TREATMENT OF SALMONELLA BACTEREMIA IN PATIENTS WITH AIDS

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We treated 3 patients with AIDS and positive blood cultures for *Salmonella* sp; in 2 cases *S.typhimurium* and, in one, *S.dublin*. They received pefloxacin orally, 800 mg/day, in 2 divided doses. They had a fast clinical and microbiological response, with disappearance of fever in few days and negativation of the blood cultures. Unfortunatelly, they also developed severe side effects. One patient developed Stevens-Johnson syndrome on the third day of treatment, one presented pruritous generalized maculo-papular rash on the fourth day, and the third had to interrupt treatment on the fifteenth day due do severe headache and insomnia. All side-effects reversed soon after stopping pefloxacin.

These preliminary observations suggest that the new quinolones may cause in AIDS patients, as also describe before with other drugs, increased and more severe adverse effects, and calls our attention to the necessity of extreme prudence in further studies with their use in patients with HIV infections.

T.B.P.318

SEVERE, ACUTE TRIMETHOPRIM-SULFAMETHOXAZOLE (T-S) REACTION MIMICS SEPSIS IN AIDS PATIENTS

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Objective. To describe a severe, acute syndrome of fever, hypotension, and pulmonary infiltrates in HIV infected patients receiving T-S.

Methods. We present the cases of two patients that we have seen and the four cases reported in the literature to describe this new syndrome.

Results. The clinical features occurred within hours of T-S therapy.

Patient	Fever	Rash	Hypotension	Chest X-ray	Pneumocystis	Prior T-S
1	39	Yes	75 mm/Hg	New Infiltrate	Not Detected By Bronchoscopy	Unknown
2	39	Yes	65 mm/Hg	New Infiltrate	Not Detected By Bronchoscopy	Unknown
+ 3	40	Yes	60 mm/Hg	New Infiltrate	Previously Treated	Yes
+ 4	40	Yes	70 mm/Hg	New Infiltrate	Previously Treated	Yes
+ 5	40	Yes	"low"	Not Described	Previously Treated	Yes
+ 6	41	Yes	60 mm/Hg	New Infiltrate	Previously Treated	Yes

All patients improved following discontinuation of T-S.

Conclusion. An unusual syndrome of high fever, hypotension, and pulmonary infiltrates may follow T-S administration to HIV infected individuals with proven or suspected Pneumocystis carinii pneumonia. This syndrome, unreported in non-HIV infected patients and rare in HIV positive patients, is acute, severe, and may be difficult to distinguish from sepsis.

+ Case reports obtained by literature search.

T.B.P.319

HYPOGLYCEMIE ET DIABETE DUS AU MESYLATE DE PENTAMIDINE AU COURS DU SIDA.

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Objectif: Analyser la glycémie de 18 SIDA (pneumocystoses) traitées par mésylate de pentamidine (P), 4 mg/kg/j en i.v.

Méthodes : Des glycémies (hors perfusion) ≤ 3,2 mmol/l définissaient l'hypoglycémie et > 10 mmol/l le diabète.

Résultats : 8 malades ont eu un trouble glucidique : 4 des hypoglycémies, 3 des hypoglycémies puis un diabète et 1 un diabète d'emblée (39% d'hypoglycémies, 22% de diabète). Les hypoglycémies (=2,1±0,7 mmol/l) étaient précoces (5±1 jours après le début de P) avec 2 comas prolongés. Le diabète (glycémie=26,5±8,2 mmol/l) survenu après 41±14 jours, était insulinodépendant chez tous. La dose totale de P était 1941±218 mg en cas de trouble vs 1170±152 mg en leur absence. La créatininémie sous P était 194±15 µmol/l (hypoglycémie + diabète) 236±62 µmol/l (hypoglycémie seule), vs 118±14 µmol/l (absence de trouble) : p < 0,01.

Conclusion: Doses élevées et insuffisance rénale favorisent l'accumulation de P et les troubles glucidiques. Avec le mésylate, la fréquence des hypoglycémies (39%) et surtout du diabète (22%) est supérieure qu'avec l'isothionate de P (27% d'hypoglycémies, 0% de diabète : *Stahl-Bayliss C.M. et al. Clin Pharmacol Ther, 1986, 39, 271-5*).

T.B.P.320

ORAL DESENSITIZATION TO SULFADIAZINE AND TRIMETHOPRIM-SULFAMETHOXAZOLE (TMP-SMZ) IN 4 PATIENTS WITH ACQUIRED IMMUNODEFICIENCY SYNDROME

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Objective. To develop and evaluate an abbreviated oral desensitization program for patients with AIDS allergic to sulfadiazine and/or TMP-SMZ.

Methods. Four patients with prior allergic reactions to sulfadiazine (3) and TMP-SMZ (1) were identified. Allergic reactions included a severe generalized erythematous rash with pruritus. Sulfadiazine oral suspension was compounded at a concentration of 1 mg/ml. An initial dose of 1 ml was given and subsequent dose concentrations were doubled every 15 minutes to achieve a total dose of 1 gm within 2.5 hours. TMP-SMZ suspension, serially diluted to 10 mg/ml (SMZ compound), was administered in aliquots of 1/2, 1, 2 and 4 ml every 15 minutes to achieve a total dose of approximately 800mg of SMZ after 9 hours.

Results. One patient had mild rash and pruritus at 400 mcg of SMZ component. Desensitization was interrupted for 48 hours and restarted with successful completion. With long-term followup, one patient has demonstrated a photosensitivity-like reaction and sulfadiazine was discontinued temporarily.

Conclusions. Oral sulfadiazine and TMP-SMZ desensitization should be considered in patients with sulfonamide-allergy. Compared to current literature values, an abbreviated desensitization program, as described, may be useful.

T.B.P.321

A METHOD FOR RAPID ORAL DESENSITIZATION OF PATIENTS ALLERGIC TO AZT

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Patients with HIV infection experience an increased frequency of allergic reactions to antimicrobial drugs with approximately 1% experiencing a sufficiently severe reaction to AZT to warrant discontinuation of the drug. In a population of 200 patients treated with AZT, 3 patients with no prior history of any sensitivity developed a severe maculo-papular rash within 8-12 days of the start of therapy requiring drug withdrawal. Two subsequent re-challenges were attempted in 1 patient and resulted in reappearance of the rash at 12 and 2 hours respectively.

Method: In an attempt to desensitize 3 patients, AZT was given orally in increasing doses according to the following schedule: 1, 10, 20, 50, 100, 200 and 500 µg every 15 minutes; 1, 2, 5, 10, 20, 50 mg hourly and 200 mg every 4 hours thereafter.

Results: All 3 patients tolerated AZT desensitization without adverse clinical, hematological or immunologic effects. One patient underwent 2 successful desensitizations following AZT withdrawal for intercurrent illness.

Conclusion: Intolerance to AZT resulting in severe rash can be treated with a simple, rapid oral desensitization. Repeated desensitizations may be performed with little risk of adverse reactions.

T.B.P.322

RECOMBINANT INTERFERON β_{ser} PROTECTS AGAINST ZIDOVUDINE-INDUCED GENETIC DAMAGE IN AIDS PATIENTS.

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This study was conducted to evaluate the in vivo geno-toxicity of zidovudine (ZDV) in patients with AIDS. AIDS patients that were non-smokers and on ZDV (1200 mg/day) as a sole medication for 4 weeks to 7 months were recruited in the study. AIDS and ARC patients prior to receiving any therapy served as a negative control. Whole blood cultures were initiated by conventional methods with PHA 1:50 dilution. For each study subject each experiment consisted of an untreated control and recombinant interferon-β (rIFN-β) experimental group. Experimental group cultures received 10, 100, 1000, 10,000 units of rIFN-β for the entire incubation period. Cells were harvested at 72 hours and stained with the fluorescense plus Giemsa method which enables the determination of number of division cycles a cell has completed. One hundred metaphases from first division cells were scored from each culture for chromosome aberrations that were mainly from the chromatid-type, i.e. chromatid, chromosome, and isochromatid breaks. The frequency of breaks in the study and negative control group was 5.14 ± 1.14 and 0.5 ± 0.29 per 100 cells respectively ($p<.05$). Cultures receiving 100 and 1000 units of rIFN-β, however, showed a frequency of 2.15 ± .3 and .57 ± .57 respectively, which was significantly lower than the untreated cultures ($p<.005$), using paired t-test. At the highest dose of rIFN-β no aberrations were detected. We conclude that rIFN-β protects against ZDV induced genetic damage.

T.B.P.323 MEGALOBLASTIC CHANGES IN THE BONE MARROW OF AZT TREATED AIDS-PATIENTS AS A PROGNOSTIC MARKER FOR NEED OF BLOOD TRANSFUSION.

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Objective: to study the effects of one year azidothymidine (AZT) treatment on the erythropoiesis of AIDS-patients.

Patients and methods: twenty three male patients, classified as having AIDS underwent serial bone marrow aspirations during AZT treatment (6 x 200 mg daily).

Results: After one month AZT 12/23 (52%) of the patients exhibited moderate megaloblastic changes in the bone marrow, whereas the other 11 remained normoblastic. Sixteen patients were available for follow up after 12 months AZT therapy, 8 from the megaloblastic group and 8 from the normoblastic. Vitamin B12 and folic acid levels were not significantly different in both groups during AZT treatment. In the group with megaloblastic changes the patients needed a significantly higher number of red cell concentrates than in the normoblastic group, i.e. 42 units versus 6 units ($p < 0.05$).

Conclusion: Megaloblastosis of the bone marrow early in the treatment with AZT may be a prognostic marker for the need of blood tranfusion in AIDS-patients.

T.B.P.325 HOME TRANSFUSION FOR AIDS PATIENTS ON ZIDOVUDINE

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Objective. To describe a home blood transfusion (HT) program for AIDS patients (pts) on zidovudine (ZDV) therapy
Methods. AIDS pts with ZDV-related anemia (Hgb < 8 gm%) were administered HT by home care nurses as an alternative to hospital transfusions (tx), usually as 2 units of WBC-poor packed RBC, under supervision of the primary MD. Most pts were ambulatory and all were hemodynamically stable. All were required to have a companion present after HT.
Results. 8 AIDS pts on ZDV were given 170 u WBC-poor packed RBC over mean 13 mo (range 2-18). 128 u were HT and 42 u were hospital outpatient or inpatient tx. 6 pts are presently alive (5 still on ZDV), 2 expired from opportunistic infections. One pt had an urticarial reaction to HT which responded to antihistamine, one pt had a delayed hemolytic reaction to blood given as an inpatient, several minor febrile reactions to HT did not require treatment. Cost for 2 units HT = $342, cost for 2 units in hospital = $ 609. HT reduced total tx cost by 31%, saving an average of $1964/pt/yr. No pt has had to permanently stop ZDV because of anemia, and all pts continue to prefer HT.
Conclusion. HT is feasible, safe, cost-effective, and facilitates long-term ZDV therapy in the home environment.

T.B.P.327 POLYMYOSITIS DURING ZIDOVUDINE THERAPY

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Objective. To determine the incidence of polymyositis during zidovudine(AZT) therapy
Methods. A 12 month prospective followup of a cohort of 20 patients(pts) taking AZT. Creatine phosphokinase (CPK) was routinely monitored during visits and in pts with symptoms of polymyositis.
Results. Eight pts (40%) were found to have elevated CPK over the period of observation. Onset of lab abnormality was from 10 days to 17 months (mean 7.8 months) after starting AZT. Most pts had mild Quadriceps muscle weakness and fatigue on exertion; 1 pt had acute onset Quadriceps tenderness and weakness which resolved in 1 week; 1 pt had chronic weakness limiting ability to ambulate. Myositis either resolved (4pts) or remained stable (4pts) despite continued AZT in all patients from 3 to 13 months (mean 4.6) after onset of polymyositis. Peak CPK ranged from 418 to 8941 IU/l (nl 0-200); duration of elevation varied from 1 to 5 months. No correlation between dose of AZT and severity of polymyositis was found.
Conclusion. Mild polymyositis is common during zidovudine therapy but usually resolves or remains stable during continued zidovudine therapy.

T.B.P.324 THE EFFECTS OF PCP PROPHYLACTIC AGENTS ON ZIDOVUDINE-INDUCED ANEMIAS

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Objective: To review transfusion requirements in PCP prophylaxed patients receiving Zidovudine. Method: Through chart review, transfusion requirements for 169 patients on Zidovudine therapy for a median of 22 weeks were compared by type or absence of PCP prophylaxis. Eighty-eight patients received TMP/Sulfa, 59 patients received aerosolized Pentamidine and 22 patients received no PCP prophylaxis. Hematocrits (Hct) were recorded at onset of Zidovudine therapy and at time of transfusion. Length of time from initiation of Zidovudine to time of transfusion was recorded. Results: 34 patients required transfusion: 28 (32%) on TMX/Sulfa, 10 (17%) on aerosolized Pentamidine and 11 (50%) without prophylaxis. The TMX/Sulfa and Pentamidine groups were not statistically different with respect to pre-Zidovudine Hct or time to transfusion. However, in the non-prophylaxed group the pre-Zidovudine Hct was significantly lower (31.7% vs. 36.85%, p less than .01) and the onset of transfusion-dependent anemia significantly sooner (82 days vs. 103 days, p less than .01). Conclusion: The use of TMX/Sulfa as a PCP prophylactic agent as compared to aerosolized Pentamidine is associated with a significant increase in the incidence of transfusion-dependent anemias. Randomized, controlled studies are indicated.

T.B.P.326 THE TOXICITY OF ZIDOVUDINE IN THE TREATMENT OF PATIENTS WITH AIDS-RELATED COMPLEX (ARC) AND AIDS

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Objective. To evaluate zidovudine toxicity over a two year period of its clinical use in HIV patients.
Methods. Zidovudine-treated 351 ARC and AIDS patients, on 200mg 4-hourly oral regimen, have been monitored fortnightly for up to two years.
Results. Over a median follow-up of 8.5 months (range 1 - 23) zidovudine was stopped/discontinued because of death (51), drug toxicity (48), other toxic treatments (23) or patient's request (27). The dose was lowered in 50 patients due to toxicity. Anaemia or pancytopenia accounted for drug cessation and lowering of dose in 74 and leucopenia alone in 16 cases. Of 15 patients with thrombocytopenia, the platelets rose to normal level in 11 but this was not sustained for longer than 5 months in 5 patients. 192 (26%) subjects received at least one blood transfusion. Of 110 patients who were on zidovudine for more than one year in 66 (60%) drug had been discontinued. Bone marrow aspirate in 13 patients with median follow-up of 8 months showed hypocellularity in 6 and hypocellular erythropoiesis in 8 patients. In 8 patients with a 3-fold rise in CPK, zidovudine was stopped in a median follow-up of 11 months; in 4 the levels didn't change significantly, in 2 fell substantially and in 2 normalised. Muscle biopsy in 7 of these 8 patients, with also associated peripheral muscle aching, was normal.
Conclusions. Zidovudine treatment in ARC and AIDS patients causes severe haematological toxicity and possibly affects muscle metabolism. By one year 60% of treated patients needed to be taken off zidovudine.

T.B.P.328 EOSINOPHILIA IN HIV INFECTED PATIENTS UNDER ZIDOVUDINE THERAPY.

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Objective. To evaluate eosinophilia in patients with symptomatic HIV infection before and during Zidovudine (ZDV) therapy.
Methods. Forty nine individuals with late ARC or AIDS who had negative stools for parasites were studied. The natural history of eosinophilia, and absolute numbers of neutrophils and lymphocytes, could be followed in 47 of them during ZDV treatment. Eosinophil (EOS) percentages (%) were from the differential; absolute EOS count was derived from that value and the WBC. Geographic controls established the normal range.
Results. Twenty two individuals (45%) had raised EOS % (> 4%). Absolute EOS counts (> 450) were elevated in 9/49 (18%) subjects. Following treatment with ZDV (median duration = 22 weeks, span 2 - 24), 38% had raised % and 9% had elevated absolute EOS count. For the entire population, there were significant reductions in EOS %, numbers, and total lymphocyte numbers ($p < 0.05$). Overall, neutrophils were unchanged. In a subset of patients ($n=16$) with neutrophil toxicity (mean time of appearance = 5.9 ± 1.3 weeks), both EOS % and absolute count decreased. When dose reduction of ZDV resulted in a raise in neutrophil numbers there was a concomitant increase in both % and absolute EOS count.
Conclusion. Increased EOS % seen in symptomatic HIV infected patients are frequent and are associated with elevated absolute counts. Thus, there appears to be a true rise in EOS % in many HIV-infected patients. When ZDV treatment induces neutrophil toxicity, EOS are usually reduced also, suggesting that ZDV can be toxic for EOS, as well as neutrophils.

T.B.P.329

AZT: DOUBLE EDGED SWORD

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Objective. To provide information about patients' stressors as well as positive perceptions regarding AZT that may influence their decision to take AZT, cooperate with treatment, and possibly their treatment outcome.
Methods. 103 seropositive homosexual men with at least one HIV-related symptom were recruited *from the UCSF AIDS Clinic* and administered an in-depth, semi-structured interview at 3 time points approximately 6 months apart. The interview was designed to elicit stressors, coping strategies, and both positive and negative perceptions in such areas as HIV testing, symptom recognition, clinical diagnosis, illness episodes, and treatments.
Results. 55 Ss spontaneously raised 39 concerns about AZT and 26 positive perceptions. The numbers of Ss who mentioned these concerns, which we categorized, were: 38--toxicity side-effects; 20--cost and financing; 18--facing decisions about beginning treatment, dosage, and choosing the right drug; 18--AZT as a negative symbol of the reality of ARC/AIDS; 11--negative or unsatisfactory interactions with health care providers, 10--lifestyle disturbances; 9--effectiveness of AZT; 7--drug study protocols; 7--lack of funding/availability of drugs; 6--telling others; 5--going off AZT; 4--time limitations; 4--availability of social support; 2--peer pressure to choose AZT; 2--peer pressure to choose an alternative. By the Time 2 interview, 30 Ss had been on AZT at some point, in addition to 4 on study protocols. A total of 22 subjects experienced negative side effects they attributed to AZT.
Conclusion. For some AIDS and ARC patients, AZT has been a means of prolonging survival and reducing the severity and frequency of opportunistic infections. For many of the ARC patients in our study, however, AZT also involved a number of physical and psychosocial stressors.

T.B.P.331

PHASE I STUDY OF INTERFERON ALPHA-2b (INTRON), ZIDOVUDINE AND rGM-CSF IN PATIENTS WITH AIDS-ASSOCIATED KAPOSI'S SARCOMA

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Objective. To evaluate the efficacy and safety of *r*GM-CSF in combination with Intron and zidovudine in patients with AIDS-associated Kaposi's sarcoma (KS).
Methods. Patients with KS and no active infections were enrolled. Intron was given as 12 mu Sq daily and zidovudine-200mg orally every 4 hrs for 16 wks. Patients received placebo or *r*GM-CSF, 5-10 mcg/kg Sq daily for 16 wks.
Results. 12 patients have been enrolled. Mean length of time on study is 8.0 wks. 4 have completed 16 wks. Changes in mean hematologic parameters were:

Weeks	0	1	2	3	5	6	8
WBC ($x10^3$ cells/mm^3)	4.5	4.7	8.8	9.0	8.0	5.9	4.3
(range)		2.2-7.5/	2.0-18.7/	1.8-28.3/	2.5-28.0/	2.0-21.6/	2.0-10.4
Neutrophils(/mm^3)	2426	2652	5823	5280	6323	3820	2114
Platelet Ct ($x10^3$)	203	158	166	150	174	174	210
CD4 cells(/mm^3)	235	N/A	260	N/A	N/A	330	253
p24 (%+)	4	N/A	1	N/A	N/A	1	1

One patient developed severe hypoxemia and died. Moderate fatigue, anorexia, weight loss, headache, arthralgias, myalgias and fevers were seen during the first wks of therapy. 2 patients had bone pain. 1 patient had a complete anti-tumor response; the remainder had a partial anti-tumor response.
Conclusion. *r*GM-CSF resulted in dramatic and sustained increases in the WBC count and neutrophil count in patients receiving Intron and zidovudine. Doses of < 5mcg/kg of *r*GM-CSF may be useful. Adverse reactions were minimal. Early data do not suggest negative or synergistic *r*GM-CSF anti-HIV activity.

T.B.P.333

UPDATE ON PROGRAM STANDARDIZATION AMONG PUBLIC HEALTH LABORATORIES IN THE U.S.A. PERFORMING TESTS FOR HUMAN RETROVIRUSES

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Objective. To promote uniformity and assure quality of testing for HIV and other human retroviruses.
Methods. A survey of the fifty-four member laboratories of the Association of State and Territorial Public Health Laboratory Directors seeking information and data on human retrovirus programs was conducted in January 1989. A conference was held in March 1989 to achieve program standardization by conferee consensus.
Results. The sixth in the series of surveys shows continued growth of state testing programs and greater uniformity of procedures and practices. Problems identified through the survey together with topics selected by the conference planning committee determined the issues which workgroups of the conference addressed. The 1989 Consensus Conference was the fourth in the series. Consensus recommendations of this recent conference as well as those still valid and reaffirmed from previous conferences are included in the final report of the 1989 conference.
Conclusion. Through problem identification, consideration and consensus acceptance, public health laboratories in the U.S.A. have established an effective system for program standardization. Other countries have expressed interest in the program and some have established similar consensus building processes.

T.B.P.330

PSORIASIS IN HIV AB POSITIVE DRUG ABUSERS

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Objective. To describe the onset of psoriasis during HIV infection in drug abuser patients.
Results. We report on 5 Italian patients, aged between 22 and 34 years, who all has been drug abusers for more than 2 years. They have never been affected by psoriasis before diagnosis of HIV infection was made, and three of- them have developed A.I.D.S. within the following 12 months. All patients presented small psoriatic lesions which covered less than 5% of the body surface. The lesions didn't worsen as in the three patients in which Opportunistic Infections occurred as in a symptom free patient. In only one case (with PGL) psoriasis exacerbated to a generalized flare of erithrodermic psoriasis, which however responded to therapy with topics.
Conclusion. Psoriasis is a disease of unknown etiopathogenesis, but it was suggested that infections may play a role of stimulus in genetically predisposed patients, and guttate psoriasis is described as a typical example of this event. Patients in whom HIV infection is associated with psoriasis have not frequently been reported. The Authors generally described homosexual men with wide spread of skin lesions which didn't improve under treatment and psoriasis often became uncontrollable when immune response was depressed during opportunistic infections. The dissimilar immune and infectious background of drug abusers can be explain the different aspect of the disease in our patients.

Diagnostic
Diagnosis

T.B.P.332

A NEW MORE SENSITIVE AND HIGHLY SPECIFIC ANTI HIV-1 ASSAY BASED ON RECOMBINANT PROTEINS.

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Objective. To replace tissue culture raised viral lysate antigen with recombinant antigen in the Wellcozyme Monoclonal test and to further improve on the specificity seen in Wellcozyme competitive assays.
Methods. A recombinant DNA produced fusion protein containing the immunodominant regions of HIV-1 envelope and core proteins replaced whole viral lysate grown in CEM cells. Chemically inactivated horseradish peroxidase was included in the assay procedure and its effect on the rate of false positive reactions was determined.
Results. All of the 348 confirmed HIV-1 positive sera from AIDS, ARC and asymptomatic donors reacted (100% sensitivity) in the test. In 4 out of 5 serial samples taken from donors during seroconversion the assay detected HIV antibodies earlier than the Wellcozyme Monoclonal test. The assay was up to 10 fold more sensitive on end point dilutions of weakly reactive sera and had similar sensitivity with strongly reactive sera. None of 11542 negatives (9508 sera, 2034 plasmas) were reactive (100% specificity), although one sample was close to cut-off.
Conclusion. The use of recombinant antigen has improved the sensitivity with weak samples and the inclusion of peroxidase in the assay procedure has increased specificity. The majority of false positive reactions seen in previous tests of this type were caused by an inhibitory anti-peroxidase activity present in some serum samples.

T.B.P.334

T4a-"INTERNAL IMAGE"-BEARING ANTIBODIES IN SERA OF PATIENTS WITH HIV-1-INFECTION

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Human immunodeficiency virus (HIV)-neutralizing antibodies could be detected in HIV-infected individuals by different groups. Obviously, the infection of the target-cell for HIV takes place by specific binding of the viral surface-glycoprotein (gp120) with the cellular CD4-receptor. This binding site is conserved in different isolates of HIV and linkage to CD4 as well as syncytia formation can be blocked by mouse-monoclonal antibodies reacting with the T4a-epitope.
Sera from patients with HIV-infection (n=120) and sera of an HIV-negative control group (n=50) were tested for antibodies reacting with the T4a-recognizing region of monoclonal antibodies in an ELISA-system. The HIV-positive sera showed significantly elevated binding activities in comparison with the sera of the control group ($p < 0.0001$). In the multiple regression analysis we determined a correlation of 0.34 ($p < 0.01$) between binding activity and linear combination of the following parameters: stage (WR-classification), T4 absolute, T8 absolute, T4/T8-ratio, Mérieux-test, opportunistic infections, lymphadenopathy syndrome and polyclonal serum-IgM. p24-positive patients (n=27) had lower binding-activities than patients without evidence for p24-antigenemia (n=13, $p < 0.02$).
The data reported here indicate the presence of antibodies reacting with the idiotypic region of T4a-recognizing monoclonal antibody-preparations in sera of patients with HIV-infection. These antibodies represent T4a-"internal image"-bearing network antibodies, which might have HIV-neutralizing function.

T.B.P.335 EVALUATION OF DIFFERENT ANTI-HIV REAGENTS THAT ARE AVAILABLE IN MEXICO.

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Objetive.
To get to know percentage of sensitivity, specificity, false positives, false negatives of the reagents that are used in the mexican health care system.
Method.
6 traditional Elisa, 3 recombinant Elisa, 3 aglutination and 2 quick technology Elisa were evaluated with a known panel of 160 samples with aids, asintomatic seropositives, healthysamples. Other infections samples and blood donors samples
Results
The percentage of sensitivity was between 100 and 62.5% specificity between 98.3 to 82.5% false positive index turned out to be between 4.76 and 41.17% and the false negative index was from 37.5 to 0%.
Conclusion.
We found that two types of reagents. One of aglutination technology and the other one Elisa quick technology were not suitable for its use. The rest of the reagents turned out to be suitable for their use.

T.B.P.336 WHICH IS THE BEST LABORATORY MARKER WHEN FOLLOWING HIV-POSITIVE PERSON?

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*Laboratório Weimann de Porto Alegre
**Hospital de Clinicas de Porto Alegre

Objective. Establish the best laboratory marker when following HIV-positive patients.
Methods. It were annalyzed 60 ambulatory patients and 19 hospitalized HIV-positive patients. The following tests were executed Western-blot(WB- Dupont),Envacor HIV_1(EC-Abbott) and the presence of viral circulating antigen(HIV-Ag).
Results. The patients were agrupated in 5 groups as follow:
I positive WB 24, positive EC 24, negative HIV-Ag (43 ambulatory patients)
II positive WB 24, negative EC 24, negative HIV-Ag (4 hospitalized and 5 ambulatory patients)
III positive WB 24, negative EC 24, positive HIV-Ag (8 hospitalized and 10 ambulatory patients)
IV positive WB 24, positive EC 24, positive HIV-Ag(1 hospitalized)
V negative WB 24, negative EC 24, positive HIV-Ag (5 hospitalized and 3 ambulatory)
Conclusion. The best relation with anti-p24 antibody drop,anticenemia and clinical criteria of AIDS progression was obtained with EC-ABBott.Surprisingly, we did notfind the WB-Dupont confiable as a marker of AIDS progression.

T.B.P.337 COMPARISONS OF COMMERCIALLY AVAILABLE TEST FOR HIV ANTIBODIES USING ZAMBIAN SERA

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OBJECTIVE. To compare the available test, the first generation, and confirmatory test with a view to decide the best Screening test and confirmatory test in Zambia.
METHODS. 3 Panels of Sera were set. Each panel of Sera was screened for HIV antibodies using a set of test from the first generation and new generation. Positives were confirmed using the standard confirmatory test like Western blots and immunofluorescent as well as using another ELISA as a confirmatory test.
RESULTS. Some of the first generation ELISA gave a very high false positive rate while the second generation were more reliable. Use of second ELISA as a confirmatory test was found to be as good as using the standard confirmatory i.e. Western blots.
CONCLUSION. Use of one of two other ELISA can be used as a confirmatory test. Immunofluorescent test was the other alternative to confirmatory test.

T.B.P.338 COMPARISON OF TWO HIV1 IMMUNOBLOT TECHNIQUES.

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OBJECTIVE: To investigate the pattern of bands in strips of two electrophoretic immunoblot techniques to same sera.

METHOD: 72 adult sera, 51 positive for HIV1 and 21 seronegative were tested with an DUPONT and ANCOS Western blot electrophoretic techniques.

RESULTS: Comparison of tests with DUPONT as reference test. (Positive tests)

	GENERAL	P15	P17	P24	P33	P41	P55	P64/66	P160
(a) No of sera observed:	51	20	32	48	50	50	51	41	46
(b) % of sera +ve for both tests:	76	82	60	78	70	66	51	49	38
(c) Sensitivity:	95	100	90	95	99	94	95	84	53
(d) Specificity:	92	100	43	73	80	65	92	46	61

No gp 120 was found in ANCOS, but was present in 51% of DUPONT strips

CONCLUSION: Despite the high level of correspondence present when combinations of protein bands are considered, great variation was present on regarding individual proteins and glycoproteins in the two techniques.

T.B.P.339 LABORATORY TESTING FOR HIV 1 ANTIBODY TESTING IN CALIFORNIA: ANALYSIS OF CURRENT PRACTICES AND IMPROVEMENT EFFORTS

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Objective. This program uses HIV antibody testing as a model to develop and evaluate methods of monitoring and improving laboratory quality.
Method. Using a "blind" proficiency test system, serum samples with known HIV content were submitted as clinical specimens by physicians, clinics and hospitals to their usual sources of testing. Currently 20 EIA laboratories and 12 confirmatory laboratories in five states are included. An open proficiency test and a written survey to a sample of 130 HIV laboratories in California has also been completed in order to profile HIV testing practices and plan future improvement activities.
Results. Performance on EIA screen tests has been excellent with fewer than 2% incorrect results. Western Blot confirmatory tests are more problematic with commercial laboratories reporting a high proportion of positive specimens as indeterminate. While public health laboratories in California use a well standardized indirect immunofluorescence test, commercial reference laboratories use both licensed and unlicensed Western blot reagents with a variety of interpretive criteria for confirmatory testing. Analysis of report content and format, shows potential communication problems between laboratory and physicians. There is no consensus on the content and format of EIA screening results or confirmatory testing. Many reports were cluttered with "boiler plate" of questionable utility, making it difficult to find relevant information and results. Approximately half of confirmatory laboratories using Western blot reported band patterns; however, there was no consensus on what were clinically important bands.
Conclusions. HIV antibody testing has the potential to be a highly sensitive and specific system However, use of a variety of unlicensed reagents for confirmatory testing, lack of agreement on WB interpretive criteria and performance of testing in more than 220 laboratories with a wide range of test volume and expertise suggests the need for continued close monitoring. In order to correct these problems, state agencies and professional organizations responsible for laboratories, are undertaking regulatory and educational interventions which seek to bring a higher level of standardization to confirmatory testing and referral of indeterminate specimens to public health laboratories for additional testing.

T.B.P.340 CROSS-REACTIVITY BETWEEN ELISA's FOR DETECTION OF HIV-1 AND HIV-2

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Objective. To study the cross-reactivity of HIV-1 and HIV-2 in ELISA assays.
Methods. Sixty sera from hemophiliacs were tested for antibodies HIV-1 (HIV-1 recombinant, Abbott) and confirmed by means of ENVACORE (Abbott) and RIPA. In all the sera, HIV-2 antibodies were determined using a commercial available anti-HIV-2 ELISA test (ELAVIA 2) (Diagnostics Pasteur). Sera reacting positive for HIV-2 were confirmed by RIPA using HIV-2-ROD.
Results. HIV-2 ELISA reactivity was observed in only 1 out of the 27 HIV-1-negative samples, but HIV-2 reactivity was found in 27 out of the 33 HIV-1-positive sera. All the HIV-2 samples positive by ELISA were negative by RIPA, which difference was statistically significant ($p < 10^{-6}$). No significant differences were observed between the presence or absence of HIV-1 core proteins and HIV-2.
Conclusion. These results confirm the high degree of serologic cross-reactivity between gene products of HIV-1 and HIV-2(ELISA).
(Supported by a grant from Fundación Roemmers).

T.B.P.341

FAILURE OF ELISA AND WB TESTING TO DETECT HIV INFECTED SUBJECTS.

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Objective. To assess the efficacy of ELISA and WB test routinely used in laboratory setting to detect HIV infected subjects.
Methods. All sexual partners of seropositive blood donors were tested by ELISA and WB; most negative for anti-HIV were in situ hybridised (ISH) with an SP64 plasmid containing the nine-kilobase SstI-SstI viral insert lambda BH10 tagged by inserting an antigene sulfone group into cytosine of the denaturate cDNA.
Results. Studied population was: 27 partners (3 males and 24 females) of 27 seropositive blood donors (25 males and 2 females); the distribution by risk group was: homosexual male 3.7%, bisexual male 11.1%, intravenous drug addict 55.5%, heterosexual contacts 22.2%, not known 7.4%.
In 3 cases the partner, belonging to risk group, was the source of infection. Seven partners negative to serological assessment resulted positive at ISH test.
Conclusions. Regular sex partner of HIV infected subjects may be infected also in presence of negative serologic assessment, and ISH may be useful to detect marker of infection at least 3 months before the ELISA and WB positive results.

T.B.P.342

CORRECTION OF FALSE-POSITIVE RESULTS OF ELISA OF IMMUNODEFICIENT STATE

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Summary. A mass-scale serotesting of various subpopulations in order to detect HIV infection demonstrated that ELISA is a most widespread method of examination, and, irrespective of its high specificity, yields false-positive results in a definite percent of cases.
Methods. Serological testing for the presence of antibodies to AIDS virus was carried out by ELISA with home-produced and imported test-systems, the obtained results were confirmed by immunoblotting.
Results. The results of ELISA were corrected by the following: adsorption of sera (the test and control ones) by the pool of trombocytic antigen, screening of the sera under study prior to and after treatment with the trombocytic antigen in the panel of T-lymphocytes of test-donors with the known spectrum of HLA-antigens. Adsorption by the pool of trombocytic antigen, with only class I HLA specificities represented, eliminated antibodies to the A, B and C loci of the HLA system. Testing in the panel of T-lymphocytes was carried out to determine the degree of serum purification of HLA - A, B, C antibodies.
Conclusion. In false-positive individuals after sorption by the trombocytic antigen the sera in ELISA became negative; this was confirmed in the panel of T-cells. It can be concluded that the false-positive results of ELISA may be due to antibodies to class I antigens of the HLA system.

T.B.P.343

SEROSURVEY OF WOMEN IN A MATERNITY WARD

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OBJECTIVE - To study the prevalence of hepatitis B markers and HIV antibodies in parturients receiving clinical care at a hospital in a Cape Verde island(West Africa).
METHODS - During January and May 1988 serosurvey of the vertical transmission of hepatitisB virus was performed on 356 parturients and their babies. Specimens were analyzed also for anti HIV antibodies. Elisa and Western blot were the methods employed.
RESULTS - 22(6,17%) of the mothers were HBs Ag positive and 78 (21,91%) were HBs Ab positive. Study of HIV prevalence is in progress. The results will be presented and discussed at the Conference.

Donneurs et receveurs de sang et de produits sanguins
Recipients and Donors of Blood and Blood Products

T.B.P.344

LOOKBACK: AN UPDATE ON THE NEW YORK EXPERIENCE

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Objective: To evaluate results and assess costs of the Lookback Program.
Methods: A lookback of previous donations from 1358 anti-HIV positive blood donors identified since April, 1985 has been carried out. 203 hospitals in the greater New York region have been notified of receipt of 2417 components back to May, 1980.
Results: To date, 1627 reports have been received from hospitals (69% response rate); 1453 or 89% of components were transfused. Of these recipients, 1079 or 74% are deceased. Recipients known to have been discharged equal 329. Of these, 237 or 72% have been tested; 99 or 42% are HIV antibody positive. The positivity rate was highest in patients transfused in 1984; 48 patients or 61% of those tested were seropositive. In 1985, 16 patients (52%) were positive. There were no positive recipients in 1980. There are 66 recipients (70%) between 18 and 70, which may be a surrogate measure of sexual activity and potential transmission. The cost to the New York Blood Center to date has been approximately $843,440, including $75,000 in grant support or approximately $8,500 per positive recipient located. This figure does not include hospital costs which are substantial, nor does it include the cost of Lookback-generated lawsuits.
Conclusion: The 99 seropositive Lookback recipients identified constitute only a small fraction of the total estimated HIV infected population in the country. Despite its minimal public health impact, Lookback fulfills our obligation to notify about information of significance to another's health.

T.B.P.345

THE ITALIAN HEMOPHILIC REGISTER AND NATURAL HISTORY OF HIV INFECTION.

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Objectives. To present the results of a nationwide survey of all population affected by congenital coagulation disorders, with the aim to evaluate the time-trend of the incidence of HIV-1 seropositivity and AIDS in the Italian Hemophilia population through a retrospective national cohort study.
Methods. This project is divided up into two phases. 1. the set up of the Register (National Hemophilia Survey), and 2. the evaluation of the spread of HIV infection. The National Hemophilia Survey carried out between September and November 1988 was performed by a standard questionnaire, with an individual code to ensure confidentiality sent to all the Hemophilia Centers to collect demographic and clinical informations. Data have been analysed using a database program.
Results. As of 15 January 1988, 12 Hemophilia Centers had replied. At this the information regarding 859 subjects were collected. On the whole a prevalence of HIV-Ab positivity of 21% was found.
Conclusions. This National Hemophilia Survey has been the first comprehensive evaluation of the Italian population affected by congenital coagulation defects. The Hemophilia Centers partecipate entusiastically to this cooperative project. From this Nation Survey, though the analysis of the data is still incomplete, a prevalence of HIV-Ab positivity of 21% was shown.

T.B.P.346

TRANSFUSION-ASSOCIATED (T-A) AIDS CASES IN ITALY.

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Objectives. To present an update of the patients with AIDS due to blood transfusion, and to discuss the importance of an active surveillance system of T-A AIDS within the overall AIDS surveillance. The peculiarities of this specific surveillance will also be discussed.
Methods. A database has been created including all the subjects for whom the only ascertained risk factor was the reception of blood transfusion. It has been derived from the National AIDS Register, including other pieces of information collected by means of a special standardized form. The analysis has been carried out using different BMDP programs.
Results. As of 31st December, 1988, 53/3008 (1.8%) patients were reported with T-A AIDS, 5 of which were below 14 years of age (9.4%). At the same date, the case-fatality rate was 41.5%. Clinical and epidemiologic information will be presented, as well as the mean lag-time between infection and the development of full-blown AIDS.
Conclusions. At the end of 1988, the relative proportion of T-A AIDS was slightly lower than at the end of 1987, in Italy; the case-fatality ratio is also less for this subgroup of patients than for all the other AIDS subjects. The standard reporting form for AIDS has proven inadequate to describe both the pattern and the natural history of the syndrome in T-A patients. Nor have the reporting physicians provided enough data, as a result of an investigation carried out early in 1988. Thus a network which includes the national AIDS unit, the reporting physicians, the unit(s) where the blood was administered, and the blood bank is being implemented.

T.B.P.347 HIV-1 p24 ANTIGEN SCREENING OF MALE BLOOD DONORS IN LOCALITIES WITH HIGH HIV-1 ANTIBODY PREVALENCE

Transfusion Safety Study Group* represented by Busch, Michael**
* Participating institutions in New York City, Miami, Detroit, Seattle, San Francisco, and Los Angeles, USA.
** Irwin Memorial Blood Centers and University of California, San Francisco, California, USA.

Objective. To assess the frequency of HIV-1 p24 antigen (Ag) positivity among male donors in high anti-HIV-1 prevalence areas in the city of San Francisco (SF) during a period with a high rate of HIV seroconversions. Methods. The SF component of the TSS/NHLBI Donor Repository has 25,892 sera collected in late 1984-early 1985, before anti-HIV screening began. Overall prevalence of anti-HIV-1 among these specimens was 0.24%. A subset of 2,297 sera was selected among males aged 18-44 years with addresses in SF Zip codes having one or more anti-HIV-1(+) Repository donations; the anti-HIV-1 prevalence of the subset by prior testing was 1.08%. HIV-1 p24 Ag testing used Abbott's ELISA and neutralization (confirmatory) reagents; if initially p24 reactive, anti-HIV-1 was reassayed (Genetic Systems, Inc.).

Results.

	HIV-1 p24 Antigen Result	Number (%)		
Anti-HIV-1 Status	Tested	Initially Reactive	Repeatably Reactive	Neutralized
Positive	25	3 (12%)	3 (12%)	3 (12%)
Negative	2,272	9 (0.4%)	4 (0.18%)	0* (0%)

* Zero falls within the 95% CI of a Poisson distribution with a mean of 3.

Conclusion. No HIV-1 p24 Ag(+) donations were found among 2,272 anti-HIV-1(-) persons in a population that yielded 25 anti-HIV-1(+) results. Given the present anti-HIV-1 prevalence of 0.012% in US donors,over 200,000 contemporary donations would be needed for a similar evaluation of the antigen:antibody ratio. (Sponsored by Contracts # N01-HB-4-7002 and N01-HB-4-7003 of the National Heart Lung and Blood Institute).

T.B.P.349 MULTICENTER EVALUATION OF A RECOMBINANT BASED HIV-1/HIV-2 COMBINATION SCREENING ENZYME IMMUNOASSAY.

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OBJECTIVE: To evaluate a newly developed screening assay which utilizes HIV-1 and HIV-2 recombinant proteins. A significant number of HIV-2 infected individuals would not be detected with current HIV-1 screening assays.
METHODS: An enzyme immunoassay (EIA) was developed which utilizes both HIV-1 recombinant envelope and gag proteins and a recombinant HIV-2 envelope protein on the solid phase. The sensitivity and specificity of this EIA was evaluated on serum or plasma from normal blood donors and from individuals infected with HIV-1 or HIV-2: results were compared to the current recombinant-based HIV-1 EIA.
RESULTS:

		No. Repeatably Reactive (%)	
Type of Specimen	No. Tested	HIV-1 EIA	HIV-1/ HIV-2 EIA
Blood Donors	5029	5 (0.10)	8 (0.16)
HIV-1 Seropositive	286	286 (100)	286 (100)
HIV-2 Seropositive	202	154 (76.2)	201 (99.5)

Both assays had a specificity of >99.8% and detected 100% of the known HIV-1 specimens. The sensitivity of HIV-1 EIA and HIV-1/HIV-2 EIA for detecting HIV-2 seropositives was 76.2% and 99.5% respectively.
CONCLUSION: The addition of HIV-2 envelope proteins to HIV-1 proteins already on the solid phase preserved the performance of the HIV-1 EIA and significantly improved the detection of HIV-2 antibodies.

T.B.P.351 USE OF RAPID ASSAYS FOR ANTIBODY TO HIV IN BLOOD DONORS, PERSONS PRACTICING HIGH RISK BEHAVIORS AND SUSPECTED AIDS CASES IN GHANA

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Objective. To evaluate three tests for antibody to HIV which do not require specialized equipment in three different populations in Ghana.
Method. Seven laboratories in Ghana participated in the study. Two thousand specimens from 3 populations were tested with HIVCHEK, SERODIA and Retrocell. The 3 populations were blood donors, persons practicing high risk behaviors and suspected AIDS cases. Each specimen was also tested by ELISA for antibody to HIV-1 and HIV-2. All positivies were confirmed by Western Blot.
Results. Analysis is currently being performed to determine sensitivity, specificity, and predictive value of the tests in each of the populations tested. These results will be reported.
Conclusion. Many laboratories in developing countries are not equipped to perform the standard tests for HIV antibody, ELISA and Western Blot. Although the newly developed tests for HIV were designed primarily for screening blood donors, many of these labs will be asked to test suspected AIDS patients and persons thought to be at high risk of acquiring HIV. These tests have been evaluated for use in these populations under true field conditions.

T.B.P.348 HIV INFECTION IN WESTERN BLOT INDETERMINATE BLOOD DONORS

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Objective. To determine whether U.S. Upper Midwest blood donors with indeterminate HIV-1 Western blot results are HIV-1 infected.
Methods. 187 volunteer blood donors who had tested repeatedly reactive by enzyme immunoassay (EIA) and had at least one HIV-1 characteristic band on Western blot (but not positive) were asked to return for an interview and blood testing. We obtained information regarding HIV risk factors and peripheral blood specimens for the following tests: HIV-1 antibody (two different EIAs and a licensed Western blot), HIV-2 antibody EIA, HIV-1 serum antigen, HIV-1 culture using both RT and HIV-1 antigen detection assays, HTLV-I antibody EIA, and PCR analysis using an HIV-1 gag primer pair.
Results. 100 of 187 (53%) blood donors agreed to participate. There was no significant difference between the blood donor participants and nonparticipants in terms of age, sex, or Western blot band pattern. 65 of 100 were still repeatedly reactive for HIV-1 antibody by at least one HIV-1 EIA. All 100 denied risk factors for HIV-1 infection. 92 of 100 were still indeterminate by Western blot and 8 were negative after 1-46 months follow-up. None were positive by HIV-1 Western blot, HIV-1 serum antigen EIA, HIV-2 antibody EIA, HIV-1 culture, or HTLV-I antibody EIA. HIV-1 PCR analysis results are pending.
Conclusion. These data indicate that blood donors who are indeterminate by HIV-1 Western blot and lack risk factors for HIV infection are not infected with HIV-1.

T.B.P.350 HUMAN IMMUNODEFICIENCY VIRUS ANTIBODY SCREENING OF BLOOD DONORS - AN INTERNATIONAL SURVEY.

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Between October 1985 and March 1988, the Canadian Red Cross Society (CRCS) conducted three surveys on international practices of screening blood donors for anti-HIV. During this period, the reported cases of AIDS per 100,000 population increased from two in 1985 to six in 1988. At the same time, the mortality rate due to AIDS also increased from 1/100,000 in 1985 to 4/100,000 in 1988. The number of blood transfusion associated AIDS cases increased from 1.8% in 1985 to 3.6% in 1988. In 1985, 17/22 countries surveyed were screening the blood donors for anti-HIV, whereas, in 1988, 31/33 countries were screening blood routinely. Of the 18 countries from which information was available, 12 countries reported a decreasing trend in the anti-HIV seroprevalence rate, five countries reported a stable trend and the remaining one reported an increasing trend. The confirmed positive anti-HIV rate in 1988 varied from 0% to 0.64% with the majority of countries reporting the prevalence rate below 0.005%. In 1985, the majority of countries had already implemented self-exclusion programme and provided alternate test sites. Most of the countries were also reporting antibody status to the donors and maintaining confidentiality of their test results. By 1988, of the 33 countries surveyed, two had already started screening donors for anti-HIV-2 and the additional 14 countries were conducting feasibility studies. Additional information based on the survey planned for March 1989, will also be presented.

T.B.P.352 "THE GIFT RELATIONSHIP REVISITED:" HIV SEROPREVALENCE OF BLOOD DONORS AND OTHER LOW-RISK GROUPS IN AFRICA

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Objective. HIV survey data from 22 African countries reenforces the conclusion of Titmuss' The Gift Relationship that the quality of donated blood varies considerably.
Method. Compared HIV seroprevalence estimates from non-random sample surveys of blood donors and other low-risk groups (i.e., pregnant women) in the same year and location. Data from small sample sizes and from small differences in seroprevalence (the significance of which is tested) are discarded.
Results. HIV seroprevalence for urban blood donors and other low-risk groups in 10 of the 22 countries was similar; in 3 countries, donor seroprevalence was lower; but in 9 countries it was higher (6 of which achieved $p < 0.02$). In regions outside the capital, the relationship is reversed. In 7 of the 10 regions, the HIV seroprevalence of donors is lower than other low-risk groups. In all 9 countries with data on gender of blood donors, male donors outnumber females; in 7 of the 9 countries, the female HIV seroprevalence rate was higher than males. Longitudinal data, available on blood donors in 9 countries, suggest that 3 countries have shown no seroprevalence change, 4 have shown a modest decrease, and 2 have shown an increase.
Conclusion. Data suggest that blood donors in many capital cities are not a random population apparently, and their higher HIV seroprevalence, especially for women, is troubling. Blood banking procedures should be reevaluated in light of this HIV data, as should the gift relationship itself.

T.B.P.353 THE IMPACT OF AIDS ON BLOOD TRANSFUSION SERVICES AT THE UNIVERSITY TEACHING HOSPITAL, LUSAKA

Dr. Abraham Mwile, University Teaching Hospital (UTH), Lusaka, Zambia

Objective: To describe the impact of AIDS on the Blood Transfusion services provided by the UTH.
Method: The data was obtained from annual records and my full participation in the recruitment of blood donors.
Results: The number of blood units discarded on account of HIV positivity is rising and thus making it more difficult for the Blood Bank to meet the ever increasing hospital requests.

Year	No. of Donors	No. of HIV+ve	%
1987	7457	678	9
1988	5505	1037	18.8

Conclusion: The AIDS pandemic relentlessly continues to be a collosal challenge to the meagre blood transfusion services offered by the UTH.

T.B.P.354 HIV ANTIGEN TESTS AMONGST NEW BLOOD DONORS

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A 'window-phase' (3-12 weeks) may exist following HIV infection when no antibody could be demonstrable but HIV antigen may appear in the blood. We have tested this possibility in first time (new) blood donors, since in our blood bank 60,000 annual donations have been followed over 3 years without additional seroconversion amongst repeat donors.
Included also in this study are 4 donors who have stopped donating because of the 'risk factors'; 5 W. blot positive donor sera and 3 'tricky sera' (only P24/P55) detected by a first generation test during 1985. Antigen assay is based on enzyme immuno assay system (Vironostika, Organon). All samples are tested in parallel by routine antibody assay (Wellcome).
Results:

TESTS	NEW DONORS	HIV antibody positive	Donor with risk factors	Tricky sera
	157	5	4	3
Antigen (Organon)	2 pos	neg	neg	neg
Antibody (Wellcome)	neg	pos	neg	neg

Our results indicate Vironostika did not show any reactivity in the 'tricky sera' and to antibody containing sera, suggesting its specificity. 2/157 normal sera showed initial reactivity, but not reproducable. However, application of the test may be profitable in risk groups and in patients where antigenemia has prognostic and therapeutic significance.

T.B.P.355 INDETERMINATE HTLV-1 WESTERN BLOT RESULTS IN BLOOD DONORS: ABSENCE OF INFECTIVITY TO RECIPIENTS OF BLOOD

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Objective. To investigate if donor blood with indeterminate test results in HTLV-1 Western Blot (WB) transmits HTLV-1 to recipients.
Methods. Serum samples from blooddonors (n=5,332) and recipients (n=392), who participated in a prospective study for posttransfusion hepatitis, were tested for HTLV-1 antibodies with a commercially available ELISA. The recipients were followed-up for 6 months. Repeatedly ELISA reactive samples were tested for confirmation with commercially available WB strips, and ^{125}J-RIPA developed in our institute.
Results.

		ELISA reactive		Western Blot		^{125}J-RIPA	
	n	initially	repeatedly	pos	indet.	pos	indet.
donors	5,332	109 (2.04%)	19 (0.36%)	0	6	0	0
recipients	392	5 (1.28%)	1 (0.26%)	0	1	0	0

The 6 recipients who received blood products from 6 donors with indeterminate HTLV-1 WB, were non-reactive in HTLV-1 WB and ^{125}J-RIPA, with serum samples obtained 0, 3 and 6 months after transfusion.

Conclusions. Blood products from donors with indeterminate results in HTLV-1 Western Blot, do not transmit HTLV-1 to recipients.

T.B.P.356 "CASE CONTROL STUDY IN HIV SEROPOSITIVITY IN HEMODIALYSIS PATIENTS"

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To investigate the extent of HIV infection among dialysis patients, we studied 117 patients of the hemodialysis unit of the Santa Marcelina Hospital, east region of São Paulo city, to assess anti-HIV (ELISA and Western Blot), immunological status, exposure to blood transfusion and time on hemodialysis. Twelve patients were positive with the ELISA technique and 9 (7,7%) were confirmed by Western Blot. Risk factors other than blood transfusion were ruled out in all 9 patients. Every positive patients was compared to 3 controls matched for sex. The mean number of units of blood transfused to cases was 29.3 units and 26,7 units for the controls. The mean time on hemodialysis was 28.2 and 27.2 months, respectively for cases and controls. Except for two patients who had chronic lymphadenopathy, all the cases had no clinical manifestations associated to HIV infection at that time. The risk of HIV infection was neither associated to the number of blood units transfused nor the time on hemodialysis. OKT4/OKT8 ratio was ≤ 1 in all truely infected patients. After 12 months, 3 out of 9 died, and 1 developed ARC. The others have been assyntomatics. New investigations showed one more infected by HIV, who is also assyntomatic yet. The prevalence of HIV infection observed in this study is rather high. This finding stresses the need for the dialysis units personnel to carefully with recommended preventive measures.

T.B.P.357 A CLINICAL AND SEROLOGICAL FOLLOW-UP OF HIV 2 - - POSITIVE PATIENTS FROM GUINEA-BISSAU (WEST AFRICA)

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OBJECTIVE - To establish the clinical and laboratorial features of HIV 2 infection and to determine parameters of these infection related to disease progression in people from Guinea-Bissau
METHODS - 59 asymptomatic persons with documented (serological) HIV 2 infection in 1986 were re-evaluated in 1988 by their medical history, physical examination and laboratory tests. The serological HIV profiles were determined and compared by ELISA and W.B.analysis; antibodies anti HSV, CMV, and EBV and B_2-microglobuline by ELISA, immunoglobulines by ID and lymphocyte phenotype by monoclonal antibodies. 40 healthy HIV negative persons were enrolled as a control group.
RESULTS - The parameters given below were associated with disease progression. Higher relative and absolut members of CD8 and lower CD4/CD8 ratio was associated with disease progression-No direct relationship was seen between CMV and HIV serological status. More results, statistics and conclusion will be presented.

T.B.P.358 LATEX AGGLUTINATION TESTING OF WHOLE BLOOD FOR HIV-1 IN THE FIELD.

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OBJECTIVE: To determine the reliability and practicability of using a Latex Agglutination (L.A.) test (RECOMBIGEN donated by Cambridge Bioscience) to test for HIV antibodies in a field serosurvey in Rakai, District, a highly endemic area of Uganda.
METHODS: RECOMBIGEN L.A. is a rapid (5min) visually scored test for antibody to recombinant GP 120 and 41. The test was performed on finger prick or venipuncture whole blood samples, immediately after samples were obtained in the subjects' home in a community based survey. 145 subjects were tested by both L.A. and serum Elisa (RECOMBIGEN) for antibody to HIV-1.
RESULTS: Technical staff expressed satisfaction with the ease and readability of the method. Sensitivity was 100% but specificity only 54% compared to the Elisa. Positive predictive value was 36%.
CONCLUSION: Despite ease of use and high sensitivity, the low specificity of the RECOMBIGEN L.A. test in this setting indicates that further development may be needed for use on whole blood in the field. Reasons for the high rate of false positives are being investigated.

T.B.P.359

ANTI-HIV LOOKBACK PROGRAMME OF THE CANADIAN RED CROSS SOCIETY.

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BETWEEN NOVEMBER 1985 AND DECEMBER 1988, THE CANADIAN RED CROSS SOCIETY (CRCS) COLLECTED OVER 3.7 MILLION UNITS OF BLOOD. OF THOSE, 395 (0.011%) WERE FOUND TO BE WESTERN BLOT (WB) POSITIVE. A TOTAL OF 3.2 MILLION UNITS WERE COLLECTED FROM REPEAT DONORS, THUS IT IS CONCEIVABLE THAT SOME OF THE WB POSITIVE DONORS MAY HAVE DONATED PREVIOUSLY. IN ORDER TO ESTABLISH THE DISPOSITION OF THE COMPONENTS PREPARED FROM SUCH DONATIONS AND TO IDENTIFY THE RECIPIENTS OF THESE PRODUCTS, A LOOKBACK PROGRAMME WAS IMPLEMENTED. UNDER THIS PROGRAMME, WHEN A DONOR IS CONFIRMED TO BE POSITIVE FOR ANTI-HIV AS A RESULT OF A ROUTINE SCREENING OR AN INVESTIGATION OF POST-TRANSFUSION AIDS CASES, A SEARCH IS INITIATED. EFFORTS ARE MADE TO TRACE ALL THE COMPONENTS AND TO ESTABLISH THE SEROCONVERSION STATUS OF THE RECIPIENTS OF THESE COMPONENTS. IF THE PLASMA HAS BEEN SHIPPED TO THE PLASMA FRACTIONATORS, THE INFECTED UNITS ARE RECALLED. CRITERIA FOR TERMINATING LOOKBACK CASES INCLUDE AT LEAST TWO DONATIONS PRECEDING THE FIRST SEROPOSITIVE OR INFECTIOUS DONATION WITH NO EVIDENCE OF HIV TRANSMISSION OR WHEN THE LIMITATION OF HOSPITAL OR CENTRE RECORDS IS REACHED.

LOOKBACK HAS BEEN COMPLETED FOR 46 OF THE 395 SEROPOSITIVE DONORS. THE REMAINING CASES ARE BEING INVESTIGATED. MAJOR HINDERANCE IN THE COMPLETION OF LOOKBACK CASES SEEMS TO BE THE DIFFICULTY IN FOLLOWING UP THE RECIPIENTS. A NUMBER OF RECORDING GUIDELINES ARE BEING DEVELOPED AND IMPLEMENTED BOTH IN CRCS AS WELL AS IN THE HOSPITALS.

T.B.P.360

RETROSPECTIVE STUDY OF POSTTRANSFUSION HIV INFECTIONS

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Objective. Between May 1, 1986 and Dec. 31, 1988 26 recipients (17 male, 5 female, 1 newborn male, 3 of unknown sex) of blood transfusions were reported anti-HIV positive; the 285 donors involved were traced for testing for anti-HIV.
Methods. Donors who had not donated blood after the donation involved were tested for anti-HIV in ELISA, Western blot and (since available) for HIV-DNA by PCR. Blood donors who had already given one or more donations that were tested negative for anti-HIV after the donation associated with the posttransfusion (PT) HIV infection were considered uninfected.
Results. Examination of 277 donors established that 21 anti-HIV positive cases were not linked to the blood donations. One of these 21 cases was only positive in ELISA and one was a passive transmission of anti-HIV to a newborn. Eight donors involved in 5 cases were not traced.
Conclusion. In all the cases of PT HIV infection for which every donor involved could be traced all donors were anti-HIV negative, and other sources of HIV-infection such as manufactured blood and plasma products of a different origin, sexual transmission, etc. must be considered.

T.B.P.361

DETERMINATION OF ERYTHROCYTE ADENOSINE DEAMINASE ACTIVITY IN ANTI-HIV SERONEGATIVE HOMOSEXUAL MEN WITH LATENT HIV INFECTION

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Objective. The aim of our research was to evaluate the erythrocyte adenosine deaminase/pyruvate kinase activity (ADA/PK) in anti-HIV seronegative, non intravenous drug abusers, homosexual men with multiple partners (ELISA test, Western blot confirmed).
Methods. Erythrocytes from 21 heparinized blood samples were examined. The ADA and PK activities were carried out on lysed purified erythrocytes using an Abbott VP bichromatic analyzer. Sixty patients affected by LAS, ARC or AIDS were used as positive control and thirty healthy blood donors as negative control.
Results. The use of ADA/PK ratio corrects for high levels of ADA activity due to increased erythropoiesis. Only one out 21 subjects studied showed an elevated ADA/PK ratio (0.225) as observed in positive control groups (LAS: 0.154 ±0.022; ARC: 0.167±0.022; AIDS 0.205±0.026; healthy subjects: 0.117±0.019). This homosexual man was then found to be latently HIV infected by "In situ" hybridization performed on cytocentrifuged peripheral blood mononuclear cells using an SP 64 plasmid containing the SstI-SstI viral insert lambda BH 10 recombinant clone.
Conclusions. Since the mean incubation period of the HIV infection is currently extimated to be in the range of 4 years, the ADA/PK ratio could be of help for the screening of latent HIV infection.

Manifestations cliniques
Clinical Manifestations

T.B.P.362

CLINICAL CHARACTERISATION OF HIV2 DISEASE IN WEST AFRICA

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OBJECTIVES: Particular attention is paid to the pattern of secondary infections in patients with HIV2 disease.
METHODES: All cases suspectical of having AIDS, AIDS selected complex on progressive generalised lumphodepathy were enclosed in the study. Seaological diagnosis was made by. Hardard methods priorier tested in our laboratory. Primary sceening users wellocozyme 1 and 2 tests. Positive HIV1 is confirmed using seaodiagnostic gel agglutimation test (Fujinibio) and positive HIV2 by Elania II. When concordant test for me or both Viauses are made.
RESULTS: At the total number of HIV seropositives studied 26% ARE, 2% PGL, 5% tuberculosis. The main clinical manifestations of HIV2 disease include wight loss 100%, pynexia 93% oral thoush 71, chronic diarrhoeas 64%, chronic cough 50% and neurologicaloynitons 43%.
HIV2 exerce mortality and morbidity similar to HIV1. There is evidence of vertical transmission.

T.B.P.363

CLINICAL EVOLUTION OF 377 CASES OF LAS/ARC (FOLLOW - UP SINCE 6 - 48 MONTHS)

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Objective. The incidence of progression to AIDS of 377 patients with LAS/ARC (334 drug-addicts 2 drug-addicts and prostitutes, 14 homo/bisexual men, 3 homosexuals and drug-addicts, 10 haemophiliacs, 9 heterosexual contacts of drug-addicts HIV-Ab+, 4 individuals with no know risk factors and 1 subject infected through blood transfusion) - followed - up since 6-48 months in the Infectious Disease Division of Ravenna Hospital (Italy) - is reported.

Results and conclusion. The incidence of progression to AIDS of 377 patients with LAS/ARC has been observed in 34 cases (9%), but, the incidence of progression to AIDS results to be 11,4% if we add up the 9 cases of AIDS hospitalized (at the same time) without previous observation and might reach the percentage of 22,5% if we also consider the 42 patients with LAS/ARC affected by minor infections (condyloma, herpes-zoster, thrush, seborrhoea) which have an adverse prognostic significance (Klein e Coll., 1984).
Among the laboratory data with adverse prognostic significance we remark a progressive decrease of CD4 and CD4/CD8 ratio, besides a progressive decrease of total T-lymphocytes.

T.B.P.364

CLINICAL AND EPIDEMIOLOGICAL SPECTRUM OF AIDS DISEASE IN RIO DE JANEIRO, BRAZIL

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Objective. To determine the clinical presentation—symptoms, signs, and diagnoses—of HIV+ and HIV- patients in order to provide an empirical basis for revision of the national case definition for AIDS surveillance in Brazil.
Methods. All consenting adults (n=496) admitted to medical wards of two large hospitals from 10-12/1988 were tested for antibody to HIV-1 and HIV-2. For epidemiological analysis, patients with ≥2 gene products on either Western blot were considered HIV+. MD interview, physical exam, and chart review were performed on 96% (110/115) of HIV+ patients, and a random sample (n=135) of 365 HIV- patients (16 were excluded for equivocal Western blots).
Results. The HIV+ mean age was 37y, compared to 51y ($p<.001$) for HIV-'s. Males were 94% (103/110) of HIV+'s, but only 50% (67/135) of HIV-'s. Death ensued in 39% (43) of HIV+'s, and only 6% (8) of HIV-'s. PCP was diagnosed in 28% (31) of HIV+'s, cerebral toxoplasmosis in 25% (28), and KS in 11% (12). Major findings predictive ($p<.05$) for HIV+ (other than known AIDS diseases) were oral candidiasis (relative risk [RR]=22.9, predictive value positive [PVP]=86%), fever (RR=18.4, PVP=43%), any tuberculosis (RR=5.1, PVP=61.3%), cotton-wool retinal spots (RR=4.2, PVP=94%), interstitial infiltrates on x-ray (RR=3.9, PVP=80%), and seizures (RR=3.7, PVP=73%). HIV+ patients lost a mean of 21% body weight; HIV-'s only 15% ($p=.001$). No associations of HIV with tropical diseases were found.
Conclusions. With appropriate statistical analysis, easy-to-detect signs and symptoms can be included in a case-definition algorithm for epidemiologic surveillance of AIDS.

T.B.P.365

AIDS ASSOCIATED GLOMERULOPATHY:LUIZ PAULO J. MARQUES,OMAR R. SANTOS,GUILHERME S. LOPES, CARLOS A. BASILIO DE OLIVEIRA, ALBANITA V. OLIVEIRA, LILIMAR S. RIODJA (CLINICA MEDICA III-ESCOLA DE MEDICINA E CIRURGIA, UNI-RIO,BRASIL).

OBJECTIVE:To demonstrate the presence of glomerulopathy in HIV-infected patients.
METHODS: We study 303 HIV-infected patients. The risk factors for HIV were:221 homossexuals; 37 hemophiliacs; 14 unknown; 13 heterossexual contacts; 12 blood transfusions;6 IV drug addicts.
RESULTS: We found nephrotic syndrome in 3 (0.9%), associated with asotemia in 2 (moderate in 1 and severe in 1).Renal biopsy showed focal and segmental glomerulosclerosis (FSGS) in 2 and diffuse glomerulosclerosis in 1. In another patient with proteinuria= 1g/24h and moderate asotemia, renal biopsy showed focal mesangial proliferation and severe interstitial nephritis. Post-mortem renal histopathology in 41 showed mesangial proliferation (MP) in 19(focal in 16 and diffuse in 3), associated with the presence of mesangial fucsinophil deposits, FSGS in 4 and membrano-proliferative glomerulonephritis in one.
CONCLUSION: 1-AIDS-associated glomerulopathy with clinical manifestation was rare(1.3%), probably due to the epidemiologic profile in this series (no Haitian, few heterossexual contacts and IV drug addicts); 2- Subclinical FSGS and MP,the latter possibly due to opportunistic infection or HIV infection, were common features.

T.B.P.366

CERVICAL LESIONS AND HIV INFECTION IN A COHORT OF PROSTITUTES IN KINSHASA, ZAIRE
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Objective: To describe the relation of cervical lesions and HIV infection in a cohort of prostitutes in Kinshasa, Zaire.
Methods: Cervical PAP smears were taken as part of the initial work up on 801 prostitutes enrolled in a cohort study in Kinshasa from May to December 1988. Data were collected for age, parity, sexual practices and frequency, duration of prostitution, use of contraceptives and general health. Physical exam, HIV serology, and extensive microbiological studies for concurrent STD's were performed on all women. (A previous study revealed a baseline of dysplasia of 3% in women of the same age from a cohort of HIV negative married couples in Kinshasa).
Results:

RATE OF CERVICAL DYSPLASIA

	<30 YRS	≥30 YRS	Total
HIV +	13/103 (13%)	5/54 (9%)	18/157 (11%)
HIV -	11/160 (7%)	4/58 (7%)	15/218 (7%)

Cytologic evidence of Human Papilloma Virus (HPV) was 11% for HIV+ and 6% for HIV- prostitutes (p=0.1)
Conclusions: 1) Cervical dysplasia is twice as common in HIV+ prostitutes under 30 yrs than their HIV- counterparts (p=0.2). Prostitutes, were 3 times as likely to have dysplasia as women in the general population (p=0.02) 2) HPV infection (by PAP smear) is seen twice as often in HIV+ prostitutes as HIV negative.

T.B.P.367

T.B.P.368

RELATIONS ENTRE HEPATITE B , INFECTIONS HIVs ET SYNDROME D'IMMUNODEFICIENCE ACQUISE

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Objectif : Evaluer le risque de portage chronique des infections HBv et HDv chez les porteurs d'anti-HIVs et les relations entre Hépatite B(HB) et SIDA en Côte-d'Ivoire .
Méthodes: 2191 sérums collectés en 1987 dans différents groupes de populations(1126 sujets sains de la population générale , 416 donneurs de sang , 112 porteurs sains d'anti-HIVs ,173 malades atteints de SIDA et 364 malades atteints d'hépatite ictérigène) ont été examinés pour les infections HIV1,HIV2, HBv et HDv .
Résultats: Le portage de l'AgHBs ne variait pas significativement dans la population générale(9,1%) , chez les donneurs de sang(10,8%) et les porteurs sains d'anti-HIVs (13,4%) . Il était cependant plus élevé (p<0,001) chez les malades atteints de SIDA (34,1%) ou d'hépatite ictérigène (40%) . La prévalence des anti-HIVs était de 2,6% dans la population générale, 13,2% chez les donneurs de sang et de 25,5% chez les malades atteints d'hépatite. Toutefois , 10% seulement de ces derniers avaient une HB et 15,6% une hépatite Non-B(HNB) . Une prévalence élevée des marqueurs HDv était observée dans tous les groupes et l'AgHD n'était trouvé que dans les cas d'hépatite ou de SIDA avec une fréquence plus élevée chez les porteurs d'anti-HIVs
Conclusion: Dans cette étude l'immunodéficience induite par l'HIV est probablement responsable de la fréquence élevée de l'AgHBs chez les patients porteurs d'anti-HIVs qui font , par ailleurs , autant de formes d'HNB que d'HB . D'autres études sont nécessaires pour évaluer les interactions entre HIVs et Hépatites Non-A/Non-B particulièrement fréquentes en Côte-d'Ivoire .

T.B.P.369

LYMPHADENOPATHY AND HIV INFECTION.
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Objective: To show the histopathological alterations of lymphnodes in HIV infected patients of groups III and IV according to CDC criteria.
Methods: We made a retrospective study of 80 biopsy and 28 necropsy material. We studied only cervical lymphnodes. The staining techniques used were: Hemathoxilin-eosin, PAS, Grocott and Reticulin.
Results:

A - BIOPSY MATERIAL

Type of Lymphadenopathy	N	%
Follicular hyperplasia	46	57.5
Transition	18	22.5
Lymphoid depletion	3	3.8
Mycobacteriosis	6	7.5
Histoplasmosis	2	2.5
Kaposi's sarcoma	4	5.0
Kaposi's sarcoma + Histoplasmosis	1	1.2
T O T A L	80	100.0

B - AUTOPSY MATERIAL

Type of Lymphadenopathy	N	%
Lymphoid depletion	12	42.9
Mycobacteriosis	10	35.7
Histoplasmosis	2	7.1
Criptococcosis	2	7.1
Cytomegaloviruses	1	3.6
Kaposi's sarcoma	1	3.6
T O T A L	28	100.0

Conclusions:
1) The most frequent histopathological aspect of group III patients is follicular hyperplasia

2) The lymphoid depletion was found only among group IV or AIDS patients.
3) Tuberculosis was the most common opportunistic infection.
4) Kaposi's Sarcoma was the only neoplasm we found among the material studied.
5) We did not find Lymphoma.

T.B.P.370

THYMIC PATHOLOGY IN PEDIATRIC AIDS
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Objective. A variety of thymic lesions have been reported in AIDS. This more detailed and systematic description expands the previous reports.

Methods. We examined the thymuses of 19 infants and children with AIDS aged 2.5 mos to 5.5 years, at autopsy. One infant had a normal thymic shadow on chest roentgenogram at 4 mos.

Results. The thymus was grossly identified in 16 cases. Thymic weights were recorded in 11. They ranged from 4-75% of expected weight for age. No weight was available for 5 thymuses which were described as small. Microscopic findings are shown in the following table:

Sclerosis		Fatty Infiltration	Hassall's corpuscles				Epithelial Network	Thymocytes	Giant cells
Peri-lobular	Intra-lobular		Normal	Rudimentary	Cystic	Calcified			
15	17	13	8	10	3	14	19	16	6

Shrunken lobules, absent corticomedullary demarcation and profound depletion of thymocytes and Hassall's corpuscles were seen. All thymuses contained a densely packed epithelial network composed of varying amounts of spindle and/or epithelioid cells. Stromal (polykaryocytes) and epithelial multinucleated giant cells were seen in 6 cases. Perilobular and intralobular sclerosis, often perivascular, was striking. Abundant thick walled blood vessels of variable diameter were present.

Conclusion. Thymic involution in children with AIDS appears to take place after birth. Their thymuses show a consistent histologic pattern of severe sclerosis. These findings may reflect direct HIV damage of both T cells and the epithelial microenvironment.

T.B.P.371

DELAYED HEALING OF INFECTIOUS SYPHILITIC LESIONS IN HIV-INFECTED ZAMBIAN MEN RECEIVING APPROPRIATE PENICILLIN TREATMENT.

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Twenty-two men with darkfield-confirmed primary or secondary genital syphilis were followed at weekly intervals to determine their response to treatment with 2.4 mega units of benzathine penicillin IM; seven had HIV infections confirmed by Western blot. Darkfield exam of lesion exudate was done on lesions persisting for more than 1 week post-therapy. Lesions had healed by two weeks in all but two HIV(+) men who had persistence of motile, morphologically typical spirochetes in their lesions at 6 weeks post-therapy, which stained brilliantly with fluorescein conjugated anti-T. pallidum rabbit antibody. Both men denied sexual reexposure and were given two additional weekly injections of 2.4 mega units of benzathine penicillin before they were lost to followup. The persistence of T. pallidum in genital lesions of HIV(+) men may reflect inadequate penicillin dosage, reinfection, or possibly, a selective, HIV mediated immune deficiency to T. pallidum.

T.B.P.373

ETUDE DES MANIFESTATIONS DERMATOLOGIQUES DES SEROPOSIFS HIV_1 HIV_2

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OBJECTIF: Discuter les manifestations dermatologiques pouvant conduire au diagnostic d'une infection retrovirale et comparer la fréquence des signes cutanés chez les HIV_1 et HIV_2.

METHODE: Par une étude retropective, nous étalissesons la fréquence des différentes atteintes cutanéo-muco-phanériennes chez les séropositifs. L'étude a porté sur la période allant de Janvier 1986 à Décembre 1988. Elle concerne les malades suivis au service de Dermatologie du C.H.U. Le Dantec de Dakar.

RESULTAT: De 1986 à 1988, huit malades séropositifs ont été observés dans le service de Dermatologie. Les manifestations dermatologiques sont les suivantes: Kaposi, Dermite séborrhéique, Fiessenger-Leroy-Reiter, Syphilis III, Condylome geant, Tuberculose cutanée. Le faible échantillon ne permet pas d'affirmer une correlation significative entre les sérotypes et les lésions cutanées mais restent à être explorée dermatologiques de HIV_1 et HIV_2 semblent identiques. En dehors du carcome de Kaposi et de la candidose buccale classiquement retrouvée dans le SIDA, la découverte de dermatoses tels que le syndrome de FISSENGER-LEROY-REITER, la dermite séborrhérique profuse et les condylomes vénériens peuvent signaler le besoin de rechercher le diagnostic.

Mots clés: Dermatose - SIDA- HIV_1- HIV_2.

T.B.P.375

GASTROINTESTINAL KAPOSI SARCOMA IN AIDS - ENDOSCOPIC FINDINGS

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Objective: Frequency and distribution of gastrointestinal (GI) Kaposi sarcoma (KS) lesions,clinical sequelae and the value of endoscopic forceps biopsy shall be discussed.

Methods: In a prospective study,endoscopies of the upper and lower GI tract were done in 17o AIDS patients with GI symptoms.39/17o (23%) had skin KS. Biopsies were taken when cutaneous KS was known or suspicious GI lesions were seen.

Results: KS of the GI tract was found in 46/17o symptomatic AIDS patients. 28/39 (71%) patients with cutaneous KS presented with GI manifestation of KS.In 6 patients KS was found endoscopically without any cutaneous lesion. 28/46 (61%) had visible lesions that were typical for KS.Lesions appeared either macular with submucosal growth or nodular.Gastrointestinal KS was seen more often in stomach and duodenum than in small or large bowel, multiple KS lesions more often than single lesions.Clinical sequelae of proven GI Kaposi sarcoma were not seen.Biopsy was positive only in half of the cases.

Conclusions: Gastrointestinal KS in an important and frequent tumour manifestation in AIDS. 71% of all AIDS patients with GI symptoms and cutaneous KS had GI tumour manifestation.Clinical sequelae are not common. Because of submucosal KS growth biopsy is positive in only 5o% .

T.B.P.372

DERMATITIS OF THE FACE AND YELLOW TOE NAIL CHANGES INDICATE PROGRESSION TO AIDS/OI IN PATIENTS WITH HIV INFECTION

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Objective. To verify that seborrheic-like dermatitis of the face (DF) and yellow toe nail changes (YN) are clinical signs of deterioration in patients with HIV infection.

Methods. 77 consecutive patients with HIV infection and PGL were studied with regard to the presence/absence of DF and YN at the point of 30 months after diagnosis. The time from 30 months of observation to AIDS/OI or to a T helper cell count $< 200 \times 10^6/l$ was estimated for the patients with the respective sign and compared to the patients without the studied signs. Life table analysis was applied to data. AIDS/OI and T4 cells < 200 were counted as events instead of "death" in ordinary life table analysis. Differences in time to AIDS/OI and T4 < 200 were tested with log rank test.

Results. Time to AIDS/OI or T4 cells < 200 was significantly shorter for the patients with DF ($p << 0.001$) and for the patients with YN ($p < 0.001$) compared to the corresponding time for patients without any of the studied signs.

Conclusion. Seborrheic-like dermatitis of the face and yellow toe nail changes, frequently seen in patients with HIV infection, are clinical indicators of progression to AIDS/OI.

T.B.P.374

CLINICAL MANIFESTATIONS IN AFRICAN CHILDREN PERINATALLY INFECTED BY HIV AND AGED 5 YEARS OLD OR MORE.

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Objective: To describe the clinical features of perinatally HIV-infected Rwandese children surviving over 5 years of age.

Methods: Sixteen HIV-seropositive children born to HIV-infected mothers, aged 5 to 12 years old (9 girls and 7 boys; mean age 6.5 years) and diagnosed between 1984 and 1987 in Kigali, Rwanda, were studied. None of these children had received blood transfusions before the onset of HIV-associated symptoms.

Results: These 16 patients represented 3% of the total cases of HIV-infected children (n= 537) diagnosed during the study period.

Two subjects were asymptomatic. Symptoms observed were: Chronic cough (7/16) and chronic diarrhea (1/16). The most common signs were: chronic parotitis (8/16), persistent generalized lymphadenopathy (PGL 7/16), pulmonary tuberculosis (4/16), chronic otitis media (2/16), clubbing of the digits (2/16), herpes zoster infection (2/16), chronic urticaria (1/16) and recurrent seizures (1/16).

Persistent oral trush was not diagnosed. Lymphoid interstitial pneumonitis was diagnosed on radiological grounds in 5/16 patients. Evidence of perivasculitis in the eye fundus was noted in 3/6 cases.

Seven of the 16 children had low weight-for-age and 12/16 had short stature (< 5th percentile of the NCHS standards). Only the 2 symptom free children had normal weight and height for age. Four of the 16 subjects presented with microcephaly.

None of the children died, had life-threatening infection or loss of developmental milestones during the study-period (mean duration of follow-up: 23 months; range: 12 to 39 months).

Conclusion: 1/ Perinatally HIV-infected children surviving over 5 years of age often present with moderate signs and symptoms, principally pulmonary involvement, chronic parotitis and PGL (3 signs characterizing a profuse lymphocytic proliferation).

2/ Severe infections and neurological involvement are uncommon in this age group.

3/ Short stature is a frequent occurence and may be the major clinical manifestation in these patients. Studies are in progress to determine whether this growth retardation is secondary to chronic pulmonary disease or to pituitary deficiency.

T.B.P.376

SEVERE REVERSIBLE GASTROINTESTINAL DILATATION ASSOCIATED WITH HIV1 INFECTION

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There is evidence of autonomic nerve dysfunction in patients with HIV infection and more recently extensive damage of the enteric autonomic nerves was documented in patients with HIV associated diarrhea.

We report the case of a patient who presented to an intensive care unit with massive gastrointestinal dilatation and diarrhea and diagnosed as acute pseudo obstruction. Subsequent studies showed that the patient had antibodies to HIV1 on Elisa and Western blot in three different samples. Immunological studies showed hipergamaglobulinemia (2.4gr%), CD4 positive lymphocytes = 884/mm3, CD8 positive = 1175/mm3, T4/T8 ratio = 0.7, with mitogen responses and skin tests for delayed hypersensitivity to Antigens within normal. There was a progressive response to symptomatic treatment of the pseudo obstruction. Detailed gastrointestinal investigations did not show evidence of any secondary gut infection or mechanical obstruction. Epidemiological and Immunological data favour a recent or an acute infection.

In conclusion, the occurrence of massive gastrointestinal dilatation associated with HIV1 infection (probably recent or acute) in this patient, raise the possibility of this gastrointestinal pseudo obstruction being related to the damaging effects of the virus on the autonomic enteric nerves previously reported by other authors.

T.B.P.377

THE SPECTRUM OF CLINICAL DISEASE AMONG FILIPINO CASES

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Objective. To determine the spectrum of clinical disease in Filipino AIDS cases.
Methods. The records of cases of AIDS among Filipino patients reported to the Department of Health AIDS Registry and referred to one of the authors were analysed to determine the spectrum of secondary conditions seen.
Results. 11/13 cases of AIDS in Filipinos were available for review. There were 9 males and 2 females between 24 to 70 years old. HIV infection was acquired in another country in 10(90%). Risk factors included homosexual/bisexual practices in 6(45%), contact with prostitutes in another country in 2(18%), blood transfusion received in another country in 2(18%), and a spouse of a foreign national who died of lymphoma 1(9%). Multiple infections were seen in all during the illness. These included PCP (5 confirmed, 3 presumptive); candidiasis(6); M. tuberculosis(5); herpesvirus infections(3); 2 each of M. avium-intracellulare, cryptosporidiosis, and CMV; and 1 each of cryptococcal meningitis, T. trichiura infestation, non-malaria erythrocytic parasitism, M. contagiosum, hairy leukoplakia, Kaposi's sarcoma, and a presumptive lymphoma. Recurrent bacterial infections were also observed: urinary tract infection(3), Salmonella bacteremia(2), skin (1), and sinus(1). HIV dementia was diagnosed in 2. 9/11(81%) have died.
Conclusion. HIV infection is of recent introduction in Asia and the clinical picture of AIDS among Asian patients is just emerging. The variety of infectious conditions seen in the early cases of AIDS in this developing country is a forerunner of the diagnostic and therapeutic difficulties which will arise as the number of cases increase in the setting of limited economic resources. There is also a need to monitor the influence of HIV on endemic disease patterns in this region.

T.B.P.378

INTRAUTERINE HIV EXPOSED CHILDREN - RESULTS OF A FOUR-YEAR PROSPECTICE INVESTIGATION

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Objective. To report and discuss results to central questions like the transmission frequency, the difficulties in early and reliable definition of HIV-infection, the duration of latency period, the prevalence of symptomatic HIV-infection and early signs of symptomatic HIV-infection beyond the CDC-classification criteria.
Methods. In Berlin, the longitudinal observation of intrauterine HIV exposed children was begun in February, 1985. The children were examined in accordance with a defined clinical, immunological, and virological program at quarterly intervals.
Results. Up to now, 67 children of HIV infected mothers could be observed from birth. 2 of these children (not HIV associated) have died. Of the 67 living children, 33 are older than 15 months. 16 of these children appear to be HIV infected. Of the 34 children younger than 15 months who appear to be infected, 13 children are classified into class P-0. The transmission rate seems to be 50 %. Of the 17 infected children 4 have become symptomatic, all children within the first year of life. 13 children are clinically and immunologically unremarkable. The oldest infected child is 3 years old. The prevalence of symptomatic HIV infection within the 4-year observation period is thus 24 %.
Conclusions. The transmission rate and prevalence rate of symptomatic HIV-infection are similar the results of other prospective studies. Moreover, it has here been confirmed that intrauterine HIV infected children do not necessarily become ill in the first year of life, but that they can remain symptomless for years. The consequences resulting from this - especially in the social area e.g. kindergarden - will be discussed.

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T.B.P.379

PNEUMOCYSTIS CARINII PNEUMONIA (PCP) PRESENTING AS CYSTIC APICAL LUNG LESIONS WHILE ON AEROSOLIZED PENTAMIDINE PROPHYLAXIS.

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We have been "prophylaxing" patients at high risk for PCP for almost 2 years with 300 mg of pentamidine aerosolized via a Respirgard-II nebulizer q 2 weeks. Thus far we have had only two documented cases of PCP. CASE 1 was a 28 year old male who was diagnosed with AIDS secondary to wasting in 3/88. He was in a zidovudine study and pentamidine prophylaxis could not be started until 5-23-88. CXR on 9-6-88 revealed multiple thin cavitary lesions in both lung fields predominantly in the upper lobes, bronchoscopy with BAL was negative for any pathogen. The patient did well clinically until 11/88 when he developed mild dyspnea. He refused workup until 12-5-88. CXR revealed multiple upper and left lower lobe cystic lesions with a partial left pneumothorax. Bronchoscopy revealed PCP. CASE 2 is a 30 year old male who was clinically diagnosed with PCP in 3/87. He was initially "prophylaxed" with low dose TMP/SMX which was stopped due to rash. He was started on aerosolized pentamidine and zidovudine in 7/87. He developed paraesophageal sinus tract and during the workup of this, apical cystic lesions and a small pneumothorax were found on CXR in 1/89. Bronchoscopy with BAL revealed PCP. These cases suggest that 300 mg of aerosolised pentamidine q 2 weeks may not completely prevent the recurrence of PCP, disease may occur preferentially in the apices of the lungs and it may appear as cystic lesions on CXR.

T.B.P.380

OCCURENCE OF KAPOSI SARCOMA (KS) IN PATIENTS TREATED WITH ZIDOVUDINE (AZT).

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Among the 135 HIV positive patients treated with AZT in our center, 5 had KS at the initiation of treatment and of the 131 remaining patients, 4 developed KS during therapy :
Patients (pts) : median age was 41 (36-53), 2 were homosexuals, 2 had heterosexual exposure. All had opportunistic infections and no KS when AZT was started. All had low CD4+ cells count : $50/mm^3$ (15-95), p24 Ag was > 100 pg/ml in 2 pts. KS appeared 4,5 months (1-12) after AZT was started. Three pts had several cutaneous tumors and one a visceral (lung) KS. Diagnosis of KS was histologically confirmed in all cases. AZT therapy was maintained in all patients. KS worsened in 3 pts (new cutaneous or visceral lesions, progression of visceral lesions) and KS was stable in 1 pt. Only 1 pt (lung KS) received specific therapy with α IFN (18×10^6 U/day), no clinical response was observed. Up to January 1989, 3 pts had had new O.I. (1 died) and 1 has a stable disease.

Conclusion : these 4 cases raise some doubts about the opportunity : 1) to treat KS with AZT 2) to maintain AZT, in the absence of other indication, when KS appeared.

T.B.P.381

REGRESSION OF KAPOSI SARCOMA AND IMPROVEMENT OF PERFORMANCE STATUS BY A COMBINED INTERFERON ß AND ZIDOVUDINE THERAPY IN AIDS PATIENTS

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Eight HIV infected patients with Kaposi sarcoma (KS) (stadium WR6),were treated with human fibroblast interferon ß and zidovudine for a period of four months. KS were histologically verified, and localised at the hard palate, gum, at the plantar side of the feet, abdomen, and on the arms. In the last two months before therapy all patients had lost 4-10 kg of body weight, CD4 cells were 110/µl.
INF-ß therapy was started by administering 10^6 U/15kg b. w. i. v. daily for two periods of 14 d each, with an interruption of 14 d. After the second course we administered a constant dose of 10^6 U/15kgb. w. every third day. Only minimal side effects were observed. Zidovudine(4x200 mg) had been given daily three months before and during treatment with INF-ß.
All patients showed a significant and persistant regression of the number and diameter of KS after the first treatment period. The KS lesions in the mouth and at the plantar side of the feet disappeared, the other lesions became smaller and changed their colour from dark to bright red, similar to the initial stages of KS lesions. There was a weight gain in all patients and a small increase in helper cells to a mean value of 150/µl; the Karnovski index changed from 30-40% to 80%.
Our findings with INF-ß therapy show clearly the effectiveness of INF therapy . Indeed the number and diameter of the KS lesions was definitely reduced and the perfomance status improved.

T.B.P.382

ENCEPHALITE AIGUE SPONTANEMENT REGRESSIVE REVELATRICE D'UNE INFECTION A HIV-2

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Les atteintes aiguës du SNC liées à une infection à HIV-2 sont rares. Deux encéphalites subaiguës ont été décrites, dont l'une de cause inconnue (Clavel, N.Engl.J.Med.,1987,316,1180-85 et Bertherat, 4th Int.Conf.AIDS,1988).
Cas clinique : Un Sénégalais de 45 ans, vivant en France, est hospitalisé en octobre 1987 pour état de mal convulsif. Au réveil il présente une agitation psychomotrice intense avec hallucinations nécessitant la prolongation de la ventilation assistée par trachéotomie durant un mois et demi.
Biologie : Le LCR initial montre 290 leucocytes/mm^3, une protéinorachie à 2,25 g/l. Tous les examens bactériologiques, parasitologiques et virologiques sont négatifs à l'exception d'une sérologie HIV-2 (réactivité gp140, gp105, p68, p26 par western-blot). Une synthèse intrathécale d'anticorps est démontrée. Le nombre de lymphocytes T_4 est de 110/ul. Le rapport T_4/T_8 est de 0,19 et reste toujours bas huit mois plus tard alors que le malade a complètement récupéré et repris son travail sans avoir reçu de thérapeutique anti-HIV.
Conclusion : Il s'agit donc d'une encéphalite aiguë à HIV-2 spontanément régressive.

T.B.P.383

PREVALENCE DES TROUBLES PSYCHIATRIQUES PARMI LES PATIENTS HOSPITALISÉS POUR SIDA.

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Objective. Plusieurs auteurs ont trouvé une prévalence des troubles psychiatriques,parmi les sujets infecté de l'HIV à different stade,qui oscille entre le 30% et le 50% selon l'étude. Nous avons voulu vérifier si cette donnée on peut la retrouver aussi parmi nos patients.
Méthodes. Nous avons pris en considération la population des sujets hospitalisés en maladies infectieuses à l'hôpital de Niguarda à cause de l'HIV. Depuis deux ans,parmi ces patients,on a observé la prévalence et les principaux aspects anamnestiques et cliniques des ceux qui avaient présenté des troubles psychiques.
Résultats. Les patients hospitalisés pour SIDA en 19 mois ont été 125,dont 107 (85,6 %)mâles et 18 (14,4 %)femelles;l'âge moyen a été 28,2 a. Parmi les facteurs de risque,l'utilisation des drogues a représenté le 76,2 %,l'homosexualité le 11 %,les transfusions le 8,4 % et les rapports hétérosexuels le 4,2 %. La prévalence des troubles(t.) psychiques a été du 37,6 %(47/125)dont les t.mentaux organiques étaient le 42,6 %(20/47),les t. de l'humeur le 14,9 %(7/47),les t.de l'adaptation le 12,8 %(6/47),les t.de la personnalité le 8,5 %(4/47),les t. d'anxiété le 8,5 %(4/47), les schizophrénies le 4,2 %(2/47) et enfin les t.psycotiques pas classés ailleurs le 8,5 %(4/47).
Conclusions. Notre étude semble confirmer les travaux d'autres auteurs,soit pour la prévalence des troubles psychiques,soit pour le pourcentage des t. mentaux organiques.

T.B.P.384

Cryptococcose
Cryptococcus Infection

W.B.P.1

FLUCONAZOLE THERAPY OF PATIENTS WITH AIDS AND CRYPTOCOCCAL MENINGITIS AND FAILED CONVENTIONAL ANTIFUNGAL THERAPY.

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Objective. The study evaluates fluconazole (flu) therapy in patients (pts) who failed or could not tolerate conventional antifungal therapy (conv rx) because of its toxicity or serious contraindications.
Methods. Pts were enrolled if they met both of the stringent entry criteria: 1) life-threatening fungal infection; and 2) failure of conv rx to eradicate the infection, or serious antifungal-related toxicity, or contraindication to its use. Requests for enrollment were reviewed by a PCR subspecialist physician. Pts were treated with flu 200 mg/day, and could be increased to 400 mg/day, if they did not initially respond satisfactorily. Evaluations of clinical efficacy, mycology, and drug safety were recorded. We update our experience with cryptococcal meningitis (cryp men) in AIDS pts in this study.
Results. 158 of 231 pts enrolled in the study had AIDS, and 145 had cryp infection. 67 pts had active cryp men (positive CSF culture at entry). 72% had received ≥ 1 gm of amphotericin B, previously; 57% had received 2 gms. 62% of 59 evaluated pts had a satisfactory clinical response and 66.7% of 38 mycologically evaluated pts became CSF culture-negative. 35 pts had inactive infection (negative CSF culture at entry) and have been followed for a mean of 81.9 days, with only two relapses. Of those with no CSF culture taken at entry (37 evaluable pts), 70% had a clinically satisfactory course, and 7/8 have had negative follow-up CSF cultures.
Conclusions. Flu is effective therapy and maintenance of AIDS pts with cryp men who have failed or cannot tolerate conv rx.

W.B.P.2

ITRACONAZOLE IN THE TREATMENT OF CRYPTOCOCCAL MENINGITIS IN PATIENTS WITH AIDS.

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Objective. To assess the efficacy and tolerance of itraconazole (ICZ), a new antifungal triazole, in AIDS patients with cryptococcal meningitis.
Methods. Fourteen AIDS patients with cryptococcal meningitis were treated with ICZ. Nine patients (group I) received induction treatment with i.v. amphotericin B and oral flucytosine for six to eight weeks, followed by maintenance therapy with oral ICZ, 200 mg/day. Five patients (group II) were initially treated with ICZ, 200 mg twice a day for six weeks, followed by maintenance therapy with ICZ, 200 mg/day.
Results. Group I: before maintenance treatment with ICZ was started cryptococcal antigen titer (CAT) in cerebrospinal fluid (CSF) ranged from 1:2 to 1:2048 and was negative in one, while all CSF cultures were sterile. CAT declined in four (range 1:8 to 1:128) and became negative in three patients during ICZ therapy (mean follow-up 11 months). In one patient CAT remained negative and one patient refused CSF re-examination. Only one of six patients who died had relapse of cryptococcal meningitis. In this patient ICZ serum levels declined dramatically during carbamazepine therapy. Group II: before ICZ induction treatment CAT in CSF ranged from 1:1 to 1:1024. After induction treatment CAT in CSF was negative in two, increased in one and unchanged in two patients. These last three patients also improved clinically, but CSF cultures remained positive. During maintenance therapy two relapses occurred because of patient failure. A third patient relapsed and showed extremely low ICZ serum levels during phenytoin therapy. In two patients clinical and mycological cure was achieved (follow-up two and 13 months). No side-effects were observed during treatment.
Conclusion. Itraconazole in the treatment of cryptococcal meningitis in patients with AIDS appears effective and is well tolerated. Carbamazepine and phenytoin might lower itraconazole serum levels.

W.B.P.3

PULMONARY INVOLVEMENT IN CRYPTOCOCCOSIS IN PATIENTS WITH AIDS.

Cameron, Miriam, Bartlett, J., Waskin, H., Gallis, H. Duke University, Durham, North Carolina, U.S.A.

Objective. To study the pulmonary manifestations of cryptococcosis in patients with AIDS.
Methods. A retrospective review was performed of patients with both HIV and cryptococcal infection. Twenty-eight patients were identified who met this criteria from 1983 to 1989. Nine patients had definite evidence of pulmonary C. neoformans infection and 3 had presumptive involvement. Eleven of the 12 patients were male. Age range was 30-48 (mean 35). Risk factors for HIV infection included homosexuality (8), IV drug abuse (3) and both (1). Cryptococcosis was the initial AIDS defining opportunistic infection in 6.
Results. Serum cryptococcal Ag titers were 1/16-1/524288 (median 1/8192) while CSF Ag titers were 1/64-1/2048 (median 1/1024). Seven patients with and 1 without pulmonary involvement died as a result of cryptococcosis. Cultures expressed as total C. neoformans positive/total cultures, chest radiographs (CXR) and initial pO_2 (mmHg) are expressed as follows:

Pulmonary	Blood	CSF	pO_2		CXR
5/5 bronchial alveolar lavage	7/9	11/11	range	28-123	11 interstitial disease
2/4 sputum			mean	82	1 pleural effusion
1/2 pleural fluid			median	75	1 adenopathy only
2/2 lung (autopsy)					

Conclusion. Pulmonary involvement with cryptococcosis in AIDS patients is probably more common than previously realized. The CXR most often showed interstitial disease which can be confused with other opportunistic infections such as PCP. Pulmonary involvement with cryptococcosis may be associated with a higher mortality than cryptococcal meningitis alone.

W.B.P.4

PROGNOSTIC FACTORS OF CRYPTOCOCCAL MENINGITIS IN AIDS PATIENTS

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Aim. Investigate which parameters could be indicative of a good or bad prognosis for cryptococcal meningitis in AIDS patients
Methods. 34 HIV$^+$ patients (21 males and 13 females) with cryptococcal meningitis confirmed by microscopy, antigen determination and Sabouraud culture were followed up at the University Hospital, Kinshasa, between December 1, 1987 and October 31, 1988. Patients were divided into 2 groups; those diagnosed within a delay of 15 days of their clinical symptoms and another group after 15 days or more. Survival rate after diagnosis was analysed with respect to time to diagnosis and to the mycological and serological parameters in blood and CSF.
Results. Mean results are given in the table below.

Delay (days)	n	CSF antigen	Serum antigen	CSF culture$^+$	Blood culture$^+$	Microscopy No./field (FF = 100 x)	Survival (days)
< 15	10	1/840	1/5250	10/10	4/10	5.8	75.8
> 15	24	1/3882	1/26272	24/24	12/19	30	36

Conclusion. Time elapsed between appearance of symptoms and confirmation of diagnosis appears to be the best prognostic factor. The longer the period before diagnosis is confirmed, the more mycological parameters become abnormal and the shorter the survival time. Consequently, systematic screening for cryptococcosis in HIV$^+$ patients seems logical.

W.B.P.5

INTRAVENOUS AND ORAL FLUCONAZOLE (FCZ) FOR THE TREATMENT OF ACUTE CRYPTOCOCCAL MENINGITIS

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OBJECTIVE: To assess the safety and efficacy of I.V. and oral FCZ in the therapy of acute cryptococcal meningitis (ACM).
METHODS: Since 9/88, 7 consecutively diagnosed pts. with ACM were treated with FCZ IV (400 mg loading dose then 200 mg/d) for 2 weeks, then orally (200 mg/d) thereafter.
RESULTS: 6/7 pts. responded. One pt. had seizures & mentally declined (day 2), was switched to conventional tx, and expired. All 6 pts. who received >4 days of FCZ responded clinically and were discharged 18-24 days after starting treatment. 5/6 continue to be ambulatory and without evidence of clinical relapse at 10-18 weeks. However, the most recent CSF cultures are positive for C. neoformans in 4/6 pts. after 6-13 weeks (median 10 weeks) including one pt. whose CSF became negative over a 6 week period (3 specimens), then reverted to positive. This pt. despite escalating FCZ to 400 mg/d subsequently developed a clinical relapse (week 20). No clear relation between clinical remission and cryptococcal antigen titers was evident.
CONCLUSIONS: FCZ at 200 mg/d appears to be highly effective in inducing an initial clinical remission (87%) in previously untreated cases of ACM. No adverse effects were noted that could be attributed to the drug either during the I.V. or the oral phase. At 200 mg/d, however, microbiological cure was achieved in only 3/7 cases within a median follow-up of 10 weeks and one of these 3 had both a microbiological and clinical relapse. Recruitment of pts. continues and longer term follow-up will be presented.

W.B.P.6

SERUM CRYPTOCOCCAL ANTIGEN SCREENING IN THE EARLY DIAGNOSIS OF CRYPTOCOCCAL INFECTION IN PATIENTS WITH HIV INFECTION

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Objective. To determine if serum cryptococcal antigen is of value as a screening test for cryptococcal infection in patients with human immunodeficiency virus (HIV) infection.
Methods. Serum cryptococcal antigen tests were performed on 88 HIV infected patients who were felt to be at risk for cryptococcal infection on the basis of T cell subset analysis or prior opportunistic infection. The latex aglutination method was used.
Results. 4/88 patients had a positive test (4.5%). The positive inverse titers ranged from 16 to 2360 (avg 916). 3 of these patients were asymptomatic (one with a lung nodule which resolved on amphotericin B therapy, 2 with culture-positive cryptococcal meningitis). The fourth patient had complaints of fever, cough, and night sweats and was shown to have cryptococcal meningitis despite the absence of specific symptoms. Cryptococcal antigen titers fell significantly and all cultures became negative during therapy with amphotericin B.
Conclusion. Screening HIV infected patients with significant immunodepression with cryptococcal antigen determinations appears to be effective in the early diagnosis of cryptococcal infection.

W.B.P.7 RESPONSE OF CRYPTOCOCCAL MENINGITIS TO ANTI-FUNGAL THERAPY IN PATIENTS WITH AIDS

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Objective. To describe the natural history and response to antifungal therapy of cryptococcal meningitis in AIDS patients.
Methods. Medical records were reviewed and follow-up information obtained for all patients with disseminated cryptococcal infections at JHMI between Jan 1, 1985 and May 15, 1988. Patients were characterized by their underlying disease, presenting symptoms, history of other opportunistic infection and laboratory work-up. Therapeutic responses, complications, and survival were analyzed.
Results. 48 pts. had cryptococcal meningitis; 39 had AIDS and 9 had other diagnoses. Patients with AIDS were treated initially with amphotericin-B (AMPHO-B) alone (20 pts.) or AMPHO-B plus 5-fluorocytosine (5FC, 18 pts.). Maintenance therapy with AMPHO-B 1-3 mgm/kg/wk. was usually given by Hickman. Survival curves suggested improved survival with initial AMPHO-B + 5FC therapy (median = 240 days) than with AMPHO-B alone (median = 95 days, Wilcoxan test p = .07). Pretreatment CBC values were not significantly different in the two treatment groups, suggesting the groups were similar at baseline.
Conclusions. Our retrospective data suggest that 5FC may improve survival in AIDS patients with cryptococcal meningitis when added to AMPHO-B treatment, as has been reported in patients without AIDS. A controlled study of this regimen is indicated.

W.B.P.8 SPECTRUM OF CRYPTOCOCCUS NEOFORMANS INFECTION IN 68 HIV INFECTED PATIENTS

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Objective. To review the spectrum of clinical features and results of therapy of Cryptococcus neoformans (Cn) infections in HIV infected (HIV+) patients.
Method. Hospital records and X-rays of all HIV+ patients found to be infected with Cn by either microbiological or histopathologic evidence were reviewed retrospectively. All patients were seen at Charity Hospital of New Orleans, Veterans Administration Medical Center, or Tulane Medical Center between January 1,1985 and December 1, 1988 (47 months).
Results. Sixty-eight HIV+ patients were identified. Ninety-eight percent were males and 68% were homosexual/bisexual. Mean age was 32.7 (± 7) years. In 75% (51/68) Cn was the initial opportunistic process and 13% (9/68) had pulmonary involvement only. Extrapulmonary cryptococcosis was found in over 12% of the total number of AIDS cases diagnosed. Patients with positive CSF cultures typically presented with headache (68%) and fever (66%). Cn was isolated from CSF in 51/63, blood 27/40, bone marrow 3/10, and urine 4/7. Common initial therapeutic regimens were amphotericin B (AmB) alone (36%) or AmB plus flucytosine (54%). Sixteen (24%) patients died within the first 14 days. Although overall median survival was 5 (± 1) months, 12 patients (11 CNS) survived at least 12 months. Patients presenting with an abnormal head CT or altered mental status had a shortened median survival.
Conclusions. In New Orleans Cn is a frequent pathogen in HIV+ patients. Mortality remains high with current treatment.

W.B.P.9 FLUCONAZOLE (FLU) TREATMENT OF PERSISTENT URINARY CRYPTOCOCCOSIS (PUC) AFTER CRYPTOCOCCAL MENINGITIS (CM).

Bozzette, Samuel A, Larsen, RA; Chiu J; Leal ME; Large K; and McCutchan JA. UC San Diego, U Southern Cal, UC Irvine and The California Collaborative Treatment Group. U.S.A.

Objective: To study the response of PUC to FLU. PUC occurs in up to 30% of AIDS patients successfully treated for CM, is usually localized in the prostate, appears to resist further amphotericin B (AB) therapy, and is probably associated with relapse of CM.
Methods: Thirteen patients who completed standard therapy for CM (median ampho B dose: 1624 mg; median 5-FC duration: 7 wks) were treated with FLU at 100 to 400 mg/day. Response was defined as suppression of post-prostatic massage (PPM) cryptococcuria and extra-urinary tract disease as determined by monthly PPM urine and blood cultures and by serum antigen titers. CSF examinations were performed as clinically indicated.
Results: Six of 13 (46%) patients had their PPM urine sterilized beginning at 1 to 16 (mean 7) weeks of treatment. Seven (54%) had persistent PPM cryptococcuria over 4 to 51 (mean 22) weeks of treatment. Two (15% overall) of these 7 developed recurrent meningitis at 6 and 22 weeks. Serum antigen rose ≥ 4-fold in these 2 and in 3 other patients. The probability of response was .15 at 2 wks, .32 at 6 wks, and .59 at 14 wks and thereafter. No patient developed cryptococcemia or FLU toxicity.
Conclusion: Treatment of PUC with FLU is well tolerated, suppresses funguria in about 1/2 of patients, and may reduce extra-urinary relapses. CM recurs in some patients whose funguria is not suppressed. Cure cannot be evaluated since all successfully suppressed patients have continued FLU.

W.B.P.10 THERAPY (RX) OF CRYPTOCOCCAL MENINGITIS (CM) AND CRYPTOCOCCOSIS (C) IN AIDS WITH ORAL ITRACONAZOLE (IZ).

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Santa Clara Valley Med. Ctr., Stanford Univ., Institute Medical Research, San Jose and Stanford, CA. U.S.A.

Objective. Despite poor CSF penetration, IZ is efficacious in CM models; we studied its efficacy in man as sole therapy.
Methods. We studied clinical, culture, serological responses to IZ (400mg/d) in 24 patients (pts) with AIDS: 18 with CM, 13 with cryptococcemia (CB), 5 with cryptococcuria (UC) and 3 with pulmonary disease (PC); 16 pts had multiple sites of disease. Four pts had failed and 3 had relapsed after previous therapy; 17 pts sought oral Rx.
Results. CB was abolished in 10 of 10 (100%) evaluable pts; 2 non-compliant pts relapsed. Ten of 14 (71%) evaluable CM pts had a complete response (clinical resolution with negative CSF cultures), 3 of 14 (21%) a partial response (clinical improvement with positive CSF cultures) and 1 (7%) failed Rx; 4 CM pts were unevaluable (<2 weeks Rx). Partial response and failure were associated with failure of previous Rx, low (<1.0 mcg/ml) serum IZ concentrations and severe disease. Among CM responders 3 of 13 (23%) had recrudescence of CM on Rx. Two evaluable pts with PC responded (100%). UC was abolished in 3 of 5 (60%) pts. Steady state mean serum IZ levels ranged from 0.43 to 8.0 mcg/ml (mean 3.36 mcg/ml). Toxicity was seen in 7 pts and was self-limited and mild in 6; one developed hypertriglyceridemia and pancreatitis. Forty of 44 isolates were susceptible (≤3.13 mcg/ml) in vitro to IZ; 3 borderline; 1 resistant.
Conclusion. IZ is effective in CM and C as primary or salvage therapy.

W.B.P.11 PERSISTENT Cryptococcus neoformans PROSTATIC INFECTION AFTER SUCCESSFUL TREATMENT OF MENINGITIS.

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Objective: To assess the frequency of persistent C. neoformans infection in patients with AIDS after receiving apparently adequate treatment for meningitis.
Methods: All patients had AIDS and C. neoformans meningitis. Therapy consisted of either 2.0 grams of amphotericin B alone, or an adjusted minimum amphotericin B dose if combined with flucytosine. Two successive culture negative CSF samples were needed to meet criteria for adequate treatment of meningitis.
Results: Urine cultures obtained at the end of treatment grew C. neoformans in 9 of 41 (22%) patients. All were asymptomatic. Fungi were visualized in expressed prostatic secretions in 3 of 9 and grown only from post-prostatic message urine in 4 of 9 patients. Three patients received additional amphotericin B; all had persistent funguria without systemic relapse. Of 6 patients on fluconazole; 4 became urine culture negative and 2 had systemic relapse during therapy. One patient refused treatment and developed cryptococcemia at 5 weeks.
Conclusion: The persistence of urinary infection with C. neoformans in spite of adequate therapy for meningitis suggests that the urinary tract (probably the prostate) is a sequestered reservoir of infection. Patients with AIDS and persistent urinary cryptococcosis maybe more likely to relapse.

W.B.P.12 EFFICACITE DU FLUCONAZOLE COMPAREE AVEC AMPHOTHERICINE B PLUS 5 FLUCYTOSINE DANS LE TRAITEMENT INTENSIF ET DE MAINTIEN DE LA CRYPTOCOCCOSE MENINGEE ASSOCIEE AU SIDA.

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Objectifs. 1. Comparer l'éfficacité du fluconazole (F) avec celle d'amphothericine B (A) plus 5 flucytosine (5FC) dans le traitement (TTT) inital intensif de la cryptoccose méningée (CRM). 2. Evaluer l'éfficacité du F dans le TTT de maintien de la CRM.
Méthodes: Étude prospective controlée, dans laquelle 36 patients (pts) avec CRM ayant un contact verbal preservé ont été randomisés pour recevoir soit F (400 mg/j PO), soit A (0.3-0.6 mg/kg/j IV) + 5FC (150 mg/kg/j PO) pendant 6 semaines comme TTT initial, suivi de F (200 mg/j PO) comme TTT de maintien. Les pts ont été suivi par un controle clinique, un examen microscopique et de culture du LCR à 4 et 6 semaines après le debut du TTT, et puis tous les mois.
Résultats. 1. TTT initial:

		A+5FC (n=18)	F (n=18)
MICROSCOPIE LCR NEGATIVE	à 4 semaines	3/14(21%)	4/ 8(50%)
(sur examens effectués)	6 semaines	2/ 9(22%)	2/ 9(22%)
CULTURE LCR NEGATIVE	à 4 semaines	12/14(86%)	7/ 8(88%)
(sur examens effectués)	6 semaines	8/ 9(89%)	4/ 9(44%)
MORTALITE	à 4 semaines	4/18(22%)	4/17(24%)
(sur nombre de pts suivis)	6 semaines	7/16(44%)	8/17(47%)

2. TTT de maintien: 2 moribonds (TTT F), 1 moribond (TTT A+5FC), et 1 résistant au TTT F, tous LCR microscopie (+) et 3 avec LCR culture (+), n'ont pu être mis sous TTT de maintien. Nous n'avons observé aucune récidive de CRM chez les 14 pts, tous LCR culture (-) au début du TTT de maintien sous F. Leur mortalité reste élevée: 6/14 décédés après un follow-up de 110 jours en moyenne (range 45-270 jours). Le suivi des 8 survivants s'étend sur 185 jours en moyenne (range 90-375 jours). Le TTT initial n'avait aucune influence sur la mortalité en phase de maintien.
Conclusions. Le F peut être utilisé avec succes dans le TTT initial intensif de la CRM et dans le TTT de maintien. Nos donnees limitees devraient cependant etre confirmees dans de plus grandes etudes.

W.B.P.13

LE "FLUCONAZOLE" DANS LE TRAITEMENT DE LA CRYPTOCOCOSE MENINGEE CHEZ LES PATIENTS ATTEINTS DE SIDA.

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Objectif: Etudier cliniquement l'efficacité du Fluconazole dans le traitement de la cryptococose meningée chez les sidéens.
Patients et méthodes: 34 cas HIV+ (21♂ et 13♀) avec cryptococose meningée confirmée par culture (Sabouraud) et par sérologie (Kit IMMY) ont été traités de façon randomisée soit par fluconazole soit par association Amphotéricine B + 5 fluorocytosine. Etaient considérés comme guéris cliniquement ceux dont les symptômes cliniques disparaissaient et guéris mycologiquement ceux dont la culture du liquide céphalo-rachidien (Lcr) devenait négative après 2 contrôles successifs.
Résultats: 17 malades ont eu le fluconazole (groupe A) et 17 l'association amphotéricine B+5 fluorocytocine (groupe B).

Moyennes	Gr A	Gr B	
Durée des sympt.avant le dx	40jrs	44jrs	p=0,7
Ag Crypt. dans le sang	1/25332	1/14047	p=0,6
Ag Crypt. dans le Lcr	1/2184	1/3806	p=0,3
Survie	57jrs	37jrs	p=0,2
Guérison clin.	11/17	3/17	
Guérison myc.	5/17	3/17	

Conclusion: Le fluconazole a une efficacité comparable à celle de l'association amphotéricine B + 5 fluorocytocine.

W.B.P.14

LA CRYPTOCOCCOSE AU BURUNDI

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OBJECTIF : Montrer l'importance de la méningite à cryptocoques dans le SIDA et l'intérêt de son traitement par le FLUCONAZOLE.
METHODE : - Etude de 31 cas de méningites à cryptocoques observées en 32 mois à Bujumbura au cours de SIDA confirmés sérologiquement (ELISA, WESTERN-BLOT)
- Diagnostic clinique et diagnostic biologique reposant sur la mise en évidence de levures typiques de Cryptococcus néoformans variété Gattii par examen microscopique direct du L.C.R. avec mise en culture systématique sur milieu de Sabouraud suivi d'une identification mycologique précise. - Traitement après tirage au sort, faisant appel :
. à association amphotericine B et 5 fluoro-cytosine . ou au FLUCONAZOLE.
RESULTATS : - Fréquence de la cryptococcose dans le SIDA : 14 % des cas
- Symptomatologie : méningo encéphalite dans 80 % des cas
- Traitement par FLUCONAZOLE très prometteur, efficace, bien toléré, facile à administrer

CONCLUSION :
La Méningite à Cryptococcus néoformans variété Gattii est fréquente dans le SIDA au Burundi. Son diagnostic est facile. Le traitement par le FLUCONAZOLE est très prometteur, efficace, d'administration facile, bien toléré, bien adapté aux pays à niveau sanitaire insuffisant.

MOTS-CLEFS :
Méningite, Cryptocoques, S.I.D.A.

W.B.P.15

CRYPTOCOCCAL DISEASE AND HIV INFECTION IN NORTH CAROLINA

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Objective: Evaluate characteristics of cryptococcal disease among persons with human immunodeficiency virus infection in rural, southeastern USA.
Methods: A retrospective review of clinical and laboratory records.
Results: From 1985 through 1988, the proportion of patients with cryptococcal disease who also had HIV infection tripled:
1985- 26% (5/19), 1986- 23% (3/13), 1987- 67% (10/15), 1988- 73% (11/15)
We compared the 29 HIV+ patients to the 33 HIV- patients diagnosed with disseminated or meningeal cryptococcosis. HIV-infected patients were more likely to have cryptococcal meningitis, had rapid conversion of serum antigen titers from negative to positive, and had higher cryptococcal antigen titers at the time of initial diagnosis.
A review of survival trends of the HIV-infected cohort (n=29) indicated that: 12-month survival following diagnosis has increased from 13% (1/8) in 1985-1986 to 67% (6/9) in 1987-1988. The magnitude of titratable antigen (by latex fixation) at the time of diagnosis was not predictive of long-term response. Two of the 7 long-term survivors had initial CSF antigen titers greater than 1:1000; one patient had a CSF titer greater than 1:1000,000.
In all patients, a decline in cryptococcal antigen titer did occur following initiation of therapy and was associated with a positive response. Subsequent increase or plateau of antigen levels was associated with relapse. All long-term survivors required maintenance therapy.
Conclusion: The diagnosis of cryptococcosis in HIV-infected patients should not confer a dismal prognosis.

W.B.P.16

CRYPTOCOCCAL MENINGITIS IN PATIENTS WITH AIDS. DIAGNOSTIC FEATURES AND OUTCOME IN 8 CASES.

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Objective. To study clinical and laboratory features of cryptococcal meningitis (CM) in patients (pts) with AIDS.
Methods. Investigations involved clinical manifestation,tests on blood, CSF, other fluid and tissues, CT brain scans and/or cranial MRI.
Results. Among 101 patients with AIDS observed from 1984 to 1988, 8 (7.9%) had CM. Four of them had also extraneurologic involvement. CM was the first diagnosed opportunistic disease in 6 pts . Fever and headache were present rispectively in 87.6% and 75.0% of pts.Alterations of mental status,meningismus and vomiting occurred in 62.5%, 37.5% and 25% respectively.The symptoms duration before diagnosis ranged from 8 to 20 days. The diagnosis of CM was based on CSF studies in 7 cases and on autopsy findings in one.The range of CSF proteins was 25-172 mg/dl,the glucose range was 16-60 mg/dl and the white blood cell count was normal in only 1 of 7 pts (range 3-80 cells/ml). The CSF culture was positive in 4 pts, Indian ink preparation in 6 of 7 pts and the cryptococcal antigen titer was positive in all pts. CT brain scans and/or MRI revealed abnormal results in 6 pts.
Therapeutic regimen included amphotericin B 0.3 mg/Kg plus flucytosine 150 mg/Kg die. Two of the 7 pts were cured.
Conclusions. The Authors point out that CM may present in an indolent manner in pts with AIDS,the high mortality rate in spite of an early diagnosis and the recommended therapeutic regimen.

W.B.P.17

THE LIMITED VALUE OF ROUTINE SERUM ANTIGEN SCREENING FOR CRYPTOCOCCAL INFECTION.

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OBJECTIVE: To assess the routine serum cryptococcal antigen as a screening procedure for diagnosis of cryptococcal infection.
METHOD: All HIV Antibody positive patients over a three year period who had pyrexia of unknown origin or meningism underwent screening by serum cryptococcal antigen latex agglutination test. All patients with a positive titre or signs of meningism had a lumber puncture. In those patients with a positive serum antigen, a further antigen was performed on serum saved prior to diagnosis.
RESULTS: Only 15 of 828 serum cryptococcal antigens were positive, 13 of whom had meningism and had cryptococcal meningitis confirmed at lumber puncture. The other 2 patients had pyrexia of unknown origin without meningism and had no CSF abnormality. One has remained well for over one year. The other had a fungaemia which responded to conventional therapy and is well at six months. Saved serum was available on 8 of the patients with positive serum antigen within 3 months prior to diagnosis (range 30-90 days: mean 60 days). All were well at time of testing. None of the sera were positive.
CONCLUSION: Cryptococcal antigen testing is not of value as a screening test for patients with a pyrexia of unknown origin or in predicting which well patients may develop this infection. It does predict which patients with meningism have cryptococcal infection.

W.B.P.18

CRYPTOCOCCUS NEOFORMANS PULMONARY INFECTION IN 17 HIV INFECTED PATIENTS

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Objective. To review the presentation and clinical course of Cryptococcus neoformans (Cn) pulmonary infections in HIV infected (HIV+) patients.
Method. Hospital records and chest X-rays of HIV+ patients known to have Cn pulmonary infection either by positive respiratory cultures or histopathologic evidence were retrospectively reviewed. All patients were seen at Charity Hospital of New Orleans, Veterans Administration Medical Center, or Tulane Medical Center between January 1, 1985 and December 1, 1988.
Results. Of 17 patients, all were male; most were white (56%), and homosexual (93%), with an average age of 33 (± 6) years. The most frequent presenting symptoms were fever (93%) and cough or dypsnea (57%). Although chest X-ray patterns included cavitary lesions (2), nodules (2), and a solitary lobar infiltrate (1), the most common finding was bilateral interstitial infiltrates (7), of which 3 had coexistent cytologically proven PCP. Positive simultaneous extrapulmonary cultures, CSF (8/15) and blood (4/10), were found in 8 patients. Five patients with no extrapulmonary infection died with a mean length of survival of 16 (± 6) weeks and 6 patients with concomitant CNS involvement died with a mean length of survival of 4 (± 5) weeks.
Conclusions. Chest X-ray findings in HIV+ patients with Cn pulmonary infections can have unusual features and differentiation from PCP may be difficult. The mortality rate is high in HIV+ patients with Cn pneumonia and may be influenced by the presence of CNS involvement.

W.B.P.19 CRYPTOCOCCOSIS IN AIDS PATIENTS: CLINICAL AND THERAPEUTIC ASPECTS.

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Objective. Cryptococcus neoformans is a dangerous pathogen in AIDS patients and usually leads to disseminated disease. Prognosis depends on early diagnosis and early onset of proper treatment. We report an attempt at identifying characteristics that facilitate earlier recognition of cryptococcosis and describe the effectiveness of therapeutic approaches.
Methods. All AIDS patients were screened for cryptococcal antigen in serum; if indicated sputum, CSF, blood, urine and stool were taken for culture on selective media. Clinical symptoms were determined and the response to therapy was judged by means of cultures of the affected site.
Results. 9 out of 184 (4,9 %) patients with AIDS had evidence of cryptococcal disease. 8 patients had disseminated cryptococcosis and cryptococci could be cultured from various body sites; one individual had still localized disease in the lungs. The main presenting features were very unspecific and consisted of headache, fever, and nausea. Laboratory data confirmed advanced immunosuppression (mean CD4-value 42). Meningism and elevated CSF leucocyte counts were present in only three patients. Cryptococcal serum antigen titres correlated with the severity of the disease: One patient with advanced disease and the highest titre (1:100.000) died 3 weeks after onset of treatment. Therapy with amphotericin B and flucytosine over 6 weeks was very effective and 7 of 9 patients were cured. Life expectancy was reduced by other AIDS-related opportunistic infections, since only one patient died because of cryptococcosis.
Conclusion. Routine screening for cryptococcal antigen in HIV-infected persons is essential for early diagnosis of cryptococcosis since clinical symptoms are very subtle. Early diagnosis and rapid onset of therapy improves prognosis. From our experience amphotericin B and flucytosine is the treatment of first choice.

W.B.P.21 THERAPEUTIC STUDY IN 35 PATIENTS WITH AIDS AND CRYPTOCOCCAL MENINGITIS.

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Objective.Analysis of the cerebrospinal fluids in 35 patients during therapeutic with Anphotericin B.
Methods. 35 patients were studied from october 86 until november 88 They were treated with AnphB and 5-fluorcytosine was also added in 19 patients(54,3%).The cerebrospinal fluids were obtained from all the patients before and during therapeutic.
Results. The first white cell count was from 0 until 10cell/mm3 in 71,4% patients,proteints 40 mg% in 80% and glucose 40mg% in 51,4%. The first India ink test performed in the patients was positive in 8,5% cases and the culture was negative in 8,5% cases. 45,7% patients had the India ink test negative with a total median dose of 1.200 mg and the culture was negative in 68,5% patients with a total median dose of 977mg. 20 patients(57,1%) died with a total median dose of 1.555mg. The rate of suvival was 5,1 months and the median 4,1 months.
Conclusion. Tge India ink test provided diagnosis in almost all the patients and was more sensitive than the culture to analyse the efficacy of the drugs.

W.B.P.20 CRYPTOCOCCAL MENINGITIS IN AIDS PATIENTS:INCIDENCE IN RIO GRANDE DO SUL(BRASIL)

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Objective. Establish the incidence of cryptococcal meningitis in Rio Grande do Sul(RS) state.
Methods. It has been reviewed, at random, 80 registers of AIDS patients that have been hospitalized between january and november 1988 at HCPA. In 60 patients al lumbar puncture has been done and the liquor examined with the India ink preparation.
Results. 11 patients had fungal or bacterial meningitis. The India ink preparation was positive in 8 cases(10% of the sample and 72,7% of fungal and bacterial meningitis.
Conclusion. Cryptococcos neoformans is the most common cause of meningitis in AIDS patients in RS state. Therefore, in patients coming from this state, as in other places of the world, it is extremely important to consider criptococcosis as a potential disease of the Central Nervous System.

W.B.P.22 MAINTENANCE THERAPY WITH AMPHOTERICIN B IN AIDS PATIENTS WITH CRYPTOCOCCAL MENINGITIS

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Objective: To report the efficacy of amphotericin B and ketoconazole as a maintenance therapy for cryptococcal meningitis in an AIDS patient.
Material: A 25 year-old intravenous drug abuser with antibodies to HIV presented a cryptococcal meningitis and received initial therapy with amphotericin B and flucytosine at a standart dosis for a 4 weeks period and then entered in a maintenance schedule of 80 mg/21 days of amphotericin B plus ketoconazole 400 mg every other day.Follow-up is actually of 14 months and the patient has reassumed a normal life.Cerebrospinal fluid cultures are negative for cryptococcus at a 1 year interval since the initial therapy.
Discussion: Although some patients have a prolonged relapse-free survival in spite of discontinuing maintenance therapy with amphotericin B it appears evident that long term suppressive therapy may offer a more convenient approach in patients with AIDS. Although fluconazole has obtained promissing results,until its availability in all centers different maintenance amphotericin B dosis should be reported if they give new clues for a major compliance.Ketoconazole may eliminate the cryptococcal sources outside the central nervous system that could be implicated in some relapses.

Infections liées au SIDA : toxoplasmose
AIDS Related Infection: Toxoplasmosis

W.B.P.23 TOXOPLASMOSE PULMONAIRE (TP) AU COURS DU SIDA.

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Objectifs. Apprécier la fréquence des TP au cours du SIDA et en évaluer les caractéristiques cliniques.
Méthodes. Etude macroscopique et histologique du poumon chez 160 patients(pts) décédés de SIDA. Etude des correlations anatomo-cliniques.
Résultats. Une TP a été retrouvée chez 6 pts (3,75 %) et chez une 7ème, actuellement vivante par biopsie pulmonaire (BP) : 5 homosexuels, 1 toxicomane, 1 haïtienne, (âge moyen : 36 ans). La durée de la maladie retrovirale était de 13 mois (4 à 28). Aucun pt n'avait de pneumocystose évolutive. Dans 2 cas un autre agent infectieux opportuniste était isolé dans le poumon, (CMV : 1, CMV + M. tuberculosis : 1). Tous avaient des signes cliniques respiratoires et 4 une hypoxémie sévère ($PaO_2 \leq$ à 60 mmHg à l'air). Les images radiologiques étaient interstitielles (5) ou alvéolaires (2). 2 fois le diagnostic fut obtenu du vivant, par lavage bronchioloalvéolaire (LBA) ou BP. La TP fut responsable du décès 2 fois. L'aspect macroscopique était celui de micro et de macro nodules blanchâtres ou abcédés. Il existait une dissémination de kystes et de trophozoites libres dans des granulomes inflammatoires polymorphes, des foyers nécrotiques et parfois une infestation des macrophages de la paroi alvéolaire. La TP était associée à au moins une autre localisation viscérale extracérébrale. 5 pts avaient aussi une neurotoxoplasmose.
Conclusion. La TP n'est pas exceptionnelle au cours du SIDA. Elle est parfois responsable d'une pneumopathie hypoxémiante. T. gondii mériterait d'être systématiquement recherché dans le LBA ou les BP des pts atteints de SIDA.

W.B.P.24 LONG-TERM SURVIVAL OF AIDS PATIENTS SUCCESSFULLY TREATED FOR TOXOPLASMIC ENCEPHALITIS.

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Objective-To describe long-term maintenance treatment and survival of AIDS patients (pts) with toxoplasmic encephalitis (TE).
Methods-Follow-up data [greater than 10 weeks (wks)] were available on 18 pts diagnosed at 4 centers since 1987. Pts received 6-8 wks primary therapy (Rx) with either 3 wks IV clindamycin (C) 4.8g/d, then oral C 1.2g/d (8 pts) or sulfadiazine (S) 6-8g/d (10 pts). All pts also received pyrimethamine (pyr) 75 mg/d and folinic acid (FA) 10mg/d. As outpatient maintenance Rx, pts received: oral C (1.2-1.35 g/d)-9 pts, S (2-3g/d)-5 pts, Fansidar once/wk-1 pt, or pyr alone (50mg/d)-1 pt. For pts on C or S, pyr and FA were continued at 50 and 10mg/d. Two pts did not receive maintenance Rx. 11 pts (61%) received concomitant zidovudine (10/11 at 1.2g/d) and 7 (39%) received PCP prophylaxis during maintenance.
Results-16 of 18 (89%) pts are alive at a mean followup of 43.5 wks (range 11-82 wks). 5 pts (28%) experienced relapse of TE; 2 while on S Rx (11%), 1 on pyr alone and 2 on no Rx. All responded to repeat primary anti-TE tx. 3 of 18 (17%) had PCP, 1 each on fansidar, C and no Rx. Reversible neutropenia occurred in 2 pts on zidovudine and pyr, no other serious drug-related complications have been noted.
Conclusions-Long-term survival can be achieved in TE, and is usually determined by response to initial Rx. We recommend use of zidovudine and maintenance anti-TE Rx as incidence of drug-related side effects is low.

W.B.P.25 TOXOPLASMA GONDII PNEUMONIA (TGP) IN AIDS

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Between 1984 and 1988, we observed TGP in 11 patients - 10 Europeans and 1 Haitien infected with HIV. 8 had AIDS prior to the diagnosis of TGP, 3 of them had non-Hodgkin lymphoma. Mean CD4 cell count was 30.5 ± 23.4x10^6/l. The clinical features were : fever (11), dyspnea (10) and hemoptysis (2). Chest X-ray showed diffuse bilateral pulmonary infiltrates in all cases. Mean PaO_2 was 46.2 ± 12.8 mmHg. Results of bronchoalveolar fluid, recovered from 10/11 patients and stained by MGG technique showed : a) tachyzoïtes of T. gondii (10/10) associated with P. carinii (n=2), b) increase of neutrophil (7-56%,8/8) and eosinophil (4-14 %, 5/8) counts. In one patient the diagnosis was made at autopsy. Serologic evidence of past infection was observed in 10/10 patients. This ruled out the possibility of primo-invasion. Extrapulmonary involvement was proved in 4 patients : gut (2), brain (2), liver (1), heart (1), spleen (1), and bone marrow (1), and suspected in 3:liver (2), heart (2), spleen (1). 5 patients were neutropenic (<1x10^9/l). Outcome : 4 patients required mechanical ventilation. 9/11 recovered from TGP. 8 received sulfadiazine-pyrimethamine and one trimethoprime-sulfamethoxazole. In conclusion, TGP must be considered in AIDS patients with severe diffuse bilateral pneumonia especially when associated with a very low CD4 cell count and neutropenia.

W.B.P.26 INCIDENCE DE LA TOXOPLASMOSE CEREBRALE AU COURS DU SIDA : DONNEES ANATOMO-CLINIQUES (PARIS 1982-1985).

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Objectifs. 1) Mesurer l'incidence de la toxoplasmose cérébrale (TC)au cours du SIDA. 2) Préciser le pourcentage de cas non diagnostiqués cliniquement. 3) Evaluer l'efficacité du traitement pas sulfadiazine-pyrimethamine (SD). Méthodes. 1) De 11/82 à 4/88, 174 autopsies ont été faites. Les critères anatomo-pathologiques (AP) de TC étaient : présence d'abcès typiques, de kystes et/ou de tachyzoïtes, de micro-calcifications et le marquage par immuno-peroxydase. 2) Les patients ont été traités (T) (au moins 6 semaines de SP) ou non traités (NT). Ils sont guéris (G) ou non guéris(NG) selon les critères AP. Résultats. 1) L'incidence clinique de la TC est 21%. 2) L'incidence autopsique est 35%. 3) Dix huit sur 35 Pts T (51%) étaient NG : 6 (17%) avaient des lésions évolutives (abcès uniques ou multiples et/ou lésions disséminées) et 12 (34%) des abcès en voie de régression. 4) Parmi les patients NT (25 cas) : 10 avaient des lésions encéphalitiques disséminées, 10 des abcès évolutifs, 5 les 2 types de lésions. Conclusions. 1) L'incidence AP minimale de la TC au cours du SIDA est de 35% 2) La différence entre diagnostic AP et clinique (35% vs 21%) est expliquée par l'absence de signes cliniques et/ou scannographiques ou par un traitement trop bref des patients en phase ultime. 3) La grande fréquence de la TC exige des drogues moins toxiques que SD en prophylaxie systématique.

W.B.P.27 CEREBRAL TOXOPLASMOSIS IN DANISH AIDS PATIENTS.

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Objective and methods: To evaluate the diagnostic accuracy of cerebral toxoplasmosis in AIDS patients using clinical features, radiologic characteristics, serology and brain biopsy, we reviewed the charts from 1981-1988.
Results: Five (2%) patients had cerebral toxoplasmosis diagnosed at autopsy but were never treated. Thirtyone (11.4%) of the 273 AIDS patients were treated suspected for cerebral toxoplasmosis up to 6 weeks with daily: pyrimetamin 25 mg + either sulfadiazin 4 g or spiramycin 1-2 g (+ folinic acid). The diagnosis was confirmed in 14 (5.1%) on the basis of regressing focal CAT-lesions consistent with cerebral toxoplasmosis and/or histological demonstration of T.gondii in brain tissue. Eight patient continued on a prophylaxis with sulfadiazin 1 g/day and pyrimetamin 25 mg/week with no relaps. Three of these are alive, 3, 4 and 15 months after the diagnosis and treated with zidovudine as well. Eleven died after 1 to 30 months.
Of the dead: Five never developed pneumocystis carinii pneumonia (PCP), 3 had had PCP prior to T.gondii and 1 of these had taken cotrimoxazol as a PCP-prophylaxis, and 3 developed PCP after the T.gondii infection the 2 taking T.gondii prophylaxis. Two of the living had had PCP 2 and 6 months prior to the diagnosis of T.gondii and got a cotrimoxazole prophylaxis.
Of the 17 patients initially treated suspected for toxoplasmic encephalitis, but who did not get the diagnosis confirmed, 2 are alive doing well 14 and 16 months after treatment. Of the 15 dead 10 got a histopathologic diagnosis: seven PML, 2 malignant lymphomas and 1 aspergillus encephalitis. Five had no biopsy: three later suspected for PML and 2 for a Kaposi's sarcoma.
Conclusion: Toxoplasmic encephalitis occur in Danish AIDS patients with a frequency of 7%. The diagnosis is difficult but should be suspected with focal CAT-lesions and neurological symptoms. Only 45% of the initially treated patients suspected for T.gondii had the diagnosis confirmed and the need for better diagnostical tools and therapies are obvious.

W.B.P.28 TOXOPLASMOSE CEREBRALE ET SIDA EN ESPAGNE.

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OBJECTIFS: valorer la prévalance, caracteristiques cliniques, evolution et reponse au traitement, ainsi que la rentabilité diagnostique du TAC cerebral en 32 cas de toxoplasmose cerebrale (TC) dans le SIDA.
MATERIEL: nous avons étudié 145 cas de SIDA, 69 d'entre eux (47.5%) presentaient affectation neurologique, parmi eux 32 cas de TC (46.3%).
RESULTATS: La TC a representé la troisième infection opportuniste (IO) en prévalence (22% de tous les cas), apparent après l'infection par Pneumocystis Carinii et la tuberculose extrapulmonaire, étant la plus frequente parmis les 65 malades avec affectation neurologique. Elle a été l'IO qui a permit le diagnostique de SIDA dans le 9.6% de tous les malades de SIDA et le 44.6% des malades neurologiques. 20 malades (62.5%) ont presenté une focalité neurologique (9 avec hemiparesie, 8 avec crise convulsives, 1 avec hemiparestesie et 1 avec affectation des paires craneales); 11 cas (34.3%) ont presenté fièvre, mal de tête et/ou obnubilation; 1 cas a été une trouvaille de la necropsie. Pendant l'évolution, 46,8% des malades ont souffer une focalité neurologique. Le diagnostique a été établi dans tous les cas (sauf dans le cas de la necropsie) par TAC cérébral. En trois cas un premier TAC fut normal mais plus tard apparurent les lesions diagnostiques. La survivance a été comprise entre 2 et 100 semaines, étant actuellements 14 malades vivant. Tous les cas qui ont été traités (30) ont suivi une bonne evolution clinique avec des lesions residuelles dans les TACs posteriours de control. 5 malades ont recidivé après suppresion du traitement; 27 cas ont reçu traitement de forme permanente aucun d'eux ayant mort a cause de la TC.
CONCLUTION: 1- La TC est une IO frequente dans notre pays, se presentant dans le 22% de nos malades de SIDA, representant le 46.3% de l'affectation neurologique. 2- Plus d'une troisième partie des cas ne commencent pas avec une focalité neurologique. 3- Le TAC cerebral a une grande valeur diagnostique (96.3%). 4- Nous proposons faire un TAC a tous les malades VIH positifs avec syndrome fevrile même sans focalité neurologique puisque elle est une exploration peu aggressive et le diagnostique de TC nous permet faire un traitemente efficient et bien toléré par les malades même quand on le fait de manière indéfinie.

W.B.P.29 FAILURE OF HIGH DOSES OF ROXITHROMYCIN (R) IN AIDS PATIENTS WITH CENTRAL NERVOUS SYSTEM TOXOPLASMOSIS (CNST).

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Aim. To evaluate R, a new macrolide antibiotic, in CNST of AIDS patients with serious intolerance to conventional therapy. R has good activity in animal models of toxoplasmosis and high concentrations in human brain tissue has been demonstrated.
Methods. R (450 mg Q12h) was administered orally as the single agent, to 8 AIDS patients with CNST in whom serious adverse effects occured after initial pyrimethamine/sulfadiazine (P/S) therapy [cutaneous allergy (n=2), thrombocytopenia ≤25000/µl (n=6)]. Patients were aged 23-74y and their body weights were 51-63kg. All presented with fever, lethargy or confusion, focal neurologic signs, and contrast-enhancing ring-like lesions of the brain. In one patient in whom bacterial brain abcess was initially suspected, CNST was demonstrated by brain biopsy. In others, CNST was demonstrated by a prompt (≤10 days) and clear regression of clinical and CT scan findings after initiation of P/S therapy (0.5/50 mg kg^{-1} Q12h). Duration of initial therapy by P/S was 11-30 days.
Results. Clinical and CT scan findings consistent with CNST reappeared in all patients after 28-45 days of R therapy. In 4 patients in whom P/S therapy could be readministered, regression of clinical and CT scan findings was again obtained, thus confirming relapse of CNST. Despite high dosage, no adverse effect of R was observed.
Conclusion. Despite encouraging experimental and kinetic background, R given at a dosage 3x that recommended for antibacterial chemotherapy was not efficacious in a limited number of AIDS patients with CNST.

W.B.P.30 VESICAL TOXOPLASMOSIS: A NEW SIGN OF PARASITIC DISSEMINATION IN AIDS.

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Protozoan affection remains the first killer of patients afflicted with AIDS. As of January 1989, 25 cases of Toxoplasmosis (T) were observed in such patients hospitalized in our institution.
Objective: To report a peculiar manifestation of T. among AIDS sufferers.
Methods: Since the first evidence of HIV seroconversion in December 1982, at risk patients were followed closely for prompt diagnosis and treatment. Charts were thoroughly studied and classified according to demographic items. Toxoplasmosis was documented by at least 2 of the following tests: serology, CT scanning, nuclear imaging, histology.
Results: Sixteen white males (12 homo, 2 hetero, 2 bi.) and 9 Carribeans heterosexual (5 W, 4 M) were recorded. Ages varied from 23 to 58 years old (mean 38.2, median 37). Sixteen patients died between 8 days and 42 months following the diagnosis (mean 9.4, median 6.5 months) while 2 cases were diagnosed at autopsy. One patient showed pulmonary envolvement and 24 displayed central nervous system infection. Of these, a 23 y. o. girl had also vesical T. 16 months following the diagnosis of AIDS based on cryptosporidiosis, P.C.P. and generalized V-Z viral infection. She had an intractable bladder infection unresponsive to adequate antibacterial drug.
Conclusions: We point out the first reported case of vesical T. in AIDS. Such diagnosis must be suspected whenever urinary complaints cannot be ascribed to evident microbiological infection.

W.B.P.31 THERAPEUTIC OF TOXOPLASMIC ENCEPHALITIS IN AIDS PATIENTS

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Seventeen patients with AIDS and toxoplasmic encephalitis were studied regarding therapeutic response and adverse effects, diagnosis being established on clinical and tomographic basis. All patients had positive specific serological tests; IgM was always negative and IgG was always > 1/256; median CD4+ count was 222 cells/mm3. Pyrimethamine, sulfadiazine, and clindamycin were used in various combinations or, in few cases, due to allergic or toxic reactions to the other drugs, as monotherapy. The same drugs and Fansidar were used as suppressive therapy. Thirteen patients improved; and four died (three of them before completing 10 days of treatment). Relapse was observed in 50% of the cases, and the mean survival time was 161 days.
Overall there are eight necroscopic studies for clinical pathological correlation.
The authors call the attention to the favourable therapeutic response even when monotherapy with clindamycin was used, and the high incidence of side effects of therapeutics and relapse of the disease in spite of suppressive therapy.

W.B.P.32 IN VITRO SECRETION OF TOXOPLASMA SPECIFIC ANTIBODIES BY PERIPHERAL BLOOD CELLS FROM HIV1 INFECTED SUBJECTS.

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INTRODUCTION. Severe cerebral complications of Toxoplasmosis occur in 10 to 20 % of AIDS patients. Serology is no great help for their diagnosis which relies on clinical and scanner arguments. We wondered whether specific B cells could not be present in the blood stream at earlier stages of active toxoplasmosis infection together with the HIV1 secreting cells.
METHODS. PBMC culture supernatants from 43 HIV1 seropositive and 24 seronegative subjects were incubated in wells of Behring or Pasteur Toxoplasmosis antibody kits. An amplifying enzymatic complex was used to reveal the in vitro secreted and fixed antibodies.
RESULTS. a) In vitro production of Toxoplasma antibodies was detected in 19 of the 36 "HIV1 and Toxo seropositive" and in none of the HIV1 "seropositive" but "Toxo seronegative" subjects, b) Although 20 of the 24 HIV1 "seronegative" subjects were "Toxo seropositive" none of them gave positive results in the in vitro Toxo test, c) Scanner and clinical evidence of cerebral toxoplasmosis was found in only 3 of the 19 "HIV1 and Toxo positive" subjects and isolated neurologycal symptoms in only 7 others, d) A specific and selective inhibition of the Toxo in vitro test (and not of the HIV1 test) was observed after preincubation on the PBMC with Toxoplasma antigens (Kindly provided by Pr Capron, Lille).
CONCLUSION. Toxoplasma antibody secreting cells are present in the blood stream of some but not all HIV1 infected subjects. Their detection could provide a tool for the diagnosis and the early treatment of active Toxoplasmosis.

W.B.P.33 THE VALUE OF PYRIMETHAMIN/SULFADOXIN (FANSIDAR) IN THE PREVENTION OF CNS-TOXOPLASMOSIS IN AIDS- PATIENTS

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Objective. Is FANSIDAR (FAN) 2 tbls/week sufficient for prevention of CNS-toxoplasmosis (C-Tox) in AIDS-patients (pts)?
Methods. Retrospective analysis of 16 pts. treated for C-Tox between 1986 and 1988.
Results. Sixteen human-immunodeficiency-virus-seropositive pts with acute C-Tox (typical intracerebral lesions in NMR a/o CT scan) were treated with pyrimethamin (PY), mean dos. 50mg/d, in combination with either sulfadiazin (SU, 4,0g/d) or clindamycin (CL, 1,8-2,4g/d) in case of SU-side effects. 4 of these 16 pts. developed their C-Tox despite secondary long term prevention of P.carinii pneumonia with FAN (50mg/1,0g/week). 14/16 pts. (87,5%) showed complete (10/16) or partial (4/16) response (residual scan lesions or neurological defects), 2 pts. died. Treatment was continued as long term therapy with FAN (50mg/1,0g/week) in 4 pts., PY alone 50 mg/d in 6 pts., or PY + CL (1,8-2,4g/d). None of the 10 pts with complete remission developed a relapse, 3/4 pts. with partial remission relapsed, two of them despite secondary long term therapy with FAN and one pt. with PY/CL. Thus, 6/16 pts. (37,5%) developed C-Tox relapses or acquired acute C-Tox while under long term therapy with Fansidar.

Conclusions: These retrospective data indicate that (1) Fansidar in a dosage of 50mg PY / 1,0g SU per week might be of limited value for the primary or secondary prevention of C-Tox in AIDS-pts. and (2) that partial remission of C-Tox seemed to be a major risk factor for C-Tox relapse.

W.B.P.34 TREATMENT OF CNS TOXOPLASMOSIS IN AIDS PATIENTS. RESULTS OF PROSPECTIVE STUDIES USING PYRIMETHAMINE AND MACROLIDE ANTIBIOTICS.

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For treatment of cerebral toxoplasmosis pyrimethamine in combination with sulfonomides is commonly used. In our study the sulfonamide component was replaced by macrolide antibiotics. The results of treatment with pyrimethamine and with one or two macrolides were compared: with clindamycin and spiramycin (three drug regimen) and with clindamycin (two drug regimen). For maintenance therapy the effectiveness of pyrimethamine/sulfadoxine was studied.

Dosages: 1.5 mg pyrimethamine/kg body weight/d, 2.4 g clindamycin/d and 9 Mill. IU spiramycin/d for 3 weeks. Prophylaxis after acute therapy: 50 mg pyrimethamine and 1000 mg sulfadoxine (= 2 tablets Fansidar®) once a week.

Three drug regimen: therapy was effective in 25/26 cases. Relapse occured in 1/19 cases under maintenance treatment but in all six patients who had omitted the prophylaxis. Two drug regimen: therapy was effective in 12/13 cases. Two of 13 patients developed a relapse under prophylaxis. Hematologic side effects were equal for both regimens, but could be controlled by folinic acid given from the start of therapy in most cases. Skin rashes were observed in 10 cases.

Therapy regimen with pyrimethamine and macrolide antibiotics and maintenance treatment were proven to be effective. Relapses are mainly due to discontinuation the prophylaxis.

W.B.P.35 LOCALISATIONS DE LA TOXOPLASMOSE DANS LE TUBE DIGESTIF (T.D.) AU COURS DU SIDA. ETUDE ANATOMO-CLINIQUE.

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Objectif. Evaluer la fréquence de la toxoplasmose digestive et préciser ses aspects anatomo-cliniques.
Méthodes. Etude macroscopique et histologique systématique du T.D. de 160 patients (Pts) décédés de SIDA, corrélée avec les données cliniques.
Résultats. Le T.D. est atteint 7 fois (5 homosexuels européens, 1 zaïroise, 1 haïtienne; âge moyen : 37 ans ; durée moyenne de la maladie : 10 mois). Sont intéressés 2 fois tout le tube digestif, 1 fois le grêle et le colon, 4 fois seulement l'oesophage (n = 1), le grêle (n = 1) ou le colon (n = 2). L'aspect macroscopique est banal (érosions, pétéchies) sauf dans 2 cas : aspects de tumeur gastrique diffuse (1 cas) et de recto-colite hémorragique (1 cas). Toxoplasma gondii (T.G.) peut infester tous les types cellulaires ; kystes et trophozoïtes libres sont mis en évidence sur toute l'épaisseur de la paroi, dans des lésions inflammatoires et/ou nécrotiques, nodulaires ou diffuses. Dans 5 cas T.G. est le seul agent pathogène ; 2 fois il est associé à des cryptosporidies (n = 1) et à une infection par Cytomégalovirus et Mycobacterium Avium Intracellulare (n = 1) ; 6 des Pts ont une neurotoxoplasmose et tous au moins une autre localisation viscérale. La clinique se résume à une diarrhée profuse (6 fois) et/ou à des douleurs abdominales (3 fois).
Conclusion. La toxoplasmose digestive existe ; T.G. devrait être recherché systématiquement sur les biopsies digestives, au besoin par immunoperoxydase.

Infections liées au SIDA : diarrhée
AIDS Related Infection: Diarrhea

W.B.P.36 ADENOVIRUS ISOLE DU TUBE DIGESTIF CHEZ 20 PATIENTS SIDA, QUELLE SIGNIFICATION CLINIQUE ?

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Objectif. Préciser le rôle des adénovirus au cours du SIDA.
Méthodes. Etude rétrospective des dossiers de 20 patients (pts) SIDA chez lesquels un adénovirus a été isolé des selles ou des biopsies coliques entre août 1987 et septembre 1988.
Résultats. Tous avaient des signes digestifs : diarrhée (n=18), douleurs abdominales (n=3).Trois pts avaient une ulcération anale. La coloscopie, était normale chez 8/18 pts, et montrait une colite inflammatoire ou ulcéreuse chez 10/18 (55 %) avec histologiquement des inclusions compatibles avec une infection à CMV (n=4), des cryptosporidies (n=1),et aucun autre agent pathogène que l'adénovirus (n=3). Un adénovirus était isolé des selles (n=11), des biopsies rectales (n=12) et/ou caecales (n=8) ou de l'ulcération anale (n=2). Les sérotypes des 4 souches étudiées étaient 15, 17, 22 et 24. Les recherches d'adénovirus étaient réalisées à la fois dans selles et biopsies chez 10 pts : elles étaient positives aux deux niveaux chez 6 pts (grp.1 et positives seulement dans les selles chez 4 pts (grp.2). 4 sur 6 pts grp.1 et 4 sur 4 pts grp.2 avaient une colite endoscopique. Une virémie CMV était présente chez 12 sur 19 pts (63 %), et 8 sur 20 pts (40 %) avec une localisation viscérale à CMV.
Conclusion. Ces résultats (1) suggèrent la possible responsabilité des adénovirus dans certaines manifestations digestives au cours du SIDA, (2) soulèvent la question des relations entre CMV et adénovirus au niveau du tube digestif chez ces pts.

W.B.P.37 BLASTOCYSTIS HOMINIS INFECTION IN AIDS PATIENTS.

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Although associated with some instances of human gastrointestinal disease, the pathogenicity of Blastocystis hominis is still under question.
Objective - To evaluate the pathogenic potential of B. hominis in AIDS patients.
Methods - The records of HIV-infected individuals whose stool specimens contained B. hominis (>5 per 400x field) were reviewed.
Results - Seven such patients were seen at our institution. All had significant diarrhea (>4 bowel movements per day) nausea, abdominal cramping, fever and weight loss. Stool specimens of 3 patients contained only B. hominis. The remaining 4 had other potential intestinal pathogens (Entameba histolytica, Giardia lamblia) which have been implicated as co-pathogens with B. hominis. All seven patients responded to therapy (metronidazole or trimethoprim/sulfamethoxazole) with resolution of symptoms and erradiation of organisms from stool. No relapses occurred (follow-up - 4 months). No other causes for their diarrhea were found.
Conclusions - B. hominis should be considered a potential pathogen in AIDS patients and may co-exist with other intestinal pathogens. Specific therapy usually results in resolution of the infection. Relapses are rare. In patients who do not respond, other causes of diarrhea should be investigated.

W.B.P.38 VARIABLE LOCALIZATION OF INTESTINAL CRYPTOSPORIDIOSIS IN AIDS.

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Objective. To examine the localization of cryptosporidial (Crypto) infection in the gastrointestinal tracts of patients with AIDS.
Methods. In a retrospective review of biopsies from 25 AIDS patients with Crypto, the small intestine was the primary site of involvement in 16 patients, the colon was the primary site of involvement in 9 patients, and no patient had severe disease in both sites. The influence of disease localization was studied prospectively in 8 patients with jejunal Crypto and in 5 patients with colonic Crypto. Studies of oocyst excretion, small intestinal structure, and the absorption of sugar (xylose) and fat (triolein) were performed.
Results. Diarrhea was more severe in patients with jejunal Crypto and was associated with greater cyst excretion, more jejunal injury and more xylose malabsorption. Fat malabsorption was abnormal in both groups.

Disease site	Jejunum	Colon	p
Oocyst excretion (#/HPF)	17.8±6.7	2.4±1.9	NS
Jejunal villus ht (#cells)	50.0±3.2	84.8±8.3	p<0.005
D-xylose (1 hr serum)(mg/dl)	12.5±2.4	42.4±5.5	p<0.001
Triolein breath(%dose, 5th hr)	0.48±0.21	0.78±0.28	NS

Conclusions. Crypto has a variable localization the intestine. Intestinal structural and functional abnormalities correlate strongly with the localization of Crypto.

W.B.P.39 COLONOSCOPIC ETIOLOGICAL DIAGNOSIS OF DIARRHEA IN AIDS

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From August 1985 to September 1988, 18 patients were studied by the same phisicians at the Department of Infectious Diseases and private clinic. They presented diarrhoea for more than 30 days. Among them were 14 homosexual men, 2 blood receivers and 2 women married with bisexual men. After negative laboratorial investigation for common intestinal parasites in AIDS, colonoscopies with biopsies from caecum through rectum (fibrocolonoscope ACMI and video-colonoscope Welch Allyn) were performed in 16 patients. The examination showed: normal mucosa (4 cases), swollen and eritematous mucosa without friability (6 cases) and sick mucosa with multiple ulcerations (6 cases). The histopathology showed Cytomegalovirus colitis (9 cases), cryptosporidiosis (1 case) and nonspecific inflamatory disease at the remaining ones.

There were two patients not submitted to colonoscopy which presented Cytomegalovirus colitis. One of them had peritonitis due to a left colon ulcer perforation found at surgery and the other at post mortem examination. The diagnosis were made by histopathology of the surgical specimen and autopsy respectively.

After given anti-viral therapy, two patients with Cytomegalovirus colitis remained with diarrhoea. One of them had cryptosporidiosis and the other Shigella flexneri in the stool culture.

W.B.P.40 INCIDENCE OF INFECTIOUS GASTROENTERITIS IN SPANISH AIDS PATIENTS

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OBJECTIVE. To describe the characteristics of the infectious gastroenteritis (IG) in 226 Spanish AIDS cases.
METHODS. Since 1984, all patients who fulfilled the CDC criteria for AIDS case definition were prospectively followed. Seventy four (33%) were male homosexuals (HMS) and 132 (60%) drug addicts (DA).
RESULTS. Fifty nine episodes of IG (defined as the isolation of one (44 episodes) or more (15 episodes) microrganisms in the feces or in the intestinal mucosa) were identified in 46 of the 226 AIDS cases (20.3%). All but 2 were males and the mean age was 36 (range 24-59); twenty seven were HMS (58%) and 17 (36%) DA (p< 0.001). The IG alone or associated with other opportunistic infection was present at the moment of performing the diagnosis of AIDS in 30 of the 46 cases cases (65%). The microrganisms were: Cryptosporidium (19), G. lamblia (12), Entamoeba coli (8), I. belli (7), Cytomegalovirus (7) (postmortem diagnosis 6), Salmonella sp. (7) (five with concomitant bacteremia), C. jejuni (4), T. trichura (2), E. nana (2), and MAI, Y. enterocolitica and S. stercoralis in one case each. All episodes of IG, but 4 caused by cryptosporidium, were self-limited or responded to treatment. The IG was the main or an associated cause of death in 5 of the 25 patients who have already died.
Conclusion. IG is very common among Spanish AIDS patients (mainly among HMS) and often are the first manifestation of AIDS. The most frequent microorganism was Cryptosporidium.

W.B.P.41 GASTROINTESTINAL MULTIINFECTION IN AIDS PATIENT: A CASE REPORT

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Objective. Report a gastrointestinal multiinfection in AIDS patient in Rio Grande do Sul(RS) state.
Case Report. A 29 years old, white, drug addict and promiscuous was hospitalized with a copious, explosive, bloody diarrhea. First stool analysis revealed Strongyloides stercoralis and Ascaris lumbricoides. Thiabendazol and mebendazol were started without great improvement. Her stool culture yelded Shigella flexnerii and cotrimoxazol was initiated with improvement of the diarrhea. Another stool analysis showed Candida sp. and Cryptosporidium sp. Amphotericin B was added and a great improvement has been noticed. She was discharged after 20 days with 2 diarrheal episodes per day. Her stool analysis was negative, except for the presence of Cryptosporidium sp.
Conclusion. When treating AIDS patients, is important to know that infections are rarely single, and this report is a perfect example of the transformations going on gastrointestinal system of these patients.

W.B.P.42 ROTAVIRUS AS A DIARRHEAL AGENT IN ADULT AIDS PATIENTS.

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Objective: To determine incidence and importance of rotavirus as a cause of diarrhea in AIDS patients.
Methods: Stool samples were assayed by latex agglutination and Elisa technique for the presence of rotavirus. These stool samples were collected from 12/88 through 1/89 when the incidence of rotavirus was at its height in the corresponding pediatric population. The medical charts of these patients were reviewed for symptoms.
Results: Eighteen patients had stool samples sent for study. Eight of these patients had symptoms of diarrhea and one of these had rotavirus detected by Elisa. Mycobacterium Avium-Intracellulare was the most common cause of diarrhea among the virus detected in their stools.
Conclusion: Rotavirus was not found to be a significant cause of diarrhea in adult AIDS patients. Detection of this agent also may not explain the diarrheal syndrome even when found.

W.B.P.43

EFFICACITE DE LA SOMATOSTATINE LONGUE ACTION (SMS 201 995)& DANS LE TRAITEMENT DES DIARRHEES ET DANS LES CYTOPENIES DE DEUX MALADES ATTEINTS DE SIDA.

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La somatostatine longue action a montré une efficacité dans la diarrhée du SIDA purement symptomatique chez 2 patients. Nous avons observés ces mêmes résultats mais associés à une correction de la cytopénie chez 2 SIDA.
Obs.1 : un homosexuel de 32 ans avec sarcome de Kaposi et pneumocystose présentait une diarrhée invalidante avec une cachexie et une perte de 6 kilos en 2 semaines. Aprés l'échec de tous les traitements symptomatiques et antibiotiques larges un traitement par SMS à la dose de 100 mcg par s/c q8 heures a arrêté la diarrhée. Au 15ème jour nous avons stoppé la SMS avec une récidive de la diarrhée. La coproculture des selles a été positive à Micobactérium Avium uniquement. Un traitement par Rifampicine et Amikacine n'a pas stérilisé les selles. Les globules blancs avant et aprés traitement (15°Jour) passèrent de 660mm3 à 5600, les CD4 de 5/mm3 à 54, les plaquettes de 67000 à 228000/ml, l'hémoglobine resta stable. Le patient a grossi de 8 kilos en trois semaines.
Obs.2 : une hétérosexuelle de 28 ans présentait une pneumocystose avec cachexie, 12 selles liquides/jour. L'examen des selles (bactéries, parasites, champignons) fut négatif. Aprés traitement de 100 mcg 3 fois/jour, arrêt de sa diarrhée. Dés la cessation du traitement, récidive de la diarrhée et contrôle à la reprise du SMS. Les globules blancs avant et aprés traitement (15è jour) passèrent de 800 à 1100/mm3, les plaquettes de 40000 à 110000. La SMS semble être un traitement symptomatique de la diarrhée du SIDA et a permis la correction de la cytopénie. Une étude est nécessaire pour en comprendre les mécanismes.

& SMS 201 995 Laboratoire SANDOZ

W.B.P.44

GASTRIC LEISHMANIASIS IN AN AIDS-PATIENT.

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Visceral leishmaniasis has been previously described in HIV seropositive patients and even proposed as a new opportunistic disease.
A 28-old patient, seropositive for HIV, followed since 1985, was admitted for weight loss, epigastric pain. Two years ago, he had developped cerebral toxoplasmosis. Since June 1987, he received zidovudine therapy, which was stopped in August 1988 for hematological toxicity. On admission, blood cells count was : 1,4. 10.9/l leucocytes, 3,58. 10.12/l erythrocytes, 34. 10.9/l platelets, hemoglobin level was 116 g/l. Immunoglobulins were normal at ponderal dosage. CD4 positive blood cells were < 10/mm3. Endoscopic examination showed an ulcer on cardia. Anatomopathologic examination revealed a gastric localisation of leishmania. Medullar examination and specific culture were positive. Specific serology was negative. There was not any parasite on skin and blood examination. Clinical status was dramatically improved by specific therapy of ulcer and sodium stibiogluconate (Pentostam*) (600 mg/day during 3 weeks). At the end of the first cure, we noted : 5,5. 10.9/l leucocytes, 77. 10.9/l platelets and hemoglobin level was 120 g/l. Severe lymphopenia was persistent. Zidovudine therapy was started again. At our knowledge, gastric localization of leishmaniasis revealing visceral disease had not been previously described, since intestinal involvment is well known. It would be a positive outline for the "opportunistic" character of leishmaniasis in AIDS-patients. Research of visceral leishmaniasis seems to be necessary in endemic area, in HIV seropositive patients with lymphopenia, mainly with hematological abnormalities.

W.B.P.45

SUCCESSFUL USE OF HYPERIMMUNE BOVINE COLOSTRUM TO TREAT *CRYPTOSPORIDIUM* INFECTION IN AN AIDS PATIENT

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Cryptosporidium is a protozoan parasite of the human gastrointestinal tract which can cause life-threatening diarrhea in immunodeficient patients. Although close to eighty agents have been tried with occasional anecdotal success, treatment remains primarily limited to hydration. We describe a 38-year-old homosexual male with antibody to human immunodeficiency virus and *Cryptosporidium*-related diarrhea. The patient excreted 6 to 12 liters of stool per day for at least three months, two in hospital. Repeat stool examinations identified no bacterial or parasitic pathogen other than *Cryptosporidium*. Trials with more than six anti-diarrheal medications, including spiramycin, were ineffective and the patient finally received bovine colostrum hyperimmune to *Cryptosporidium* by direct duodenal infusion. The colostrum was produced by parenteral injection and intramammary infusion of oocysts into pregnant dairy cows; resulting colostrum had >1:200,000 titers of specific bovine anti-*Cryptosporidium* IgG-1, IgA and IgM. During infusion, the patient's fecal output decreased to less than 2 liters per day and 48 hours after treatment, stools were fully formed and oocysts to *Cryptosporidium* could not be found. The patient remains asymptomatic 3 months later. Hyperimmune bovine colostrum offers an exciting possible new treatment for cryptosporidiosis; the active factor(s) and mechanisms of action should be characterized.

W.B.P.46

A COMPARISON OF ELECTRON MICROSCOPY (E/M) AND LIGHT MICROSCOPY (L/M) IN THE DIAGNOSIS OF CRYPTOSPORIDIAL AND BLASTOCYSTIS INFECTION

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Objective To assess the value of L/M and E/M in the identification of apparent cryptosporidial infection.
Methods Rectal biopsy and stool specimens were examined by L/M and E/M from 40 AIDS patients with diarrhoea (at least 3 liquid motions/day for longer than one month).
Results E/M confirmed the presence of cryptosporidium in 4 of 11 patients identified by L/M and in no patients where this organism had not been seen. The 4 patients had typical cryptosporidial infection with mean weight loss of 9 Kgs. and large volume diarrhoea (mean 1.9L/day). They all died 3, 7, 9 and 24 months after diagnosis. In the other 7 patients, an alternative diagnosis was suggested at E/M (blastocystis 6 and dead cysts of giardia in 1). Four of the 6 patients with blastocystis are still alive 9, 12, 12, and 21 months after diagnosis. They had lost little weight at presentation (mean 4 Kgs.) and had low stool volumes (mean 0.7L/day). A subsequent AIDS diagnosis has been made in 3 of these patients.
Conclusion Light microscopy may confuse blastocystis and cryptosporidal infection. The former has a better prognosis, is not a feature of AIDS and presents with fewer clinical symptoms.

W.B.P.47

TREATMENT OF CRYPTOSPORIDIAL INFECTION WITH RECOMBINANT INTERLEUKIN-2 (rIL-2)

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Objective To assess the response of cryptosporidial diarrhoea to rIL-2.
Methods Three patients with cryptosporidial diarrhoea (present in 3 stool specimens and rectal biopsy) had stool volumes measured for four days prior and seven days after a course of intravenous rIL-2 (400ug over 2 hours daily for 14 days). A patient with severe right upper quadrant pain, sclerosing cholangitis, cytomegalovirus (CMV) colitis and cryptosporidium on rectal biopsy was treated similarly.
Results Ina ll four patient cryptosporidium was not found in stools or rectal biopsy after treatment. In two or three patients with diarrhoea the average daily stool volumes fell from 1.6 and 1.5 litres per day to 0.75 and 0.3 litres per day. Remission was maintained for two weeks in one patient who died of pneumonia and for two months in another patient who died of CMV colitis. The third patient had visceral Kaposi's sarcoma and no reduction in stool volumes and died within two months. After starting a course of rIL-2 in one patient with cholangitis his abdominal pain was markedly reduced but treatment was discontinued after seven days because of marked hypotension, pyrexia and hemiparesis from which he recovered. He subsequently received Foscarnet for CMV colitis and remains well four months later. Three of the four were febrile in response to rIL-2 and the alkaline phosphatase was significantly raised in two during treatment.
Conclusion rIL-2 is an effective treatment for cryptosporidial diarrhoea but may cause severe reactions.

W.B.P.48

GASTROINTESTINAL CRYPTOSPORIDIOSIS IN RIO GRANDE DO SUL(RS) STATE: THE HIGHEST INCIDENCE

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Objective. Establish the incidence of gastrointestinal cryptosporidiosis in AIDS patients in RS.
Methods. It was reviewed, at random, 50 registers of AIDS inpatients at HCPA between july and november 1988. 8 cases were excluded because they did not meet the inclusion criteria(at least 4 stool analysis for cryptosporidium sp. in an acid-fast smear).
Results. 52,4%(N=22) were positive, and 47,6%(N=20) were negative for cryptosporidium sp.
Conclusion. Gastrointestinal cryptosporidiosis in RS is one of the highest incidence in the world. Therefore, it is important to consider this disease when dealing with an AIDS patient coming from RS.

Infections liées au SIDA : syphilis
AIDS Related Infection: Syphilis

W.B.P.49 ATYPICAL SECONDARY SYPHILIS IN HIV SEROPOSITIVE PATIENTS

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Objective : to describe secondary syphilis in 8 HIV-seropositive patients.
Methods : retrospective study of clinical, serological, bacteriological and histopathological data in 8 consecutive patients (HIV +) seen in our department from 1984 to 1988 for a secondary syphilis.
Results : Patients : 8 males (mean age : 36,8 ± 10,2 years old), 7 homosexual, 1 drug addict, 2 with AIDS, 2 with the lymphadenopathy associated syndrome and 4 with asymptomatic HIV infection. 3 of them had a previous treated syphilis and only one had a history of chancre before the eruption. Clinical presentation was atypical in five : one livedo vasculitis of the trunk, two palmo-plantar keratodermas, two malignant ulcerative syphilis. The 3 others had a classical presentation (roseola or papular syphilids). Diagnosis was made on serology (high titers of antibody) in 8, darkfield examination in 1, histopathology (numerous plasma cells) in 6.
All were cured with classical recommended Penicillin therapy for early syphilis.
Conclusion : Clinical presentation of secondary syphilis during HIV infection was atypical in 5/8. In such patients, syphilis is more than ever "the great imitator". On the other hand, the serological and histological data were typical of secondary syphilis and led to an easy diagnosis.

W.B.P.50 NEUROSYPHILIS IN HIV-INFECTED PATIENTS: EVIDENCE OF UNRELIABLE SEROLOGIC RESPONSES

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Objective and Methods.The combined infection with Treponema pallidum and HIV by unknown interaction leads to an atypical presentation of Neurosyphilis (NS), but reagin and treponemal antibody tests have remained the cornerstone of diagnosis.
We report on 4 HIV-infected men (CDC group II and III) with NS (one meningovascular, two meningeal type(s), one papillitis) who failed to develop typical serologic responses. High dose antibiotic therapy was effective in all cases. Serum and CSF were examined for FTA, IgM-FTA, TPHA and cardiolipin reaction. The TPHA-serum/CSF-quotient was calculated. In 3 patients the relative concentrations of HIV-antibodies in serum and CSF were determined by serial dilutions in an anti-HIV ELISA (Abbott, Dupont). CSF was examined for cell count, protein content, oligoclonal bands and intrathecal IgG production.
Results. There was serologic evidence for a previous syphilitic infection in all patients, but the serologic indicators of active NS, the cardiolipin reaction and the IgM-FTA in CSF, were negative. In addition, three of the patients showed no serologic signs of active syphilis in serum. One patient developed a relaps of NS despite an adequately high dose antibiotic therapy.

W.B.P.51 SYPHILITIC MYELOPATHY WITH HUMAN IMMUNODEFICIENCY VIRUS: A TREATABLE CAUSE OF SPINAL CORD DISEASE

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Three individuals with syphilic myelopathy occurring in association with human immunodeficiency virus (HIV) infection are described. One patient responded dramatically to high dose intravenous penicillin therapy. In the other two patients, syphilitic spinal cord involvement was confirmed at autopsy by the presence of lymphocytic fibrotic leptomeningitis, chronic periphlebitis, and microglial infiltrates of the spinal cord. Both also exhibited radiculitis. One patient had clinical features of cervical radiculopathy, paraparesis, and double incontinence. The other was treated for neurosyphilis three months before death when she presented with an altered mental state, acute left hemiparesis, and hemihypalgesia with positive syphilis serology.

Syphilis needs to be considered in the differential diagnosis of any patient developing a myelopathy in association with HIV infection. Because of the diverse nature in which syphilis may affect the spinal cord, any HIV-seropositive patient with a progressive, unexplained myelopathy and a positive serum FTA-abs should be considered for therapy with intravenous aqueous penicillin, 12 to 24 million units daily, for a minimum of 10 days, even in the absence of a positive cerebrospinal fluid VDRL.

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W.B.P.52 HISTORY OF AND CONVENTIONAL TESTS FOR SYPHILIS IN HIV-1 SEROPOSITIVE HOMOSEXUAL MEN IN THE BALTIMORE MACS

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Objective To determine the validity of syphilis testing in HIV-1 seropositive homosexual men with self-reported syphilis history.
Methods Sixty HIV-1 seropositive Rapid Plasma Reagin (RPR)- men in the Baltimore MACS were stratified by self-reported history of syphilis and tested for evidence of past or present infection using the Fluorescent Antibody Absorbed (FTA) assay. 39/60 men had lumbar punctures performed using Venereal Disease Research Laboratory (VDRL) analysis of cerebrospinal fluid (CSF).
Results Fifteen men reported history of syphilis, all before 1984. FTA tests were reactive in 13/15 (Sensitivity = 86%). CSF-VDRL analysis was available in 8/13 of these men and were all nonreactive. In 45 men with no history of syphilis, the FTA was reactive in 2 (Specificity = 43/45 = 96%). CSF-VDRL evaluation was negative in 31 of those tested including one participant with +FTA and negative history.
Conclusion Both sensitivity and specificity of reported lifetime history of syphilis are high compared to FTA testing in this small highly screened HIV-1 seropositive population. The 4% (2/45) of FTA+ men without reported history may be the result of recall error, false positive treponemal tests, or inadvertent treatment of asymptomatic disease. These data suggest that the accuracy of self-reported and serological testing for syphilis in HIV-1 seropositive homosexual men with negative RPR is high and the yield of further testing is low.

W.B.P.53 AN ASSOCIATION OF SYPHILIS EPISODES AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN SEXUALLY TRANSMITTED DISEASE (STD) PATIENTS IN LOS ANGELES COUNTY

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Objective. To determine if an association exists between a history of syphilis episodes and HIV seropositivity.
Methods. Clients participating in confidential HIV testing in Los Angeles County STD clinics between July 1 and December 15, 1988, were interviewed by pretest counselors about their history of STDs and high risk behaviors such as number of sex partners, drug use, and prostitution.
Results. Having a history of at least one episode of syphilis appears to be strongly associated with HIV seropositivity (p<.0001). For those clients testing HIV positive, 57.8% (26/45) reported an episode of syphilis in contrast to 16.9% of those testing HIV negative (198/1,172). Upon further examination of drug and sex-related risk factors, exchanging money or drugs for sex and intravenous drug use since 1978 were all strongly associated with having had at least one syphilis episode (p<.001). These associations were consistent within race group (Black and Hispanic) and among males. Only exchanging drugs for sex was independently associated with being HIV positive (p<.0001).
Conclusion. Syphilis appears to be a risk factor for HIV infection independent of any confounding effect of intravenous drug use unless drugs are exchanged for sex. Syphilis in Los Angeles County may predispose an individual to HIV infection.

W.B.P.54 "SEROREVERSION" OF TREPONEMAL TESTS DURING HIV INFECTION

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Objective: To evaluate the sensitivity of treponemal tests (i.e.FTA-ABS and/or MHA-TP) for syphilis in individuals with HIV infection.
Methods: *Subjects*—110 homosexual men with a documented history of syphilis, who enrolled in a longitudinal cohort between 1982-85. Syphilis serology done on entry into cohort was compared to records of previous results. Serology confirmed on stored serum samples. *Study design*—retrospective review.
Results: None of the HIV-negative individuals in the cohort "seroreverted," whereas 7.2% of those who were HIV-seropositive but asymptomatic, 42.9% of those with ARC, and 35.7% of those with AIDS had loss of reactivity of a treponemal test. The relative risk of "seroreversion" for those with ARC was 14.3 (p=0.02), and for those with AIDS 10.5 (p=0.02). Characteristics of those with "seroreversion" and those with persistent reactivity include:

	Serorevert n=14	Serofast n=96
T4 count(x10^6/l)	381.2 (215.3-507.1)*	698.4 (627.8-769.1)
T4/T8 ratio	0.54 (0.38-0.69)	0.99 (0.88-1.1)
# episodes syphilis	1.2 (1.0-1.6)	1.8 (1.5-2.0)

*all results reported as mean (+/- 95% confidence interval)

Conclusions: Individuals with symptomatic HIV infection and a documented history of syphilis lose reactivity of treponemal tests. Reversion appears to be related to the decline of total T4 count and T4/T8 ratio. These findings raise questions about the sensitivity of treponemal tests in HIV-infected individuals, and suggest that a history of syphilis cannot be excluded by negative treponemal tests.

W.B.P.55 MENINGOVASCULAR SYPHILIS in AIDS

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HIV may alter the natural history of syphilis by increasing the propensity of the disease to progress to neurosyphilis. Meningeal inflammation induced by either pathogen (HIV and T. pallidum) could allow the other agent to penetrate further into the CNS.

We reported two cases of meningovascular syphilis in homosexual men. One of the two patients had neurosyphilis despite previous adequate therapy for early syphilis with benzathine penicillin.
A 22 year old homosexual was admitted to the hopital with a left facial palsy, a diffuse rash, and a left Hemiparesis, after a three month prodrome of fatigue, headache. He had been treated for one episode of gonorrhea at 18.
Laboratory revealed a VDRL test titer of 1/1024, TPHA test titer of 1/1280 and a positive test for serum HIV antibody. Examination of the CSF revealed lymphocytic Pleocytosis (103 white cells per cubic millimeter), an elevated protein level (0,86 g/l) hypoglycorrachia, a VDRL test titer of 1/16, TPHA test of 1/80 and positive test for CSF HIV antibody and P24 antigen. MRI revealed an infarction of the right hypothalamus area. Patient was treated for 18 days with intravenous penicillin (20 million units per day) and Probenid and had no Jarisch -Herxheimer reaction. We described CSF at J1, J4, J10, J30, J90,. We reported another case of 37 year old man.
This observation illustrate that Syphilis in patients with HIV infection follow a malignant or protracted cause.
Lumbar puncture may be indicated in the Evaluation of HIV seropositive patients with Syphilis, a more aggressive therapy including maintenance therapy.
Neurosyphilis should be added to the growing list of infections complications of AIDS.

W.B.P.56 SEROLOGICAL AND CEREBROSPINAL FLUID PARAMETERS RELATED TO SYPHILIS IN HIV ASYMPTOMATIC SEROPOSITIVES

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Serological and CSF parameters associated with syphilis were analyzed in asymptomatic HIV-seropositives. Thirty-four of 86 (39.5%) reported a remote history of syphilis. Serum FTA-ABS was positive in 25/34 (73.5%) of those with a positive history and in 4/52 (7.7%) without a history. Only 8 subjects had a positive serum RPR and all of these had a positive history for syphilis. The CSF VDRL was positive in 3/81 (3.7%) asymptomatics, one of whom had never been previously diagnosed with syphilis. The CSF FTA-ABS was positive in 6; 3 of whom had neither a history of syphilis nor a positive serum FTA-ABS. A history of syphilis had no effect on CSF white blood cell count, protein, glucose, immunoglobulin level or the presence of oligoclonal bands.

In our population, a history of syphilis is common and serological confirmation (FTA-ABS) unaffected by concomitant "early" HIV infection. 3.7% of asymptomatic HIV seropositive subjects had unsuspected neurosyphilis as defined by a positive CSF VDRL. Though the CSF VDRL may be relatively insensitive for diagnosing neurosyphilis, the CSF FTA-ABS appears to be too nonspecific. The presence of a CSF pleocytosis, elevated immunoglobulins and oligoclonal bands was equally common in those without as with a history of syphilis. Greater precision in diagnostic modalities is needed to firmly establish the presence of neurosyphilis.

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W.B.P.57 SYPHILIS TREATMENT RESPONSE IN HIV INFECTED PERSONS

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Objective: To determine whether HIV infected persons treated for primary (PS) or secondary syphilis (SS) have a modified rapid plasma reagin (RPR) response and thus are more likely to be considered treatment failures compared to HIV- patients with a comparable stage of treated syphilis.
Methods: Medical records were reviewed and abstracted on all patients with PS and SS attending NYCDOH STD clinics in a one year period beginning June 1987 during which sera of all positive RPRs were saved. Eligible study participants were those who had RPR titers measured prior to and subsequent to syphilis treatment. Sera were retrieved and tested for HIV. Serologic (RPR) failure and success parameters were analyzed according to HIV status.
Results: Data on 303 (45%) of 677 participants are currently available for analysis. Of these, 124 (41%) had PS and 179 (59%) had SS; 163 (54%) were men and 36 (12%) were HIV positive.

RPR RESPONSE BY HIV STATUS

RPR RESPONSE	HIV+	(%)	N	HIV-	(%)	N
>=4X RPR Increase	2	(6%)	36	6	(2%)	267
Stable or Increasing RPR after 6 months	1	(4%)	36	2	(1%)	267
>=4X RPR Decrease within 6 months	22	(73%)	30	172	(71%)	242

Conclusions: HIV+ and HIV- persons were equally likely to have a fourfold or greater decrease in RPR titer within 6 months of treatment for syphilis. Although HIV infected persons were more likely to have an increasing or stable titer after 6 months or a 4-fold increase at any time, "treatment failure" remains unusual.

W.B.P.58 RETREATMENT OF SYPHILIS IN HIV POSITIVE PATIENTS.

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Objective: Treponemes can persist in the CNS following standard treatment of early syphilis with benzathine or procaine penicillin. Approximately 50% of homosexuals with AIDS have had syphilis, and it is possible that persisting treponemal infection contributes to the neurological manifestations of AIDS. We are performing a trial to assess the benefits of retreatment with an antibiotic regime that achieves good CNS penetration.

Methods: A double-blind placebo controlled trial using amoxycillin 3 g bd/probenicid 500 mg bd for HIV positive patients previously treated for syphilis. All patients have CDC stage 4 disease. They are assessed over 6 months with neuropsychiatric tests, neurological examination and serology.

Results: Nineteen patients have been treated so far. One withdrew due to penicillin allergy, 2 because of admission to hospital. Four patients stopped after 2 weeks because of minor reactions. Twelve completed the 3 week course. So far no significant difference between the treatment and placebo groups has emerged.

Conclusions: These are small numbers of patients but the results of long term follow up will yield more information. Probenicid increases the half-life of zidovudine. This has prevented use of the trial treatment in patients taking zidovudine, until the safety of such a combination is assessed. The amoxycillin and probenicid regime may be useful for the initial treatment of syphilis in HIV positive patients.

W.B.P.59 FAILURE OF BENZATHINE PENICILLIN TO ERADICATE SYPHILIS IN HIV POSITIVE PATIENTS.

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Objective: An increasing number of reports document failure when using benzathine penicillin to treat early syphilis in HIV positive patients. Alternative regimes that have been suggested include procaine penicillin with probenicid, oral amoxycillin with probenicid, and intravenous benzylpenicillin. We reviewed the progress of 15 patients treated for early syphilis when they were thought to be HIV positive.

Results: Seven patients received benzathine penicillin 2.4 MU repeated after 6 days. Two of these developed tertiary syphilis, in spite of having the treatment repeated. One required IV benzylpenicillin to eradicate a gumma, the other a 15 day course of procaine penicillin 2.5 MU with probenicid 500 mg qds to treat neurosyphilis.

One patient treated with repeated courses of doxycycline developed neurological disease which may have been neurosyphilis, but he died from PCP before the diagnosis was established.

Seven patients received oral amoxycillin 3 g bd with probenicid 500 mg bd. One of these was in the third trimester of pregnancy. The infant was subsequently treated for possible congenital infection. This patient and 3 others receiving amoxycillin declined the HIV antibody test but had a high probability of being HIV positive.

Conclusions: Benzathine penicillin is unreliable for the treatment of syphilis in HIV positive patients. Alternative regimes have not yet been fully evaluated. We are using PCR to look for treponemes in CSF's as a way of evaluating the effectiveness of treatment.

Soins alternatifs, soins traditionnels
Alternative and Traditional Care

W.B.P.60 HIV-RELATED PRIMARY MEDICAL CARE FOR INTRAVENOUS DRUG USERS (IVDU) IN A METHADONE MAINTENANCE TREATMENT PROGRAM (MMTP)

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Objective. To evaluate the feasibility of providing on-site HIV-related primary medical care for IVDU's enrolled in a longterm outpatient MMTP in New York City. Methods. IVDU's with or at risk for HIV infection were offered on-site primary medical care at a Bronx MMTP. Patients with AIDS or advanced HIV disease (CDC IV C.2) were offered AZT (from 5/87) and weekly aerosolized pentamidine (from 3/88). Patients with latent or active tuberculosis (+PPD/TB) were offered supervised chemotherapy along with daily methadone doses (from 1/86). Pregnant women were offered HIV antibody (Ab) testing and clinical care for pregnancy (from 9/85). Results. (1) AZT: 33/48(69%) eligible patients accepted AZT, including 15(45%) women. Mean length of treatment through 1/89 was 30 wks.(range 1-81); 13/33(39%) required dosage adjustment; 8/33(24%) stopped AZT due to toxicity (n=6) or non-compliance (n=2). (2) Pentamidine: 19/22(86%) eligible patients accepted weekly pentamidine; 14/19(74%) have continued >3mos., 1/19(5%) stopped therapy.(3) +PPD/TB: 46/56(82%) patients with +PPD accepted INH; 34/38(89%) evaluable patients received ≥ 6 mos. INH; 13/13(100%) evaluable patients with active TB received multidrug therapy ≥ 9 mos. or until death. (4) Pregnancy: HIV Ab testing and on-site care were accepted by pregnant women in 152/214(71%) pregnancies from 9/85-1/89. Conclusion. Results indicate high levels of participation in HIV-related primary medical care among IVDU's in our MMTP, including treatment regimens requiring close follow-up and monitoring. Care is facilitated by patients' frequent clinic visits to receive methadone, which suggests that MMTP's can be effective sites for preventive and therapeutic medical interventions among high-risk IVDU's.

W.B.P.61 REPORT ON A STATEWIDE SURVEY TO DETERMINE LEVELS OF OUTPATIENT CLINIC/AMBULATORY CARE SERVICES FOR PERSONS WITH HIV INFECTION

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Objective. To determine the configuration and cost of needed ambulatory services for HIV infected persons in New Jersey which has the fourth highest number of AIDS cases and significant HIV seroprevalence.
Method. Data was obtained from a statewide survey of 16 hospital- and community-based ambulatory health centers caring for 2,678 HIV positive clients, a review of Medicaid outpatient charges for HIV infected persons; and the State's HIV Case Management Information System of 1,579 persons during the period Fall 1988.
Results. Previously reported reviews of HIV related care have focussed on inpatient acute care resource consumption. 66% of HIV positive clients report the single biggest unmet need to be ambulatory care. Its rate of growth is several times that of acute care for HIV infected persons. Waiting times for appointments ranged from same day to eight weeks. Referrals to ambulatory services are highest from acute settings, lowest from private physicians, dentists, community agencies including drug abuse facilities. Medicaid is the primary insurer. 11 ambulatory clinical therapies were identified as being the predominant therapies needed as were specific obstacles to expanding services.
Conclusion. Ambulatory care has emerged as most needing additional resources & organization. This is consistent with earlier identification and expanded prophylactic therapy. The NJ Dept. of Health has developed a statewide approach to HIV Ambulatory Care centers to meet the imminent need.

W.B.P.63 COMPREHENSIVE HIV CASE MANAGEMENT PROTOCOLS FOR 26 NORTHERN CALIFORNIA COUNTIES

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Objective. To develop for Northern California area physicians and hospitals HIV education and a comprehensive case management protocol for HIV, ARC/AIDS patients. Northern California has had 600 cases of AIDS recorded since 1983. Projections indicate 1,500 cases of AIDS and over 12,000 HIV cases in the region by 1992.
Methods. Questionnaires, surveys, and site visits, together with epidemiological studies, conducted by the state, the counties, the Sierra Foundation, U. C. Davis Medical School, and the Sacramento AIDS Foundation, found the need and resources necessary and have developed a regionalized HIV/AIDS service plan and comprehensive case management protocol.
Results. A committee assembled in Aug., 1988, under the joint leadership of the Sacramento AIDS Foundation and Dr. Neil Flynn, Director of the U. C. Davis Medical Center, wrote and developed a comprehensive regional case management protocol guide that describes appropriate care and resources needed to address all regional HIV services. Case management for this protocol is defined as the process in which the necessary resources are provided to maintain persons with HIV and AIDS at the highest level of functioning during the course of the disease, beginning with a positive HIV test, and continuing for the rest of the patient's life. The guide includes nine components: 1. AIDS education; 2. AIDS medical care, inpatient, extended care, and intermediate health services; 3. Social service advocacy, including emergency and long-term housing; 4. Hospice service; 5. Spiritual and wellness support; 6. Mental health, outpatient and in-hospital emotional support; 7. AIDS outpatient services, an outpatient regional AIDS treatment center; 8. Nursing, home health and practical support for daily living; 9. Legal services; with, appendices that include resources in the 26-county region. This recently-completed document will be updated every 6 months. The updates will provide the region with the most current medical treatment and drug protocols developed. The treatment algorithm, located at the beginning of the guide, is a quick reference for health care givers to locate their patients' needs at any/all stages of the HIV illness.
Conclusion. The Protocol Guide will assist primary care physicians first by providing update diagnostic and treatment information (it will provide a type of on-the-job continuing education backed by the facility of the University of California, Davis Medical School); secondly, the shortage of primary physicians and health care providers in this primarily rural area of California will be offset by the regional consultation network, growing from the distribution plan of the Protocol Guide.

W.B.P.65 HOME TRANSFUSION: A SAFE, EFFECTIVE ALTERNATIVE TO TRADITIONAL CARE.

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Objective: To describe an active, safe and effective home blood transfusion program designed to meet the needs to the HIV + patient experiencing anemia.
Methods: We set up a home blood transfusion program designed to meet the needs of the anemic HIV + patient who often requires 3-4 units of Packed Red Cells per episode. Patients must be cardiovascularly stable and require transfusion on a non-emergent basis. The program is an ideal alternative to the homebound patient who is unable to make repeated trips to the hospital. Packed cells are given consecutively, thereby decreasing total administration time. Patients are continuously monitored by a registered nurse trained to detect possible complications.
Results: (July 87 -Jan. 89)

Total patients	105
Transfusion episodes	432
# RBC units given	1060
Adverse reactions	0

Conclusions: Our home transfusion program has proven to be a safe and effective means of treatment for HIV+ patients. The number of non-acute hospitalizations for these patients has significantly decreased. This has also resulted in decreased medical costs and time lost from the work place.

W.B.P.62 A COLLABORATIVE APPROACH TO PRIMARY OUTPATIENT ORIENTED CARE OF PATIENTS WITH HIV INFECTION

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The San Francisco Veterans Administration Medical Center (SFVAMC) is a 300 bed teaching hospital with a traditional emphasis on inpatient care that is located in an area of high endemicity for HIV infection. The Infectious Diseases Clinics provide primary outpatient care for the majority of HIV-infected patients seen. A multidisciplinary, collaborative model of care was chosen to deal with the complex care issues that emerge in our patients. Collaborative Practice is a model for health care delivery first outlined by the National Joint Practice Commission in 1977. In our clinic, the main elements are: 1) Algorithms by which clinic nurses assume responsibility for most phone and drop-in triage, as well as for many routine clinic visits. Included in these are the assessment of diarrhea and dyspnea symptoms, common dermatologic, dental, and psychosocial issues, and the management of many patients on AZT. 2) Collaborative development of clinic policies, procedures, and goals by representatives of each of the involved allied health professions, and 3) An integral program of clinical research that encourages participation in protocol development and patient recruitment. Additional features of the program include integrated dental and dermatology sub-clinics, an on-line patient data base, and ambulatory intravenous therapy. Ongoing professional collaboration at all levels improves efficiency, productivity, and morale at SFVAMC.

W.B.P.64 VISITING PHYSICIAN SERVICE FOR AIDS PATIENTS IN NASSAU COUNTY.

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Objective. To describe a visiting physician service for AIDS patients in suburban Nassau County.

Methods. Prospective records were kept of patient characteristics and each physician intervention.

Results. In 1988 a visiting physician service for PWAs was created at NCMC and supported by the Robert Wood Johnson Foundation. Because of geographic constraints and lack of public transportation on Long Island, this service was developed with the intent of minimizing trips to overburdened community hospital clinics by providing non-emergent medical care in the home setting. Between July 1988 and January 1989, 104 home visits have been made for 35 AIDS patients in 20 communities in suburban Long Island. An additional 135 visits were made at the county residential drug treatment facility. Of 35 patients seen at home, 7 were terminally ill, 6 were acutely ill, and 22 had ongoing medical problems. Among these 22, 10 have limited mobility because of neuromuscular disease, 3 received home IV therapy, and 7 received medical care for active problems in lieu of clinic visits. In 104 visits, 116 interventions were made: 36 involved therapeutic intervention; 19 resulted in further diagnostic evaluation, 13 in additional medical referrals, 10 in non-medical referrals and 4 in hospital admission; 20 were classified as routine follow-up care. Psychosocial support to PWAs or family members was the sole intervention in 12 visits; pronouncement of death obviated police intrusion for 2 families.

Conclusion. The visiting physician service offers benefits to patients who are terminally ill, physically dependent on others for mobility, or require active monitoring of home therapy. It offers psychosocial support to patients and families directly in the home environment, while relieving pressure on hospital ambulatory care services. This service is a unique response to AIDS in the suburban community with the largest number of PWAs and offers an alternative approach to traditional medical care.

W.B.P.66 AT-HOME CARE OF TERMINAL AIDS PATIENTS.

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Objetive: Evaluation of the problems of this new form of care of AIDS patients.

Method: The hospital team included a physician and a nurse who were charged with at-home care of AIDS patients, particularly terminal cases. The number of visits was determined by the patient's individual needs, and the objective of each visit was to offer the necessary medical care, education for health care and disease prevention, and any psychological support required by the patient or his/her family.

Results: From February to December 1988, 18 patients were attended, 8 of whom died, with different diseases: cerebral toxoplasmosis, PML, KS... The number of visits made to each patient was 2-3 per week, of an approximate duration of an hour.

Conclusions:
1. If the domestic circumstances of the terminal AIDS patient present the necessary sanitary conditions and there are persons willing to care for him/her, in our opinion it is preferable that the patient spend his/her last days at home, since this situation is more conducive to the patient's sense of well-being and the family is more satisfied as to having done everything possible for the patient.
2 Prolonged hospital stays can be considerably reduced, which represents an economic savings for public institutions.

W.B.P.67 A SURVEY OF COMPLEMENTARY AIDS/HIV THERAPIES AND SERVICES

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Objectives: To determine the range of information and services provided by complementary/alternative AIDS/HIV therapy organizations and practitioners, the range of therapies in use beyond standardized medical treatments, and their willingness to participate in a computerized database of complementary therapies.
Methods: A sample of complementary/alternative providers and organizations was obtained through telephone interviews with PWA organizations and holistic health networks. A brief survey was sent to a sample of 105 organizations, practitioners, and information sources requesting information regarding the types of services provided, specific therapies, types of information collected and willingness to participate in a computerized database.
Results: Over half of the organizations and practitioners responded to the survey and all but three of the respondents were interested in participating in the proposed database. These represented practitioners, buyer's clubs, holistic health facilities and community research initiatives who are serving anywhere from a few to several thousands of persons with AIDS/HIV. At least 100 alternative/complementary therapies were identified, including immune enhancing, antiviral, energy/life force, stress reduction, dietary and anti-tumor therapies. Common underlying strategies being endorsed to restore compromised immune system functioning were: toxin removal and correction of cellular malnutrition; restoration of circadian rhythms; mental imaging; and energy field mobilization or balancing.
Conclusions: Persons with AIDS/HIV are utilizing a wide range of complementary /alternative therapies. Much of this activity is coordinated through organizations and practitioners which collect extensive information regarding specific therapies and potential outcomes. Information regarding these therapies can be obtained from cooperative organizations and practitioners for use in patient education and research planning.

Supported by NIH grant 1R43A126966-01.

W.B.P.68 EFFECT OF CARDIOVASCULAR CONDITIONING IN HIV INFECTION

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OBJECTIVE: Clinical and immunologic evaluation of cardiovascular conditioning in persons with HIV infection.
METHODS: 28 patients(6AIDS, 18ARC, 4PGL) were randomized to 1 of 2 groups for cardiovascular conditioning in a crossover trial of 16 weeks duration. Treatment phase consisted of 3-1hr periods/wk of aerobic exercise training for 8 consecutive weeks. 8 weeks of usual activity constituted non-treatment. Pre-, mid- and post-trial measures of hematologic, immunologic and cardiovascular parameters were performed. Physical and psychological complaints were also recorded.
RESULTS: Using a paired T-test for combined groups, treatment(cardiovascular conditioning) was statistically significant for CD4 cells(mean increase=68, p .005), T4/T8 ratios(mean increase=.072, p .01), serum globulin (mean decrease=.18, p .005), and resting and recovery pulses(mean decrease 10.2 and 18.6 respectively, p .001). No statistically significant differences in CD8 cells, serum albumin or Hgb were observed. Subjects described improved exercise tolerance, decreased fatigue, improved appetite and lower incidence of depression posttreatment, although numbers were not sufficient to achieve statistical significance.
CONCLUSION: Cardiovascular conditioning by aerobic exercise is associated with significant increases in circulating CD4 cell numbers and T4/T8 ratios and with a significant decrease in serum globulin. Duration and extent of effect, mechanisms of action and impact on the natural history of the disease are under investigation in a more extensive trial.

Diagnostic : marqueurs et progression de l'infection par le VIH
Diagnosis: Markers of HIV Infection and Progression

W.B.P.69 CLINICAL VALUE OF A TAC-INHIBITORY ACTIVITY PRODUCED SPONTANEOUSLY BY ADHERENT CELLS OF HIV-INFECTED SUBJECTS.

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Objective : Determine the clinical value of a Tac-inhibitory activity produced during HIV infection.
Methods : Peripheral blood adherent cells were isolated from 15 asymptomatic seropositives, 11 LAS, 4 ARC and 5 AIDS patients, and 24h-conditioned media were prepared without any cell stimulation under serum-free conditions. Conditioned medium-mediated inhibition of Tac expression was tested on normal mitogen-activated PBL and both the ID_{50}(ug/ml) and the % of maximal inhibition were determined. ID_{50} represents the quantity of protein to obtain the 50% of the maximum inhibition.
Results : When the ID_{50} was expressed according to the % of maximal inhibition it was observed that a low ID_{50} with a high % of inhibition was associated with more advanced disease than a high ID_{50} and a low maximal inhibition. Nine of 15 (60%), 2 of 11 (18%), 2 of 4 (50%) and 5 of 5 (100%) of asymptomatic, LAS, ARC and AIDS patients respectively produced significant quantities of the inhibitory activity [ID_5 less than 0.2 ug/10^6 cells]. Prospective longitudinal studies in several patients revealed that decrease of the ID_{50} was followed by clinical stage progression of the infection. Treatment of these patients with AZT allowed to an increase of the ID_{50} and a decrease of the % of maximal inhibition. Preliminary results strongly suggest that the production of Tac-inhibitory activity is associated with higher concentrations of soluble IL2-R but not p24 antigen in the patients' sera.
Conclusion : These findings strongly suggest that Tac-inhibitory activity production is a reliable marker of the evolution of the HIV infection towards the full down disease.

W.B.P.70 APPEARANCE OF p24 ANTIGEN AND DECLINE IN T4 CELL COUNTS AS PREDICTIVE MARKERS FOR AIDS

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Objective. To investigate the predictive value of assays for HIV, p24 antigen (Ag), p24 antibody (ab) and gp120 ab compared to T4 cell counts in a cohort of 87 hemophiliacs with an actuarial cumulative AIDS incidence of 26% (± 7% SE) 8 years after ab seroconversion.
Methods. Ag was measured by the Abbott EIA, p24 and gp120 ab by radioimmunoassay, and T cell subsets by flow cytometry.
Results. Ag was detected in 8/74 (11%) of the non-AIDS and 7/13 (54%) of the AIDS patients. The two year actuarial incidence of AIDS was 24% (± 12%) after detection of Ag, 16% (± 9%) after loss of p24 ab, 20% (± 13%) after loss of gp120 ab, 31% (± 8%) after a T4 count <200 cells/ul and 67% (± 18%) after a T4 count <200 cells/ul among those patients positive for Ag. Very low numbers of T4 or T8 lymphocytes, presence of Ag and absence of p24 ab all had some predictive value. However, only Ag (relative hazard 6.0, p=.008) and T4 counts (relative hazard 5.3, p=.002 with T4 count <200 cells/ul) independently predicted AIDS up to 12 months before diagnosis.
Conclusion. The development of Ag or low T4 counts are both strongly predictive of AIDS in HIV-infected individuals. Detection of Ag is highly specific and complementary to the greater sensitivity of low T4 counts. These findings have important implications regarding the planning, management and interpretation of antiretroviral and immunomodulatory therapies. (Supported by NCI Contract N01-CP-85649)

W.B.P.71 CHICAGO/BOSTON COHORTS STUDY: αp24/gp41 ANTIBODY RESPONSE AT HIV SEROCONVERSION

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Prognostic value of p24 Ag in HIV+ individuals is well established and recent studies have demonstrated that decline of αp24 may precede antigenemia by several years. We have reported previously use of αp24 for staging HIV+ individuals in the Chicago/Boston cohorts. Because of emerging relevance and prognostic potential of αp24, αp24 and αgp41 levels were measured in 6 seroconverters seen in a private clinical practice (Chicago) and 8 seroconverters of a prospective cohort (Boston), established in 1985, with return visits at 6 month intervals. Antibody levels were determined by competitive EIA using recombinant p24 and gp41 proteins. Two patterns of αp24 response were observed: those responding vigorously with αp24 titers of 1100 - 36,000 (n=5) vs. moderate/low αp24 levels of 7 - 260 (n=8); one individual with low αp24 may still be mounting αp24. αgp41 titers of high αp24 responders ranged from 1500 - 38,000 and 4200 - 26,000 in moderate/low αp24 responders. p24 antigenemia was detected in 4 of 6 Chicago seroconverters and 1 of 8 Boston cohort members; p24 antigenemia resolved with mounting of αp24. Average follow-up periods post seroconversion were 12 and 16 months for high and moderate/low responders respectively. Continued monitoring of these patients/volunteers becomes important, for individuals with moderate/low αp24 may show clinical manifestations of HIV infection sooner than vigorous responders.

W.B.P.72 PREDICTIVE VALUE OF CD4+ NUMBERS, LEVELS OF NEOPTERIN AND BETA-2-MICROGLOBULIN AND RISK OF DEVELOPING PNEUMOCYSTIS CARINII PNEUMONIA

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Primary prophylaxis of Pneumocystis carinii pneumonia (Pcp), the most frequent life threatening complication in AIDS, is not generally recommended, because the duration of asymptomatic HIV-infection is variable. Predictive indices are required to improve decision making regarding primary prophylaxis.
Objective: To determine the predictive values of CD4+ counts, serum neopterin (NPT) and beta-2-microglobulin (B2M) regarding the risk of developing Pcp.
Methods: CD4+ (n=396), NPT (n=509) and B2M (n=527) from 292 patients were analyzed retrospectively, using life-tables. Median follow-up period was 7.5 months (range:0.1-65). During this period 26 pts had their first episode of a Pcp.
Results: Probabilities of NOT developing a Pcp at different levels of CD4+, NPT and B2M were:

	CD4+ NUMBERS		NEOPTERIN		B2-MICROGLOBULIN	
	$>200/mm^3$	$\leq 200/mm^3$	≤5.0 ng/ml	>5.0 ng/ml	≤4.8 mg/l	>4.8 mg/l
6 mts	.99(.98-1.00)	.66(.54-.80)	.97(.95-.99)	.93(.89-.96)	.95(.93-.98)	.94(.91-.97)
12 mts	.98(.97-1.00)	.44(.30-.65)	.95(.92-.98)	.90(.85-.94)	.94(.92-.97)	.90(.85-.94)
18 mts	.98(.97-1.00)	.39(.25-.62)	.94(.90-.97)	.85(.79-.91)	.94(.91-.97)	.85(.79-.91)
24 mts	.98(.97-1.00)		.93(.89-.97)	.83(.76-.90)	.94(.91-.97)	.78(.70-.88)
	p<0.001		p<0.01		p<0.01	

Conclusions: Serum levels of B2M, NPT and CD4+ numbers are predictive regarding the risk of developing a first episode of Pcp but only CD4+ numbers discriminate to a reasonable extent. Therefore primary prophylaxis of Pcp in pts with CD4+ numbers $\leq 200/mm^3$ should be evaluated in clinical studies.

W.B.P.73 HUMAN IMMUNODEFICIENCY VIRUS (HIV) IgA SERUM ANTIBODIES IN A LONGITUDINAL STUDY OF HIV INFECTION AND SUBSEQUENT PROGRESSION OF THE DISEASE IN HOMOSEXUAL MEN

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Objective. To determine the value of serum specific HIV IgA antibodies as a predictor of the progression of HIV infection.
Methods. A sensitive solid phase, enzyme linked immunosorbent assay (ELISA) has been adapted. Microplates coated with a mixture of 4 peptides which correspond to the serological active epitopes of the virus P18, P24, gP41, and gP120 served as antigen (Biochrome K.G.). The serial serum specimens, blindly tested, were obtained from a cohort of 211 homosexuals: 123 HIV seropositives [41 asymptomatic, 29 w/lymphadenopathy associated syndrome (LAS), 22 w/AIDS related complex (ARC), and 31 AIDS patients], 17 HIV seroconverters and 71 HIV seronegatives [36 asymptomatic and 35 w/LAS].
Results. During HIV IgG seroconversion, 47% of the homosexuals developed specific HIV IgA antibodies. HIV IgA antibodies with a titer $\geq$50 were detected among 27% of the HIV seropositive asymptomatic subjects, 25% of LAS and 23% of ARC patients. The prevalence of virus-specific IgA antibodies (titer $\geq$50) among the AIDS patients (55%) was significantly higher as compared with the HIV seropositive asymptomatic subjects (26%) ($p=0.015$).
Conclusions. 1) HIV seroconversion was followed by acquisition of virus specific IgA antibodies in 47% of the seroconverters; 2) Progression of HIV infection in asymptomatic HIV carriers to LAS and ARC was not accompanied by a higher prevalence of HIV specific IgA antibodies; 3) AIDS patients are characterised by high prevalence rates of HIV IgA antibodies.

W.B.P.74 T-CELL SUBSET, B_2 MICROGLOBULIN, AND NEOPTERIN LEVELS IN EDINBURGH HAEMOPHILIACS

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Objective To assess the value of B_2 microglobulin, neopterin and T-cell subset estimations in predicting clinical progression to serious HIV disease in a cohort of haemophiliacs.
Methods Longitudinal study of 18 HIV seropositive haemophiliacs since seroconversion in 1984, following exposure to a batch of HIV-contaminated factor VIII.
Results Declining CD4 values were observed in all patients, except two who had low values when first studied. The risk of progression to CDC Grp IV disease at 4 years increased significantly at CD4 counts $< 0.35 \times 10^9/l$, RR=16, $p=0.025$; and most dramatically at CD4 $< 0.2 \times 10^9/l$, RR=28, $p=0.07$. No significant changes in CD8 values were observed. Rising levels of B_2M were observed in all patients and this was most pronounced in the symptomatic group. At $B_2M > 3.0$ mg/l the risk of progression to CDC Grp IV was significantly increased, RR=10, $p=0.02$. Rising neopterin levels were observed in 10 of 17 patients. At neopterin $>$15 nmol/l the relative risk of progression to CDC Grp was 5.8, $p=0.11$. Dramatically elevated levels ($>$ 35 nmol/l) were observed in 2 patients with AIDS and 2 with severe ARC, but in no asymptomatic patients.
Conclusion Estimation of CD4 counts, B_2 microglobulin and neopterin levels are useful in predicting the progression of HIV disease in haemophiliacs.

W.B.P.75 IFN-α PRODUCTION, CORRELATION WITH CIRCULATING IFN-α ANTIGENEMIA P 24 AND SEROLOGICAL PROFILE IN HIV$_1$ INFECTED PATIENTS AT DIFFERENT CLINICAL STAGES.

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The aim of this work was to investigate the interferon system, both stimulated and circulating IFN-α and to correlate these markers to antigenemia P 24 and decline or lack of antibodies to Gag (P 18 - P 24 - P 55) and or to Pol (P 34 - P 68) antigens, in a attempt to predict the evolution and risk for opportunistic infections . Peripheral mononuclear cells (PBMc) were stimulated with Sendai virus for IFN-α production . IFNs were tested by bioassay (inhibition of viral cytopathic effect on MDBK cells), HIV antigenemia by ELISA and HIV antibodies by immunoblotting .

	IFN-α production Non responder titer < 2.40 log 10 IU/ml	Circulating IFN-α > 0.8 log 10 IU/ml	HIV Ag P 24	Decline or lack of antibody bands	
				Gag Ag	Pol Ag
Controls	0/30 (10 %)	4/28 (13.7 %)	NP		
HIV + patients					
CDC II	7/48 (14.6 %)	10/28 (35.7 %)	NP	8/24	3/24
CDC III	7/27 (25.9 %)	9/30 (30 %)	1/23 (4.3 %)	3/22	7/22
CDC IVa	14/16 (87.5 %)	18/23 (78.2 %)	13/23 (56.5 %)	14/22	18/22
CDC IV (c.d)	8/8 (100 %)	18/18 (100 %)	16/18 (88.8 %)	15/18	13/18

These results show :

- A diminished capacity of PBMc from CDC IVa and CDC IV c.d patients to produce IFN-α ($P < 0.001$).
- A good correlation between circulating IFN-α, antigenemia P 24 and diminished capacity of PBMc to produce IFN-α. * In many cases decrease in P 68 antibody band prior to decrease in P 24 band. These findings suggest that a drop in PBMc stimulated interferon-α in HIV$_1$ seropositive patients could be of value for predicting desease progression .

W.B.P.76 COMPARISON OF ACTIVATION MARKERS FOR PROGRESSION TO AIDS.

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Objective. To assess progression to AIDS using markers of immune activation.
Methods. 60 gay men had serum neopterin (NEOP), a marker of macrophage activation, and beta2 microglobulin (BETA2) measured with a subset of men assessed for T4/T8 and BE2, a T4 cell antigen elevated in ATL, CTCL and AIDS.
Results. NEOP and BETA2 were highly correlated in the control and the AIDS groups but not in ARC. T4/T8 and BETA2 were each significantly different for controls vs. ARC and controls vs. AIDS, but not for ARC vs. AIDS. Mean NEOP and BE2 were also different for ARC vs. AIDS, at $p < .0001$ and $p < .005$.

Means	Controls			ARC			AIDS		
	mean	s.d.	N	mean	s.d.	N	mean	s.d.	N
NEOP (nmol/l)	6.0	(3.5)	12	17.2	(6.3)	10	44.3	(34.2)	37
BETA2 (mg/l)	1.65	(0.67)	13	3.57	(1.43)	10	3.75	(2.12)	36
BE2 (% of total T)	0.69	(0.62)	13	2.57	(2.58)	9	7.82	(8.78)	31
T4/T8	1.93	(1.11)	13	0.62	(0.34)	8	0.53	(0.45)	18

Correlations	Overall			Controls	ARC	AIDS
	BE2	NEOP	BETA2	BETA2	BETA2	BETA2
BE2	1	.43***	.42***	.006	-.17	.38*
NEOP	.42***	1	.78****	.81****	.09	.82****
T4/T8	-.22	-.39*	-.42**	.005	-.39	.13

* p <.05 ** p <.01 *** p <.005 **** p <.0001

Conclusion. While each of 4 markers was sensitive for distinguishing between controls and ARC in this group of gay men, serum neopterin combined with % BE2 distinguished between ARC and AIDS better than BETA2 and/or T4/T8.

W.B.P.77 FORECASTING INDIVIDUAL RATES OF PROGRESSION FROM ARC TO AIDS USING ROUTINE CLINICAL LABORATORY TESTS

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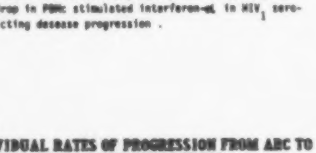
Objective. To develop a diagnostic procedure which definitively predicts the rate of progression of an individual with ARC to clinical AIDS.
Methods. In a prospective study of 30 ARC patients 6 immunological and 7 metabolic parameters were analyzed by Immuno-Balascopy (IBa), an artificial intelligence system for cognition of interactions between and within laboratory analytes. These Immuno-Balascopic patterns were used to predict progression to clinical AIDS in these 30 ARC patients followed for 30 months.
Results. Of the initial 30 ARC patients entered into the study, 6 progressed to clinical AIDS, 11 did not develop AIDS and 13 were lost to follow-up after 30 months. IBa analysis of the AIDS-resistant ARC patients and those progressing to AIDS provided correct identification of all 17 patients remaining in the study. Representative individual IBa patterns for these two groups are shown:


AIDS-RESISTANT ARC ARC PROGRESSING

Conclusion. Definitive identification of AIDS-resistant individuals among ARC patients can be done by IBa based on routine clinical laboratory tests at the time of initial presentation with ARC. IBa can eliminate a minimum of 30 months of prognostic uncertainty for patients with AIDS-related conditions.

W.B.P.78 INCREASED β_2-MICROGLOBULIN CONCENTRATIONS IN CHILDREN WITH AIDS

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Objective. To determine whether serum β_2-microglobulin (β_2m) concentrations can be a sensitive marker for HIV infection in children, particularly infants, born to HIV-infected mothers.

Methods. β_2m is measured using an immunoturbidimetric procedure.

Results. Sera from 35 patients were tested in this study. Nine patients, aged 1 to 6 years, were HIV-seropositive and symptomatic with decreased cellular responses, absolute CD4 values and inverted T4/T8 ratio. The mean and standard deviation (SD) of β_2m concentrations for this group were 2.67 ± 0.73 mg/L (1.74 to 3.96 mg/L). Eighteen age-matched seronegative patients had a mean and SD β_2m concentrations of 0.98 ± 0.54 mg/L (0.04 to 1.85 mg/L). The difference between the two groups was highly significant by unpaired student t-test ($p<0.0005$). Eight patients, who were HIV-seropositive as determined by EIA but had indeterminant results by western blot analyses, were also examined. Four of these patients had β_2m concentrations similar to the seronegative controls (0.59, 1.40, 1.29 and 1.20 mg/L) and were clinically asymptomatic. Considering that age of these subjects was 1 year or less, it is likely that the antibodies detected were from the mother. The other four had high β_2m concentrations (3.19, 3.29, 4.23 and 6.85 mg/L), symptoms of immune dysfunction and were recently found to be p24 antigen positive. Therefore, the latter four patients were most likely HIV infected.

Conclusion. Based on these preliminary data, serum β_2m concentrations can be used as an indicator for HIV infection in children.

W.B.P.79 NEOPTERIN AS PREDICTIVE MARKER FOR DISEASE PROGRESSION IN HUMAN IMMUNODEFICIENCY VIRUS-1 INFECTION

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Objective. The value of urinary neopterin levels for disease progression was determined in HIV-1 infected patients.
Method. 68 HIV-1 seropositive homosexuals with lymphadenopathy syndrome were tested for urinary neopterin and T-cell subsets in 1982/83. Their AIDS incidence rate was evaluated in May 1988.
Results. Overall, 21/68 (30.9%) patients progressed to AIDS, with a yearly progression rate of 4 to 9%. The predictive value of urinary neopterin was higher (p=0.0042) than that of CD4+ T-cell counts (p=0.015) or CD4+/CD8+ ratio (p=0.022). Multivariate regression analysis revealed neopterin and CD4+ T-cell counts as significant joint predictors. CD4+ T-cell/neopterin ratio resulted as best predictor of AIDS onset (p=0.0003).
Conclusion. Neopterin predicts better than T-cell subsets the AIDS outcome in HIV-1 seropositives during our study period of 5 years. Combination of neopterin with CD4+ T-cell counts further improved the predictive value. Neopterin is produced by human macrophages activated by interferon gamma. The results indicate a correlation between the level of T-cell/macrophage activation and the progression of HIV-1 infection.

W.B.P.80 PERSISTENCE OF GOOD E-CR1 ACTIVITY RELATES TO NON-PROGRESSION OF IMMUNE DYSFUNCTION IN HIV POSITIVE INDIVIDUALS.

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Objective. The Erythrocyte complement 3B receptor (E-CR1) is postulated to provide a cofactor role for the factor I in the inactivation of Complement 3B (C3B) thereby preventing (i) amplification of the positive alternate complement loop and (ii) activation of the terminal complement cascade. In addition E-CR1 binds complement coated (opsonized) circulating immune complexes and infectious particles, shuttling them to phagocytes for elimination. We previously reported our observation on a relationship between low or absent E-CR1 activity with triple positive Coombs test and progression to AIDS in prospectively followed HIV positive (Htve) volunteers. We here present data to show a direct relationship between normal E-CR1 activity in HIV positive individuals observed prospectively over 7 years who have shown no clinical or immunological deterioration based on absolute T4 cell counts.
Method & Results. Of 108 homosexuals prospectively followed since 1981/82, 60 were HIV seropositive (H+) and 42 seronegative (H-) on entry. An additional 6 have seroconverted. Of 54 H+ on whom E-CR1 was measured biannually beginning in 3/83, 25 have developed AIDS and 5 ARC. Of these, 24(80%) had 25% or less CR1 activity in 1983 and all had decreasing CR1 activity at least 12 months prior to development of clinical illness. 24 remained clinically asymptomatic and of these 7 have not shown any significant decrease of CD4 T cell numbers over the 7 years observation period. Of these all had normal initial E-CR1 activity (75% to 100% of control) and had 100% normal CR1 function at all follow-up time periods tested.
Conclusion. The persistence of an asymptomatic state and nondeterioration of absolute CD4 cell numbers in volunteers HIV seropositive for at least 7 years correlates strongly with the persistence of normal E-CR1 function, suggesting that the physiological role of E-CR1 function plays a role in the immunopathogenesis of HIV infection.

W.B.P.81 SERUM B2M IN INTRAVENOUS DRUG ABUSERS WITH HIV INFECTION.

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Objective. To determine whether IVDA influences serum beta-2-microglobulin distribution in HIV infection that may interfere with its interpretation as a prognostic index to determine the risk of progressing to AIDS.
Methods. Sera referred to the PHLS were measured by the Pharmacia B2M-RIA.
Results. The patients were sub-divided into anti-HIV antibody +ve or -ve, and whether they had symptoms (PGL was classified as symptomatic, 3 patients with Stage IV AIDS, B2M 1.6, 3.1 and 6.1 mg/l; and 3 with renal failure, B2M 15.3, 11.7 and 8.9 mg/l were excluded).

			B2M (mg/l)		
Symptoms	HIV	No.	Mean	SD	%>3
Nil	-ve	132	1.6	0.6	4
Present	-ve	35	2.2	0.7	20
Nil	+ve	28	2.4	0.65	25
Present	+ve	18	2.9	1.1	44

Conclusions. IVDA per se has no significant effect on the B2M level. HIV infection is associated with a rise of B2M; transient rises may be the result of coincidental viral infections.

W.B.P.82 [1-^{14}C] ARACHIDONIC ACID RELEASE FROM HUMAN CD$_4^+$ MONOCYTIC U 937 AND CD$_4^+$ T-LYMPHOCYTIC CEM CELL LINES IN THE EARLY STAGE OF HIV INFECTION

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Phospholipids (PLs) of cellular membranes require an appropriate percentage of unsaturated fatty acids in the various lipids to maintain their structural and functional characters. This percentage is mainly influenced by phospholipase activities (PLA). Such PLA should be studied in the different cells of the immune system involved in AIDS. For this purpose, human monocytic U 937 and T-lymphocytic CEM cell lines were equilibrated for 1 h or overnight at 37°C with [1-^{14}C] arachidonic acid (*AA). Then, both cell lines were infected with HIV$_1$ or HIV$_2$ (10.000 cpm reverse transcriptase activity per 1X10^6 cells). After 6 h, the radioactivity (*R) was measured in the supernates (SN) directly or after lipid extraction and rp-HPLC. The study of *R in the cell pellets was evaluated by TLC.
Results. The *R measured in SN of U 937 cells infected with HIV$_2$ was significantly increased when compared to non-infected controls. A lesser effect was observed with HIV$_1$. However, infection of CEM cells with either HIV$_1$ or HIV$_2$ showed no significant difference in the release of the *R. About 80% of recovered *R was eluted as non transformed *AA. The increase of *R observed with HIV$_2$ was suppressed in the presence of $6x10^{-8}$ M EGTA, suggesting the involvement of PLA$_2$ activation. The repartition of AA in the various phospholipids and neutral lipids did not reveal major differences between infected and non infected U 937 or CEM cells.

W.B.P.83 EVALUATION OF BETA-2-MICROGLOBULIN AND NEOPTERIN AS PROGNOSTIC MARKERS IN HIV DISEASE

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Objective. A study was designed to elucidate the usefulness of Beta-2-microglobulin (β2m) and Neopterin in predicting disease progression to ARC and AIDS.
Methods. A total of 1198 frozen serum samples, collected during 1983-88 in Stockholm from 185 homo- and bisexual men who were or turned HIV seropositive, were analyzed for β2m and Neopterin. Single samples from 59 HIV negative men were analyzed as controls. The marker levels were statistically (Student's t-test) compared in relation to CDC classification.
Results. Mean β2m-values in comparison to CDC classification (nr. of observations in brackets).

Negatives		CDC-classification							
Contr.	Preconvers.	II	III	IV-z**	IV-γ*	IVA	IVC1	IVC2	IVD
1.32	1.54	2.18	2.22	2.57	2.79	3.65	3.25	2.78	3.47
(59)	(53)	(112)	(94)	(19)	(19)	(10)	(6)	(14)	(3)

* β2m value measured within 3-6 months prior to first visit with stage IV **β2m prior to IV-γ

For β2m statistically significant differences were noted between the negative values and all positive values. Furthermore, the values in asymptomatic patients (CDC stage II/III) differed significantly from those in symptomatic patients (CDC IVA-D). Neopterin failed to show any significance between the negative and the II+III values but gave the same pattern of significant differences as β2m for asymptomatic and symptomatic patients. A great variability in Neopterin levels between visits was frequently detected.
Conclusion. Although corresponding rises in β2m and Neopterin correlated with the disease progression a lesser degree of variability would favour β2m as a prognostic marker.

W.B.P.84 INCREASED PROLIFERATION OF ORAL EPITHELIAL CELLS IN HIV-INFECTED PATIENTS.

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Objective: To determine the proliferation of oral epithelium in patients in different clinical stages of HIV infection.
Material and methods: Mouth washes (10 ml PBS) of 20 HIV seropositive patients (asympt. n=5, ARC: n=7, AIDS n=8) and of 20 HIV seronegative persons were obtained under standard conditions. The oral epithelial cell suspensions (c.s.) were washed, filtered and fixed with acetone. The cells were incubated with a monoklonal antibody specific for Kl1 keratinocyte in indirect fluorescence technique. The cells were analysed by flowcytometry. In some cases the results were visualized using the immunocytochemical APAAP technique.
Results: In all c.s. of control persons the amount of KL1+ cells was lower than 5%, while in HIV+ patients the percentage of positive cells was more than 15 %.
Kl1 positive cells in c.s. of HIV+ patients showed a broad spectrum of fluorescence intensity, pointing to the different size of the keratinocytes. No correlations to the clinical stages of HIV-infection were stated.
Conclusion: The demonstrated non-invasive technique seems to be a valuable tool to quantify the proliferation rate of oral epithelial cells. The role of the increased proliferation of oral keratinocytes in HIV-infected patients in regard to a later defect in the barrier function of the oral mucosa is yet unknown.

W.B.P.85 MEASUREMENT OF β2-MICROGLOBULIN (β2M) BY RATE IMMUNO-NEPHELOMETRIC ASSAY IN BLOOD FROM AIDS PATIENTS

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Objective: β2M content of blood, CD4 T-cell count, hemoglobin and social and behavioral risk factors have been proposed as prognostic indicators in AIDS/ARC patients. We developed a method to measure β2M by immunonephelometry (INA).
Methods: We used the Beckman ICS nephelometer and commercially available anti-β2M. We mixed 50 µl of serum or plasma with 1.50 ml of 9% polyethylene glycol (PEG) and 84 µl of anti-β2M. β2M from human urine was used as standard.
Results: Analytical sensitivity and linearity were 1.0 mg/L and 7.7 mg/L. Inter-assay CV's were 7.2% for 5.6 mg/L and 6.0% for 2.6 mg/L. Intra-assay CV's were 3.9% for 6.7 mg/L and 4.0% for 2.3 mg/L. β2M content by EIA (Pharmacia) and INA were highly correlated; r = 0.926. Sera from 45 AIDS and ARC patients had a mean β2M of 3.7 ± 1.6 mg/L. Sera from 22 healthy subjects had a mean β2M of 1.7 ± 0.3 mg/L. Lipemic specimens were cleared by ultracentrifugation. Specimens kept at -70 °C up to 6 months are suitable for this assay.
Conclusion: This INA procedure is easily adaptable to routine clinical laboratory operation, is less expensive and is less labor-intensive than is ELISA and RIA. Further, the AIDS/ARC β2M shows significant elevation over healthy subjects studied at SFGH.

We wish to acknowledge Dr. A. Moss for providing AIDS/ARC samples.

W.B.P.86 THE CLASSIFICATION OF HIV DISEASE: CORRELATION OF BETA-2-MICROGLOBULIN (B-2-M) AND ERYTHROCYTE SEDIMENTATION RATE (ESR).

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Objective. To identify the role of beta-2-microglobulin, erythrocyte sedimentation rate, and hemoglobin (Hb) as predictive indicators of CDC-HIV stages.
Methods. At the time of initial medical assessment, 70 HIV(+) men were classified according to CDC clinical stage and had serum B-2-M, ESR, Hb and CD2, CD4, and CD8 T-lymphocytes subsets determined. CDC groups were then compared by analysis of variance.
Results. Mean values ± standard deviations are indicated for each parameter.

CDC Group	N	ESR	B-2-M	Hb	CD4	%CD4	CD4/CD8
II	15	12.5±11.7	2.6±0.9	15.4±1.0	597±431	28.0±12.4	0.67±0.49
III	43	15.2±15.4	2.4±0.6	15.1±1.4	517±269	27.4±11.0	0.66±0.36
IV	12	53.0±44.3	3.9±2.3	13.7±2.3	290±180	17.0± 7.9	0.36±0.22
P value		0.0002	0.003	0.02	0.03	0.02	0.05

When analyzed by disease stage, none of the above parameters differed between groups II and III; all were significantly different between groups III and IV. Among T-cell measures, %CD4 correlated best with group. However, ESR, B-2-M and Hb were each a more sensitive predictor of Stage IV than %CD4.
Conclusion. The B-2-microglobulin and ESR may be more sensitive than the T-cell markers and a less expensive means in monitoring HIV disease.

W.B.P.87 QUEST FOR PROGNOSTIC MARKERS IN HIV INFECTED HAEMOPHILIAC CHILDREN

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Objective: To assess the predictive value of laboratory markers in progression of HIV infection in a cohort of haemophiliac boys.
Methods: Assays for anti-HIV, anti-p24 antibody, p24-antigen, α-interferon, neopterin and B2-microglobulin were bought in kit form and carried out according to the manufacturer's instruction.
Patients: Since the introduction of HIV screening, HIV seroconversion has been shown in 34 haemophiliac boys attending a large paediatric haemophilia centre. It has been possible to document that seroconversions occurred as early as 1981 but the majority in 1983 to 1985 with seroconversion precisely identified within a three month period in at least a third of the patients. Sequential samples including some pre-seroconversion are available on all patients (mean number 13 per patient).
Results: Among this cohort one boy who has persistent α-IFN had one episode of pneumocystis carinii pneumonia 2 years ago, but is currently well on no treatment. Although a further 7 boys have one or more altered markers, all remain well and are asymptomatic, some after 8 years of follow up. These results will be presented in relation to the time from seroconversion.
Conclusion: Results from marker studies in haemophiliac children should be interpreted independently. Data from studies in adults cannot be used to predict the course of infection in children. It seems likely that age will prove a contributory factor in the development of the infection in this group of patients.

W.B.P.88 ROUTINE LABORATORY TESTS WHICH CORRELATE WITH HIV-1 INFECTION PRIOR TO ONSET OF AIDS

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Objective: To identify routine laboratory tests whose results can correlate with HIV-1 infection in asymptomatic people.
Methods: A group of 110 apparently healthy, formerly drug addicted women was evaluated during 1983-1985. The relationship of routine laboratory tests to anti-HIV-1 antibody presence was evaluated by univariate and multivariate analysis. HIV-1 testing by ELISA with confirmation by Western Blot found 46 of these women to be positive for anti-HIV-1 antibodies. None had AIDS or ARC at the time of evaluation.
Results: Even in the asymptomatic stages of the disease process, there is evidence of statistically significant values ($p < 0.05$) in increased globulins (Glob), and decreased albumin (Alb) and albumin/globulin ratio (Alb/Glob), hematocrit (Hct), white blood count (WBC), lymphocytes (Lym), cholesterol (Chol), sodium (Na), iron (Fe) and calcium (Ca) levels in the anti-HIV-1 positive women (values expressed as Means with Standard Deviation):

Status	n	Glob	Alb	Alb/Glob	Hct	WBC	Lym	Chol	Na	Fe	Ca
HIV +	46	3.74	3.92	1.089	37.65	5,553	2,004	156.89	136.52	74.95	8.86
HIV -	64	3.04	4.11	1.396	39.24	7,024	2,317	184.85	138.05	88.30	9.03
StDev+		0.72	0.34	0.227	3.57	1,437	535.9	39.78	2.35	27.16	0.39
StDev-		0.55	0.31	0.293	3.58	1,948	581.5	39.04	2.69	36.74	0.36

Conclusion: This profile of results is indicative of the pattern of early malabsorption common to ARC and AIDS. The clinician can be alerted to suspect HIV-1 infection in these early stages, prior to the onset of ARC, by detecting this pattern of high globulins with "low normal" chemistries and blood counts. This pattern needs to be confirmed in other populations.

W.B.P.89 NEOPTERIN IS A RELEVANT DIAGNOSTIC MARKER IN HIV-INFECTION.

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Objective. Neopterin is produced by gamma-interferon stimulated macrophages. We report on the correlation of serum-neopterin with the course of HIV-infection during a prospective randomized double blind treatment study. Methods. 54 patients were examined in 6-weeks intervals and the neopterin levels were correlated with known prognostic markers for HIV-infection. In the RIA we are using, the upper normal limit is 10 nmol/l. Results. In the asymptomatic stage of the HIV-infection the neopterin levels are normal in most cases. In early symptomatic stages of infection (CDC III) the neopterin levels are elevated minimally (10-20nmol/l). The levels tend to increase with progression in CDC, Walter-Reed and Zolla-Pazner stages. No increase is seen in case of local superficial irritation (e.g. hairy leucoplakia, oral thrush). But there is a stringent correlation with the generalized infections associated with HIV (e.g. severe opportunistic infections, herpes zoster etc.). Neopterin is also highly correlated with progression parameters as CD4 pos. lymphocytes, CD4/CD8 ratio, and HLA-DR pos. lymphocytes.

W.B.P.90 THE USE OF SERUM OLIGOCLONAL IMMUNOGLOBULINS TO MONITOR THE COURSE OF HIV-INFECTION.

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Objective. To use oligoclonal bands as markers to follow the course of HIV-infection.
Methods. The increased sensitivity of our zone electrophoresis technique to determine serum proteins demonstrates discrete oligoclonal immunoglobulin bands (OIB) within an intense diffuse γ-globulin zone. Originally OIB were found in the serum of HIV-antibody carriers. Subsequently the serum OIB were identified with HIV-antigens. Presence of OIB in the serum of HIV-antibody carriers indicates a specific immune response of the host to HIV infection. This electrophoresis technique is used to monitor OIB in serum samples of asymptomatic HIV-antibody carriers. Testing is done every six months to correlate persistence and disappearance of OIB with progression of HIV infection to AIDS.
Results. Serial analysis of serum samples from 68 HIV-antibody carriers was performed for three years. During this period in 14 of 68 carriers (20%) disappearance or absence of OIB was associated with the development of clinical AIDS.
Conclusion. Millions of people worldwide are infected with HIV. Little is known about the factors that influence progression of infection to AIDS. Determination of OIB at defined time intervals serves as a useful marker to follow the clinical course of the infection in its progression to clinical AIDS.

W.B.P.91 CSF NEOPTERIN IN HIV-1 INFECTION AND AS A FUNCTION OF AIDS DEMENTIA COMPLEX (ADC) SEVERITY

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Objectives: To determine the clinical significance of elevated concentrations of neopterin in the cerebrospinal fluid (CSF) of HIV-infected individuals and assess the value of CSF neopterin as a marker of ADC.
Methods: 50 samples of CSF and serum from 44 neurologically symptomatic patients at various stages of HIV infection were analysed by radioimmunoassay (a gift from Kallestad) for neopterin and albumin (CSF and serum). All patients had been assessed by a neurologist and staged according to the presence and severity of ADC.
Results:

Neurological Diagnosis	# Pts	CSF Neopterin (nmol/l±SD; normal<3.4)	Serum Neopterin (nmol/l±SD; normal<10)
CNS Lymphoma	3	54.3 ± 27.1	37.3 ± 29.1
CNS Infections	4	71.7 ± 59.3	79.5 ± 63.4
ADC	28	29.8 ± 26.0	33.2 ± 33.0
Headache	9	17.3 ± 11.5	27.0 ± 25.3

In the ADC only patients, CSF neopterin correlated with ADC severity (p=.001) but not albumin ratio.
Conclusions: CSF neopterin is frequently elevated in HIV-infected individuals and as such is non-specific. In those patients with ADC without other confounding illnesses, CSF neopterin correlated with ADC severity and seemed to be independent of blood-brain barrier dysfunction. As such, it may prove useful as a marker of ADC when other confounding illnesses are absent.

Diagnostic : le VIH
Diagnosis: HIV

W.B.P.93 EFFICIENT SCREENING FOR HIV 1- AND HIV 2-ANTIBODIES WITH A 3rd GENERATION ASSAY

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Objective: To describe the features of a new ELISA (^R^Enzygnost-Anti-HIV 1 + 2) based on synthetic peptides corresponding to env-proteins of HIV 1 and HIV 2.
Methods: 50 µl undiluted specimen are added to 50 µl diluent into each well of microtitration plates coated with a cocktail of 4 synthetic peptides. After an incubation for 30' at 37 °C and 4 washings 100 µl of peroxidase labelled Anti human IgG are added and incubated for another 30' at 37 °C. Colour development was allowed after 4 washings for 30' at RT using TMB.
Results: Of 708 Anti HIV 1-sera and 186 Anti HIV 2-sera all specimens reacted positive, whereby the majority of about 95 % showed O.D. values of greater than 2,0. Compared to 2nd generation assays an improved efficiency was found by clear cut positive results of 12 Anti HIV 1-seroconverters and 5 samples from early stages of HIV 2-infections. By testing 7159 sera from healthy blood donors and 5020 plasma as well as 788 "tricky" specimens an overall specificity of 99,86 % was calculated. No false positive reactivity could be oberserved after heat treatment or freeze-thawing of sera and plasma specimens.
Conclusions: These results and the ease of handling make this new assay most suited for the reliable screening for both Anti HIV 1 and Anti HIV 2.

W.B.P.95 A SEMIAUTOMATED DOT BLOT IMMUNOASSAY FOR THE CONFIRMATION OF HIV SEROPOSITIVITY

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Objective: To develop an HIV confirmatory assay which is more sensitive and specific than Western Blot.
Methods: Purified recombinant proteins of HIV-1 and HIV-2 are immobilized on nitrocellulose. The assay is conducted in a 35 C incubator automated for timed incubations, sample removal, washing, drying and reflectance reading. A digital print-out records the intensities of the color reactions. The assay requires less than 5 hours to perform and utilizes an alkaline phosphatase detection system. The detection of antibodies to the HIV-1 ENV antigens in addition to either the GAG or POL antigens is used as the criteria for HIV-1 antibody confirmation. The detection of antibodies to the HIV-2 ENV is the criteria for HIV-2 infection diagnosis.
Results: This assay, based on testing of dilution panels, is 8 to 16-fold more sensitive than the current commercially available Western Blot assays for HIV-1 or HIV-2. In a population of 50 AIDS , 50 ARC and 50 asymptomatic seropositive individuals, all were detected by both the dot blot and Western Blot. One hundred percent correlation was found, with Western Blot, on a population of 76 normal blood donors.
Conclusion: This semiautomated dot blot immunoassay offers enhanced performance over the Western Blot with the additional advantage of a non-subjective instrument readout.

W.B.P.92 PREDICTIVE VALUE OF NEOPTERIN, β_2-MICROGLOBULIN AND THYMIDINKINASE IN HIV INFECTION

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OBJECTIVE: To determine the predictive value of β_2-Microglobulin (β2), Neopterin (Npt) and Thymidinkinase (Tk) in patients (pts) with or without progression of HIV disease.

METHODS: 60 HIV-AB pos. pts in 4 groups with different clinical deterioration within 2 years (group I: progression WR1 to WR 6; II: WR1 to WR3/5; III: WR1 to WR2; IV: WR1 unchanged) were tested for lymphocyte subsets, β2, Npt and Tk
RESULTS: Significant differences between all stages of WR were observed for CD4/8 ratio (ratio) and β2, for Npt only beginning with WR3, for Tk only between WR1 and WR6. Within group IV a significant increase of β2 and decrease of the ratio were seen after 2 years despite unchanged classification in WR1. Comparing WR1 in group I and WR1 in group IV revealed significantly higher values of β2 and Npt, lower values for the ratio in group I.

CONCLUSION: Even in case of stable WR classification changes of β2 and Npt, though unspecific, and ratio are highly predictive and indicate progressive disease. Tk does not seem to have similar prognostic value.

W.B.P.94 The use of the N-terminal portion of the transmembrane proteins for the early detection and discrimination of HIV 1 and HIV 2 infection

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Objective
To determine the usefulness of the transmembrane proteins for early discrimination of HIV 1 and HIV 2 infections.
Methods
A DNA-fragment coding for the N-terminal region of the transmembrane protein of HIV 1 and the corresponding sequence of HIV 2 which has been chemically synthesized were cloned and expressed in E. coli. The recombinant antigens were purified and further evaluated in ELISA-experiments.
Results
Both antigens could be efficiently expressed in E. coli and purified to homogeneity. The purity of antigens were well documented by SDS-PAG-electrophoresis and Western Blot. In ELISA-experiments all sera obtained from HIV 1 and HIV 2 infected persons reacted with one of the recombinant antigens. Although a lot of sera reacted with both antigens a discrimination between HIV 1 and HIV 2 infection was possible.
Conclusion
The transmembrane proteins are very useful antigens for detection and discrimination of HIV 1 and HIV 2 infection.

W.B.P.96 Title : Improvement of anti-HIV-2 reactivity of Vironostika anti-HTLV-III

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HIV-2 has been described as a second causative agent of AIDS. Therefore anti-HIV-screening assays should be fully sensitive to both anti-HIV-1 and anti-HIV-2 antibodies.
The existing competitive anti-HIV-1 EIA's have a sensitivity of 28-51% for anti-HIV-2 sera; existing indirect EIA's have a sensitivity of 70-93% for anti-HIV-2 sera. Anti-HIV-2 reactivity of anti-HIV-1 EIA's is mainly due to immunologic cross-reactivity of GAG and POL gene products of HIV-1 and HIV-2. We describe a new screening assay, the Vironostika anti-HIV 1+2, with a combination of HIV-1 viral lysate and HIV-2 synthetic peptides as antigen coated to microelisa plates. This combination of antigen results in an increased reactivity with anti-HIV-2 antibodies, without any loss of anti-HIV-1 reactivity. In a preliminary study of 22 anti-HIV-2 sera the sensitivity of the Vironostika anti-HIV 1+2 was 100%, compared to only 36% of the Vironostika anti-HTLV-III, which is based on HIV-1 viral lysate only.

W.B.P.97

"DEVELOPMENT OF TWO DIAGNOSTIC SYSTEMS FOR HIV SEROCONVERSION USING TWO RECOMBINANT ANTIGENS"

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Objective:To develope two alternative diagnostic systems for - HIV-antibodies detection using two recombinant antigens.

Methods: The recent development of second-generation tests - - based on simple and manual procedures for rapid diagnosis of HIV antibodies are said to be so reliable and easy to use, they - - could allow future application not only for clinical diagnosis - under elemental laboratory conditions, but also for their use - in the undeveloped countries in order to eliminate the AIDS - - transmission by blood transfusion.
Two systems for HIV1 seroconversion were developed. An indirect sandwich type enzyme immunoassay and a visual test based on a - membrane capture assay with detection of antibodies with a - - protein A-gold conjugated, both using two recombinant antigens - expression products of representative regions of the genes - - coding for the transmembrane 6p-41 and the major core gas 24 - - HIV-I proteins.

W.B.P.98

CROSS REACTON BETWEEN HIV-1 and HIV-2 or DOUBLE INFECTION.

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HIV-1 and HIV-2 viruses exhibit a high degree of sequence homology, in particular in the core proteins. Antibodies to HIV-2 core proteins might cross-react with HIV-1 and vice versa, whereas envelope proteins are antigenically distinct. Distinction between antibodies to HIV-1 and HIV-2 thus is usually attempted on the basis of reactivity with envelope derived bands of HIV-1 and HIV-2 on Western Blots.

In the present study an ELISA-test system was established using recombinant HIV-2 envelope antigens corresponding to aminoacids (555-761), which derive from or extend into the transmembran proteins. This system recognized 17 out of 18 HIV-2 infected patients (one patient was in terminal disease and did not further produce antibodies). 12 sera, both reactive to HIV-1 (Immunofluorescence and Western Blot) and conventional HIV-2 ELISA (Pasteur), were used for the experiments. 5 of these sera clearly stained the 105 KD envelope band of HIV-2. However, none of them reacted with the recombinant HIV-2 envelope derived antigen.
This study shows that antigenetic cross reactivity between envelope proteins of HIV-1 and HIV-2 does exist and strict care should be taken in interpreting respective results

W.B.P.99

EVALUATION OF HIV-1 AND HIV-2 ELISA BASED ON SYNTHETIC PEPTIDES OF gp41

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Objective. Assessment of peptide-based enzyme-immunoassays for the detection of antibodies against HIV.
Methods. Three different tests were used: an HIV-1 assay based on a peptide from gp41, an HIV-2 assay based on the corresponding peptide from gp36, and a combi-test which contains both the HIV-1 and the HIV-2 peptides.
Results. These tests were evaluated using two panels of sera. Panel A consisted of 200 HIV-1-positive sera which were all confirmed positive by Western blotting. Panel B consisted of 300 sera which had yielded false positive results upon screening in either the Organon ELISA or the Abbott Recombinant ELISA but were Western blot-negative. All truly HIV-positive sera were also recognized as positive in the HIV-1 peptide- and in the combi-test. About 20 percent of the HIV-1 positive sera were also reactive in the HIV-2 peptide ELISA. The absorbance values, however, were always lower than those obtained in the HIV-1 peptide ELISA and rapidly dropped off upon titration. With respect to specificity, the combi-peptide-assay revealed a very low rate of false positive results. Only 16 out of 300 sera that had yielded a false positive result in other HIV assays were also repeatedly positive in the combi-assay.
Conclusion. Due to its specificity and sensitivity the peptide-based ELISA seems to be suited as a routine diagnostic assay.

W.B.P.100

APTITUDE D'UN TEST RAPIDE POUR HIV1 ET DE TESTS D'AGGLUTINATION A DETECTER DES ANTICORPS ANTI-HIV2 AU SENEGAL.

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Objectifs. Evaluer l'efficacité de tests d'immunofixation sur membrane (DOT-Blot) et d'agglutination conçus pour HIV1 au Sénégal, pays où circule à la fois HIV1 et HIV2.
Méthodes. 2000 prélèvements sanguins de donneurs de sang, de personnes à haut risque, et de patients suspects de SIDA ont été testés par HIVCHEK (Dupont, USA). Tous les positifs, les indéterminés, et 10% des négatifs ont été testés en double en RETROCELL (Abott) et en SERODIA-HIV (Fujirebio, Japon). Tous les sérums ont aussi été testés par ELISA en HIV1 et HIV2, puis les positifs par Western-Blot HIV1 et HIV2.
Résultats. Cette étude est en cours et sera achevée en Janvier. La sensibilité et la spécificité des 3 tests pour la détection de HIV2 seront étudiées.
Les résultats provisoires montrent une bonne répétabilité des 3 tests.

Nbre de serums	Hivchek+	Hivchek répété+	Retrocell+ Serodia +	Retrocell Serodia -	Retrocell douteux Serodia +
1005	31	31	27	2	2

Conclusion. Les nouveaux tests de dépistage du HIV qui sont simples, rapides, économiques, et ne nécessitent pas un équipement spécial vont pouvoir faciliter grandement le dépistage dans les pays en voie de développement. Cependant, il est urgent que ces tests comprennent des antigènes multiples.

W.B.P.101

CONTRIBUTION OF SYNTHETIC PEPTIDES (SYP) TO THE SEROLOGIC DIAGNOSIS OF HIV-1 AND HIV-2 REACTIVITY.

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Objective. To determine the extent of HIV-2 infection in high risk populations and its relationship with HIV-1 infection.
Methods. HIV-1 and HIV-2 antibodies were studied in sera of 215 individuals at risk, 22 out of them showing an indetermined HIV-1 Western Blot, and 70 sera from West Africa people. Sera were screened by ELISA against HIV-1 (Vironostika) and HIV-2 (Elavia-2). The positive results were confirmed by WB HIV-1 (local test) and HIV-2 (Lavoblot-2). A SYP specific for HIV-2 was used in a ELISA test for screening all the sera (HIV-2 Ab Clonatec) and another synthetic peptide was used to confirm seropositivity HIV-2 (Peptilav). The diagnosis of HIV-2 reactivity was demonstrated by the presence of antibodies to the HIV-2 gp 130-105 and reactivity against both HIV-2 SYP.
Results. 40 % of the sera tested had antibodies against HIV-1. 38 % of the HIV-1 positive sera were also reactive by Elavia-2. Four sera were reactive with gp 105 but only three were also reactive with both SYP.
One African's sera was reactive with HIV-2 peptides and gp 105, and failed to react with HIV-1 antigens. None of the WB+undetermined sera were reactive with HIV-2.
Conclusion. Synthetic peptides used as antigens in ELISA method are useful to screen HIV-2 seropositivity. Antibodies against gp 105 allow to distinguish cross reactions between HIV-1 and HIV-2 and Peptilav system is useful to confirm HIV-1 and HIV-2 seropositivity.

W.B.P.102

TYPE SPECIFICITY OF THE HIGHLY IMMUNOREACTIVE EPITOPES OF HIV-1 AND HIV-2

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We have developed sensitive EIA's to detect human serum antibodies elicited against HIV-1 and HIV-2. EIA's are based on synthetic peptides derived from transmembrane proteins gp41 and gp34 respectively. These peptides share 30 % homology with each other. In our earlier studies we have compared the HIV-1 specific env peptide EIA to other antibody assays, whole virus EIA's and IB (Närvänen & al.). Now we have tested the sensitivity and specificity of HIV-1 and HIV-2 env peptides by using HIV-1 positive human sera from North-Italy and HIV-2 positive sera from West-Africa. In the case of 100 HIV-1 positive sera all reacted with HIV-1 env peptide, 20 % of them reacted with HIV-2 env peptide. 25 % of HIV-2 positive sera reacted with HIV-1 env peptide. All tested HIV-positive sera were reactive with the mixture of HIV-1 and HIV-2 peptides. In the case of crossreactive sera, it remains open if the reaction is based on sequence homology or are these cases true double infections. In addition, we have tested twenty seroconversion panels from patients infected with HIV-1. Two of these cases can be detected earlier in HIV-1 env peptide EIA than in whole virus EIA, the rest are detected parallel with whole virus EIA (Närvänen & al., J. Med. Virol. 26:111-118, 1988). (Part of this work was conducted with reagents provided through the Global Programme on AIDS of the World Health Organization).

W.B.P.103 EVALUATION OF A NEW COMBINED HIV1&2 IGG EIA BASED ON SYNTHETIC PEPTIDES

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Objective. Recently a new type of retrovirus, HIV2, associated with AIDS was discovered. Although the majority of HIV2 infections are concentrated to West Africa it has also been detected in Europe. Anti-HIV screening might thus in a near future require simultaneous detection of antibodies to HIV1 and HIV2 respectively.
Methods. We have evaluated a new combined HIV1&2 IgG EIA, Pharmacia Diagnostics AB, Sweden. The assay is based on traditional EIA technology utilizing 96 wells microtitration plates coated with synthetic peptides directed towards anti-GP41 (HIV1) and anti-GP36 (HIV2) respectively.
Result. In 5 180 consecutive normal blood donors 10 sera were initial reactive and 8 repeatedly. However, none were Western Blot positive and the specificity estimated to 99.85 %.
In 90 AIDS patients, 89 HIV1-infected and 1 HIV2-infected; all were positives. The absorbance values exceeded 1.000 in 86.
In 88 sera previously yielding repeatedly positive result in EIA:s but all Western Blot negatives 87 were negative.
Conclusion. It can thus be concluded that although addition of the HIV2 peptide the specificity remains high and the cross-reactivity with tricky negative sera are extremely low.
It can also be concluded that the HIV1 signal remains high in the combined test indicating that the sensitivity is not affected.

W.B.P.104 RELIABLE DIFFERENTIATION BETWEEN ANTI HIV-1 AND ANTI HIV-2 ANTIBODIES USING A COMPETETIVE ASSAY

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Objective: To clarify the question, if sera, reacting in both HIV-1 and HIV-2 test systems have to be assessed either to Human immunodeficiency virus type I or type II.

Methods: $F(ab)_2$ fragments were prepared from 6 crossreacting sera, purified by gel and affinity chromatography, pooled, and incubated simultaneously with the serum to be examined in antigen coated microtitre plates. After a second incubation step with POD labelled Fc specific anti human IgG the reaction could be visualized.
The 6 sera, from which $F(ab)_2$ fragments were prepared, were reactive in all applied HIV-1 assays and in most of the HIV-2 assays, including immunofluorescence microscopy.

Results: Using this competetive assay, the 6 sera did not react and were found to be HIV-2 nagative.

Conclusion: Blocking crossreactive epitopes on HIV-2 antigen by pooled $F(ab)_2$ fragments prepared from crossreactive sera leads to exclusion of crossreactivity and sera containing antibodies to HIV can be assessed according to their antibody specificity.

W.B.P.105 LINE IMMUNOASSAY FOR THE SIMULTANEOUS DETECTION OF ANTIBODIES TO HIV-1 AND HIV-2 IN HUMAN SERA

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Objective: Evaluation of recombinant proteins and chemically synthesized peptides in a line immunoassay technique (LIA) on their sensitivity and specificity compared to Western blot, for the detection of antibodies to HIV-1 and HIV-2. Methods: In the LIA technique gag (p24 and p17), and pol (endonuclease) recombinant proteins expressed in E. coli, and chemically synthesized HIV-2 env (gp 36) and HIV-1 env (gp 41) peptides were coated as discrete lines onto a nylon strip. Specific antibodies to these antigens in human sera were revealed using an alkaline phosphatase labeled anti-Hu IgG as second antibody. An anti-Hu IgG line was used as a control for the addition of serum. Positive or negative results were determined by visualy comparison of the antigen lines intensity with that of a cut-off line. A panel of 1062 human sera was tested (prevalence 53 % HIV-1, 0.9 % HIV-2) among which 296 of African, 452 of European and 314 of South American origin. All samples were stored frozen. Sensitivity and specificity was compared with western blot (WB) HIV-1 (Dupont) and HIV-2 (ELAVIA Pasteur).

Results

		WB HIV-1 +	WB HIV-1 −
INNO-LIA	+	559	5
HIV-1*	−	8	492

		WB HIV-2 +	WB HIV-2 −
INNO-LIA	+	10	0
HIV-2**	−	0	4

		WB HIV-1 +	WB HIV-1 −
INNO-LIA	+	567	0
HIV-1***	−	0	495

* LIA HIV-1 + = gp41+ or p33+ p24+ p17+ or p33+ p24+ or p33+ p17+, in the absence of HIV-2 gp36. ** LIA HIV-2 + = HIV-2 gp36+ HIV-1 gp41-; LIA HIV-1-2 undetermined: HIV-2 gp36+ HIV-1 gp41+. *** Overnight incubation in LIA of sera with initial doubtful LIA results.
Conclusion: Compared to WB, the LIA technique allows to determine simultaneously HIV-1 and HIV-2 types of antibodies with a sensitivity of 100 % and a specificity of 100 % for HIV-1 and HIV-2, respectively.

W.B.P.106 EFFICACY OF ABBOTT RECOMBINANT HIV-1/HIV-2 EIA FOR EARLY DETECTION OF HIV-2 AND/OR HIV-1 SEROCONVERSION

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The greatest difficulty in HIV diagnosis in Europe is to have at one's disposal an ELISA test sensitive enough to detect low levels of HIV-2 as well as HIV-1 antibodies. We determined the performance characteristics of Abbott Recombinant HIV-1/HIV-2 EIA by studying sequential sera from one HIV-2 and seven HIV-1 seroconversions.
HIV-2 seroconversion results:

	ELAVIA I*	ELAVIA II*	ELAVIA I + II*	Ab Rec I	Ab Rec I + II	RIPA HIV 2 gp140	p26	p56	p18
June 20, 1988	0.02	0.38	0.38	0.34	0.62	-	-	-	-
June 21	0	0.28	0.28	0.28	0.61	-	-	-	-
June 23	0.42	0	0.85	0.82	1.52	-	-	-	-
July 7	0.20	1.7	1.48	0.77	1.23	+	-	-	+
July 20	0.40	2.9	4.13	0.91	1.33	+	-	++	+
Aug. 11	1.2	≥ 6	≥ 6	0.84	1.97	++	+	+++	++
Aug. 28	2.43	≥ 6	≥ 6	1.04	2.42	++	+	+++	++
Jan. 21, 1989	2	≥ 6	N.D.	1.14	3.42		N. D.		

* Elavia I, Elavia II, Rapid Elavia I and II: Diagnostics Pasteur.

All HIV-2 confirmed positive sera of our panel (n = 21) were detected by Abbott Rec. HIV-1/HIV-2 EIA.
HIV-1 seroconversion results: the seven cases of our panel HIV-1 seroconversions were documented at the same time by Abbott Rec. HIV-1/HIV-2 EIA and Rec. HIV-1 and in five of these cases 13 to 27 days before the Western Blot showed any specific band.
We can conclude that, in our hands, Abbott Rec. HIV-1/HIV-2 recognized all HIV-2 positive sera and low level of initial antibody production associated with HIV-2 or HIV-1 primary infection.

W.B.P.107 DETECTION OF HIV-1 AND HIV-2 ANTIBODIES IN AFRICAN SERA BY THE ENV-9 (gp120-HIV1) RECOMBINANT PROTEIN

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Objective. To evaluate the performance of the ENV-9 recombinant protein in an ELISA test and a rapid test (HIV-check) in detecting antibodies to HIV2.
Methods. A panel of 49 sera, positive for HIV2 antibodies by WB and/or RIPA (presence of gp36 and/or gp140) were tested with the ENV-9 recombinant ELISA (Dupont de Nemours). 20 sera from the same HIV2 panel were tested with the ENV-9 protein in the HIV-check rapid test (Dupont de Nemours). In parallel, a panel of 39 sera, positive for antibodies to HIV1 (presence of gp41/gp120) were also tested for both tests.
Results. All the HIV1 antibody positive sera reacted in the ENV-9 ELISA (OD/cut-off ranged between 3 and 7, median - 5,5) and all these sera were positive in the HIV-check test. Among the HIV2 antibody positive sera 47 of 49 (96%) were positive in the ELISA test (OD/cut-off ranged from 1 to 5, median - 3,5). But only 2 of 20 (10%) HIV2 antibody positive sera reacted in the HIV-check test.
Conclusion. ENV-9 ELISA detects all the HIV1 antibody positive and 96% of HIV2 positive sera. Optical densities were generally lower for HIV2 than for HIV1 sera. The rapid test detects all the HIV1 sera. ENV-9 recombinant protein detects most of the HIV2 sera when it is used in an ELISA, but not in the rapid test.

W.B.P.108 PERFORMANCES OBTENUES AVEC 11 KITS ELISA HIV-1 ET/OU HIV-2 UTILISANT VIRUS ENTIERS, ANTIGENES RECOMBINANTS OU PEPTIDES SYNTHETIQUES ET DES SERUMS AFRICAINS.

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Objectif : Etude des performances de kits utilisant virus purifié, antigènes recombinants et peptides synthétiques (transmembranaires) HIV-1 et/ou HIV-2.
Matériel et Méthodes : Série de 734 sérums d'Afrique de l'Ouest, étudiés avec les kits : Ortho HIV (HIV-1), Pasteur mixt HIV-1+2(Past), Abbott HIV-1(Abb1), Abbott HIV-1/HIV-2 (Abb12), Clonatec Total (peptides 1+2) (CT), et Typing (peptides 1 ou 2)(C1 et C2), Johnson & Johnson HIV-1 (JJ1) et HIV-2 (JJ2), test Elisa expérimental (peptides 1 ou 2) (Gn1 et Gn2) (Gnann, Science, 1987, 237,1346-1349).
Les sérums positifs avec au moins un des tests ont été soumis simultanément à deux Western Blot HIV-1 et HIV-2 (New Lav blot, Diagnostics Pasteur).
Résultats : Exprimés en terme de sensibilité et de spécificité en respectant les critères des fabricants sauf pour les kits JJ1 et JJ2 (seuil DO=2 et non 0,20 conseillé par le fabricant (spé JJ1 : 54,8% ; JJ2 78,6 %).
Sur les 734 sérums, on compte : 13 HIV-1, 10 HIV-2 et 5 HIV1+2.

	virus entier		Ag recomb.		peptides						
	Ortho	Past	Abb1	Abb12	CT	C1	C2	JJ1	JJ2	Gn1	Gn2
Sensibilité (%)	83.7	100	89.3	100	ND	ND	ND	100	100	88.9	86.7
Spécificité (%)	96.7	91.4	99.2	98.6	ND	ND	ND	99.2	99	98.6	99

Conclusion : Les tests utilisant à la fois des antigènes (viraux ou recombinants) des deux virus HIV-1 et HIV-2 sont plus sensibles, l'utilisation d'antigènes recombinants donnant une meilleure spécificité. Les peptides, très utiles pour le typage, montrent certaines limites pour un dépistage, certains sérums se révélant négatifs, peut-être du fait de l'existence de variants HIV-1 ou HIV-2.

W.B.P.109 SENSITIVITY AND DISCRIMINATORY VALUE OF SYNTHETIC PEPTIDE ASSAYS FOR HIV-1 and 2 INFECTIONS.

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Objective. To evaluate a combined HIV-1 and 2 enzyme immunoassay.
Methods. Microtiter plates were coated with: a) a 23 mer synthetic peptide, presenting a continuous epitope of the HIV-1 transmembrane protein (env-1), or b) a 24 mer peptide, presenting a homologous region of the HIV-2 transmembrane protein (env-2), or c) the combination of a and b (env-1/2), or d) the above combination + the entire p24 gag gene product of HIV-1 (p24/env). Samples tested were from 150 Dutch AIDS patients; 60 Dutch homosexual men, taken 1 year after and 30 samples taken at the moment of WB seroconversion; 42 Central African ARC/AIDS patients; 29 HIV-2 infected West-Africans (including one HIV 1/2 double infection).
Results.

Assay:	env-1	env-2	env 1/2	p24/env
Dutch AIDS	150/150	7/150*	150/150	150/150
Dutch 1 yr post s.c.	60/60	8/60*	60/60	60/60
Dutch s.c. at s.c.	29/30	0/30	29/30	30/30
Central African AIDS	41/42	26/42	41/42	42/42
West-Africans	3/29*	29/29	29/29	29/29

* Cross vs. true reactivity evident from OD differences.

Conclusions. Sensitivity and discriminatory value of the synthetic peptide assays for HIV-1 and 2 infections appear excellent. For screening purposes p24 addition may offer a slight advantage.

W.B.P.110 COMPARATIVE PERFORMANCE OF CYCLIC VERSUS LINEAR PEPTIDES IN AN ELISA FOR HIV-1- AND HIV-2-SPECIFIC ANTIBODIES

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Objective: Report on the superiority of cyclic peptides of the transmembrane glycoproteins over their linear counterparts as antigens in an ELISA for the highly sensitive detection of antibodies to HIV-1 and to HIV-2.
Methods: Peptides covering an immunodominant region of HIV-1 and of HIV-2 transmembrane glycoproteins were synthesized. A fraction of the purified peptides was cyclized under conditions in which the formation of dimers and polymers is minimized. Cyclic peptides were then isolated by HPLC and the absence of residual thiol function confirmed by Ellman's test.
Results: Serially diluted serum samples were prepared from confirmed HIV-1 and from confirmed HIV-2 seropositive patients. Each serum dilution was tested on linear and cyclic peptide-coated microtiter wells. Serum titers measured on cyclic peptide-coated wells were 1.2 to 43 times higher than those obtained on linear peptide-coated wells.
Conclusion: We have found that cyclic peptides mimicking an immunodominant region of HIV are superior antigens than their linear counterparts and that they can form the basis of highly sensitive and specific tests for HIV-antibody detection.

W.B.P.111 A PEPTIDE-BASED MICROTITER ELISA KIT FOR THE DETECTION OF ANTIBODIES TO HIV-1 AND TO HIV-2

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Although many assays for HIV-1 antibodies are now on the market, they do not always perform as well as claimed by the manufacturers. Clearly, there is an urgent need for a more specific and more sensitive HIV antibody test. Our assay uses synthetic peptides mimicking highly conserved and immunodominant epitopes of gp41 and gp120. It is very sensitive (100%) and very specific (99.8%). Among the 1250 confirmed negatives tested were 250 samples from patients suffering diseases often associated with false-positive ELISA testing (lupus, rheumatoid arthritis, blood fraction recipients, various infectious diseases). Seropositive specimens were obtained from a wide spectrum of risk groups. Our test is more sensitive than WB and is equivalent to RIPA and IFA in detecting early seroconverters. The test also detects HIV-2 antibodies since the peptide cocktail includes one homologous to a region of the HIV-2 gp40 protein. The ELISA is done at room temperature and requires 90 min. to complete.
Conclusion: Our kit is more reliable than others since it has the highest sensitivity and a specificity for both HIV-1 and HIV-2.

W.B.P.112 SEROLOGIC CLASSIFICATION OF US PATIENT SERA DUALLY REACTIVE FOR HIV-1 AND HIV-2

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Objective. To characterize and classify sera of US origin, which are dually reactive for HIV-1 and HIV-2 by EIA.
Methods. Forty-one sera from the Multi-center AIDS Cohort Study that were dually reactive by ELISA were further tested for HIV-1 and HIV-2 antibodies by Western blot (Genetic Systems and DuPont) and by viral peptide assays (derived from the env glycoprotein).
Results. All sera were repeatedly reactive by HIV-1 and HIV-2 ELISA using viral lysate antigens and by DuPont HIV-1 Western blot. Western blot results for the two HIV-2 tests are listed below.

	Positive	Indeterminant	Negative
Genetic Systems	16 (39%)	25 (61%)	0
Biotech/DuPont	0	37 (90%)	4 (10%)

Peptide ELISA for HIV-1 were positive for 38/41 sera (92.7%). Peptide assays for HIV-2 were weakly positive for 2 sera, one of which was also strongly positive for the HIV-1 peptide.
Conclusion. All 41 sera were from individuals infected with HIV-1. Reactions with HIV-2 assays were due to antibodies reacting with epitopes common to the two viruses. Discrepant results between the HIV-2 Western blots were due to differences in antigen preparation and loading.

W.B.P.113 EVALUATION OF HIV-1 AND HIV-2 PEPTIDE ELISA TESTS IN SERA FROM ABIDJAN, COTE D'IVOIRE

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Objective. To evaluate HIV-1 and HIV-2 peptide ELISA tests in a population with both HIV-1 and HIV-2 infections.
Methods. Sera from 957 persons (hospitalized and non-hospitalized) from Abidjan were tested for HIV-1 and HIV-2 by whole virus lysate ELISA (VEIA), type-specific peptide ELISA (PEIA) against the immunodominant domain of the viral transmembrane protein, and virus-specific Western blots (WB). Using WB-confirmed VEIA-1 and VEIA-2 as standards, the sensitivity (SENS), specificity (SPEC), and positive predictive values (PPV) for PEIA-1 and PEIA-2 were calculated.
Results. By VEIA (WB-confirmed), the overall seropositivity was 19.5%. Thirty-nine (4.1%) were positive for HIV-1 only, and 2(0.002%) HIV-2 only. PEIA and WB testing of 150(15.7%) sera reactive to both VEIA-1 and VEIA-2 showed that an additional 90(9.4%) were HIV-1 only, 19(2.0%) HIV-2 only, and 37(3.9%) remained dually seropositive. Of 150 VEIA dually-reactive sera, 147(98.0%) were WB-confirmed. For PEIA-1: SENS=87.8%, SPEC=96.8%, PPV=92.3%. For PEIA-2: SENS=80.0%, SPEC=98.0%, PPV=80.0%.
Conclusion. In populations with both HIV-1 and HIV-2 infections, peptide ELISA tests are relatively sensitive and specific, helpful in distinguishing HIV-1 from HIV-2, and useful in determining which patients need further evaluation by other laboratory tests such as viral culture or polymerase chain reaction. Dual VEIA reactivity is highly predictive of HIV infection.

W.B.P.114 EVALUATION OF PHARMACIA HIV 1&2 COMBI IGG EIA, A SYNTHETIC PEPTIDE EIA

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Objective. To evaluate a new anti-HIV EIA, HIV 1&2 Combi IgG (Pharmacia Diagnostics AB). In the test synthetic peptides corresponding to parts of the transmembraneous protein of HIV-1 and HIV-2 are used as antigens.
Methods. 10 402 consecutive blood donations were tested for HIV antibodies by HIV 1&2 Combi, Vironostika anti-HTVL III (Organon Teknika) and Recombinant anti-HIV EIA (Abbott laboratories). Sera from 342 anti-HIV positive patients in differents stages of infection and 9 sera from 7 seroconverters were tested by HIV 1&2 Combi.
Results. The specificity was higher than 99.9 % for all three tests and no statistically significant difference was found between the tests. All 342 anti-HIV positive sera gave a positive result by HIV 1&2 Combi IgG EIA giving a sensitivity of 100 % for this panel. Eight out of 9 sera collected early during seroconversion were positive by HIV 1&2 Combi. Most of these sera had been found negative by the first generation anti-HIV assays.
Conclusion. HIV 1&2 Combi IgG EIA were found to have a high specificity and a sensitivity equal to second generation anti-HIV EIAs. The test is well suited for screening of blood donations and for diagnosis of HIV infection. A great advantage is that the test also detects HIV 2 antibodies.

Techniques nouvelles et améliorées
New and Improved Techniques

W.B.P.115 DETECTION OF HIV-1 ANTIBODIES USING SYNTHETIC PEPTIDES

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Objective. To standardize an indirect immunoenzymatic assay for the detection of HIV-1 antibodies using synthetic peptides.
Methods. Two synthetic peptides corresponding to a segment of gp41 described by Wang et al. (PNAS 83:6159,1986) and Gnann et al.(Science 237:1346, 1987), respectively with 21 (RILAVERYLKDQQLLGIWGCS) and 12 (LGIWGCSGKLIC) amino acid residues were employed separately in an indirect immunoenzymatic assay (research test kit) for the detection of HIV-1 antibodies, standardized by us. A panel of 318 well characterized positive sera tested by indirect ELISA using whole-virus preparation (VIRGO™ HIV-1 ELISA, Electro-Nucleonics), "Western blot" (Diagnostics Pasteur; Innogenetics) and/or EIA using recombinant viral proteins (Abbott HIV-1 Confirmatory EIA; "Dot blot" and indirect ELISA, Embrabio) was used.
Results. All sera with known HIV-1 antibodies reacted with both peptides except 6 sera from hemophiliac patients that failed to react with the 21 aa peptide and 1 serum from an AIDS patient that did not react with the 12 aa peptide at the regular dilution of 1:50. Negative normal sera and sera presenting false positive reactions in the screening test (Electro--Nucleonics) due to antibodies to H9 cell line proteins, as expected, did not react with the peptides.
Conclusion. Synthetic peptides corresponding to viral proteins epitopes, separately or in combination, are useful for screening and/or confirmation of HIV-1 infection.

W.B.P.116 DETECTION OF ANTI-HIV, CORE AND ENVELOPE IgG, IN HIV-INFECTED AND TROPICAL DISEASED FROM BRAZIL

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Objective. Anti-HIV assays based on synthetic peptides and recombinant produced antigens have been developed in Europe and US. These tests need, however, also to be documented in countries with other patterns of infections and possibly variations of HIV.
Methods. We have used a test system based on synthetic peptides detecting anti-GP41 from HIV1 and anti-GP36 from HIV2 respectively and recombinant produced P24 (HIV1), Pharmacia Diagnostics AB. They are available as combined tests for screening and single tests for differentiation.
Result. Sera from 87 suspicious HIV-infected patients, original diagnose mainly based on 2 EIA:s, were analyzed. Antibodies to envelope proteins were recognized in 80 and towards core in 76 sera. In five sera neither envelope nor core antibodies were detected by the EIA and when Western Blotted no bands were found. In 38 sera from patients with various tropical diseases, i.e. Paraccocidimycosis, Hansens Dis., Typhoid fever, Schistosomiasis, TB etc., 31 were anti-envelope negatives and 27 anti-core negatives. Five sera were pronounced positives in either envelope (n=3), core (n=1) or both (n=1). In Western Blot 3 were positive and 2 indeterminant.
Conclusion. The synthetic peptides and the recombinant P24 assays opens a possibility to differentiate between core and envelope antibodies and will thus contribute to a reliable diagnosis of HIV-infection also in countries like Brazil with another disease pattern.

W.B.P.117 Comparison of Cambridge Biosciences Recombigen HIV Latex Agglutination Assay with three Commercial ELISA Assays

Authors: M. Tamburini (2), R.G. Downing (2), B. Biryahwaho (1)
(1): Uganda Virus Research Institute, Entebbe - Uganda; (2): WHO/AIDS Control Programme.

Objective: ELISA screening facilities are difficult to maintain in small hospital laboratories. We therefore decided to evaluate a rapid Latex Agglutination Assay for use in Uganda.
Methods: Manufacturers protocols were followed carefully. We gratefully acknowledge the gift of Latex Assay kits by Cambridge Biosciences and the assistance given by Dr. Charles Riggin.
Results: Latex Agglutination Test (LA) was carried out on 100 whole fresh blood samples from Ugandan subjects. After centrifugation, LA was repeated on plasma (PLA). The results were compared with 3 commercially available ELISA Assays namely Virgo (VIR), Wellcozyme (WELL) and Cambridge Recombigen (EIA). Western Blotting (Biorad) (WB) was used as the reference assay. Table below shows sensitivity and specificity for each of the commercial assays tested.

	LA		PLA		EIA		WELL		VIR	
	n	Sens.	n	Sens.	n	Sens.	n	Sens.	n	Sens.
WB POS	45/52	87%	50/52	96%	51/52	98%	51/52	98%	50/51	98%
	n	Spec.	n	Spec.	n	Spec.	n	Spec.	n	Spec.
WB NEG	34/43	79%	41/42	98%	43/43	100%	37/42	88%	37/40	93%

Conclusion: Our preliminary results indicate that this assay would be useful in the Ugandan setting. A further Evaluation in District Hospitals is planned.

W.B.P.118 The determination of additional serological markers concerning HIV-Infection using recombinant viral antigens of all HIV 1 reading frames

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Objective
The evaluation of additional serological markers for prognostic purposes using recombinant viral antigens of all HIV 1-reading frames.
Methods
DNA-Fragments of all HIV 1-reading frames coding for the major structural antigens and parts of them as well as the in vivo weakly expressed regulative proteins have been cloned and expressed in E. coli. Bacterial lysates of 22 selected clones were further evaluated in Western Blot experiments with a variety of sera from classified infected persons, as well as seroconversions and questionable sera.
Results and Conclusion
The Western Blot experiments demonstrated a large variability in antibody response against the different recombinant antigens. In early clinical stages a strong reaction with the majority of recombinant antigens can be observed while with the progression of the disease the number of recognized antigens is strongly reduced. The only antigens which were detected by all sera were the N-terminal portion of gp41 and the reverse transcriptase (p66).In addition some interesting connections between antibody response and clinical stages could be observed.

W.B.P.119 ANTI-HTLV-I TAX ELISA FOR DETECTION OF INFECTION IN STANDARD HTLV-I ELISA NEGATIVE INTRAVENOUS DRUG USERS (IVDUs).

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Objective: To assess the sensitivity of the standard ELISA for detection of HTLV-I infection.
Methods: Serum was obtained from 235 IVDUs from 5/1/86 to 8/15/87 and tested by HTLV-I ELISA. Since the HTLV-I tax protein product is not packaged in the mature virion, a variety of assays to detect this antigen were prepared to overcome any potential serological window: (i) Radioimmunoprecipitation assay (RIPA), using whole cell lysates from HTLV-I cell lines; (ii) specific tax ELISA and; (iii) specific tax western blots, both prepared from recombinant tax protein. Polymerase chain reaction (PCR) was used to confirm the presence of provirus in all individuals with HTLV-I.
Results: Six of 162 IVDUs had positive standard ELISAs confirmed by both PCR and RIPA and/or standard western blot. Seven of 162 were standard ELISA negative, but PCR, RIPA and tax western blot positive.
Conclusions: Standard ELISA had low sensitivity (6/13; 46%) for detection of HTLV-I. This has major implications with regards to screening blood products and for those studying HTLV-I epidemiology and pathogenesis. Addition of recombinatnt tax protein to HTLV-I viral ELISAs is a viable method to close the detection gap.

W.B.P.120 CLINICAL EVALUATION OF TESTPACK HIV-1/HIV-2 RAPID ASSAY FOR THE DETECTION OF ANTIBODY TO HIV-1 AND HIV-2 USING RECOMBINANT DNA DERIVED HIV-1 and HIV-2 PROTEINS

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Objective. The Testpack HIV-1/HIV-2 rapid enzyme immunoassay for the detection of antibody to two Human Immunodeficiency Viruses (HIV-1 and HIV-) has been evaluated in clinical trials at four European sites.
Methods. To date, these sites have tested a total of 2455 specimens by both the Testpack HIV-1/HIV-2 assay and the Abbott HIV-1 EIA (Recombinant) assay. These specimens were obtained from random donors, individuals previously determined to be reactive for anti-HIV, individuals previously determined to be reactive for anti-HIV-2, patients with autoimmune disease, patients diagnosed with chronic Hepatitis B, homosexuals and drug addicts.
Results. Data demonstrated an overall specificity of 99% and sensitivity of 100% at the clinical sites. The overall percent Agreement with the Abbott HIV-1 EIA (Recombinant) is 99.1%. This figure includes four specimens that were Testpack HIV-1/HIV-2 reactive and Abbott HIV-1 EIA (Recombinant) negative. These specimens were confirmed by HIV-2 Western Blot. Testpack HIV-1/HIV-2 demonstrated reproducibility both within day and between days.
Conclusion. Clinical studies to date demonstrate good performance of the Abbott Testpack HIV-1/HIV-2 as a rapid assay detection system of antibodies to these two viruses.

W.B.P.121 TESTPACK HIV: RAPID ASSAYS CAPABLE OF DETECTING ANTIBODIES TO HIV PRESENT IN SERUM, PLASMA, AND WHOLE BLOOD

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Objective: To develop rapid, visual immunoassays to detect antibodies to Human Immunodeficiency Viruses 1 and 2. These assays require minimal sample preparation, minimal technical expertise, no sophisticated equipment and provide easily interpretable results.
Methods: These tests utilize full length recombinant antigens p24 and gp41 from HIV-1 either alone or in combination with gp41 from HIV-2. An internal control is incorporated to alert the user to procedural errors. Assays can be completed in 10 minutes, using whole blood, serum or plasma, with results read visually as a plus (+) or minus (-) sign.
Results: Sixty-seven and 132 ELISA positive, Western Blot confirmed HIV-1 samples were tested with the HIV-1 and HIV-1/HIV-2 assays, respectively. Each sample consisted of whole blood and matched serum or plasma. Both assays detected 100% of the samples tested. On a population of 395 normal blood donors, the specificity of these assays ranged from 98% on HIV-1/HIV-2 to 99% on HIV-1. Whole blood, obtained via fingerstick from 115 normal blood donors, was negative in both assays. The presence of the anticoagulants EDTA, heparin and sodium citrate did not interfere with the performance of either assay.
Conclusion: These rapid assays demonstrate high sensitivity and specificity and are appropriate for use in situations which preclude the use of conventional ELISA tests; e.g., stat blood transfusions, emergency rooms, organ transplants, physicians' offices and small laboratories.

W.B.P.122 UNIQUE IMMUNOREACTIVITY OF A NORMAL HUMAN SERUM WITH RECOMBINANT HTLV-I ENV GENE PRODUCTS

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Objective: To assess an anti-HTLV-I ELISA test based on recombinant products and to identify the specificity and significance of the immunoreactivity between the serum of a normal blood donor and recombinant HTLV-I envelope proteins.
Methods: Clones containing different regions of HTLV-I genome were constructed and recombinant protein were produced and used as antigen in enzyme linked immunoassay and immunoblotting assays. Sensitivity for the detection of anti-HTLV-I was assessed with a panel of known positive specimens. To assess the specificity and the significance of this immunoreactivity, recombinant proteins of unique or overlapping sequences from different portions of env gene were also produced and used as antigen.
Results: Comparable sensitivity in detection of anti-HTLV-I by recombinant products was observed with a panel of known positive sera in comparison with commercial tests made of viral culture products. A strong and consistent reaction between one normal donor serum with recombinant products was observed. Serum from this donor was not reactive in any currently available commercial anti-HTLV-I EIA tests, Western blot or radioimmunoprecipitation assay.
Conclusions: A specific immunoreactivity between a blood donor serum with a defined region of HTLV-I envelope protein gp21 was identified with recombinant products. This immunoreactivity was unique and its biological significance remained to be assessed.

W.B.P.123 IMPROVED *IN SITU* DETECTION OF HIV NUCLEIC ACID WITH FLUORESCENT PROBES AND LASER EXCITATION.

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Objective - To develop more sensitive instrumentation to detect and quantitate HIV infected cells in culture and in clinical specimens using nonradioactive *in situ* hybridization.
Methods - Acetylaminofluorene (AAF) HIV DNA probes were made and reacted by *in situ* hybridization with HIV infected CEM cell lines. The AAF-labeled probes were detected using rabbit antibodies to AAF, followed by an antirabbit antibody that was labeled with fluorescein. Samples were excited at 488 nm using either a 40 mW argon ion laser, or using a conventional 100 W mercury arc source. The fluorescent emission was detected above 530 nm using a CCD video camera. The percentage of cells stained and their fluorescent staining intensity was quantified using a semiautomated computerized image analysis system and computer programs developed by us.
Results - Comparison of the numbers and intensity of cells stained *in situ* using the laser and mercury source showed that the laser had: 1) a 10 fold improvement in fluorescence signal intensity and 2) improvement in the signal to noise ratio due to lower autofluorescence.
Conclusion - *In situ* detection of HIV nucleic acid using fluorescent probes and an argon ion laser excitation source is more sensitive and has a higher signal to noise ratio than a mercury excitation source.

W.B.P.124 Detection of HIV in Hematopoietic Cells from Patients with AIDS and AIDS-Related Complex (ARC).

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Objective. To test the hypothesis that hematologic abnormalities in patients (pts) with ARC and AIDS were related to direct and persistent HIV infection of the hematopoietic precursors in the bone marrows.
Method. We used ^{3}H-labelled cDNA probe and in situ hybridization (ISH) method to detect the presence of HIV nucleic acids in formalin-fixed, paraffin-embedded bone marrow sections from ARC and AIDS (ten in each group) and five non-HIV-infected pts.
Results. Positive cells were found in all ten ARC and eight AIDS pts, but none in two AIDS and five non-infected pts. Most positive cells were mononucleated, resembling lymphocytes and histiocytes. Endothelial cells, interdigitating reticulum cells, erythrocytes, nucleated red cells and immature myeloid cells also labelled with radioactive material in some instances. Positive cells were usually few and far between in each specimen. Megakaryocytes, epithelioid histiocytes, fibroblasts, fibrocytes, osteoblasts, osteoclasts, and osteocytes were consistently negative.
Conclusions. (1) ISH is a useful tool for identification and localization of HIV in tissues. (2) HIV is capable of infecting cells which do not have CD_4 receptors, and may become symbiotic with the host cells and cause latent persistent infection. (3) Hematologic manifestations in ARC and AIDS pts are at least partly caused by direct HIV infection.

W.B.P.125 SEROCONVERSION FOLLOWED BY RECOMBINANT- AND SYNTHETIC PEPTIDE BASED ANTI-HIV ANALYSIS

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Objective. To define the sensitivity of recombinant- and synthetic peptide based anti-HIV ELISA tests.
Methods. A total of 290 sera, which were collected during the weeks and months of seroconversion, from 75 patients were studied with anti-HIV tests. The 28 patients had acute symptoms, while 47 patients did not report any symptoms connected to seroconversion. For 9 patients the time of exposure was reported. The sera were tested by two different anti-HIV peptide ELISA tests based on synthetic peptides (Pharmacia), recombinant DNA based anti-HIV test (Abbott), and immunoblotting (western blotting) (DuPont).
Results. Second generation anti-HIV analysis with recombinant- and synthetic peptide antigens showed specific antibody detection within 5 weeks from exposure to HIV. - The anti-HIV abs appeared no later than 4 weeks from onset of symptoms, and most often within the first weeks after symptoms. The immunoblotting test and the second generation ELISA tests were positive either simultaneously, or positive test results were only removed one sample from each other.
Conclusion. The serological "window" of acute HIV infection can be reduced by 2-3 weeks by recombinant- and synthetic peptide based anti-HIV assays.

W.B.P.126 HIV-1 POL synthetic peptides

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The HIV-1 POL amino-acid sequence was analysed for antigenic epitopes by epitope-prediction programmes such as Hopp and Woods. Of the epitopes predicted by this method 14, partially overlapping, peptides were synthesized by solid phase methodology. The peptides were coated to microelisa plates and analysed for reactivity with anti-HIV-1 sera. We identified 3 anti-HIV-1 reactive peptides: AA 230-244 (IKKKDSTKWRKLVDF); AA 945-959 (TKIQNFRVYYRDSRN) and AA 975-994 (AVVIQDNSDIKVVPRRKAKI). The reactivity of these peptides could be increased by conjugation of the peptides to bovine serum albumin. Immunoassays, based on a single of these POL peptides as antigen, however, did not yield 100% sensitivity with P65/51 and P31 western blot positive anti-HIV-1 sera.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

W.B.P.127 INVESTIGATION OF RECOMBIGEN$^{(TM)}$HIV EIA (Cambridge BioScience Corporation)

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Objective. A new, indirect EIA test employing recombinant polypeptides gp41 and 120 (env) and p24 (gag) expressed in *E. coli*, for the detection of antibodies to HIV was investigated.
Methods. A panel of 875 sera was selected to include: 55 seroconversions (134 sera); 89 confirmed reactive sera, including 10 weakly-reactive; 183 indeterminate; 469 unselected routine HIV specimens. Panel sera had been tested by Dupont HIV-EIA in duplicate and immuno (Western) blot (IB) if required.
Results. Recombigen was reactive in 7/55 initial specimens of the seroconversions while IB was indeterminate or nonreactive; but was negative in 1 initial specimen reactiving only with p24 by IB. All reactive specimens from HIV-infected persons were reactive by Recombigen. Ten IB weakly-reactive sera from recipients of HIV-positive Hepatitis B Immune globulin were negative by Recombigen. Of the 183 indeterminate specimens, 6 were Recombigen reactive; 5 of these 6 were subsequently shown to be HIV-infected by culture or subsequent seroconversion, and the remaining 1 is probably a false-positive result. Recombigen produced concordant results with all routine specimens following confirmatory testing.
Conclusion. Based on these data, Recombigen has a sensitivity of 99.7%, specificity of 99.8%, NPV of 99.8% and PPV of 99.7% in the detection of naturally occurring HIV antibodies.

W.B.P.129 EARLY SEROCONVERSION DETECTED BY ANTI-HIV RECOMBINANT ELISA

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Objective To study the usefulness of the Wellcozyme HIV recombinant test for the diagnosis of HIV infection and, in particular, the ability of the test to detect early seroconversion.
Methods 526 sera comprising a panel including 120 confirmed HIV-positive, 30 Western blot (WB)-negative sera with ambiguous results by other ELISAs and 404 ELISA-negative sera were tested by the Wellcozyme recombinant competitive ELISA. In addition, 18 consecutive sera from 6 patients with primary HIV infection (PHI) with defined onset were studied. Comparisons were made using first generation Wellcozyme anti-HTLV III, Organon Vironostika anti HTLV III, and Abbott Recombinant HIV EIA. Analyses of WB patterns were made using strips from Biotech.
Results No obvious false negative results were obtained, giving a sensitivity of the test of 100%. The specificity was 99.5%; two apparently false positive results were obtained in the group of 30 sera which were WB-negative but gave ambiguous results using other ELISAs. Three sera obtained 4, 6 and 6 days respectively after onset of PHI were negative by Wellcozyme recombinant test as well as all other tests employed. All 15 sera obtained 10 days and onwards were positive by Wellcozyme as well as the Abbott recombinant tests. By contrast only 4 of these sera were positive by the first generation Wellcozyme test, one (obtained 11 days after disease onset) was negative by WB and 6 sera showed detectable antibodies to the p24 antigen only.
Conclusions The Wellcozyme recombinant anti HIV EIA, is a highly sensitive and specific test for the diagnosis of HIV infection. The test is well suited to detect to early seroconversion, being able to demonstrate an antibody response already during the second week of illness during symptomatic PHI.

W.B.P.131 DETECTION OF HIV-1 ANTIBODIES IN IMMUNOMETRIC ELISA BASED ON LABELED SYNTHETIC PEPTIDE

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Objective. To compare synthetic-peptide immunometric ELISA and standard ELISA with labeled immunoglobulins.
Methods. Both techniques utilize microtiter plates coated with synthetic peptide. Bound antibodies are detected either by the same but labeled peptide (immunometric format), or labeled anti-immunoglobulins, or protein A. Labeled peptide and anti-immunoglobulins are prepared by attaching biotin.
Results. Assay sensitivity was checked on the panel of 194 Western Blot positive sera from AIDS, ARC and asymptomatic patients. In immunometric assay 76.8 % of sera were positive and in assay with protein A 87.6 % were positive. Sera weakly positive in immunometric assay, gave a positive signal at dilution up to one thousand-fold in assay with labeled anti-immunoglobulins. Immunometric assay detects no IgG, but only IgM. Seventy seven false positive sera by viral ELISA were negative by immunometric assay.
Conclusions. Synthetic-peptide immunometric assay gives lower sensitivity but greater specificity as compared to assay with labeled immunoglobulins and can be used as a confirmatory test.

W.B.P.128 PRODUCTION AND CHARACTERIZATION OF MONOCLONAL ANTIBODIES AGAINST HTLV-I CORE PROTEINS.

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Objective. To identify and characterize core protein fragments on HTLV-I Western blot strips utilizing anti-core protein monoclonal antibodies (MAb).
Methods. Balb/c mice were immunized utilizing HTLV-I viral lysate as immunogen. Hybridoma cells were cloned which produced MAb reactive with HTLV-I core protein as analyzed by Western blot and ELISA reactivity utilizing viral lysate and recombinant core product.
Results. Five MAb were produced which were reactive with core protein. Specifically, their reactivity patterns on Western blot analysis were:

Clone	Reactive bands (kilodaltons)
5201	p19,29,33,53
5202	p19,33
5205	p24,42,53
5206	p24
5204	p19,29,33,42,53

MAb were additionally tested against HIV-I core proteins (Western blot) and were found to be non-reactive. All five MAb were shown to be reactive with recombinant core protein by Western blot analysis.
Conclusions. MAb against HTLV-I core protein were produced as demonstrated by reactivity against viral lysate and recombinant core protein. Multiple bands (p19,24,29,33,42,53) were shown to be core-associated by utilizing the MAb on Western blot analysis.

W.B.P.130 DETECTION OF ANTI-TAX ANTIBODY IN HTLV-1 WESTERN BLOTS.

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Objective. To determine whether antibody to the TAX gene product of HTLV-1 may be detected by using viral lysate based western blots (WB).
Methods. HTLV-1 WB strips were obtained from Biotech Research Laboratory and Diagnostics Biotechnology Limited. Samples were incubated as per WB kit instructions. Recombinant p40X (rp40X) or TAX protein, rabbit polyclonal, and mouse monoclonal antibodies to rp40X were produced by Triton Biosciences Inc.
Results. Both the rabbit polyclonal and the mouse monoclonal antibodies to purified rp40X protein reacted strongly to the p36 band in WB strips prepared from virus grown in HUT-102 cells. In contrast, neither antibody reagent reacted with WB strips prepared from virus grown in MT2. Sera from HTLV-1 seropositive individuals were examined for WB reactivity to p36 and rp40X, and for anti-TAX reactivity by RIPA.

	No. p36 (+)	No. p36 (-)
No. RIPA TAX (+)	205	50
No. RIPA TAX (-)	174	118
No. rp40X (+)	157	25
No. rp40X (-)	28	63

	Number rp40X (+)	Number rp40X (-)
RIPA TAX (+)	95	17
RIPA TAX (-)	42	36

Of 972 sera tested by WB alone, 458 (47.1%) were reactive to p36; yet, for 154 sera where anti-TAX antibody was demonstrated independently using RIPA or rp40X reactivity, 141 (91.6%) were WB positive for p36.
Conclusions. The p36 band in WB strips of virus grown in HUT-102 cells shares immunologic crossreactivity with the TAX gene product of HTLV-1. Antibody to TAX may be detected by some, but not all, viral lysate based WB; with the greatest sensitivity achieved through the use of rp40X.

W.B.P.132 VIRONOSTIKA HIV CORE ASSAY : AN ANTI-p24/p55 SPECIFIC TEST USING VIRAL ANTIGEN AND MONOCLONAL ANTIBODIES.

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Objective: Progression in seropositive individuals to AIDS is strongly associated with declining or absent levels of anti-p24 antibodies, and high levels of antigen. Therefore, it was of interest to develop an assay specific for anti-p24 antibodies.
Methods: Vironostika HIV CORE is based on the inhibition principle using microelisa stripwells coated with a monoclonal anti-p24 antibody, in combination with a fixed amount of HIV/H9 viral lysate, and a monoclonal anti-p24 antibody-HRP conjugate. Antibodies to p24 or p55 present in the sample will inhibit the monoclonal-antigen-monoclonal sandwich.
Results: Performance of the assay with respect to sensitivity and specificity was compared to that of assays based on recombinant proteins, and to that of anti-HIV screening tests. The detection limit of the assay, based on testing dilution series of anti-HIV sera is better than that of current core-specific assays based on recombinant proteins. In seroconversion panels reactivity becomes detectable 2 to 5 bleeds earlier.
Conclusions: The Vironostika HIV CORE micro ELISA assay based on viral antigen in combination with monoclonal anti-p24 antibodies is more sensitive than current tests based on recombinant proteins and can be used to monitor clinical transition from asymptomatic to AIDS and antiviral therapy.

W.B.P.133 A SCREENING ASSAY FOR ANTIBODIES TO HIV-1 USING RECOMBINANT ANTIGENS

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Objective. To develop a screening enzyme immunoassay (EIA) for antibodies to HIV-1 using recombinant antigens which allows detection of both IgG and IgM. This assay is capable of reducing the window between antigenemia and seroconversion.
Methods. The recombinant *gag* (rp24) protein includes the full sequence of p24. The recombinant *env* (rp41) protein includes the full protein sequence of gp41. Human antibodies to HIV-1 are captured on a polystyrene bead coated with purified rp24 and rp41. Captured antibodies are detected colorimetrically using rp24 and rp41 conjugated to HRPO.
Results. The EIA detected all of a population of 40 ARC, 50 AIDS and 65 asymptomatics and 133 randomly selected Western blot positive samples. The recombinant EIA is at least 16 fold more sensitive than a current, viral lysate based, licensed EIA when used to assay serial dilutions of positive samples.
This assay detects anti HIV antibodies earlier than the licensed 1st generation viral assay in 8 of 9 seroconversion panels and in 4 of 9 compared to the Abbott 2nd generation recombinant assay. In all these panels at least one serial sample tested positive both in this assay and the current Abbott EIA for p24 antigen effectively closing the antigenemia/seroconversion window. The profile of anti HIV-1 IgM levels measured in these seroconversion panels suggest that a large part of this early detection is related to anti HIV IgM detection.
Conclusion. The increased sensitivity of this recombinant assay in detecting seroconversion panels is due to a combination of improved IgG sensitivity and IgM detectability. In combination with assay for HIV-1 antigen the window between infection and seroconversion may be substantially narrowed.

W.B.P.134 CHARACTERIZATION OF FULL-LENGTH RECOMBINANT HIV-1 P41 AND P24 FOR USE IN THE IMPROVED ABBOTT HIV-1 ENZYME IMMUNOASSAY.

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Objective: Abbott Laboratories has produced a plasmid containing the gene for full length HIV-1 envelope protein p41 in *Bacillus megaterium*. The protein which contains the 45 C-terminal amino acids of gp120 was recovered as inclusion bodies following cell lysis. We have also expressed HIV-1 core antigen p24 in *E. coli*.. The protein p24 (which contains 12 and 44 amino acids of the HIV-1 proteins p17 and p15, respectively) was isolated as an inclusion body using similar procedures. Our objective was the full purification and characterization of these recombinant antigens.
Methods: Purification of p41 was obtained by step elution from hydroxyapatite using sodium phosphate in 0.1% SDS. Purification of p24 was performed by step elution from CM-Sepharose using NaCl following inclusion body solubilization.
Results: Both antigens were determined to be pure by N-terminal sequence analyses and by SDS-PAGE followed by Coomassie and silver stain. Densitometer tracings of Coomassie stained gels indicated purity levels greater than 93% for both antigens. Western blot analyses of purified p24 and p41 demonstrated expected reactivity with monoclonal antibodies against specific regions of the viral antigens and with HIV-1 positive human sera from a variety of geographical areas. In addition, both recombinant proteins competed with their viral counterparts in Western blot assays.
Conclusion: These highly purified antigens contribute to the enhanced sensitivity of the improved Abbott HIV-1 screening assay.

W.B.P.135 DETECTION OF ANTIBODIES TO HIV-1 BY A PASSIVE HEMAGGLUTINATION ASSAY (RETROCELL HIV-1).

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Abbott Laboratories, North Chicago, IL, USA.

Objective: To evaluate the sensitivity and specificity of a simple, passive hemagglutination assay for the detection of antibodies to HIV-1.
Methods: Stabilized human red cells (Duracytes®) are coated with affinity purified p24 and gp41 HIV-1 viral antigens. The assay is initiated by mixing 50 ul of diluted patient serum(1:50 dilution) and 25 ul of the coated duracytes.The agglutination pattern is visually interpreted after a 3 hour incubation at room temperature.
Results: The performance of the Retrocell HIV-1 assay was compared to the Abbott 2nd generation screening test on blood donors from S.Africa, Zimbabwe and Mexico. Specimens which tested initially reactive (IR) by either test were first retested then if found repeat reactive (RR), were confirmed by Western Blot (WB).

	Retrocell		2nd gen screening	
	%IR	%RR	%IR	%RR
S. Africa(n=1471)	1.16*	0.61*	2.05*	1.00*
Zimbabwe (n=2027)	0.25*	0.25*	0.45*	0.15*
Mexico (n=1998)	0.85	0.30	0.25	0.10

*WB positive specimens were removed.

Specimens from 55 AIDS, 33 ARC and 84 asymptomatic patients were all detected by Retrocell; all of these specimens were confirmed by WB with the exception of 2 ARC specimens which tested as indeterminant and negative. The assay also shows equivalent sensitivity to the 2nd generation HIV-1 screening test when tested on serial bleeds from 7 seroconversion panels.
Conclusion: The performance and ease of use of this assay make it appropriate for blood screening in areas of the world where standard EIA procedures are impractical.

W.B.P.136 DETECTION OF IgM AND IgA ANTIBODIES TO HIV-1 AFTER REMOVAL OF IgG BY PROTEIN G.

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Objective. To develop sensitive and specific microassays for IgM and IgA antibodies to HIV-1 utilizing Protein G treatment to remove interfering IgG.
Methods. Twenty-five ul aliquots of plasma were treated with Protein G agarose (Genex) to remove IgG. Removal of IgG was confirmed by ELISA for IgG antibody to HIV-1. Treated samples were tested by indirect ELISA, and the Miniblot immunoblot using IgM or IgA specific reagents. Sixty-two plasma specimens collected serially during seroconversion of 5 individuals were used to evaluate these methods.
Results. Of the 62 specimens, 36 were positive for HIV antibodies by the FDA licensed DuPont immunoblot. IgA antibodies were detected in all 36; IgM antibodies in 26. In 3 individuals where specimens were available for 1-3 months after seroconversion, IgA antibodies persisted longer than IgM. The IgM and IgA antibodies reacted either with envelope alone or with envelope and gag gene products. The indirect IgM and IgA ELISAs were less sensitive and specific than the immunoblot.
Conclusion. IgM and IgA antibodies to HIV-1 are detectable by immunoblot in seroconversion specimens that have been treated with Protein G. Because the newborn's IgM and IgA can be distinguished from the maternal IgG antibodies, these assays may be useful for the diagnosis of congenital HIV infection.

W.B.P.137 STRUCTURAL CHARACTERIZATION OF RECOMBINANT HIV-1 PROTEINS P24 AND P41 BY HPLC PROTEASE V8 MAPPING AND MASS SPECTROMETRY.

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Objective: Abbott Laboratories has produced recombinant HIV p24 core protein and envelope protein p41. The recombinant p24 contains the full length sequence of HIV p24 with 12 residues from p17 and 44 residues from p15. The recombinant p41 contains the full length sequence of HIV p41 in addition to the 45 C-terminal amino acids of the external glycoprotein gp120. Our objective was to characterize the primary sequence of these antigens and evaluate reproducibility between production lots.
Methods: Following purification from bacterial cell lysates, antigens were reduced and carboxylated and treated with *Staphylococcus aureus* V8 protease in the presence of urea (p24) or SDS (p41) to obtain peptides. The resulting peptides were isolated by High Performance Liquid Chromatography (HPLC) using conditions optimized for each antigen.
Results: The primary structure of the purified p24 was confirmed by mass spectrometric analyses of the resulting peptides, which corroborated the entire amino acid sequence derived from gene sequencing. Further, a combination of amino acid analysis and time-of-flight mass spectrometry identified the peptides corresponding with the amino- and carboxy-termini. The identity of the amino-terminus was confirmed using an automated liquid phase sequencer. Similar studies are nearing completion for p41.
Conclusion: Besides confirming the expected sequence for our recombinant HIV core and envelope proteins, these data also demonstrate the high degree of reproducibility obtained among multiple production lots of these antigens. This contributes to the enhanced sensitivity of the improved Abbott HIV screening assay.

W.B.P.138 A FILTER IMMUNOPLAQUE ASSAY FOR THE DETECTION AND ENUMERATION OF HUMAN HIV1 ANTIBODY SECRETING CELLS

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OBJECTIVE. To allow the enumeration and the study of the circulating B cells shown to secrete specific HIV1 antibodies in vitro during the whole course of HIV1 infection.
METHODS. PBMC from HIV1 infected and control subjects were incubated on nitrocellulose filters coated with either : HIV1 virus (Diagnostic Pasteur), highly purified gp 160 (S. Rasheed-Los Angeles), or recombinant p24 (Transgene-Strasbourg). Revelation of specific spots was realised by the use of the BCIP-NBT system.
RESULTS. 1) While no spots were evidenced with control PBMC, 1 to $6x10^3$ HIV1 spots/10^6 PBMC and 0,5 to $1x10^3$ "gp 160" or "p24" spots/10^6 PBMC were enumerated with the P[illegible] from HIV1 infected subjects. 2) The results observed with this filter assay [illegible] with seric ELISA and Western blot assays were analogous : thus, for example, HIV1 and "gp 160" spots but no "p25" spots were evidenced in patients with no "p25" Western blot bands.
CONCLUSION. This new technique confirms both our results with the ELISA or Western blot techniques for in vitro antibody production or those of Amadori et al. using a limiting dilution technique. It provides a tool for in vitro studies of cellular B cell regulation in the course of HIV1 infection.

W.B.P.139 CHARACTERIZATION AND CLINICAL SIGNIFICANCE OF HIV p24 ANTIBODY

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Objective. Detect and quantitate p24 antibody (p24 Ab) to monitor natural history and therapy of HIV antigen (HIV Ag) negative individuals.
Methods. Solid phase was coated with recombinant p24 antigen to capture specific antibody. The same antigen labelled with HRPO was used as a probe. Titer and slope of p24 Ab were obtained by plotting the optical density (OD) of 5 dilutions of each sample and extrapolating the intercept at a cutoff of 0.1 OD. These parameters were correlated with HIV Ag level and clinical condition.
Results. A wide range of slopes (y= < 0.1 to > 1.0) reflected the variability of p24 Ab affinity and prevented use of a reference curve for quantitation. The distribution of HIV p24 Ab and Ag in seropositive persons stratified according to clinical condition is shown in the Table. Mean p24 Ab titer was lower in patients with AIDS (432) than ARC (841) or asymptomatic (1637). All but 1 p24 Ab negative sample were HIV Ag positive; in 15.3% of samples, p24 Ag and Ab were both detectable.

Clinical Condition	Number of positive (% of total)				
	p24 Ab titer				p24 Ag
	< 1	1-5	5-500	> 500	
Asymptomatic	12(2.5)	31(7)	212(47)	197(43.5)	21(4.6)
ARC	3(8)	7(19)	18(49)	9(24)	11(29.7)
AIDS	6(8)	24(30)	40(50)	10(12)	35(43.8)

Serial samples from anti-p24 seropositive homosexual males over 2-3 years showed either a stable (48%) or declining (52%) p24 Ab titer. Among patients receiving antiviral therapy, only those treated with alternate AZT-ddC recovered p24 Ab after disappearance of HIV Ag.
Conclusion. Reliable quantitation of p24 antibody provides information on the natural history, the clinical prognosis and the efficacy of anti-viral therapy in HIV infected persons.

W.B.P.140 EVALUATION OF THE WELLCOZYME RECOMBINANT ENZYME IMMUNOASSAY

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Objective: To evaluate the performance of the Wellcozyme HIV 1 Recombinant EIA in a clinical laboratory.
Method: 1621 serum samples collected from patients with AIDS, ARC or Asymptomatic HIV infection and 36 serial serum samples from 3 seroconverting subjects were tested by the Wellcozyme assay; 5 other commercial EIA's were tested on the seroconversion panel and limits of detection were compared.
Results: 1621 out of 1621 samples from known anti-HIV positive patients were correctly identified by the Wellcozyme assay indicating a sensitivity of 100% in this population. There was total agreement between the Recombinant assay, the Wellcozyme Polyclonal assay and the Genetic Systems LAV EIA which had also been used to test these sera. The Recombinant assay detected anti-HIV in 75% of samples collected in the second week following onset of symptoms of primary HIV infection in 3 homosexual males, compared with the next most sensitive assay which detected 25%. In samples collected in the following two weeks the Recombinant assay detected anti-HIV in 100% of sera. Anti-HIV was not detected by any test in sera collected within the first week after onset of symptoms. In a multicentre random blood donor trial conducted by the Australian Red Cross Blood Transfusion Service on 3057 samples, no sample was repeatably reactive by the Recombinant assay, indicating a specificity of 100%.
Conclusion: The Wellcozyme Recombinant assay (based on recombinant envelope and core antigens specifically captured onto microtitre wells by mouse monoclonal antibodies to anti-HIV1) is a sensitive and specific test well suited to a clinical laboratory.

W.B.P.141 HIV-1 SEROPOSITIVE INDIVIDUALS RECOGNIZE DIFFERENT EPITOPES OF P17: POTENTIAL FOR STAGING DISEASE PROGRESSION

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Objective. Development of an ELISA method to quantitate the levels of antibody to specific epitopes of HIV p17.
Methods. Synthetic peptides of 15 to 35 amino acids in length, representing the entire HIV p17 protein were synthesized. The presence of antibodies in serum to the peptides was determined using an ELISA procedure. Enhanced reactivity and lower backgrounds were achieved using peptide-BSA conjugates.
Results. Individuals who are seropositive for HIV p17 were found to recognize different epitopes on p17 as defined by the synthetic peptides. The peptide representing the C-terminal appeared to be most immunogenic, while the N-terminal was least immunogenic. Antibodies to the p17 peptide representing the p17 candidate AIDS vaccine epitope (HGP-30) i.e., amino acids 86 to 115, (Naylor et al., PNAS 84, 2951, 1987) were seen by antibodies from a subset (~30%) of seropositive individuals.
Conclusion. Recent observations indicate that a decline in antibodies to p17 may be an earlier serological marker of disease progression than antibodies to p24 (Lange et al., AIDS 1, 155, 1987). These studies with p17 may provide a new diagnostic assay to stage clinical disease progression, and identify of new epitopes for inclusion in an HIV vaccine.

W.B.P.142 DETECTION OF HIV-1 ANTIBODIES IN URINES OF ASYMPTOMATIC AND ARC /AIDS PATIENTS

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Objective: We (AFK, YC) have reported detection of antibodies to HIV-1 in the urines of HIV-1 seropositive infected (H+) individuals using FDA licensed tests. In this study, using a recombinant protein dipstick format, we evaluate the detection of antibodies to HIV-1 in the urine of H+ individuals.
Method: Immobilized recombinant HIV-1 envelope protein on a dipstick (Calypte Biomedical Company [CBC] E1 test format) was used to detect antibodies to HIV-1 in unconcentrated urine. The test was carried out at room temperature. Urines tested were random samples collected from 30 H+ individuals (27 asymptomatic and 3 ARC/AIDS patients) and 20 HIV-1 seronegative (H-) individuals. Results were read by 5 different observers as positive or negative by the presence of blue color in a well.
Results: All urines from H+ individuals tested positive (30/30). In contrast, all urines (20/20) from H- individuals tested negative. Positive and negative controls reacted appropriately in all 50 urine samples.
Conclusion: There was a high correlation between reactivity of urines to HIV-1 recombinant envelope protein and serum reactivity in FDA licensed HIV-1 antibody blood tests for both positive (30/30) and negative (20/20) urine samples. These data suggest that urine instead of blood can be used as a sample source for the detection of HIV-1 antibodies. There is a lower risk to health care workers testing for HIV-1 antibodies in urine rather than blood due to 1) substantially lower incidence of infectious HIV-1 virus in urine and 2) eliminating venipuncture and exposure to blood. The CBC dipstick test format used at room temperature adapts to testing in restricted laboratory environments.

W.B.P.143 SIMPLE, EASY TO USE HIV-1 RECOMBINANT ANTIGEN BASED BLOOD ANTIBODY TEST

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Calypte Biomedical Company, Berkeley, CA USA

Objective: Calypte Biomedical Company (CBC) has developed a simple and easy to use dipstick assay for HIV-1 antibodies. In this study, we evaluate the detection of antibodies to HIV-1 in the blood, serum or plasma of HIV-1 seropositive (H+) individuals.
Method: A dipstick format with recombinant HIV-1 envelope and core proteins was used to detect antibodies to HIV-1. Either 200 µls of blood or 100 µls of serum or plasma is added to the first tube containing CBC E1 buffer. The E1 buffer is formulated to reduce background contamination. The dipstick is added, incubated for 30 minutes at ambient temperature, washed, incubated in conjugate and washed. Substrate is added to each of the wells and stopped after 10 minutes. Results are read as presence of color (positive) or no color (negative). Samples were taken from proficiency panels supplied by Massachusetts General Hospital, New York University, Center for Disease Control, Boston Biomedica and San Francisco Bay Area physicians.
Results: The proficiency panels taken together show: 1) the CBC E1 test was more sensitive than FDA licensed HIV-1 antibody test formats, 2) no false positives were observed and 3) there was 100% correlation of all 5 observers with respect to positive and negative responses.
Conclusion: The CBC E1 HIV-1 antibody test is simple and easy to use. We have validated the efficacy of the E1 blocking buffer with respect to false positive samples (originally identified by FDA licensed tests). The test also accurately identified known difficult sample types such as sera that are hemolytic, icteric, lipemic or from patients with rheumatoid factor or systemic lupus erythematosus.

W.B.P.144 PROLIFERATIVE RESPONSE TO SOLUBLE AND MICROPLATE-ADSORBED gp41 SYNTHETIC PEPTIDE IN HIV+ VERSUS NORMAL SUBJECTS

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Objective. To detect specific cell-mediated immunity to a gp41 synthetic peptide, in soluble and adsorbed form, in HIV+ individuals.
Methods. Peripheral blood mononuclear cells obtained from 10 HIV+ subjects (3 AIDS, 7 ARC; 5 adults, 5 children), were incubated in triplicate for 6 days with different concentrations of a gp41 synthetic peptide (5,10,20 µg/ml; BIOCHROM KG,FDR) or in gp41-coated microwell plates and pulsed overnight with ³H thymidine. The effects of PHA (1:100)+gp41 peptide were also assessed. Sixteen healthy HIV- control donors were tested under the same experimental conditions. A stimulation index (≥ 2SD of normal controls) was considered as positive result.
Results. No specific T cell proliferative response was triggered by the soluble form of the peptide. In contrast, the adsorbed form elicited a significant lymphocyte transformation in 5 out of 7 ARC patients (4 adults and 1 child). No response was found in AIDS patients (1 adult and 2 children). Nonetheless, in AIDS subjects a synergistic effect of the adsorbed gp41+PHA on the proliferative response was observed. In all but one control donors no significant gp41-induced lymphocyte proliferation was observed.
Conclusion. Our results indicate that T cell specific immunity to HIV envelope glycoproteins may be evidenced by absorbed synthetic peptide, whereas the soluble form does not elicit any proliferative response. The test we used shows good sensitivity in HIV+ patients. The positive response in one control subject suggests that a cross-reactivity to gp41 structure may occasionally occur in HIV- individuals. The specific T cell deficiency to HIV in AIDS patients may contribute to the unfavorable outcome of infection.

W.B.P.145 DIRECT DETECTION OF HIV-DNA IN PERIPHERAL BLOOD MONONUCLEAR CELLS FROM ASYMPTOMATIC PATIENTS: COMPARISON OF THREE DIFFERENT PROBES.

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Several methods allow the detection of HIV infection, being the nucleic acid hybridization the most useful and sensitivity one. The aim of this study was to directly determine the presence of HIV-DNA in peripheral blood mononuclear cells (PBMC) from anti-HIV positive patients, using 3 different HIV-probes.

A total of 20 asymptomatic seropositive patients (15 IVDA, 2 homosexuals, 1 homosexual drug-abuser, 2 with no risk factors) and 2 AIDS cases (both IVDA) were included. Anti-HIV was confirmed by western-blot and serum HIV p24 antigen (HIVAg) was determined by EIA. HIV-DNA was detected directly in the PBMC by slot-blot hybridization using 3 different probes: a p-pol-cDNA, a full-length cDNA and a full-length RNA-probe. Ten μg of total PBMC DNA were used in each assay.

Serum HIVAg resulted positive in 3/20 (15%) asymptomatic subjects and in the 2 patients with AIDS. HIV-DNA was detected with the p-pol-cDNA-probe in 44% of the symptomless patients, and with the full-length cDNA one, in 50% of them. However, when using the full-length RNA-probe, HIV-DNA was found in 85% (17/20) of the asymptomatic cases, with a statistical difference ($p < 0.05$) between this percentage and those obtained with the other 2 probes. HIV-DNA resulted positive in the 2 AIDS patients with each of the probes. Finally, HIV cultures were performed from 5 of the asymptomatic subjects. Out of them, 4 were HIV-DNA positive and in the other one, HIV-genome was undetectable by the RNA-probe. In all the positive cases, the virus was isolated from the cultures while this did not occur with the negative one.

In conclusion: 1) no differences between the sensitivity of the cDNA-HIV probes have been achieved. 2) The RNA-probe detected more frequently the presence of HIV-DNA than the cDNA ones. 3) HIV-DNA detection is a more rapid method than PBMC cultures for the identification of a current HIV infection.

W.B.P.146 DETECTION OF ANTI-NEF ANTIBODIES IN SERA OF AT RISK INDIVIDUALS.

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Objective. Nef gene seems to down regulate replication of HIV. It is suggested that following infection, antibodies anti-nef would be detected first and would remain the only detectable HIV-specific parameter during the variable period of latency. Moreover in the hypothesis of the association of expression of nef protein with a low level of viral replication, anti-nef antibodies could be a valuable marker to monitor during the progression of infection.
Methods. We have developed an Elisa assay utilizing a recombinant nef protein (provided by L. Montagnier/Transgene). Reactive sera will be confirmed by immunoblot.
Results. We will detect nef antibodies in sera from the following subjects: a) at least 10 seronegative individuals who are heterosexual partners of HIV-1 seropositive subjects; b) at least 20 seroconverters i.v. drug abusers; c) at least 100 seronegative but at risk i.v. drug abusers; d) at least 30 seronegative but highly transfused hemophiliacs; e) serial sera from at least 40 HIV-1 positive i.v. drug abusers who are either not progressing or rapidly progressing into full-blown AIDS.

W.B.P.147 CLINICAL AND THEORETICAL APPLICATIONS OF NEW PROCEDURES FOR HIV RT AND RT ANTIBODY (AB) QUANTITATION.

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In two accompanying abstracts (   ), we have shown the synthesis and usefulness of a new substrate ^{125}I-Iododeoxyuridine triphosphate for RT analyses, as well as the construction of solid phase coupled templates to achieve further improvements potentiating the direct detection of RT activity in crude specimen. Due to the improved detection sensitivity obtained, analyses have been started to answer the following questions regarding RT and RT ab: 1) what is the sensitivity and specificty of HIV-RT blocking ab? 2) does the anti-HIV ab titer decrease with progressive disease? 3) is there a crossreactivity between HIV1-RT and HIV-RT ab? 4) how efficient are the new procedures for RT activity detection and quantitation, compared to conventional assay, using from virusisolation; pelleted virus, or cellculture supernantant, or crude lymphocyte extracts ? 5) can high RT activity be detected directly, or in pelleted material, from serum or spinal fluid? 6) can RT activity be measured in crude extracts of lymphocytes directly from the infected? 7) does the new assay procedure detect enough RT activity directly in patient specimen in order to determine development of therapy resistant RT? 8) are the solid templates developed, useful for the separation and characterisation of the different RT-forms reported, i.e. the 52 and 66kD proteins.
The present results and conclusions from these studies per the 31st of may 1989 will be given.

W.B.P.148 PASSIVE AGGLUTINATION WITH RECOMBINANT ENV ANTIGEN TO DETECT ANTIBODIES TO HUMAN IMMUNODEFICIENCY VIRUS.

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Objective. To develop a simple and stable test for antibodies to human immunodeficiency virus (HIV-1) which requires no instrumentation and could be used for large scale screening.
Methods. Highly purified recombinant HIV env antigen, CBre3, was adsorbed to blue polystyrene microbeads. A colloidal suspension (0.6% w/v) of the antigen coated microbeads was prepared and tested by passive agglutination (PA) with HIV positive and negative sera. The tests were performed in 96 well microtiter plates by adding 25 ul sample diluent, 1.0 ul sample, and 15 ul latex-antigen to each microtiter well and allowing the latex-antigen and serum mixture to settle and agglutinate 3.0 hours.
Results. A positive reaction gave a diffuse light blue pattern on the bottom of the well. A negative reaction or no agglutination gave an intense blue bead at the bottom of the well. A total of 423 serum samples, 120 positives by EIA and Western blot, 303 negatives were tested blind and retrospectively by PA for antibodies to HIV-1. Sensitivity relative to EIA and Western blot of the passive agglutination technique was 99.2%; specificity relative to EIA and Western blot was 97.7%. Preliminary stability studies indicate that the latex-antigen is stable for several months at room temperature.
Conclusion. These results suggest the test is similar to EIA in sensitivity but more stable upon storage at room temperature.

W.B.P.149 CHEMILUMINESCENT DETECTION OF HIV INFECTED CELLS USING IN-SITU HYBRIDIZATION ASSAY TECHNIQUE

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Recently, we have developed a sensitive chemiluminescent assay for alkaline phosphatase and alkaline phosphatase conjugates based on adamantyl-stabilized dioxetane, AMPPD. (Voyta, J.C. et al, Clin. Chem. 34, 1157 (1988), Bronstein, I., et al, J. Biolum. Chemilum. 2, 186 (1988)). We have applied this chemiluminescent technique to the detection of human immunodeficiency virus, (HIV), in infected cells using in-situ hybridization with photographic detection. HIV-infected and uninfected CEM cells were fixed on slides using 1% paraformaldehyde followed by treatment with 0.2% HCl, at ambient temperature. Hybridization with 10 nM HIV-specific alkaline phosphatase oligonucleotide probes was performed at 55°C followed by a short wash. The slides were developed using AMPPD chemiluminescent substrate and the light signal was detected with Polaroid High Speed instant black and white film. The HIV-infected cells, after a 5 minute incubation, were detected on the film in less than 30 seconds. Comparatively, chromogenic substrate, BCIP/NBT permitted detection of HIV-infected cells in 30 minutes. This novel chemiluminescent readout technology is suitable for simple, rapid and ultrasensitive detection of viral nucleic acid in cells, blots or in solution.

Tests diagnostiques
Diagnostic Tests

W.B.P.150 INDIRECT IMMUNOFLUORESCENCE TO DETECT ANTI-HIV ANTIBODY

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Objective: An immunofluorescent method [IFA] (Fluorognost-HIV, Thermascan, Inc.) to detect anti-HIV antibody was compared to ELISA and Western blot [WB] (E.I. DuPont) methods.
Method: Samples (n=10454) from 3 blood donation sites and samples from patients (n=1177) with known clinical histories (classified by CDC criteria) were tested by ELISA and IFA. Samples positive in ELISA and/or IFA were confirmed by WB.
Results: For blood bank samples, 37(0.3%) were ELISA reactive, 17(0.2%) were IFA reactive, and 15(0.1%) were WB positive by FDA criteria. Eleven samples were WB indeterminate: RIPA is pending. Based upon samples with definitive WB results, the specificity for ELISA was 99.906% and 99.923% for IFA. For samples linked to clinical history with definitive WB results (n=796), the overall sensitivity of ELISA was 98.816% (98.826% for CDC II/III, 100% for CDC IVA, 96.552% for CDC IVD, and 98.775% for CDC IVC), while the overall sensitivity of IFA was 99.362% (99.061% for CDC II/III, 100% for CDC IVA-IVC). Among CDC II/III and ARC/AIDS patients (n=858), 116 samples reactive in ELISA or IFA were WB indeterminate: 61% were anti-p24 negative, 56% were anti-p31 negative, 26% were anti-gp41 negative, 16% were anti-gp120 negative, 7% were anti-gp160 negative. 84% of anti-p24 negative sampler and 56% of anti-p31 negative samples were from AIDS patients. Among AIDS patients the frequency of positive results in ELISA was 98.3%, in IFA 100%, while in WB (FDA standards) 77.6%; Among well-characterized HIV-infected homosexuals and intravenous drug users in NYC, the frequencies were 97.8% for ELISA and for IFA and 93.0% for WB.
Conclusion: The IFA method employed is sensitive, specific for detecting antibody to HIV, while simple to perform & interpret.

W.B.P.151 SEROLOGIE VIH ET INFECTION A PLASMODIUM FALCIPARUM

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OBJECTIF. Compte tenu de la forte fréquence des réactions positives VIH1 Elavia, non vérifiées par les tests de confirmation, observée à Brazzaville où le paludisme à Plasmodium falciparum (Pf) est intensément implanté, il était important de préciser le rôle d'une réactivité croisée possible entre Pf et le VIH.
PATIENTS ET METHODES. - 332 donneurs de sang, agés de 18 à 50 ans, dont 166 HIV+ (Elavia Pasteur: EP) et 166 HIV-, appariés par âge, sexe et jour du don, ont eu, en plus de l'EP, une recherche quantitative de Plasmodium. Un test par Western Blott (WB) a été réalisé pour tous les sujets EP+Pf+ et pour un nombre identique de sujets EP+Pf-, appariés par âge, sexe et valeur de la densité optique (DO). - 30 enfants agés de 3 à 12 ans, sans antécédents notables, présentant un accès palustre (température > 38°5 et parasitémie à Pf > 10.000/mm3), ont eu une sérologie EP.
RESULTATS. - Donneurs de sang. Le taux de Pf+ n'est pas significativement différent pour les groupes EP+ (12.7%) et EP- (9.6%). Le résultat des DO ne montre pas de différences notables qu'il s'agisse de sujets Pf+ ou Pf -. Le taux de confirmation en WB (≈ 60%) est sensiblement le même chez les sujets EP+Pf+ et EP+Pf-. Les réponses incomplètes, fréquentes, en particulier la présence d'une bande p25 et/ou p18 isolée ou associée ne sont pas plus fréquentes pour le groupe Pf+. - Aucun des 30 enfants présentant un accès palustre n'a eu une sérologie EP+.
CONCLUSION. La présence de Pf dans le sang circulant, que les densités parasitaires soient faibles (porteurs asymptomatiques) ou élevées (accès palustres) n'est pas, à l'évidence, une cause à retenir pour expliquer les fausses réactions positives VIH EP à Brazzaville.

W.B.P.152 ELEVATED SERUM LACTATE DEHYDROGENASE (LDH) IN NON-HOSPITALIZED AIDS PATIENTS

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Objective. To evaluate use of LDH in early diagnosis of Pneumocystis carinii Pneumonia(PCP) in non-hospitalized AIDS patients(pts)
Methods. Retrospective review of 20 pts taking zidovudine who had monthly LDH levels as part of routine followup.
Results. Isolated LDH elevations (normal hepatic transaminases and creatine phosphokinase) were found in 12 out of 20 pts, 6 of whom had prior PCP. Four pts developed recurrent PCP treated as outpatients; the LDH was 1571, 1059, 1193 and 1215 IU/l (nl 297-611) at time of diagnosis. All pts had pO_2>70. Eight pts without PCP had elevations of LDH from 1023 to 3030. Three pts had no symptoms, the elevated LDH resolved (1pt) or remained elevated (2 pts); 1 pt had abdominal large cell lymphoma, 1 had disseminated cryptococcal disease; 2 had fever and cough which resolved in 1 week, 1 of these 2 pts had a gallium scan which was normal; 1 pt had disseminated Mycobacterium avian complex. Macrocytosis was common on zidovudine but correlated poorly with LDH. For LDH >1000 the specificity=0.5, positive predictive value=0.33 for diagnosis of PCP
Conclusion. Serum LDH is frequently elevated in AIDS pts on zidovudine, not always associated with an opportunistic infection. The specificity is thus too low to indicate imminent PCP.

W.B.P.153 EVALUATION OF HIV1 ANTIBODY TESTING STRATEGY IN A MIXED LOW RISK/HIGH RISK POPULATION

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Non-specific ELISA screening reactions in low risk persons invariably lead to atypical or indeterminate band profiles on Western Blotting which must be evaluated alongside incomplete Western Blot profiles of true HIV1 positive sera.
METHOD The Westmead HIV1 antibody testing strategy consists of the concurrent use of two screening ELISA kits (Genetic Systems, Wellcozyme or Abbott) followed by supplemental tests including Western Blotting (Dupont), Abbott ENVACORE and antigen ELISA (Abbott) when indicated. Western Blot profiles were classified by guidelines suggested by the Australian National HIV Reference Laboratory:Positive, Negative, and 4 classes of indeterminate patterns.
RESULTS AND CONCLUSIONS Between March 1987-1988, 35,687 sera were tested, 616 of which were repeatedly reactive by both screening ELISAs. Regardless of screening ELISA kit combination, 98% of sera repeatedly reactive by two ELISA screening tests were confirmed positive by both Western Blot and Recombinant ENV ELISA. The remaining 2% were identified as seroconverters. Sera which were discordant on the ELISA screening assays had less than 2% chance of being confirmed positive for HIV antibody or less than 3% chance of being a seroconverter. The incidence of non-specific indeterminate Western Blot profiles was found to be inversely proportional to the specificity of the ELISA screening kits used. The Recombinant Envelope Protein ELISA (ENVACORE) was able to confirm the viral specificity of HIV1 envelope bands (gp160/110,41) on Western Blot. A Western Blot profile which is reactive for HIV1 viral glycoproteins alone or with not more than two other viral proteins (gag or pol) and which is confirmed viral specific by a Recombinant Envelope Protein ELISA can be used as a predictor of seroconversion.

W.B.P.154 SIGNIFICANCE OF AN INDETERMINATE HIV WESTERN BLOT (WBi)

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Objective. To determine the significance of a WBi result in a normal blood donor population at low-risk for HIV infection.
Methods. One hundred donors (D) to 50 recipients (R) were selected from prospective studies of post-transfusional hepatitis. Anti-HIV were tested by EIA (Dupont) and by a licensed WB assay (Biotech/Dupont). A WBi pattern was defined as the detection of any band without meeting the FDA criteria for positivity. We also used a recombinant immunoblot assay (RIBA-HIV216, Chiron/Ortho) with 4 recombinant antigens (p24,31,gp41,120) on an EIA strip, an HIV antigen test (Abbott), an anti-HTLV-I EIA (Dupont) and anti-HIV-2 EIA (Johnson).
Results. Twenty of 100 D were WBi; none were EIA+. p24 was found in 70% of WBi, in 10 cases as a single band. A 6 month post-transfusion sample in 19 R from the 20 WBi D revealed a WBi in 7 (36%); similar to the finding of WBi in 8 of 19 (42%) control R of WB- blood. When 4 serial samples from the 15 WBi R were tested on two occasions, a reproducible WBi was found in only 21 of 60 (35%) samples; a p24 band was reproducible in only 25% of the samples whereas p55 was reproducible in 78%. No R of WBi blood developed a WB+ by FDA criteria or an EIA+. None of the WBi D or R were reactive for HIV antigen and in the RIBA immunoblot assay. Anti-HTLV-I and anti-HIV-2 were - in 5 D R pairs.
Conclusion. 1)A WBi can be found in 20% of a healthy D population anti-HIV- by EIA;2)WBi patterns are poorly reproducible; p24 is the most common band but the least reproducible;3)the recombinant immunoblot is a useful tool for the clarification of WBi;4)D with WBi do not appear to transmit HIV to R; in a low-risk D population is unlikely that a WBi indicates true HIV infection.

W.B.P.155 WESTERN BLOT QUANTITATIF : INTERET DANS LA SURVEILLANCE DES PATIENTS HIV-SEROPOSITIFS

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Objectifs. Evaluer l'intérêt d'une quantification du Western-blot.
Méthodes. Les bandes d'immunoblot obtenues (Du Pont de Nemours) sont quantifiées par lecture densitométrique automatisée (Electrophoresis Data Centers-Helena). Les résultats sont exprimés en intégrales représentatives de la surface délimitée par chaque pic de la courbe. Deux groupes de 9 patients appariés d'après l'âge, la sexualité et le stade clinique (défini par le CDC) ont été constitués : le groupe Malades (M) formé de sujets ayant progressé du stade II au stade IV, et le groupe Témoin (T) de malades restés asymptomatiques (stades II) durant le même suivi de 24 à 31 mois.
Résultats. Cette technique assure une lecture objective. Elle permet un suivi précis des différents anticorps : ainsi les valeurs représentatives des Ac anti-p24 et anti-p17 sont plus faibles dans le groupe M que dans le groupe T ($p < 0{,}05$) et décroissent jusqu'à s'annuler au cours du suivi ; chez un malade traité par AZT, ces 2 valeurs augmentent alors que l'antigénémie p24 disparait. Sa sensibilité est supérieure à celle des tests EIA de 2ème génération (ENVACOR Abbott) pour la détection des anticorps anti-p24. Sa reproductibilité intrasérie est bonne. Cependant elle pose des problèmes méthodologiques (défaut de reproductibilité intersérie) nécessitant l'apport d'améliorations.
Conclusion. Les perspectives sont intéressantes dans l'évaluation précoce de l'évolutivité de la maladie chez les sujets asymptomatiques, dans le suivi des nouveaux-nés de mères séropositives et dans la surveillance du traitement antiviral.

W.B.P.156 FIELD EVALUATION FOR THE DETECTION OF HIV-1 SPECIFIC IGG ANTIBODIES (HIV-AB) IN SALIVA: A COST-EFFECTIVE AND ACCURATE ALTERNATIVE TO BLOOD TESTING

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Objective. To determine the sensitivity and specificity for the detection of HIV-1 antibody in saliva using commercial ELISA and Western blot assays in a high risk population.
Methods. Saliva and serum samples were concurrently collected from 387 prostitutes and their 71 male clients in Kinshasa. Both serum and saliva were tested by ELISA (Organon) and repeatedly reactive samples were tested by Western blot (DuPont).
Results. 134 (34.6%) of the 387 prostitutes and 11 (15.5%) of 71 male clients were HIV-1 seropositive as determined by ELISA and Western blot results of serum. Of these 145 seropositive individuals, 137 (94.5%) were positive by saliva ELISA and Western blot. Of the 8 false negative saliva samples, 5 were ELISA positive but Western blot indeterminate on saliva testing. Of 313 seronegative individuals, none were positive on saliva testing. Of 7 women who seroconverted over a 3 month period, 2 had saliva that was ELISA positive and Western blot positive, while 2 had saliva that was ELISA positive, Western blot indeterminate.
Conclusion. In this field evaluation of testing saliva samples for the presence of HIV-1 antibodies, saliva testing had a sensitivity of 94.5% and a specificity of 100% compared to serum ELISA and Western blot testing. However, if individuals with ELISA positive, Western blot indeterminate saliva results subsequently undergo serum testing, the sensitivity of the screening method increases to 97.9%. Saliva testing for HIV antibodies represents an economical alternative method for screening patients when invasive techniques such as venipuncture are not possible.

W.B.P.157 APPLICATION OF VIRUS CULTURE AND PCR FOR HIV DETECTION IN BLOOD DONORS WITH PERSISTENT ANTI-P24 REACTIVITY IN WESTERN BLOT

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Objective. To investigate the presence of HIV in blooddonors with persistent indeterminate anti-p24 reactivity in HIV Western Blot.
Methods. PBL from 11 blood donors with persistent anti-p24 in HIV WB, previously described as non infective to recipients of blood (Lancet 1986;ii:752-753) and HIV positive cells were co-cultivated with PHA stimulated PBL from HIV negative donors, and cultured for >30 days. HIV expression was monitored by RT and p24 capture assay. After culturing HMW-DNA was isolated and applied in PCR. The PCR was performed with 2 primer sets for pol and gag. Putative amplificates were confirmed on Southern Blot using internal oligonucleotides of 40 bp specific for pol and gag respectively, radio labeled with ^{32}P.
Results. None of 11 donors with persistent anti-p24 reactivity in WB were found positive in culture. The results of PCR analysis will be presented.
Conclusions. Will be discussed.

W.B.P.158 ANTI-NEF ANTIBODIES IN BLOODDONORS WITH PERSISTENT ANTI-P24 REACTIVITY IN HIV WESTERN BLOT, AND CHARACTERIZATION WITH RECOMBINANT P24 IN BIDIMENSIONAL BLOT AND ELISA.

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Objective. To investigate the presence of anti-NEF antibodies as a marker of HIV infection in blooddonors with indeterminate anti-p24 HIV Western Blot reactions, and to further characterise this reactivity employing recombinant p24 as antigen.
Methods. Serum samples of 11 blooddonors with persistent isolated anti-p24 reactivity in HIV Western Blot, previously described as being non-infective for HIV to recipients of blood, (Lancet 1986;ii:752-753) were tested for anti-NEF antibodies, employing recombinant NEF protein (Transgene, Diagnostics Pasteur) in ELISA and WB. The serum samples were further tested in bidimensional blot and ELISA with recombinant p24 protein (Transgene, Diagnostics Pasteur), obtained native from E. coli, as antigen. Bidimensional blotting was performed by electrophoresis according to electric charge in a pH gradient and in second dimension by molecular weight with SDS-PAGE, and afterwards transferred to a nitrocellulose membrane.
Results. In recombinant p24 ELISA 5/11 sera were repeatedly positive and 1/11 was borderline positive. In bidimensional blot 3/5 sera were positive, and 1/5 gave an indeterminate reactivity. Results of anti-NEF testing will be presented.
Conclusions. Will be discussed.

W.B.P.159 DETECTION OF HIV-1 SPECIFIC ANTIBODIES AND NEUTRALIZING ACTIVITY (NT Act.) IN THE URINE OF SEROPOSITIVE PERSONS.

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Objective. To detect antibodies to HIV-1, including neutralizing antibodies in urine samples from 56 HIV-1 seropositive individuals.
Methods. Fifty-six persons including 17 patients with AIDS-KS, 16 with AIDS-OI, 8 with ARC and 15 asymptomatic seropositive homosexual men were tested for HIV-1 specific antibodies in both serum and urine (concentrated 100-200X) by ELISA, Western blot (WB), and RIPA. HIV-1 NT act. was determined using a neutralization assay performed with the H9 clone as target cells and HTLV-IIIB as the virus inoculum.
Results.

Samples Tested	ELISA	No. reactive (%) by WB p24	gp41	gp120	gp160	No. reactive (%) by RIPA p24	gp41	gp120	gp160	NT act.
Serum	56 (100.0)	45 (80.4)	54 (96.4)	54 (96.4)	56 (100.0)	35/46 (76.6)	41/46 (89.1)	44/46 (95.7)	46/46 (100.0)	23 (41.1)
Urine	55 (98.2)	35 (62.5)	41 (73.2)	55 (98.2)	56 (100.0)	30/46 (65.9)	29/46 (65.2)	32/46 (69.6)	44/46 (95.7)	19 (33.9)

The titers of the HIV-1 antibodies and HIV-1 NT act. found in the urine corresponded to the titers of the antibodies to HIV-1 and NT act. in the serum.
Conclusion. 1) Specific antibodies to HIV-1 were detected in urine of HIV-1 seropositive individuals. 2) HIV-1 NT act. was shown in 200X concentrated urine from those who were HIV-1 antibody positive in both serum and urine. 3) The anti-HIV-1 antibodies in the urine may be derived from the serum.

W.B.P.160 COMPARISON OF WESTERN BLOT (WB) INTERPRETIVE CRITERIA FOR HIV-1 ANTIBODY

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Objective. To compare the four main proposed WB interpretations for their ability to confirm HIV-1 infection.
Methods. Proposed criteria include: I) Assoc State Terr Public Health Lab Directors (ASTPHLD), II) Consortium Retro Serol Stand (CRSS), III) American Red Cross (RC), IV) Dupont-FDA licensed WB kit. We evaluated each criteria by testing sera from 436 randomly selected patients as follows: AIDS (n=86), ARC (n=40), EIA repeatedly reactive (RR) asymptomatic homosexual men (n=58), and EIA negative volunteer blood donors (n=250). Each serum was tested by the FDA licensed Dupont Western blot kit and the results were scored as positive (P), negative (N) or indeterminate (I) according to the four definitions.
Results. The data presented indicate that the ASTPHLD criteria were the most sensitive and specific of the four criteria examined.

	ASTPHLD P(%)	I(%)	CRSS P(%)	I(%)	RC P(%)	I(%)	DP P(%)	I(%)
AIDS	83(96)	3(4)	76(88)	10(12)	74(86)	12(14)	62(72)	24(28)
ARC	39(97)	1(3)	38(95)	2 (5)	36(90)	4(10)	34(85)	6(15)
RR MEN	45(78)	13(12)	43(74)	15(26)	41(71)	17(29)	39(67)	19(23)

The most restrictive criteria (requiring the presence of GAG, POL and ENV), RC and Dupont, yielded higher numbers of indeterminates, usually due to a lack of GAG/POL antibody in AIDS patients.
Conclusion. The ASTPHLD criteria have the least number of indeterminates in all categories. This allows more accurate interpretations while minimizing indeterminate results which must be followed by further serologic examinations. We would, however, alter the negative statement from no viral specific bands present to no bands present.

W.B.P.161 The Use of Recombinant HIV ELISA Kits as a Secondary Supplemental Test for Confirmation of HIV Infection

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Improvements in the sensitivity and specificity of HIV EIA kits and in the performance of supplemental confirmatory tests have made the serological diagnosis of HIV infection far more reliable in recent years.

We initiated a study involving over 3000 sera to evaluate the performance of a Recombinant HIV ELISA Ab kit from Cambridge Bioscience (CBC). The kit employs 96 well microtitre plates coated with recombinant proteins from the gag and env gene products of HIV. In an initial analysis, 333 blot indeterminate, 862 blot positive and 521 blot negative samples were retested using the CBC test. The samples were unselected in that all sera submitted for reference analyses were tested by the CBC procedure. All immunoblot positive sera were positive by CBC while 23 of the 333 blot indeterminants were positive using this recombinant test. One of the 521 blot negative samples was positive by the CBC test and could represent a false positive result. This preliminary evaluation indicates recombinant protein-based kits may be extremely useful adjuncts in HIV testing especially when used as supplemental tests.

W.B.P.162 LABORATORY IDENTIFICATION OF RECENT HIV SEROCONVERSION: THE UTILITY OF EARLY REPEAT SPECIMENS AND COORDINATION WITH THE COUNSELING TEAM.

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Objective. To study the collection of followup specimens when there are apparent indeterminate results in a high risk population. The objective was to determine serologic patterns consistant with early seroconversion, minimize time of uncertainty for clients with indeterminate results, and communicate these findings to the counseling and education teams.
Methods. Low level of antibody was defined as 1) EIA ratio >0.8 and <2.5, 2) immunofluorescence (IFA) titer ≤1:10, and 3) 1-3 viral bands on Western blot (WB). A second specimen was obtained 2-4 wk later (median 14 d, mean 15.9 d) by requesting a new blood draw at the time of the results reporting and counseling. It was possible to maintain anonymity and the link between the 2 specimens by including the previous specimen number on the new lab slip.
Results. Of 54,000 specimens tested 1985-1988, 52 were defined as low positive. In 29 of 30 cases where a second specimen was obtained, the EIA absorbance, the IFA titer, and the number of bands on WB increased, suggesting that these were early seroconversions. The WB patterns commonly consisted of p24 and very weak gp160 on the 1st specimen; the second specimen showing gp120 and other gag and pol bands.
Conclusions. Certain serologic responses may be indicative of early seroconversion, which can be confirmed on followup specimens taken 2-4 weeks later. Identification of such recent seroconverters may be valuable for planning and evaluation of prevention and education efforts.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

W.B.P.163 THE D-MANNOSE-SPECIFIC LECTIN FROM GERARDIA SAVAGLIA BLOCKS BINDING OF HIV-1 TO H9 CELLS IN VITRO.

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Objective. To describe that lectins can be used as a tool to inhibit HIV infection in vitro. Methods. Human T cells (H9), infected with HIV-1 have ben used for the studies. Results. The new (alpha-1-->2)D-mannose specific lectin from Gerardia savaglia is shown to prevent infection of H9 cells with HIV-1 in vitro. At 0.2 µM a complete protection was achieved. Moreover, the lectin inhibits syncytia formation in the HIV-1/H9-Jurkat cell system to 100 % at 0.2 µM. This effect was abolished by coaddition of D-mannose at a stoichiometric ratio of lectin to sugar of 1:500. In addition it is shown that the lectin reacts with the oligosaccharide side chains of HIV-1 gp120 env molecule; after deglycosylation of the gp120, the resulting 58-60 kDa form did not react with the lectin. Conclusion. This new lectin allows the development of assays (i) to screen for compounds that interfere with the gp120-CD4 interaction and (ii) to detect viral antigens in patients' sera. Refs.: Kljajic et al., Europ. J. Biochem. 169, 97 (1987); Müller et al., J. Acquired Immune Def. Syndr. (1989), in press. Supported by grants from the Bundesgesundheitsamt.

W.B.P.164 EARLY SEROLOGIC EVIDENCE OF INFECTION WITH HUMAN IMMUNODEFICIENCY VIRUS-TYPE 1 (HIV-1)

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Objective: To determine the prevalence and significance of indeterminant western blot (WB) assays in homosexual men with negative Enzyme-Immunoabsorbent Assays (EIA).
Method: The Chicago component of the MACS followed 396 EIA-negative men from 1984-85 through 10/1988. At 6 mo. intervals an EIA was obtained; WB were performed at 2 or more visits.
Results: By 10/88, 60 of the 396 had developed a WB confirmed EIA; 24 had bands to 1 or more products of the GAG, POL or ENV gene regions 6 mo. or more before the visit with the diagnostic WB confirmed EIA. In contrast, 15 of 336 who remained EIA negative through 10/88 had similar indeterminant WB at 2 or more visits ($X^2 = 72$, $p<0.0001$). Of the 15, 7 had 2 bands on at least 1 visit. The mean CD4 cell count of these 15 was 906/mm^3 (493-2012) at entry and 864/mm^3 (435-1427) at the 9th visit.
Conclusion: Of 39 homosexual men with negative EIA and an indeterminant WB, 24 developed a WB confirmed EIA (positive predictive value 61.5%). In contrast 321 of 357 with persistently negative WB remained EIA-negative during the 48 mo. study period (negative predictive value 89.9%). Individuals at risk, with indeterminant WB should be closely monitored for definitive evidence of HIV-1 infection.

W.B.P.165 IS THERE A LONG 'SILENT' PERIOD BEFORE ANTI-HIV-1 SERUM ANTIBODIES APPEARANCE IN HIV-1 INFECTION?

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Ranki et al.[1] have suggested that a period as long as 14 months can pass since HIV-1 infection is acquired to Anti-HIV-1 serum antibodies appearance, if a non-recombinant, type 'sandwich' EIA (sEIA) is used to test them. However, if a recombinant, competitive EIA (cEIA) or a Western-Blot analysis (WB) are employed, antibodies to the HIV-1 core proteins are able to be detected during this 'silent' period.
Objective: To gain more knowledge on the HIV-1 serology during this period of HIV-1 infection.
Methods: We have studied serum samples sequentially taken from 17 subjects (4 homosexual men, 5 hemophiliacs, 7 intravenous drug abusers and the spouse of an infected man) who seroconverted for Anti-HIV-1. Three of these patients suffered from an acute, self-limited, febrile illness. The samples were collected between 14 and 1 months before they developed Anti-HIV-1. Seroconversion (SC) was defined as the appearance of Anti-HIV-1 antibodies tested by a recombinant sEIA in a sample taken from a subject who previously had been proved to be seronegative.
Results: All of the samples collected before SC were found to be negative for Anti-HIV-1 when tested by both cEIA and WB. Two patients were Anti-HIV-1 positive earlier when tested by recombinant sEIA than when a non-recombinant sEIA was used. Four of the 17 subjects turned out to be positive for HIV-1 Ag in serum before SC.
Consclusion: These results show that there is not a long 'silent' period before SC for Anti-HIV-1 if a highly sensitive EIA is used to test this marker. Moreover, this seems to be in the same way regardless the risk group and the clinical picture of acute HIV-1 infection.

Ranki et al. Long latency precedes overt seroconversion in sexually transmitted human immunodeficiency virus infection. Lancet 1987; 2: 589-59[illegible].

W.B.P.166 COMPARISON OF FALSE POSITIVE REACTIONS IN DIRECT BINDING ANTI-HIV ELISA USING CELL LYSATE OR RECOMBINANT ANTIGENS

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Objective Comparison of prevalence of false positive reactions in a commercial anti-HIV ELISA in blood donors using antigen from H9 infected cell lysates with those in the same assay using recombinant antigen.
Method In 1987-88 a commercial anti-HIV ELISA test using antigen from infected H9 cells was used to screen blood donors in the Manchester and Lancaster blood banks. In April 1988 an ELISA using recombinant antigen from the same company was introduced. Reactions not due to anti-HIV-1 on confirmatory testing and follow-up for 1 year were analysed by Western Blot.
Results False positive reactions were found at a prevalence of 1/800 (0.2%) in 1987-88. Study of 60 of these donors showed 57 reactive by Western Blot; 7 had anti-p24 ± 55 bands and 50 anti-p18 ± 55 bands. From April 1988 the recombinant assay had a higher prevalence (0.5%) of reactive samples. Most were negative in 3 other immunoassays, and by Western Blot:- 12 were positive by the Abbott recombinant test only; 9 had anti-p18 ± p55 on Western Blot and 3 had anti-gp120/60, one with gp41. Eleven donors positive on screening in 1987-88, reactive by Western Blot, were negative by the recombinant anti-HIV ELISA when referred after April 1988. Further studies continue.
Conclusion False positive reactions in the recombinant ELISA recognises different epitopes to those recognised by the anti-HIV ELISA using antigen from HIV infected cells.

W.B.P.167 NEGATIVE RESULTS OF IN VITRO TESTS FOR HIV1 ANTIBODY PRODUCTION BY PERIPHERAL BLOOD CELLS IN 12 CASES OF ISOLATED GAG-ENCODED PROTEIN POSITIVITY.

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OBJECTIVE. To provide a help for the interpretation of ambiguous results observed in the course of systematic surveys : weak HIV1 seropositivity of ELISA tests, together with isolated bands of p25 (or other gag-encoded/protein) bands with no gp bands probably correspond to HIV1 "false positivity" and not to a very early stage of HIV1 seroconversion. The interpretation of such tests is however difficult and stressing.
METHODS. PBMC from 12 cases of isolated gag-encoded protein positivity and from 12 cases of classical asymptomatic HIV1 seropositivity were incubated : a) in the wells of Pasteur ELISA kits : the in vitro secreted HIV1 antibodies were revealed by the use of an amplifying immunoenzymatic complex, b) in antigen-free plates : the supernatants were then used for Western blot analysis on strips from the Pasteur kit, thus allowing a comparison of seric and supernatant Western blot profiles.
RESULTS. HIV1 in vitro ELISA and supernatant Western blot tests, positive in all HIV1 infected subjects even at very early stages of sero conversion were constantly and repeatedly negative in the 12 cases of isolated gag-encoded positivity.
CONCLUSION. Since circulating B cells have been shown to secrete HIV1 antibodies in vitro during the whole course of HIV1 infection, the absence of such cells should help to eliminate the diagnosis of HIV1 infection in these ambiguous cases.

W.B.P.168 COMPARISON OF INDIRECT IMMUNOFLUORESCENCE AND WESTERN BLOT-TESTS FOR DETECTION OF ANTIBODY TO HUMAN IMMUNODEFICIENCY - VIRUS.

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Objetive To compare two confirmatory tests in the serological diagnosis of-- infection with A.I.D.S. virus.
Methods. 237 sera and 25 c.s.f. from the same number of people that were selected on the basis of screening enzyme immunoassay reactivity to A.I.D.S.-- virus were tested using Indirect Immunofluorescence (I.F.A.) and Immunoblot-assays (W.B.).
Results

GROUP	SAMPLE	I.F.A. No.T./ No.(+)	W.B. No.T./ No.(+)
A.I.D.S. patients	serum	149 / 145	149 / 145
	c.s.f.	25 / 18	25 / 25
Sexual contacts	serum	40 / 39	40 / 39
Hemophiliacs	serum	23 / 22	23 / 22
Blood donors	serum	11 / 9	11 / 9
Renal insuficiency	serum	11 / 8	11 / 5
Lupus erithematosus	serum	3 / 3	5 / 10

Conclusión there was 100% agreement between I.F.A. and W.B. test in the samples of serum of A.I.D.S. patients, their sexual contacts, haemophiliacs and blood donors However the W.B. was the most acceptable method for the groups of patients with renal insuficiency, lupus erithematosus and the samples of- c.s.f. of. A.I.D.S. patients.

W.B.P.169 RESOLUTION OF INDETERMINATE HIV WESTERN BLOT RESULTS BY ADDITIONAL TESTING

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Objective. Current laboratory practice for the serological diagnosis of HIV infection involves initial screening of the specimen for anti-HIV antibody using an enzyme immunoassay (EIA) and validation of EIA positive results with Western blot (WB). The resolution of indeterminate WB results is a major problem in this algorithm. A practical solution would be to retest specimens using other serological approaches.
Methods. We have investigated the addition of indirect immunofluorescence (IFA), recombinant EIA (ENV-9, E.I. DuPont, Inc., Wilmington, DE), or recombinant immunoblot (RIBA HIV-216) Chiron Corp., Emeryville, CA) as tests to resolve EIA positive, WB indeterminate specimens.
Results. 508 of 3104 consecutive specimens were EIA positive. WB test results were: 416 positive, 32 negative, 54 indeterminate. The results of additional testing on the 54 WB indeterminate specimens were ENV-9, 2 positive, 52 negative; RIBA HIV-216, 2 positive, 51 negative, 1 indeterminate; and IFA, 1 positive, 41 negative, 11 indeterminate.
Conclusion. These results indicate that the recombinant tests may be the most useful in the resolution of WB indeterminate specimens.

W.B.P.170 PROGNOSTIC VALUE OF REPEATED WESTERN BLOT ANALYSIS.

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Objective. To assess the prognostic usefulness of Western Blot testing in HIV-infection.
Methods. In 214 asymptomatic patients of the Bonn Hemophiliac Cohort Study Western Blot analysis has been performed at intervalls of 3 to 6 months since 1986.
Results. Only loss of anti-p24 or loss of anti-p17 was correlated with clinical progression to ARC or AIDS after 2 years.

	Asympt.	ARC	AIDS (after 2 years)
p24 absent (n=33)	55%	21%	24%
p24 present (n=180)	87%	8%	5%
p17 absent (n=70)	67%	17%	16%
p17 present (n=143)	90%	6%	4%

Conclusion. If available, Western Blot, together with other prognostic markers, might help in deciding which patients to assign to antiretrovial therapy.

W.B.P.171 SENSITIVITY OF A NEW RECOMBINANT INHIBITION TYPE ELISA SYSTEM FOR THE DETECTION OF HIV-1 ANTIBODIES

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Objective. To establish the sensitivity of a new inhibition type ELISA for the detection of HIV-1 antibodies, employing recombinant antigens.

Methods. A serum panel of 1593 confirmed HIV-1 Western Blot positive samples, classified as: clear (n=408), turbid (n=1139), haemolytic (n=46), obtained from asymptomatic individuals (n=1271) and from AIDS patients (n=322), was tested with the new Wellcome recombinant HIV-1 ELISA, according to the manufacturers instructions. The samples had been obtained between 1986 and 1988, and had been stored at -20° C.

Results. Out of 1593, 1589 (99.7%) were found initially positive and 4 samples (0.3%) were found initially negative. Of the ELISA negative samples, 3/4 were classified as haemolytic and 1 as turbid; 4/4 were positive when retested at 1:10 serum dilution. The overall sensitivity of the test was 99.7%. Among clear and turbid samples the sensitivity was 100% and 99.9 % respectively, and among haemolytic samples 93.5 % ($p < 0.001$ Chi sq).

Conclusion. The sensitivity of the Wellcome recombinant inhibition ELISA was very high: 99.7% . The 4 false negative results were observed among haemolytic and turbid serum samples.

W.B.P.172 PERFORMANCE OF A DOT IMMUNOBLOT KIT FOR HIV ANTIBODY TESTING

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Objective. To evaluate the performance of a dot immunoblot kit containing recombinant gp160 protein (MGSearch, MicroGeneSys) as a definitive screening and confirmatory HIV antibody test.
Methods. Sera were received for routine testing and were tested at the B.C. Provincial Lab by EIA (DuPont) and immunofluorescence (IFA) and/or Western blot (WB). A true positive was defined as EIA and IFA positive (high-risk patient) or WB positive or both.
Results. 292 sera were tested. Of 216 true positive sera, 196(90.7%) were positive by dot blot (MGS), 6 were negative and 14 were indeterminate (visible dot but no color). Of 76 true negative sera, 75 were negative by MGS and 1 was indeterminate (specificity 98.7%, pos and neg predictive values 100% and 92.6%). 11 known early seroconverters (p24 only on WB) were also tested; of these, 2 were MGS positive, 5 negative and 4 indeterminate.
Conclusion. The figures show that the MGS is insufficiently sensitive to be used as a screening test,particularly for seroconverters. It has good specificity for confirmatory testing. If indeterminate results are recorded as positive the sensitivity improves (97%) but is still inadequate for screening purposes.

W.B.P.173 USE OF AGGLUTINATION ASSAYS SUPPLEMENTAL TESTS FOR ANTIBODY TO HIV.

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Objective: To evaluate two agglutination assays for antibody to HIV as supplemental tests in field laboratories in Kenya.

Methods: A particle agglutination test (SERODIA-HIV, Fujirebio,Japan) and a haemagglutination test ([illegible], abbott, USA) were evaluated for use as supplemental tests in comparison with the Western Blot. Seven laboratories in Kenya participated in the study. Serum from 2,000 blood donors, persons at high risk and suspected AIDS patients were initially screened by the HIVCHEK (Dupont, USA), all positive specimens and 10% of the negatives were tested by Western Blot. Each test is being evaluated for sensitivity, specificity, and usefulness in these field laboratories.

Results: With thorough training these tests can readily be performed in laboratories without sophisticated equipment. Data on sensitivity and Specificity will be presented at the conference.

Conclusions: The agglutination tests do not require expensive equipment or highly trained staff and are more economical than the conventional supplemental tests used in HIV testing. These tests offer an alternative to the Western Blot technique as well as their intended use as screening tests.

W.B.P.174 PERFORMANCE APPRAISAL OF LABORATORIES TESTING DRIED BLOOD SPOT SPECIMENS FOR BLINDED HIV SEROPREVALENCE SURVEYS IN THE UNITED STATES

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Objective. To determine and monitor the quality of analytical performance for HIV antibody analysis of dried blood spots (routinely collected for newborn screening programs) by laboratories participating in the blinded seroprevalence surveys of childbearing women.
Methods. Dried blood spot (DBS) specimens on filter paper were prepared simulating typical analytical experiences for the performance evaluation of laboratories. A panel of 59 DBS specimens were prepared from individual serum matrices using heat inactivated HIV positive plasma and negative serum. The first monthly test sets of 12 blind-coded specimens selected from this panel were distributed to laboratories in July 1988.
Results. Two of 7 laboratories misclassified three different specimens in an initial pilot evaluation of the specimen panel. To date, 31 laboratories and 6 manufacturers have analyzed several sets of 12 blind-coded DBS specimens selected from the panel. The participating laboratories have analyzed a total of 1,236 specimens by EIA and Western blot. For the 6-month evaluation period, nine specimen misclassifications and 10 transcriptional errors have been identifed.
Conclusion. The performance of the testing laboratories and products for analysis of DBS specimens has been excellent. These laboratory evaluations assure the quality of the analytical data for the national surveys.

W.B.P.175 ASSESSMENT OF DRIED BLOOD SPOT QUALITY CONTROL AND PERFORMANCE EVALUATION MATERIALS FOR NATIONAL HIV SEROPREVALENCE SURVEYS

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Objective. To characterize dried blood spot (DBS) materials prepared for quality assurance of laboratories screening for HIV seroprevalence. Methods. DBS specimens were produced, characterized, and distributed for bench level controls and laboratory evaluation. Quality control (QC) materials were prepared on filter paper using HIV seropositive plasma and/or negative serum combined with red blood cells to an hematocrit of 50%, to yield appropriate target values of high, low, and negative specimens. Bulk production lots of QC contained 6,000 sheets of 15 DBSs each for routine use by all laboratories. Stability in both longitudinal and accelerated studies and homogeneity of DBS materials were measured by ELISA and Western blot. Results. Analysis of DBS materials, stored at -20°C in zip-closure bags with desiccant over seven months showed no apparent change in optical density (OD) or Western blot band pattern. Studies of antibody stability with a 1.2 OD specimen under various storage conditions were conducted. For example, exposure of this specimen to 37°C at ambient humidity resulted in a 20% reduction of recoverable antibody (relative OD) in 30 days, while the same specimen maintained at 37°C in a zip-closure bag with desiccant showed a 20% relative loss after 61 days. From Western blot analysis the detected titer loss appears to be uniform across all antibody bands. Conclusion. DBS materials can be prepared that are reliable and stable under normal storage and handling conditions for routine QC, and to monitor and evaluate laboratory performance for this matrix.

W.B.P.176 CHRONIC HIV INFECTION WITH DELAYED APPEARANCE OF ANTIBODIES BY USUAL TECHNIQUES AND A CASE OF SEROREVERSION

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We describe 2 unusual serology profiles from HIV-infected persons. Case 1: A 47 year old male, was intermittently symptomatic for a year, but not seropositive. The P24 Ag capture Assay was persistently reactive. HIV was isolated in 09/88. Case 2: A 33year old female who presented an acute HIV encephalopathy and was seropositive. She recovered clinically, became EIA negative, IB indeterminate and later developed multiple infections, T4 cell count fell to 40, HIV isolation was positived. A recombinant-based EIA test showed persistent presence of antibodies in both cases.

Results.

	Case 1				Case 2				
	09/87	11/87	07/88	09/88	05/87	06/87	03/88	08/88	09/88
EIA (Dupont)	-	-	±	±	+	+	-	-	-
Immunoblot	-	-	ind	ind	+	+	ind	ind	ind
Recombigen	-	+	+	+	nt	+	+	+	+
P24 Ag (Abbott)	+	+	+	+	nt	nt	+	+	+
HIV Culture	nt	nt	nt	+	nt	nt	nt	-	+

Conclusions. Case 1 adds to the few cases described as HIV infected without the appearance of detectable antibodies for a prolonged period. Case 2 shows that seroreversion with apparent clinical recovery may occur but the infection persists. Standard viral lysate EIA tests may not have the sensitivity to detect HIV antibodies in all cases of infection.

W.B.P.177 REDUCING FALSE REACTIVE RESULTS WHEN TESTING FOR ANTIBODIES TO HIV-I.

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Sera from a population of 40,458 prospective immigrants to the US presently residing in New York City were tested for the presence of antibodies to HIV-I. Screening was with DuPont ELISA and confirmatory testing was with DuPont Western Blot (WB) kits. By WB analysis there were 1,256 (3.1%) reactive and 514 (1.26%) inconclusive (INC) sera.

A sample of 469 INC sera were further tested by alternative FDA approved ELISA assays from Genetic Systems (GS), Ortho, and Abbott. Retesting by the GS ELISA assay reduced the number of reactive samples by 47%, by the Ortho assay by 74%, and by the Abbott assay by 94%. The Abbott assay is therefore the most appropriate second tier ELISA assay for reducing the number of false positive ELISA assays.

The Ortho-Chiron RIBA confirmatory test found 35% of the INC sera to be non-reactive. Confirmatory Cellular immunofluorescence assays using slides prepared by either the Wampole Laboratory, or by Electronucleonics, were applied to a a subsample of the INC sera. These assays reduced the frequency of inconclusive results by over 98% each.

W.B.P.178 INTERPRETATION AND FOLLOW-UP OF "INDETERMINATE" WESTERN BLOT(WB) TEST RESULTS

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Objective. To describe the follow-up of "indeterminate" in WB test persons.
Methods. 53 "indeterminate" persons (16 belonging to high risk and 37 - to low risk groups) were followed-up for 6-14 months (3-8 sera tested in 4-6 week intervals) using- WB HIV-1 IgG (DuPont,USA).
Results. The most characteristic patterns of "indeterminate" WB in low risk persons at the beginning of the study include predominantly antibodies to GAG or ENV proteins(54,05%); they persist or disappear during the follow-up. The sera of high risk people demonstrate at the beginning of the study mainly multiple bands(81,2%) showing a tendency to persist or to shift to "positive" pattern.
Conclusion. 1. "Indeterminate" WB is not a final result. Based on the literature and our experience we proposed an own schema (it will be presented) for diagnostic behaviour to "indeterminate"WB results. 2. People belonging to high risk groups have to be retested in 6-8 week intervals,but not at 3-6 months as recommended until now.

W.B.P.179 EVALUATION OF TWELVE COMMERCIAL KITS FOR SCREENING OF HIV-1 ANTIBODIES IN MEXICO

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**Ministry of Health of Mexico

Objective: To evaluate sensibility, specificity and operative performance of twelve comercial kits for use in screening programs for HIV-1 antibodies in Mexico.
Methods: A 775 sera panel, integrated by 32 AIDS patients sera, 49 HIV-1 seropositive sera, 42 sera from patients with pathologies likely to produce false positive results and 652 randomly selected blood donor sera, was used. The sera were analysed by seven enzime immunoassays from Abbott, Behring, Cambridge Bioscience, DuPont, Heber Biotec, Ismunit and Organon, DuPont dot immunoassay, Abbott, Cambridge Bioscience and Miles passive agglutination assays, and the Medicorp cytoimmunoenzymatic assay. First time reactive sera were retested with the same assays. Commercial Western Blot was used as reference test.
Results: HIV-1 seroprevalence for the total panel was 10.7%. Sensitivities of the assays ranged from 91.8 to 100%; specificities from 96.4 to 100% and operatively (evaluated by operative indicators) ranged from 27.5 to 90%.
Conclusion: Methodological differences between the assays was not relevant for either sensitivity or specificity. Specificity was related to antigen origin. Kits with recombinant antigen gave, in general, higher specificity values.

Psychiatrie/Neuropsychologie
Psychiatry/Neuropsychology

W.B.P.180 Neuropsychological Function in Physically Asymptomatic HIV Seropositive and Seronegative Gay/Bisexual Men

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Objective: To determine if HIV-induced neuropsychological impairment occurs prior to physical manifestations of immunosuppression.
Methods: A 2-hour battery of standardized neuropsychological tests was administered to 20 HIV seropositive and 20 HIV seronegative gay/bisexual men matched for age, education and distress (BDI, Spielberger Anxiety). Asymptomatic status was ensured by thorough medical history and physical exam, and subjects were excluded with psychopathology, substance dependence (SCID, PDE), bereavement (PERI), medication during past month, or history of concussion or migraine.
Results: Multiple t-tests and logistical regression failed to find significant differences between the two groups on attention, concentration, memory, conceptualization, language or motor functions.
Conclusions: The findings further document the need for careful screening and tightly-matched seronegative comparison subjects before concluding that neurotropic effects of HIV cause significant dysfunction in asymptomatic seropositive subjects.

W.B.P.181 IMMUNOLOGICAL AND PSYCHOLOGICAL PREDICTORS OF DISEASE PROGRESSION IN GAY MALES AT RISK FOR AIDS

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Objective. To determine the immunologic and psychologic factors which appear to be useful predictors of progression of HIV-1 infection.
Method. A cohort of 24 gay males (participants in a larger study, in which they received their anti-HIV-1 status), were followed for 1 to 2 years. Six of these progressed in severity of illness, five who were positive progressed in disease, i.e., developed posterior cervical nodes, two developed symptoms of ARC, two developed AIDS (1 died), and one who was antibody negative seroconverted to positive. Those who progressed in disease differed on several immunologic and psychological measures collected at baseline.
Results. Those who progressed in disease were lower at baseline than those who remained asymptomatic in T4 number, 4B4+T4+number, T4/T8 ratio and lymphocyte response to mitogens. Within a subset of subjects who were antibody positive those who progressed in disease were significantly lower (by Mann-Whitney U Test) than those positive subjects who did not progress in terms of WBC count [(4300 vs 6350)$Z=1.96$, $p=.048$)], total lymphocyte count [(2400 vs 3212)$Z=2.45$, $p=.01$)], T4 number [(706 vs 1200)$Z=2.2$, $p=.027$)], 4B4+T4+ number [(203 vs 554)$Z=2.2$, $p=.027$)], NKH.1 [(186 vs 450)$Z=2.12$, $p=.034$)], number of B cells [(152 vs 301)$Z=2.45$, $p=.01$)], and significantly higher in IgM [(123 vs 87)$Z=1.96$, $p=.05$)].

For the psychological parameters those who progressed in disease, compared to those who remained asymptomatic were lower on active coping, hardiness-commitment, hardiness-total, and social support-reassurance, and higher in loneliness at baseline. Within a subset of subjects who were antibody positive, those who progressed in disease were significantly lower (by Mann-Whitney U Test) on active coping [(11.0 vs 14.5)$Z=2.26$, $p=.023$)], hardiness-commitment [(1.1 vs 1.2)$Z=2.46$, $p=.01$], and hardiness-total [(97 vs 110)$=1.96$, $p=.05$)].
Conclusion. Both immunologic and psychosocial factors may be predictors of disease progression in HIV-1 infection. Supported by NIMH, P50MH42455-03.

W.B.P.182 A COMPARISON OF NEUROPSYCHOLOGICAL TESTING AND MENTAL STATUS EXAM IN AIDS PATIENTS

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OBJECTIVE: To document the inaccuracy of a standardized mental status exam compared to neuropsychological (NP) testing in the assessment of cognitive function in people with AIDS.
METHODS: NP testing (Numerical Attention; Symbol-Digit; Trails A, B; Story Recall and Figure Learning) and the NBCSE (Neurobehavioral Cognitive Status Exam) were done on 31 Ss with AIDS who were not referred for neurological problems. NP test results were compared to 39 controls.
RESULTS: According to the NBCSE, a standardized mental status exam, 28 of 31 Ss with AIDS were normal(21) or had an abnormal score only in memory(7). NP testing revealed impairment in 17 of these subjects, 11 of whom were very impaired on summary scores. Ss with AIDS were significantly impaired, compared to controls on Numerical Attention Time ($p<.001$), Symbol-Digit Modalities ($p<.002$), Trails A ($p<.04$), Trails B ($p<.04$), Story Recall ($p<.003$), and Figure Learning ($p<.006$).
CONCLUSION: In Ss with AIDS, a standardized mental status exam may identify deficits in memory, but will not accurately assess cognitive dysfunction which is significantly impaired across multiple categories, compared to controls.

W.B.P.183 NEUROPSYCHOLOGICAL IMPACT OF AIDS ON THE DEVELOPING BRAIN

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Objective. To propose a model for understanding the neuropsychological development of children with HIV infection, highlighting the differences between insult to the developing CNS and the mature adult CNS.
Method. A developmental neuropsychological perspective, with attention to white matter disorders (Rourke, 1988) is applied to 1) previous empirical findings and 2) current results on 16 children with HIV infection (10 treated with AZT) seen for serial comprehensive neuropsychological assessments.
Results. Infants with CNS involvement exhibit more global neuropsychological deficits whereas children with later or acquired manifestations show greater functional variability with specific deficits observed in attention and intermodal integration as represented by constructional and memory impairments.
Conclusion. The developmental neuropsychological model provides perspective on adult/child differences in CNS pathology. While similarities exist in functional deficits, the dementia symptomatology in adults is a result of the insult to the mature CNS causing specific loss of established functions. In contrast, the global effects in infants and the specific attentional and integration deficits in children result from poor transmission/connection between underdeveloped brain systems. Cognitive sequelae of HIV infection and the effects of AZT therapy in infants/children will be related to the developmental timing of both the CNS manifestation and treatment. The specific nature of the neuropsychological deficits present a major challenge to caregivers and educators who will provide services for growing numbers of children with AIDS.

W.B.P.184

W.B.P.185 MOOD STATE, NEUROPSYCHOLOGY & SELF REPORTED COGNITIVE DEFICITS IN HIV INFECTION

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Objective: To examine the relationships between mood state, neuropsychological performance and self reported cognitive deficits in HIV+ve homosexual males.
Method: 32 -ve and 77 well, +ve (CDC 2 + 3) were assessed using a comprehensive neuropsychological battery. Self reported and observer rated measures of mood were completed at the same time, and self reports on cognitive performance were also obtained.
Results: No differences were found between the two groups on the neuropsychological tests. They differed significantly on anxiety and on depressed mood, the +ve obtaining higher scores on both. On a measure excluding items relating to physical illness, the difference between the groups approached significance. Mood state made only a small contribution to overall neuropsychological performance. Subjective reports of cognitive deficit were in general not related to actual neuropsychological performance, but rather, were significantly associated with anxiety and depressed mood.
Conclusions: No differences were found between the groups on neuropsychological assessment. The seropositives had higher scores on the depressed mood and anxiety. Self-reported cognitive defects were associated with measures of mood state and not neuropsychological performance.

W.B.P.186 NEUROPSYCHIATRIC DISTURBANCES IN HIV-INFECTED PATIENTS.

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Objective. To describe frequency, type, severity of affective/behavioral disturbances among HIV-infected patients in the different stages of the disease; to evaluate the personality traits of these patients.
Methods. The study included n. 113 subjects (M=77; F=36; mean age 26.9±5.4 yrs; i.v.drug abusers n.96/113) of consecutive observation, classified according to the CDC criteria (group II: n. 49; III: n. 32; IV A: n. 10; IV B-E: n. 22). The following tests were administered: BPRS (Brief Psychiatric Rating Scale); MADS (Montgomery-Asberg Scale for Depression); MMPI.
Results. Affective/behavioral abnormalities were diagnosed (DSM III-R) with progressive percentual increases from group II to group IV, ranging from "adaptive" anxiety/depression to major psychiatric disturbances as a part of Organic Brain Syndromes. Anxiety/depression scores, even if abnormally elevated in all groups, tended to decrease with progression of the disease (scores of group IV vs II: $p< 0.01$); a significant elevation ($p<0.001$) of "Pd" scale (MMPI) was found without differences among CDC groups.
Conclusions. Personality traits of our HIV-patients were superimposable to those of HIV-negative drug abusers (control population); attention should be given to asymptomatic HIV-subjects showing even minor psychiatric disorders due to their possible significance of (HIV-related) organic mental disorders.

W.B.P.187 PSYCHOMETRIC EVALUATIONS IN ZIDOVUDINE TREATED PATIENTS - STANDARDIZED TEST-PROCEDURES DEMONSTRATE MEASURABLE PSYCHOLOGICAL IMPROVEMENT

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Objective. To evaluate the psychosocial impact of Zidovudine treatment in ARC and AIDS, 40 patients were sequentially tested using the SCL-90-R, a psychological symptom index. Medical, immunological and sociodemographic data were collected, in addition patients were staged using the Walter-Reed-Staging Classification.
Methods. 20 patients receiving Zidovudine were compared to a group of 20 patients in similar stages from the pre AZT area. We used a three point design of sequential tests. The SCL-90-R was applicated more than 2 months before the first medication of Zidovudin (point 1), within 3 months after the first medication (point 2) and more than 6 months after starting therapy (point 3). The patients in the historic comparison group had been tested at comparable points of their disease between 1986 and May 1987 when Zidovudine became first available in West-Germany.
Results. 20 Patients receiving Zidoduvine showed considerable less psychosocial distress within 3 months and more than 6 months after the first medication than before being started on this drug (p < = 0.05). On the other hand we found rising psychological distress between point 1 and point 2, and between point 1 and point 3 in the comparison group (p < = 0.05). It can be expected that physical improvement in Zidovudine treated patients contributes to the improvement of psychological stress as well as a feeling of hope related to this medication.
Conclusion. Standardized test procedures demonstrated lower distress in patients receiving Zidovudine than in the same patients before their being started on this drug, and than in similar patients not on Zidovudine.

W.B.P.188

W.B.P.189 THE USE OF MEDROXYPROGESTERONE AS PHARMACOLOGIC TREATMENT OF HYPERSEXUALITY IN MALE PATIENTS WITH HIV-1 INFECTION

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Objective: To examine the efficacy of the anti-androgen medroxyprogesterone acetate (MPA, Depo-Provera) in reducing sexual urges and high-risk behavior in patients with hypersexuality and HIV-1 infection.
Methods: Four HIV-1 seropositive male patients aged 22-44 were seen in psychiatric consultation for suspected or self-reported hypersexuality. After inpatient or outpatient evaluation, all were begun on MPA. Three received 500 mg. IM every 1-2 weeks while the fourth received oral Provera, 90 mg. every day. Determination of efficacy was based on self-report regarding intensity and frequency of sexual urges and/or reports of sexual behavior. Patients were seen weekly and received individual psychotherapy.
Result: Two patients were diagnosed with paraphilic disorders while the other two engaged in sexual behavior in the setting of poor judgement related to mental retardation. FSH/LH levels were increased in one patient with low testosterone. All patients decreased the number of sexual contacts, falling from as many as 50 per week to 1 per week or complete celibacy. This effect was noted after approximately 6 weeks on the drug. The only untoward event was mild hypertension in one patient.
Conclusion: Individuals engaging in high-risk sexual behavior due to either paraphilia or poor judgement secondary to mental retardation can decrease their urges and behaviors with MPA. Therefore, MPA should be considered as a safe and effective treatment option in these patients when combined with psychotherapy.

W.B.P.190 NOREPINEPHRINE RESPONSE & IMMUNE FUNCTIONING IN HIV⁺ SUBJECTS

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"Stress" is one of the proposed cofactors that could influence the clinical course in HIV infection. This study of 43 HIV+ homosexual males examines the hypothesis that norepinephrine (NE) response to a cold pressor test is related to immune functioning in HIV⁺ subjects.

A sample of blood for determining PHA stimulation of lymphocytes was collected from each subject via an indwelling catheter. After a 30 min rest, another sample was drawn for quantifying NE (basal level). Subjects then emersed one hand in ice water. Three additional blood samples were drawn at 0 (peak), 2 and 4 minutes after removing their hand from the water. NE response was expressed in terms of its recovery index (RI) from the peak level. RI = (peak - final sample)/(peak - basal sample). The results using a Pearson linear test show a relationship between RI and lymphocyte PHA stimulatory index ($r = .47$; $p < .005$).

These data support the hypothesized link between stress response and immune function. They also suggest that RI may be a useful indicator of stress response.

W.B.P.191 RESPONSE TO ANTIDEPRESSANT THERAPY IN DEPRESSED PERSONS WITH ADVANCED HIV INFECTION

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Objective: To determine differences in therapeutic response to two antidepressants in advanced HIV infection.
Method: Twenty-eight subjects (19 ARC/9 AIDS) were selected as meeting DSM-III-R criteria for major depression. Subjects received either amitriptyline (AMI) or desipramine (DMI) in a randomly assigned fashion. The patients were followed for the study period of one year. The Clinical Global Improvement Scale (CGIS) was used to rate response of the patients' psychiatric disorder to the medications.
Results: Using chi-square analyses and Fisher's Exact Test, ARC patients showed significantly better response (CGIS of moderate to marked improvement; p=0.0261). No significant difference was found between responses to the two antidepressant agents (p=0.2945).
Conclusion: Our results suggest:

1. In spite of the differential antidepressant affinities for central neurotransmitter receptors, specifically H_1 and muscarinic blockade, both DMI and AMI were equivalent in their clinical efficacy and tolerance.
2. The significant difference found between ARC and AIDS patients to antidepressant treatment may reflect a higher fraction of the organic component of AIDS-related mood disorder.

W.B.P.192 NEUROPSYCHOLOGICAL MANIFESTATIONS OF HIV INFECTION IN GAY MEN

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Objective: Cognitive function in HIV+ individuals without AIDS may be impaired. However, prior studies have been limited by inappropriate control groups and failure to medically stage HIV.
Methods: Blind to HIV status, we administered tests assessing general intellectual function, memory, language, executive function, visuospatial abilities, attention and motor speed to 160 gay men: 40HIV-, 55 HIV+ asymptomatic, 33 mildly symptomatic and 32 with medical symptoms.
Results: HIV+ and HIV- men were comparable in age, education, race, and handedness; presence of neurological signs, current or previous psychiatric diagnoses, rated depression or anxiety; and frequency of defective neuropsychological performance based on normative values or clinical impression. HIV+ men performed worse than HIV- on a test of verbal memory, had more trouble getting into set on a test of executive function, made more errors on the trail making test and had slower choice reaction time (all p<.05). Within the HIV+ groups there was no degradation in performance across medical stages of severity, but a summary score of neuropsychological performance correlated with both T4/T8 ratios and a rating of the severity of neurological signs and symptoms (both p<.05).
Conclusion: Subtle non-specific changes in memory, executive function and attention can occur after HIV infection of the CNS, prior to the onset of medical symptoms. Overt dementia or other major cognitive disorders do not appear at this stage of HIV infection unless caused by another disease.

W.B.P.193 THE USE OF THE MINI MENTAL STATUS EXAM AS A COGNITIVE SCREEN IN PATIENTS WITH AIDS

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Objective. To examine the utility of the Mini Mental Status Exam (MMSE) as a screening instrument in detecting cognitive deficits in patients with AIDS.

Methods. Hospitalized subjects (N=50) with first episode *Pneumocystis carinii pneumonia* (PCP) were given a battery of 10 neuropsychological tests (NP), Auditory Brain Wave Evoked Potentials (ABR's), and the MMSE. Impairment on the MMSE was determined by the usual cut off score of <24.

Results. Sixty-six percent of the subjects had abnormal ABR's and 78% of the subjects were abnormal on at least 6 of the 10 NP measures. However, only 4 of the 50 subjects (8%) scored less than 24 on the MMSE. The $\bar{X}$ score for this sample was 26.6, SD=2.0. In addition, the MMSE did not correlate with any of the individual NP measures nor with the ABR's.

Conclusions. The MMSE appears relatively insensitive in identifying cognitive deficits in patients with HIV infection. Caution should be exercised in using the MMSE to rule out cognitive impairment in this population.

This work has been supported in part by grant # DA04873 from the National Institute on Drug Abuse.

W.B.P.194 TRYPTOPHAN LEVELS ARE UNRELATED TO DISTURBANCES OF MOOD IN HIV-1 INFECTED PATIENTS

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Objective: Disturbances of mood frequently accompany early symptoms of the AIDS Dementia Complex (ADC). Metabolism of tryptophan (TRYP), a serotonin precursor, is also disrupted by HIV-1 infection. In order to investigate a possible biochemical mechanism of mood disturbance in ADC, mood and psychiatric symptom ratings were related to TRYP levels in both plasma and cerebrospinal fluid (CSF) in HIV-1 infected patients.
Methods: Blood and CSF samples from 45 HIV-1 infected patients, at various stages of disease, were assayed for TRYP using high performance liquid chromatography. Samples were drawn following administration of the Neuro-AIDS Study Group neurological history, exam, and neuropsychological battery, which included self-ratings for mood disturbance (Profile of Mood States: POMS) and general psychiatric symptomatology (Brief Symptom Inventory: BSI).
Results: Correlations between mood/psychiatric ratings and both plasma and CSF tryptophan levels were non-significant (e.g. POMS total by plasma TRYP r=-.03, p=.82; POMS total by CSF TRYP r=-.17, p=.25; BSI general severity index by plasma TRYP r=.17, p=.27; BSI general severity index by CSF TRYP r=.20, p=.22). Cases above normative cutoffs for mood/psychiatric disturbance did not differ in tryptophan levels from those below these cutoffs.
Conclusions: Levels of tryptophan, a precursor of serotonin, are unrelated to both presence and severity of self-reported mood disturbances in HIV-1 patients.

W.B.P.195 NEUROPSYCHOLOGICAL AND IMMUNOLOGICAL ABNORMALITIES IN ADVANCED HIV INFECTION

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Objective: To study the relationship between systemic immunodeficiency status and neurobehavioral impairment in advanced HIV infection.
Methods: Eighty subjects (39 ARC/41 AIDS) studied at entry for baseline neuropsychological testing were evaluated for their hematological and immunological status (white blood cell count, absolute T-cell count, and T-helper/T-helper suppressor lymphocyte ratio). Correlational analysis was done between neuropsychological marker variables with hematological and immunological values. Investigators were blinded to the individual participant's disease status.
Results: No significant differences between ARC or AIDS with respect to age, education, socioeconomic status or substance use were present. Abnormalities in memory reflected by long-term storage (LTS) and consistent long-term retrieval (CLTR) revealed significant abnormalities in both groups: 62% of ARC and 73% of AIDS cases fell below one standard deviation below the mean on LTS; 92% of ARC and 100% of AIDS cases fell one standard deviation below the mean on CLTR. Likewise, abnormalities were present in visual scanning, information processing and attention. ARC/AIDS status was not significantly correlated with psychiatric diagnoses. No statistically significant correlations were found between neuropsychological markers, ARC and AIDS subjects' total white blood cell count, total T-cell count, and helper/suppressor ratios.
Conclusion: Our results suggest a lack of correlation of cognitive dysfunction and immunological status in advanced HIV infection suggesting that HIV-CNS involvement may be independent of indices generally associated with HIV systemic progression.

W.B.P.196 A BRIEF SCREENING TEST BATTERY FOR COGNITIVE DEFICITS IN HIV INFECTION

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Objective. (1) To design a brief screening measure with the capacity for early detection of neurocognitive impairment in HIV infected individuals.
(2) To establish if scores on this measure may be used to infer the degree of CNS or immune impairment.
Methods. This is a 2 year longitudinal study of a case group with HIV infection (Ab+ =20, ARC=5, AIDS=7), and a control group, similar in age, education and SES. Neuropsychological tests, and measures of depression and anxiety are administered at 3 month intervals. The battery includes: Trails A and B, Controlled Oral Word Association, Graded Difficulty Arithmetic, WAIS-R Digit Symbol and Digit Span, Stroop Test, Reye Auditory Verbal Learning Test and Benton Visual Retention. To determine the pathological correlates of cognitive status, blood tests and magnetic resonance imaging (MRI) are done every 6 months.
Results. Initial testing and 3 month follow-up show no global differences between cases and controls. However, 30% of the cases scored in the range of suspected of impairment on atleast 1 test, and 57% of subjects with AIDS have scored in this range on 2 tests or more. Trails A and B show poor performances across the spectrum of HIV infection with many scores falling between 1 and 2 standard deviations below the mean.
Conclusion. These preliminary results suggest some cognitive changes associated with HIV infection which appear to be greater in patients with AIDS. NHRPD Grant#6606-3654-AIDS.

W.B.P.197 DRUG USE HISTORY IN GAY MEN WITH AIDS AND ITS RELATION TO NEUROPSYCHOLOGICAL FINDINGS

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Objectives: To characterize the drug use histories of gay men with AIDS and to explore possible interactions of drug use with neuropsychological (NP) findings.
Methods: Self reported drug use histories for the prior 6 months and prior 7 years were obtained from 46 gay men during their first hospitalization for AIDS. The Beck Depression Inventory was given. The length of time that AIDS related symptoms were experienced prior to hospitalization was measured. NP measures given were: Wechsler Memory Scale-Russell version, Shipley, Trail Making Test, and Finger Tapping Test. A sum of z was calculated for the NP measures to represent an overal index of impairment.
Results: Drug use was reported by 43 of the 46 subjects (93%). Alcohol and marihuana use represented the highest consumption. Average alcohol use for the past 6 months was once a week, and for the 7 year period was 2-6 times a week. Average marihuana use for the past 6 months was once a month and for the 7 year period 2-3 times a month. A significant decrease (p<.05) in drug use was found in 6 out of 10 drug categories from the 7 year to 6 month period. Marked NP impairment was found in 78% of the sample, irrespective of amount of drug use. A multiple correlation was not significant between the NP index of impairment and a combined drug use score, after partialling out the measures of depression and symptom length.
Conclusions: Subjects at risk for AIDS or showing early signs of AIDS reported a significant decrease in drug use over the last several years. This may be due to increasing health concerns and awareness of AIDS. Furthermore, light to moderate substance use (a few times weekly or less) does not appear to have exacerbated the marked NP impairment found in this sample.

W.B.P.198 RELATIONSHIP BETWEEN NEUROPSYCHOLOGICAL AND IMMUNE VARIABLES IN HIV POSITIVE ASYMPTOMATIC MEN

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Objective. To describe the interrelationship between neuropsychological (NP) function, immune status and neuropsychiatric measures in asymptomatic HIV positive gay men.

Methods. Fifty-six asymptomatic gay men (HIV+ = 33, HIV- = 23) were given a one time battery of NP tests and psychiatric rating scales. Measures of immune function were also obtained. Group differences between HIV+ and HIV- groups were determined by use of multiple T-tests. (Bonferroni correction was applied.) Additionally, the HIV positive group was divided into those with CD_4 cells ≤ 400 (N = 14) and >400 (N=19). Correlations were calculated between the immune and NP measures.

Results. 1. No significant differences were found between the positive and negative groups on age, education and occupational levels. 2. No statistically significant differences were found between the HIV+ and HIV- groups on any of the NP measures. 3. In the HIV+ group, no statistically significant differences were found between those with CD_4 ≤ 400 and those with CD_4 > 400 on the NP measures. Additionally, no differences were found on the NP measures between the CD_4 ≤ 400 group and the HIV negative group.

Conclusions. These results help to confirm a lack of documented neuropsychological impairment in otherwise asymptomatic HIV+ men. This finding held up even when comparing those HIV+ men with CD_4 count of ≤400 with the seronegative group.

This work has been supported in part by grant # DA04873 from the National Institute on Drug Abuse.

W.B.P.199 COGNITIVE DYSFUNCTION AND PSYCHOSOCIAL FACTORS IN SYMPTOMATIC SEROPOSITIVE MEN

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Objective. Questions remain about the prevalence and severity of cognitive impairment along the spectrum of HIV disease. Our aim was to determine the presence and degree of cognitive impairment in symptomatic seropositive men, and whether severity was associated with certain psychosocial factors.
Methods. 103 seropositive homosexual men with at least one HIV-related symptom were recruited from the UCSF AIDS Clinic and administered neuropsychological tests. Data were adjusted for age and education, and standardized ratings of impairment were determined. Standard measures of distress, coping, and mood were also administered.
Results. 89% of Ss showed at least mild impairment, 59% at least moderate impairment, 32% at least marked impairment, and 19% severe impairment on one or more neuropsychological test. There was also differential cognitive impairment: e.g., 43-49% had impaired immediate and delayed memory, but only 17% had impaired verbal fluency; while only 18% had impaired total digit span, 28% had impaired digits backwards. Anger/Hostility was correlated with level of impairment on most tests ($r = .19$ to $.31$, $p < .05$ to $.001$). Greater impairment on Digits, Verbal Fluency, and Trailmaking was significantly correlated with coping style: for social desirability, $r = .21$ to $.31$, $p < .05$ to $.001$); for emotional control, $r = .19$ to $.29$, $p < .05$ to $.001$.
Conclusion. Few neurological or neuropsychological reports on patients with HIV disorders have included psychosocial measures. The positive correlations in this sample of distress and coping style with levels of impairment may reflect (a) the exacerbation of cognitive impairment by distress and certain coping styles, and/or (b) patients' reactions to awareness of their cognitive impairments.

W.B.P.200 EARLY DIAGNOSIS OF HIV INFECTION IN INFANTS

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Objective. To evaluate the role of serial IgM anti-HIV and p24Ag testing in the neonatal diagnosis of HIV infection.
Methods. 24 neonates from anti-HIV pos. mothers were followed-up bimonthly for 10±6 mo.s. At each time clinical, immunological (lymphocyte subsets, immunoglobulin levels) and serological (IgG anti-HIV, ELISA and Western Blot (WB), IgM anti-HIV, WB, p24Ag, ELISA) tests were performed. CDC classification for pediatric HIV infection was used.
Results. IgM anti-HIV were found at birth (5 cases) or at 2nd-4th mo.(6 cases) p24Ag was detected in 7 cases from 4th mo., in 1 transiently at birth. 5 neonates became symptomatic (P-2) within 4th mo. (follow-up 11±8 mo.s). All were IgM anti-HIV and/or p24Ag pos. 3 other neonates developed immunodeficiency (ID) (follow-up 13±4 mo.s). All were p24Ag pos. (P1-B), 2 also IgM anti-HIV pos. Among asymptomatic immunocompetent patients 7 were followed at least for 15 mo.s (16±3 mo.s): 2 were still seropositive (P1-A) (previously IgM anti-HIV pos.) 5 were pos. only for gp120 (1 IgM anti-HIV pos.). 5 patients were followed for 5±3 mo.s (4 IgM anti-HIV pos., 1 also p24Ag pos.); finally 4 neonates are too young to be followed.
Conclusions. IgM anti-HIV and p24Ag seem good predictors of HIV infection and/or disease progression in infants.

Enquêtes
Surveys

W.B.P.201 IMPACT OF HIV DIAGNOSIS ON MOOD - ST.STEPHEN'S COHORT STUDY

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Objective To assess the impact of HIV positivity on mood state.
Method As part of the St.Stephen's prospective cohort study, mood is assessed prior to notification of HIV Ab status and reassessed 6 months later. Assessment consists in the following self-report questionnaires: HAD, POMS, STAI and a Physical Complaints Schedule.
Results The baseline HAD anxiety mean scores fell within the borderline pathological range in both groups (HIV +ves: 9.04±SE0.68; HIV -ves: 8.69±SE 0.60), whereas at 6 months they fell within the normal range (HIV+ves: 7.00 ±SE1.61; HIV-ves: 7.96±SE0.75). Inter- and intra-individual group comparisons, however, were not significant. Other mood scores for HIV+ve and -ve groups were well within the normal range at baseline and follow-up.
Conclusions Reports of clinical impressions indicate that anxiety and/or depression levels rise sharply at the time of diagnosis of HIV+ve status. Our results suggest no evidence of any persistent pathological mood states at 6 month follow-up.

W.B.P.202 A VA HOSPITAL SPECIALIZED PSYCHIATRY PROGRAM FOR PATIENTS WITH HIV DISEASE: A REVIEW OF THE FIRST 50 REFERRALS

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Objective. To identify characteristics of a population of patients with HIV disease referred for outpatient psychiatric consultation in the San Francisco VA Hospital and to use these data for program planning purposes.
Methods. Since the first cases of HIV disease appeared at the San Francisco VA Hospital in 1982, the number of referrals to psychiatry steadily increased. Initially patients were managed on an individual basis, but it eventually became clear that this population had grown to be a significant proportion of overall referrals. A multidisciplinary committee was formed to evaluate the needs of this population and make specific programmatic recommendations. Meetings were held with various hospital units involved in providing care to HIV patients to assist in planning and coordinating psychiatric services. A trial program was initiated beginning July 1, 1988. Between July 1 and December 31, 1988, 50 patients with HIV disease were referred for psychiatric consultation. Demographic and other specific variables were monitored, including reason for referral, DSM-IIIR diagnoses, treatment plan, disposition, medication, and outcome.
Results. Data from this recent 6-month period are in the process of being coded and analysed at the time of abstract preparation and will be presented at the conference.
Conclusion. Conclusions regarding using the data for planning for HIV psychiatric services will be presented.

W.B.P.203 REQUEST OF MENTAL HEALTH-CARE WORKERS INTERVENTION BY PHYSICIANS ATTENDING HIV+ OR AIDS PATIENTS: The importance of an integrated and multidisciplinary approach.

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Objective: To identify and evaluate the reasons that make physicians, leading with HIV+ or AIDS patients, to request mental health-care workers approach.
Method: Retrospective review of 124 patients assisted by mental health-care workers from a total of 439 registered patients attended in a National Reference Centre on AIDS, since july 1987.
Results: There were 158 requests to evaluate patients. 27 patients had 2 reasons for evaluation, 2 patients had 3 reasons and 1 patient had 4 reasons. Requests were classified in 6 groups. The results were: 1) Diferential Diagnosis: (19/158):12%; 2) Problems related to clinical staff-patients relationship: (46/158):29%; 3) Reactions to diagnosis and/or evolution of the disease: (59/158):38%; 4) Psychomotor agitation: (10/158):6%; 5) Family approach: (10/158):6%; 6) Other: (14/158) :9%. In each group we could identify several causes of request. The most important were: Anxiety (group 3): (26/158):16%; Difficulties in the communication of the diagnosis to the patient (group 2):(18/158): 12%; diferential diagnosis (group 1) between cognitive deficits (delirium, dementia, depression): (13/158):9%
Conclusions: The high proportion of request (28%) to mental Health-care professionals shows the importance of an integrated and multidisciplinary approach in the assistance of these patients. Although, an adequate preparation is needed for these professionals due to the complexity of the situations that arise: clinical complications, social problems, staff-patient difficulties and multiple mental syndromes manifestations.

W.B.P.204 PERSONALITY, BEHAVIOUR AND COGNITIVE CHANGES IN AIDS AS RATED BY PATIENTS AND THEIR CARERS AND AS RELATED TO NEUROPSYCHOLOGICAL TEST RESULTS.

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Objectives: To determine if; (1) Informal carers of AIDS patients notice changes in their partners which may be predictive of objective neuropsychological impairment; (2) Patients' own perceptions are correlated with objective neuropsychological impairment.

Method: The informal carers of AIDS patients (N=75) rated the patients for changes on the St. Mary's Personality, Behaviour and Cognitive Changes (PBCC) Questionnaire. These ratings were compared with PBCC self -ratings of the patients and the carers. Scores were compared also with the neuropsychological test results of the patients. In addition carers and patients filled out standardised mood questionnaires.

Results: 1. Carers' ratings of the patients are independent of the carers' own anxiety and depression levels. 2. Carers' ratings of deterioration in patients' cognitive functioning is significantly correlated with an overall impairment score obtained from neuropsychological testing. However, patients' own ratings of impairment in their cognitive functioning is related only to their own anxiety and depression.

Conclusions: Informal carers can be useful informants as to possible Central Nervous System involvement in patients. However, patients' subjective perception of deterioration in themselves is likely to be unreliable.

W.B.P.205 COMPETENCY CONSULTATION TO HIV PATIENTS: A LIAISON PSYCHIATRY PERSPECTIVE

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Objective. 1) To identify the reasons for competency consultation to patients infected with HIV, 2) to classify such consultations by psychiatric diagnosis and 3) to determine if the competency consultation provides a significant access route to mental health care for HIV patients.
Methods. All psychiatric competency consultations to HIV patients at Queens Hospital Center from 1987 and 1988 were evaluated for demographic characteristics, reasons for consultation, competency, psychiatric diagnosis and psychiatric intervention.
Results. In 1987-88 the psychiatric consultation-liaison service saw 56 HIV patients in competency evaluations, representing the largest single medical diagnosis, and constituting 1/3 of all competency evaluations. Forty two percent were referred because they refused treatment, 31% presented with altered mental status, 25% wished to leave the hospital. Forty percent were judged competent. Of the remaining 60%, all but two were diagnosed with organic mental syndrome. Of those judged competent 24% were diagnosed with adjustment disorders, and 19% each personality disorder and substance abuse. Five patients (24%) had no psychiatric diagnosis.
Conclusion. Competency evaluations form a significant portion of psychiatric consultations to HIV patients, reflecting the neuropsychiatric and psychosocial manifestations of the disease. They provide an important route of entry into mental health care.

W.B.P.206 POSITIVITE'A L'HIV EN PSYCHIATRIE: OBSERVATION SUR 18 MOIS.

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Objectif. Nous croyons que la présence des troubles psychiques induise une telle réduction des capacités de jugement d'entraîner plus fréquemment que dans la population générale les typiques conduites à risque pour l'infection de HIV. Pour cette raison nous avons cru utile suivre dans le temps la prévalence des sujets découverts positifs à l'HIV parmi les hospitalisés en Psychiatrie.
Méthodes. Outre la VDRL et l'HBsAg que nous effectuons routinièrement,à partir du 1-10-87 nous avons soumis au test pour l'HIV tous les patients consentants hospitalisés dans notre service. Nous avons utilisé comme groupe de contrôle les donneurs de sang du Centre de Transfusion de la Policlinique de Milan. Enfin nous avons évalué la significativité statistique avec le test du chi carré.
Résultats. Les données à ce moment se referent aux deux premiers semestres d'observation,du 1-10--87 au 30-9-88. On a pu effectuer le test pour l'HIV au 79,4% (259/326) des hospitalisés en psychiatrie (mâles 44,7%;femelle 55,3%;âge moyenne 42,8 a.). Les patients positives à l'HIV dans le premier semestre ont été le 8,4% (12/144) et,à la fin du deuxième semestre,tel pourcentage est devenu le 6,1% (16/259) (mâles 75%;femelle 25%;âge moyenne 28,9 a.).En tout cas il faut considérer qu'en même temps la prevalence des sujets positives à l'HIV parmi les donneurs de sang du Centre de Transfusion a été le 0,4%,quinze fois inferieur avec une différence statistiquement très significative.
Conclusion. Notre hypothèse paraîtrait confirmée et donc nous croyons qu'il faudra structurer des spécifiques programmes d'éducation sanitaire pour ces patients.

W.B.P.207 ETUDE DE LA DEMANDE PSYCHOTHERAPEUTIQUE CHEZ 100 PATIENTS ATTEINTS DE SIDA.

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L'étude d'un groupe de cent patients séropositifs symptomatiques non SIDA ou SIDA avéré a été menée par l'équipe médico-psychologique mise en place dans le Service du Pr M. Gentilini en 1983 pour l'accompagnement psychologique et psychiatrique des malades atteints par le VIH.

A partir d'entretiens individuels semi-directifs et d'un questionnaire d'évaluation (111 items), les auteurs donnent les résultats d'une approche épidémiologique du retentissement psycho-pathologique de l'infection à VIH dans ses corrélations avec la demande de soutien psychologique, les antécédents psychiatriques personnels, les facteurs familiaux et de l'environnement.

Dans le cadre de cette première étude dans un service hospitalo-universitaire, il ressort que :

- 62 % des patients ont demandé un soutien psychologique durant le temps d'hospitalisation ; 23 % ont refusé toute intervention psychologique spécialisée ; 24 % ont demandé une psychothérapie de soutien (brève ou longue) après l'hospitalisation.
- 18 % des homosexuels, 50 % des toxicomanes, sous-groupes étudiés, avaient des affections psychiatriques précédant l'infection par le VIH.

Les facteurs influençant le non-dit de la séropositivité, de la toxicomanie, de la sexualité sont corrélés à la relation d'aide de l'entourage (famille).

W.B.P.208 CLASSIFICATION DES TROUBLES PSYCHIATRIQUES SELON LE DSM III°-r EN COURS DE SIDA

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Objectif. En considération de la frequence élevée des troubles psychiatriques,soit primaires que secondaires,en cours d'infection de HIV il nous a paru utile classer ces communs complications de cette pathologie.
Méthodes. Pour cet étude nous avons pris en considération les patients hospitalisés depuis deux ans dans notre hôpital en maladies infectieuses à cause de l'HIV et dans lesquels ont apparu,outre les symptômes physiques,des troubles psychiques; nous avons aussi consideré ceux qui ont été hospitalisés en psychiatrie et dans lesquels on a trouvé une positivité à l'HIV asymptômatique du point de vue somatique. Les diagnostics ont été posés selon les principes du DSM III°-r.
Résultats. Nous avons considéré 79 sujets avec infection d'HIV à différents stades et aussi avec des troubles (t.)psychiques. Les mâles étaient le 74,7 %(59/79) et les femelles le 25,3 %(20/79); l'âge moyen était 29,5 a. Les facteurs de risque ont resultés être: la toxicomanie 65,8 %(52/79); l'homosexualité 22,8 %(18/79); les rapports hétérosexuels 8,9 %(7/79); les transfusions 2,5 % (2/79). Les diagnostics psychiatriques ont été: t.mentaux organiques 29,1 %(23/79); t. de l'humeur 22,8 %(18/79); t. de l'adaptation 17,7 %(14/79); t.de la personnalité 11,4 %(9/79); schizophrénie 7,6 %(6/79); t. d'anxiété 6,3 %(5/79); psycotiques pas classés ailleurs 5,1 %(4/79).
Conclusions. On confirme la prévalence élevée des t. mentaux organiques mais il nous semble aussi interessant la considerable presence des t. psychiatriques en strict sens comme la schizophrénie.

W.B.P.209 HIV SEROPREVALENCE STUDY OF INVOLUNTARILY HOSPITALIZED MENTALLY ILL HOMELESS FROM THE STREETS OF MANHATTAN, NEW YORK

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Objectives: To determine the rate of HIV seroprevalence and risk taking behavior among a group of high risk psychiatric patients, i.e., the homeless mentally ill who shun health care services and are involuntarily hospitalized by mental health teams in New York City.
Methods: The study is conducted on The Creedmoor Psychiatric Center Intensive Placement Unit, which is part of New York City's largest state hospital. Homeless mentally ill patients removed from the streets are accepted for intermediate care and placement. This population tends to avoid public shelters and is demographically diverse. 28% are female and 72% are male. Ethnically, 46% are white, 39% are black, 13% are hispanic and 2% are Asian. All ages between 18 and 65 plus are well represented. There is a high rate of medical illness including active TB, positive VDRL and hepatitis B antibodies. Approximately 30% of patients abuse substances. Anonymous bloods will be tested for HIV antibodies on approximately 100 patients and correlated with histories of risk taking behaviors including needle sharing, prostitution and sexual behavior. These findings will also be correlated with geographic mobility, patterns of homelessness and psychiatric and medical illnesses.
Results: To be presented at the conference.

W.B.P.210 PSYCHIATRIC DIAGNOSES AMONG VOLUNTEERS FOR HIV TESTING

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Objective: The determine the rates of DSM-III-R diagnoses among individuals volunteering for HIV serological testing.
Methods: We administered the Structured Clinical Interview for DSM-III-R (for Axis I) and the Personality Disorders Examination (for Axis II) one week prior to HIV serological testing to a heterogeneous population of 231 physically asymptomatic adults at perceived risk for AIDS who had enrolled in a prospective psychobehavioral study.
Results: Overall rates for the presence of any Axis I disorder were 25.5% current and 64.1% lifetime; for Axis II disorders the overall rate was 28.6%. Compared to reported community samples, these subjects had high rates of mood disorders, both current (13.9%) and lifetime (42.9%). Lifetime rates of non-alcohol substance dependence were also high (30.3%), even after eliminating from analysis the 21 subjects with intravenous drug use as a risk factor. An Axis II personality disorder was present in 50.8% of subjects with a current Axis I diagnosis and in 35.8% of those with a lifetime Axis I diagnosis. Conversely, most subjects (53.6%) with an Axis II diagnosis met criteria for a current Axis I disorder and almost all (94.6%) met criteria for a lifetime Axis I disorder.
Conclusion: A large subgroup of the volunteers for testing had histories of depression and non-alcohol substance dependence. A substantial subpopulation with Axis I psychopathology may have additional treatment needs posed by Axis II disorders.

W.B.P.211 PSYCHIATRIC DIAGNOSES AND TREATMENT OUTCOME IN AN AIDS SPECIALTY CENTER

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Objective. We examined baseline patterns of psychiatric referrals, psychiatric diagnosis and treatment outcome in a cohort of PWA's in an AIDS specialty center. Methods. Twenty-eight patients were referred for psychiatric evaluation and treatment in a six month period. This number represents 50% of inpatient admissions and 25% of outpatients followed by the center. Risk factors for HIV infection in the referred population were: 57% IVDA, 36% homosexual contact and 7% heterosexual contact. Results. The most prevalent psychiatric diagnoses in the outpatient setting were major depression (44%) and organic brain syndromes (25%). In both groups there was good response to psychotropic medications, with 80% of depressed patients improving on tricyclic antidepressants and 75% of OBS patients improving on neuroleptics and other agents. The most prevalent psychiatric diagnoses in the inpatient setting were organic brain syndromes (50%), ongoing drug addiction (22%) and major depression (17%). Both OBS and major depression were responsive to psychopharmacological treatment in greater than 75% of cases. In both inpatients and outpatients, psychiatric treatment was not successful in halting ongoing drug abuse. Nevertheless, psychiatric consultation was helpful in establishing realistic treatment goals in both settings. Conclusion. In this pilot study, high baseline rates of psychiatric illness were found in an AIDS specialty center. Psychiatric evaluation and psychopharmacologic treatment resulted in symptomatic improvement in those patients suffering with major depression and organic brain syndromes. We conclude that psychiatric treatment and evaluation is an essential feature of the comprehensive care of PWA's in the AIDS specialty clinic.

W.B.P.212 PSYCHOSOCIAL STATUS OF 192 PATIENTS WITH HIV INFECTION AND AIDS

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Objective. Before planning psychological services for patients infected with HIV, we need epidemiological data on immediate and long-term psychological consequences of the diagnosis.

Methods. HIV positive outpatients were interviewed in a standardised manner at the HIV clinics of 2 London hospitals.

Results. 192 patients took part: 65 were HIV positive but well, 64 had accompanying symptoms or signs (41 PGL, 23 ARC) and 63 had AIDS. Almost all had revealed their diagnosis to others, 25% receiving negative reactions. 31% had a psychiatric disorder, half of whom reported emotional problems prior to HIV infection. Patients with ARC or those diagnosed less than a year ago tended to have more psychological symptoms. 22% complained of impaired memory or concentration, of whom more than half had cognitive impairment on brief assessment. Extreme health worries predicted wider psychological problems.

Conclusion. This degree of psychological distress is similar to reports for patients with other medical conditions. Subjects with past psychological difficulties and those who worried excessively about their health were more likely to be psychiatrically disturbed. Overall, patients had adapted well, despite the stigma and poor prognosis of their disorder.

W.B.P.213 ANALYSIS OF INITIAL PSYCHIATRIC REFERRALS FROM A HOSPITAL HIV SERVICE

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Objective. To determine patterns of initial utilisation of psychiatric services by a hospital HIV program.
Methods. We reviewed 396 admissions to a military hospital's HIV service made by 354 patients over a 12-month period to determine the nature of initial requests for psychiatric consultation.
Results. Nearly 14% of the admissions required psychiatric consultation; that percentage applied equally to newly identified HIV seropositive persons undergoing initial medical evaluation and to persons who had been previously diagnosed, educated about their infection, and counseled and were now admitted for periodic medical reevaluation or treatment. Psychiatric services were especially in demand when patients learned they were antibody positive, began to note early evidence of disease progression, or were in late stages of illness. In order of decreasing frequency, psychiatric diagnoses were adjustment disorders, major affective disorders, substance abuse, and delirium or other organic brain disorders (excluding dementia).
Conclusion. In a setting of free, readily available medical and psychosocial care, nearly 14% of patient admissions required referral to a psychiatrist rather than to other mental health therapists. Similar studies from other medical centers could yield data that might help mental health planners prepare their resources for the still unfolding HIV epidemic.

W.B.P.214 A COMPARISON OF SUICIDAL BEHAVIORS IN PATIENTS IN AN AIDS RELATED PSYCHIATRIC CLINIC AND IN A GENERAL PSYCHIATRY CLINIC

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Objective.To assess the extent of suicidal behaviors in a population of AIDS, ARC and HIV positive patients.
Methods.69 patients attending a psychiatric outpatient clinic for HIV related problems were surveyed as to past or present suicidal behaviors, and compared to a demographically matched sample of patients attending a general psychiatry outpatient clinic. Both populations were predominantly Hispanic (60%)with almost equal numbers of men and women. Major risk factors for the HIV clinic group were IVDA (52%), heterosexual sex partner of person at risk(22%), homosexuality (22%) and none (6%). HIV related diagnoses were:AIDS n=23; ARC n=9, asymptomatic HIV+ n=14; HIV- n=8; unknown serology, n=15.
Results. There were no significant differences in the incidence of suicidal behaviors between patients attending the two clinics. Within the HIV clinic population there were no significant differences in the incidence of suicidal behaviors by diagnosis of AIDS,ARC,HIV+,HIV-, or unknown serology.There were no significant differences in psychiatric diagnoses among the AIDS diagnosis groups. For each of the AIDS diagnosis groups, the mean age of the first suicidal attempt antedated clinic enrollment:AIDS 7yrs; ARC 17 yrs; HIV+ 14 yrs; HIV-13 yrs, thus preceeding the diagnosis of AIDS or HIV+ for most patients.
Conclusions. HIV related disease status was not associated with increased suicidal ideation or attempts in the surveyed population. There were no differences in the incidence of suicidal behaviors between the HIV related psychiatric clinic population and an age and ethnicity matched general psychiatric outpatient population.

W.B.P.215 PSYCHIATRIC HISTORY AMONG HOMOSEXUALS AND DRUG-ADDICTS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS

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Objective: to evaluate psychiatric history among HIV-infected subjects (homosexuals,drug-addicts and heterosexuals).
Methods: 218 subjects HIV-infected (II,III C.D.C.) , 60 subjects at risk of HIV infection seronegative for antibody to HIV , 50 healthy heterosexual controls were recruited from the Dpt. of Infectious Diseases. We examined each subject with a psychiatric interview in order to collect: 1) previous personal and familial psychopathological history (considered in terms of lifetime prevalence); 2) Early Life Losses (E.L.L.); 3) Attempted Suicides (A.S.).
Results: a lifetime prevalence of personal and familial psychiatric disorder was higher in Seropositive (S+) (15%,22%) and Seronegative (S-)(27%,24%) subjects than in the Control Group(C.G.).43% of S+,41% of S-,1,5% of C.G. reported E.L.L. . The prevalence of A.S. was 22% (S+),17%(S-) & only 0.2(C.G.).
Conclusion: 1) psychiatry morbidity among S+ was higher before the onset of HIV-infection , 2) awareness of psychiatric history is important for the monitoring and management of S- at risk of HIV-infection.

W.B.P.216 A COMPARISON OF PSYCHIATRIC CONSULTATIONS IN AIDS AND NON AIDS PATIENTS

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Objective. To identify differences between AIDS patients and age matched medical patients without AIDS seen in psychiatric consultation on the medical service of a large voluntary general hospital.
Method. All psychiatric consultations done in one year on the acute medical service of a large voluntary hospital were reviewed, comparing AIDS patients (n=67) with other medical patients without AIDS (n=121) under age 55.
Results. There were significant differences between the two groups of consultation patients in ethnicity(AIDS patients more often Hispanic and less often Caucasian $p<01$). The AIDS group was predominantly male (69%) while the non-AIDS group was predominantly female(68%),a difference significant at $p<001$. There were no significant differences between the AIDS and non-AIDS groups in the incidence of diagnosis of depression, suicidal risk, substance abuse, or adjustment disorder. An Axis II diagnosis was made significantly less often in the AIDS group ($p<05$). The incidence of organic mental disorder was significantly higher in the AIDS group ($p<05$).Staff spent an average of 4.0 hours on AIDS consultations compared to 3.4 hours on non-AIDS consultations. There were 26 repeat consultations (40%) requested for the 67 AIDS patients, compared to 17 repeat consultations (12%)in the 121 non-AIDS patients.($p<.01$).
Conclusions. With the exceptions of OMS and Axis II diagnoses, there were no significant differences in psychiatric diagnoses between AIDS patients and non-AIDS patients seen in psychiatric consultation. AIDS patients required more staff consultation time and repeat consultations, thus creating a heavier time burden on psychiatric services.

W.B.P.217 ESTABLISHMENT OF AN HIV RELATED PSYCHIATRIC CLINIC IN AN AREA OF HIGH SUBSTANCE ABUSE.

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Objective. To describe an innovative psychiatric outpatient clinic for HIV related care and to identify factors related to patient drop out.
Method. A psychiatric outpatient program was established in an area with a high rate of HIV infection among Hispanic and black intravenous drug users (IVDU) and their sexual partners. The only criteria for admission was a need for psychiatric services due to HIV,irrespective of serology. Strategies to enhance patient retention included flexible scheduling, vigorous outreach and Spanish speaking staff. Data on all patients was reviewed after one year to identify differences between those successfully enrolled versus dropouts.
Results. 148 patients were seen, equally divided between men and women. 60% were Hispanic. 53% gave IVDU as the primary risk factor, followed by heterosexual transmission 23%. 30% had AIDS, 14% ARC, 26% HIV+ asymptomatic, and 12% known HIV-. 41% had a history of prior psychiatric inpatient or outpatient care. The most common psychiatric diagnosis was adjustment disorder 62%, followed by any substance abuse disorder 47%. Organic mental syndromes were diagnosed in 6%.Those who dropped out of treatment(48%)were more likely to be on methadone, abusing alcohol, and have a diagnosis of organic mental syndrome and less likely to have a diagnosis of adjustment disorder.There was no difference in incidence of prior psychiatric treatment.
Conclusions. HIV related psychiatric services can be delivered to a minority population in an area of high substance abuse reaching many individuals without prior mental health services. On-going substance abuse and organic mental syndromes make successful enrollment less likely.

W.B.P.219 LOCUS OF CONTROL, SOCIAL SUPPORTS AND DEPRESSION AMONG HIV INFECTED SUBJECTS

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Objective. To evaluate the relationship among Social Supports, External-Internal Coping and psychopathological responses in subjects infected with Human Immunodeficiency Virus.
Methods. 125 subjects HIV infected (65 drug-addicts, 43 homosexuals, 17 heterosexuals) in CDC groups 2-3 were administered: 1) I-E Locus of Control; 2) Availability of Social Supports; 3) Zung Anxiety and Depression Scales.
Results. Social Supports have no influence on psychopatological responses. External subjects are more anxious and depressed than Internal ones.Internal subjects with grater availability of Social Supports have lower depression scores.
Conclusions. Availability of Social Supports does not reduce psychopathological responses in our total sample, but Internal subjects seem to benefit by a greater availability of Social Supports. On the other hand External subjects showing a greater psychopathological response do not benefit by available Social Supports. These subjects are in greater need of counselling.

Psychiatrie/Études de prévalence
Psychiatry/Provalence Studies

W.B.P.221 HANDEDNESS AND IMMUNE SYSTEM FUNCTION IN GAY/BISEXUAL MEN: The Multicenter AIDS Cohort Study (MACS).

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OBJECTIVES: The purpose of the present study was to evaluate the relationships between handedness and immune system function in gay/bisexual men. Two hypotheses were tested: 1)gay/bisexual men are more likely to be left-handed; 2)left-handers are more likely to show impaired immune function.
METHODS: Sixteen hundred and five MACS participants completed a five-item version of the Edinburgh handedness inventory as part of a study of the neuropsychiatric manifestations of HIV-1 infection.
RESULTS: Among HIV-1 seronegative men there was a doubling of the rate of exclusive lefthandedness (6.7% vs. 3.1%), a decrease in exclusive right-handedness (58.3% vs. 62.0%), and no difference in the rates of self-reported mixed handedness (34.9% for both samples) when compared to males in the general population (General Cincinnati Survey). This difference was significant (p .001), although the effect size was small (phi=.12).

Handedness was not associated with either prevalent or incident HIV-1 serostatus. Neither were left-handers more likely to develop either AIDS or severe depletion of CD4 cells (200) than other men.
CONCLUSIONS: These data replicate earlier findings of increased left-handedness among gay/bisexual men; however, there was a lack of association between handedness and immune system function. Thus, while there may be a small increase in left-handedness among gay men, the basis for this increase is not known, and handedness has no impact on clinical illness.

W.B.P.218 EFFECT OF NEUROPSYCHIATRIC SIGNS AND SYMPTOMS ON HOMELESS PERSONS WITH AIDS IN A GROUP RESIDENCE

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Objective. To assess and manage HIV neuropsychiatric impairment in persons living in a residence for homeless persons with AIDS.
Methods. Consecutive admissions (N=120) to Bailey House, a residence for 44 homeless persons with AIDS in New York City, were evaluated by a nurse-practitioner for psychiatric symptoms as a part of general history and physical examination at admission. Pre-morbid symptoms were documented - e.g., history of stroke, substance abuse or psychiatric care--and to identify HIV related impairments. Signs and symptoms were monitored in weekly nursing contacts.
Results. Thirty per cent of residents (N=37) reported bothersome, chronic early symptoms of AIDS-related dementia (e.g., memory loss) for which they had devised their own coping mechanisms (e.g., systems of reminders). Twenty per cent (N=25) presented signs and symptoms; personality changes, progression of memory loss, lower extremity weakness and pain, impaired vision, and incontinence. In 55 per cent of the residents (N=65) other psychiatric and CNS problems were encountered that were documented prior to HIV infection. These included personality disorders, psychosis, depression, drug and alcohol abuse, and medical conditions. These individuals often suffered refloresence of pre-existing problems while living at Bailey House. In the 20 per cent of residents with more severe problems, inability to cope appeared to be related to the existence, severity, and frequency of requried higher elvels of pre-morbid CNS and psychiatric problems. Those with more severe pre-morbid problems required higher levels of intervention and on occasion (N=6) referral to medical or psychiatric hospitalizations and/or intercurrent cocaine abuse. Interventions will be described.
Conclusion. Persons with AIDS suffering from neuropsychiatric impairment can function in a residential setting. Periodic monitoring of symptoms is helpful in planning interventions.

W.B.P.220 FREQUENCY OF PSYCHIATRIC DISORDERS IN HOSPITALIZED AIDS PATIENTS: COMPARISON TO A GENERAL HOSPITAL POPULATION

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Objective: To report results of psychiatric consultations on hospitalized AIDS patients and compare prevalences of diagnoses to those from general hospital consultations.
Methods: Eighty-five consecutive consultations (mean age 33) from the inpatient AIDS unit were compared to 85 consecutive general hospital (GH) consults (mean age 52) and 40 consecutive age and sex matched GH consults (mean age 36). Patients were evaluated by a psychiatrist and diagnoses made according to DSM-IIIR criteria. Data were compared using CHI-Square analysis.
Results: The table lists the 4 most frequent diagnoses in the AIDS group and percentages of total diagnoses as compared to the other two populations.

	AIDS	GENERAL		AGE/SEX MATCHED	
1. Adjustment disorder	34%	23%	p<0.002*	23%	p<0.005**
2. Delirium	30%	16%	p<0.001*	17.5%	p<0.001**
3. Dementia	14%	6%	p<0.001*	0%	p<0.001**
4. Major depression	7%	27%	p<0.001*	13%	N.S.**

*AIDS VS GENERAL,**AIDS VS AGE/SEX MATCHED

Conclusions: Adjustment disorder predominates in the AIDS consult population, undoubtedly related to the chronic, deteriorating course of the disease. That delirium and dementia are twice as prevalent in this group and that the latter diagnosis was not found at all in an age-matched population suggests that consult-liaison psychiatrists and primary physicians must be especially aware that AIDS patients are quite susceptible to alterations in consciousness and cognition.

W.B.P.222 PSYCHONEUROIMMUNOLOGIC STUDIES OF GAY MEN WITH HIV INFECTION

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In order to explore possible relationships between psychiatric and neurological morbidity with medical and immunological status in patients with HIV infection, we began a five year follow-up study in October, 1987. At present, 196 gay men have been seen at least one time, 118 of whom were HIV seropositive at the time of study entry. The HIV positive and negative men are well-matched for age, ethnicity, and economic status. We devised a medical staging system for seropositive subjects ranging from "0" representing no medical symptoms or signs to "39" representing advanced AIDS. The mean medical staging score at study entry was 13.5, representing only minimal medical signs of HIV infection. Seropositive subjects had significantly lower ratio of T4 to T8 lymphocytes, lower absolute T4 count, and higher T8 count than seronegative subjects. Nineteen seropositive subjects but none of 73 seronegative subjects were positive for presence of p24 antigen in blood. Among the 118 seropositive subjects, T4/T8 ratio correlated significantly with medical stage (r=-0.21, p=0.02) and presence of p24 antigen (r=-0.20, p=0.03). In this group of relatively asymptomatic HIV seropositive subjects, there was relatively little psychiatric, neurologic and neuropsychologic morbidity. Consequently, at study entry there are no significant correlations between medical stage or immunologic status and nervous system pathology.

W.B.P.223 PSYCHIATRIC DISORDER AND HIV INFECTION: A CONTROLLED, LONGITUDINAL STUDY

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Objective. To examine the prevalence of psychiatric disorder in various stages of HIV infection. We recently reported elevated lifetime prevalences of psychiatric disorder in HIV illness, and noted that onset of selected psychiatric disorders often preceded the AIDS pandemic, suggesting that some individuals might be at increased vulnerability for later disorder. Here we report on a larger cohort and include preliminary one-year follow up. Methods. Subjects were 135 homosexual (high risk) and 22 heterosexual (low risk) men who were examined with the Diagnostic Interview Schedule (DIS). Results. The table gives the most prevalent lifetime diagnoses.

Diagnosis	CDC IV (N = 37)	CDC II/III (N = 62)	HIV - (N = 36)	Heterosexuals (N = 22)
Maj. depression	32%	31%	31%	9%
Gen. anxiety	32%	34%	39%	0
Alcohol	35%	31%	41%	36%

Six month rates did not differ across high risk groups but exceeded low risk rates. Alcohol use disorders and over 20% of affective disorders preceded documentation of serostatus. One year follow up (N = 26 to date) incidence of major depression was 8%; gen. anxiety 23%; and alcohol disorder 4%. Conclusion. Careful assessment of high risk men, regardless of serostatus, may be warranted for selected psychiatric disorders.

W.B.P.224 NEUROPSYCHOLOGICAL AND PSYCHOSOCIAL FUNCTION IN TWO COHORTS OF GAY MEN: RELATION TO STAGE OF HIV-1 INFECTION

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OBJECTIVE: To characterize neuropsychological function, affective status and changes in activities of daily living in relation to stage of HIV infection. METHODS: Eighty-five HIV-1 seropositive gay men enrolled in prospective studies in Atlanta, GA, and San Francisco, CA, [Asymptomatic (ASX=35); Generalized Lymphadenopathy (GL=18); AIDS-Related Complex (ARC=32)], and 75 seronegative (SN) matched gay controls were evaluated with neuropsychological testing, the MMPI-168, other affective measures and an 82-item Activities of Daily Living Scale (ADL-82).
RESULTS: Data were analyzed by MANOVA with stage of HIV-1 infection as the grouping factor. For ADL, the ARC group rated themselves as more disabled than controls on 6/12 scales: Attention/Planning, Memory, Language/Reading, Self-care, Motor, and Sexual Functions (p=.0013). On the MMPI-168, the ARC group showed more somatic complaints, depression, anxiety and social withdrawal than controls (p=.0061). Neuropsychological function was impaired in ARC subjects relative to controls for verbal cognition and verbal and visual memory (p=.0226). The ASX and GL groups did not differ from controls on any ADL, MMPI-168 or neuropsychological scale.
CONCLUSION: Neuropsychologic dysfunction, affective complaints and self-reported disability were associated with ARC, but not ASX and GL.

W.B.P.225 THE EFFECT OF HIV ANTIBODY STATUS ON U.S. MILITARY APPLICANT APTITUDE TEST SCORES

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Objective. To estimate the effect of HIV-1 seropositivity on Armed Services Vocational Aptitude Battery (ASVAB) test scores in otherwise healthy individuals with early HIV infection. Methods. The ASVAB is a ten test written multiple aptitude battery, administered to all military enlisted applicants. Since 1 Oct 85, all recruit applicants have been serologicly tested for antibodies to HIV-1. A total 975,489 induction testing records containing both ASVAB and HIV results from Oct 85 through Mar 87 was obtained. An analysis data set (N=7698) was constructed by choosing 5 controls for each of the 1283 HIV+ cases, matching on 5-digit zip code, and a multiple linear regression analysis was performed to control for demographic and other factors which might influence test scores. The model developed is sensitive enough to detect an HIV effect of roughly 0.06 standard deviation (SD) in ASVAB scores.
Results. Years of education and ethnicity were the strongest predictors of test scores. The HIV+ effect on an ASVAB composite score was -0.09 SD (99% CI = -0.17, -0.02), while the effect on the separate test scores ranged between -0.39 and +0.06 SD, with corresponding R^2 values from .41 to .09. The two ASVAB component tests felt *a priori* to be the most sensitive to HIV+ status (coding speed and numerical operations) showed the least decrease with seropositivity. The auto/shop knowledge component showed the greatest HIV status effect.
Conclusion. While very sensitive, this model appears to show little evidence of a strong HIV effect upon military enlisted applicant test scores. The low R^2 values imply that most variability in test scores is due to neither demographic factors nor HIV status.

W.B.P.226 A LONGITUDINAL ANALYSIS OF PERCEPTION OF PHYSICAL HEALTH AND SYMPTOMS OF DEPRESSION IN GAY/BISEXUAL MEN: The Multicenter AIDS Cohort Study (MACS).

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OBJECTIVES: The perception of symptoms of impaired physical health, specifically lymphadenopathy syndrome (LAS) has been associated with elevated scores on the Center for Epidemiological Studies- Depression scale (CES-D). The purpose of this study was to evaluate the change in this relationship during a four year follow-up period.
METHODS: Each participant in the MACS Completed the CES-D at the time of their regular clinic visits. They were classified in terms of self-perception of LAS and clinically identified LAS at each visit.
RESULTS: Those men who perceived LAS had significantly elevated CES-D scores compared with men who did not share this perception. Furthermore, the proportion of men with clinically abnormal scores was greater among those who perceived that they had LAS. These relationships were stable over time, and the men who reported LAS in the face of a normal clinical examination were relatively unchanged after two years. Similar relationships were found when oral thrush was examined (i.e., perceived vs. observed).
CONCLUSIONS: These data are consistent with a large body of evidence concerning the relationship between perceived physical well being and mood. They suggest that even as men become more educated about HIV-1 infection, and have more experience with their own symptomatology, the impact of perceived abnormalities remains the same.

W.B.P.227 NEUROPSYCHIATRIC FEATURES OF AIDS: A COMPARISON WITH MULTIPLE SCLEROSIS

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Objective: To compare rates of psychiatric disorders and cognitive functioning in outpatients with AIDS and ambulatory patients with Multiple Sclerosis (MS).
Methods: Twenty gay male AIDS outpatients, 20 gay male HIV-1 seronegative volunteers and 20 MS outpatients (steroid free) received a structured psychiatric interview (PSE) and a neuropsychological screening battery. Groups were matched for age, sex and disability and data analyzed with NOVA. Chi-square was used to examine nominal data.
Results: AIDS patients had significantly more current psychiatric disorders than MS or HIV seronegative patients (X2=8.29, d.f.=1, p<0.005). Anxiety disorders occurred significantly more often in AIDS patients than MS or HIV seronegatives (X2=3.96, d.f. = 1, p<0.005). Cognitively, MS patients performed significantly worse than AIDS patients who did worse than HIV-1 seronegatives on Trailmaking A and Symbol Digit Modalities (F=5.62, d.f.=2, p<0.01).
Conclusion: In these samples, outpatients with AIDS had rates of psychiatric disorder that exceeded those of patients at risk for HIV infection or those with MS., However, Multiple Sclerosis patients perform worse than AIDS patients on Trails A and Symbol Digit Modalities. Future studies of AIDS patients must therefore determine the origin and treatment of psychiatric disorders when examining cognitive status and neuropsychological performance.

W.B.P.228 PSYCHIATRIC FINDINGS IN HIV-SEROPOSITIVE PERSONS IN A MANDATORY HIV SCREENING PROGRAM

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Objective. To determine the frequency of psychiatric diagnoses and degree of psychological distress in persons found to be HIV-infected in the U.S. military's mandatory HIV screening program. Methods. 95 randomly selected HIV-infected military personnel were examined by board-certified psychiatrists.
Results. The most frequent psychiatric diagnoses were: simple phobia (18.9%), adjustment disorder (17.9%), hypoactive sexual desire disorder (12.6%), alcohol abuse (9.5%), major depression (5.4%), organic mental disorders (5.4%), psychological factors affecting physical condition (5.4%), and panic disorder (2.1%). Psychiatric rating scale results are: Michigan Alcoholism Screening Test score ≥ 5 (20.0%); Hamilton Anxiety Scale scores ≥ 12 (15.8%) and ≥ 16 (7.4%); Hamilton Depression Scale scores > 12 (18.9%) and ≥ 16 (5.3%). 21.1% admitted to current suicidal thoughts; 2 patients had a recent suicide attempt.
Conclusion. Minor forms of psychopathology, dysphoria, anxiety, and suicidal ideation are common in persons who learn they are HIV-infected in a mandatory HIV screening program. Major psychiatric illness is less frequent but present in an important number of individuals.

W.B.P.229 AUDITORY EVENT RELATED POTENTIALS (ERPs) IN THE CLINICAL EXAMINATION OF HIV INFECTED DRUG USERS.

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UNITED KINGDOM

OBJECTIVE: Slowing of the long latency ERP occurring some 300 msec. post stimulus has been detected in patients suffering from Alzheimer's disease. A prospective study of the ERPs of HIV infected Injection Drug Users (IDUs) was undertaken to detect the onset of HIV related dementia.
METHOD: 322 HIV infected patients have been assessed at the Infectious Diseases Unit of the City Hospital, Edinburgh. 253 (79%) were infected between 1983-85 by IDU. 138 of this group were recruited into a prospective study of ERPs, using a two tone auditory paradigm. 30 patients have been retested at intervals of 6-12 months.
RESULTS: Mean P300 for the sample was 320 msec. (SD = 30), significantly slower than 212 normal controls (mean = 301, SD = 22.6) t = 5.92; p < 0.005. No significant differences were shown between current injection users, oral users and ex-users. Furthermore, no significant difference was shown by cross-sectional comparison across CDC status for any latency component of the ERP. No patient has yet developed dementia.
CONCLUSION: Despite considerable drug use, ERP results were readily obtained and interpreted. Significant slowing of ERPs of the IDU group was noted, but serial measurements are required during the course of HIV infection to relate change to neuropsychiatric or other clinical development.

W.B.P.231 PRELIMINARY FINDINGS ON A SCREENING SYMPTOM CHECKLIST FOR HIV DEMENTIA

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Objective. To describe the development of a screening self-report symptom checklist to detect individuals at risk for the development of HIV Related Dementia.

Methods. Seventy-nine subjects (56 HIV+ and 23 HIV- Controls) completed a 55 item checklist of HIV Related CNS symptoms. Subjects were also given a battery of neuropsychological tests (NP) and psychiatric rating scales. Measures of immune functioning were also obtained. The HIV Dementia Symptom Checklist (HDSC) documents the presence and severity of self-report prodromal physical symptoms and neurological/neurobehavioral changes.

Results. Cronbach's alpha (α = 0.96) was calculated to estimate the internal consistency of the scale. Furthermore, the total score on the HDSC was shown to have a low but significant correlation with numbers of Helper T-Cells (CD_4 r = - 0.20, p<.05). The score also correlated with impairment on NP testing, particularly on measures of verbal memory (r = -.27, p<.01), visual-spatial memory (r = - 0.31, p<.01), fine motor speed (r = - 0.24, p<.05), speeded mental operations (r = 0.36, p<.001), and sustained concentration (r = 0.43, p<.001). While no significant differences between the groups on measures of depression and anxiety were found, the HDSC significantly differentiated the HIV+ group from the HIV- controls (p = <.001), on both the prodromal physical symptoms and the neuropsychological/neurobehavioral symptoms.

Conclusions. While cross validation of these results are needed, this preliminary data suggests that the HDSC may be a practical and efficient way to identify those subjects who are at risk for developing HIV-related cognitive impairment. It may also help identify those individuals in need of neurological or NP evaluation.

This work has been supported in part by grant # DA04873 from the National Institute on Drug Abuse.

W.B.P.233 RELATING DEPRESSION TO NEUROPSYCHOLOGICAL IMPAIRMENT

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Objective: Since depression can affect neuropsychological (NP) functioning, we assessed whether observed NP deficits in men with HIV illness might be due to depressed mood.
Methods: Subjects were 72 homosexual men (CDC IV, N=9; CDC II/III, N=41; HIV-controls, N=22) participating in a longitudinal study of NP functioning in HIV. Measures were an expanded Halstead-Reitan Battery (HRB) and four indices of severity of depressed mood: Beck Depression Inventory (BDI); Hamilton Rating Scale for Depression (HRSD); the Profile of Mood States (POMS) and Symptom Checklist -90R (SCL-90R) depression scales.
Results: Significant group differences were obtained in prevalence of impairment on three of the eight ability areas covered by the expanded HRB (abstraction, learning, motor skills), principally due to deficits in CDC IV men. Of 36 correlations computed between the eight NP ability areas and the four measures of depression there was only one significant (p < .05) result, which correlated greater motor impairment and higher HRSD scores. Subjects (N=12) with a lifetime history of major depression by DSM-III criteria did not show significantly greater NP impairment.
Conclusions: Results from this series suggest that NP impairment in ambulatory HIV infected men is not accounted for by depressed mood.

W.B.P.230 DISCRIMINATING DEPRESSION FROM COGNITIVE IMPAIRMENT IN HIV ILLNESS

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Objective: To understand the relationship between depression and impaired neuropsychological (NP) performance in HIV illness.
Methods: Subjects were ambulatory homosexual men classed as CDC IV (N = 37) and CDC II-III (N = 58); and HIV negative homosexual (N = 34) and heterosexual (N = 27) controls, matched for age and education. Measures were a comprehensive NP battery and various measures of mood, including the Profile of Mood States (POMS). Recursive partitioning was used to classify subjects according to a decision tree approach using quantitative measures of cognitive impairment (NP) and depression (D).
Results: On the basis of optimally chosen yes-no questions regarding NP and D covariates, a test of speeded information processing (PASAT) most rigorously discriminated D from NP impairment. The decision tree yielded three subgroups, in which NP+ indicated abnormal PASAT and D+ was depressed based on POMS-D > 15: In Group 1 40/47 CDC IV were NP+/D-; In Group 2 52/61 controls were NP-/D-; and Group 3 consisted of CDC II-III men: 44/58 NP-/D-, 11/58 NP-/D+, 3/58 NP+/D-. Measures of verbal and visual learning and forgetting displayed less discrimination.
CONCLUSION: Recursive techniques suggest depressed mood can be separated from NP impairment in HIV. Application of advanced statistical approaches to classification hold promise for further exploration of cognitive function and in mood disorder in HIV illness.

W.B.P.232 CORRELATION OF P300 AUDITORY EVOKED POTENTIALS (AEPs) AND TESTS OF COGNITIVE FUNCTION IN HIV POSITIVE DRUG USERS.

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OBJECTIVE: In cortical/subcortical dementias AEPs, particularly P3 latency (the time the brain takes to make a tonal discrimination) slow. Neuropsychological (NP) testing enables specific cognitive deficits to be assessed. A prospective study of synchronously-infected drug users currently examines electrophysiological, psychological and drug use factors.
METHOD: 33 subjects (CDC 2/3) were assessed using AEP and NP tests. P3 latency, P3 amplitude, memory, information-processing speed, cognitive function, and mood tests together with a drug history were recorded.
RESULTS: 5 of the 8 cognitive tests correlated significantly with P3 latency (Trails A 0.57, p<.001; Trails B 0.62, p<.001; Digit-Symbol Substitution -.53, p<.001; Logical Memory (immediate recall) -.57, p<.001, (delayed recall) -.47, p<.001; NART-estimated premorbid IQ, -.37, p<.02; Digit Span, -.41, p<.001). P3 amplitude was only associated with Logical Memory (r = 0.59, p<.001 and 0.42, p<.02 for immediate/delayed recall conditions respectively). Partialling-out years of opiates use, benzodiazepine use, amount of drugs taken in last 24 hours (range = 0-132 ml. of methadone) and Beck mood left the magnitude of P3 latency and amplitude/cognitive test correlations unaffected.
CONCLUSIONS: Tests sensitive to impairment in the AIDS dementia complex seem to correlate highly with slowed electrophysiology, and are not attributable to either long or short-term drug effects, or mood state.

W.B.P.234 THE DEVELOPMENT OF A BRIEF SCREENING BATTERY TO DETECT COGNITIVE DEFICITS IN PATIENTS WITH AIDS

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Objective. To determine the clinical value of a brief screening battery in detecting cognitive deficits in patients with AIDS.
Methods. Fifty patients with AIDS were given the following battery of Neuropsychological tests (NP):
Trail Making Test Part A & B (TMT)
Wechsler Memory Scale Logical Memory & Visual Reproduction, Immediate & Delayed Memory (WMS)
Shipley Institute of Living Vocabulary & Abstraction Scores
Finger Tapping Test (FTT)
Controlled Oral Word Association Test
Luria Nebraska Receptive Speech & Visual Schemas
Digit Span
Each individual NP measure was converted to a Z score equivalent. A sum of Z representing overall NP status was then achieved. A multiple regression analysis determined which combination of NP instruments best predicted overall NP impairment.
Results. Overall NP impairment was best predicted by: TMT (Part B), FTT, and WMS (Visual Reproduction). These measures accounted for 87% of the variance (p<.01).
Conclusions. These findings are consistent with previous research suggesting that HIV infection of the central nervous system is related to the development of mental slowing, reduced mental flexibility, decreased fine motor speed and difficulty with visual spatial memory in patients with AIDS. While cross validation is needed, this preliminary data supports the use of this brief screening battery in determining cognitive deficits in this population.

This work has been supported in part by grant # DA04873 from the National Institute on Drug Abuse.

W.B.P.235

NEUROPSYCHOLOGICAL FUNCTIONING IN HIV-INFECTION

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F.R.G.

Objective.To study the natural history of neuropsychological deficits in patients with HIV-infection.
Methods.132 HIV-positive patients,100 in early stages,underwent psychiatric exploration and neuropsychological testing.Psychopathology was rated by means of the AMDP-System,self-rated by SDS,POMS,STAI and SCL.Neuropsychological examination included "Maze","Vocabulary","Similarities","Digit-Symbol","Color-Word-Interference","Benton","Trail-Making" and "Auditory-Verbal-Learning".
Results.27% of patients showed symptoms of depression,3% of anxiety.Tests revealed normal functioning in 70% of patients in early stages and in 41% in late stages.Clinically relevant was the deficit in 5% and in 19% respectively.The comparison with HIV-negative controls (n=100) showed for most tests a significant reduction already in early stages.These deficits correlated highly with the degree of affective symptoms.
Conclusion.Cognitive deficits already occur in early stages,but often without clinical relevance.This study does not qualify to differentiate somatogenic vs. psychogenic etiology,repeated measurements and correlations with neurological variables are in process.

W.B.P.236

QUALITATIVE ASPECTS OF DEPRESSED MOOD AND NEUROPSYCHOLOGICAL FUNCTION IN HIV-1 +/- GAY AND BISEXUAL MEN: The Multicenter AIDS Cohort Study (MACS).

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OBJECTIVES: This study evaluated the relationship between measures of affect and cognitive function in HIV-1(+/-) gay/bisexual men.
METHODS: HIV-1 seropositive (n=157) and seronegative (n=113) gay/bisexual men from the Pittsburgh and Baltimore MACS sites completed the Beck Depression Inventory (BDI), Spielberger's State/Trait Anxiety Inventory (STAI), and a short battery of neuropsychological tests.
RESULTS: Overall, the HIV-1+ men had more symptoms of depression (i.e., BDI), but no increases in either State or Trait Anxiety. Furthermore, when the seropositive men were categorized based on total number of CD4 cells there were significant differences only in terms of the total BDI score, which was elevated in the men with the lowest CD4 counts. This elevation was not due to an increase in the number or severity of symptoms of abnormal affect (e.g., "dissatisfied with life"), but rather an increase in the number and/or severity of physical symptoms (e.g., weight change) reported on the BDI. No differences in performance on the cognitive tests were seen between serostatus groups. Performance was correlated with the BDI but not the STAI. Further analysis revealed that it was the physical symptoms of depression rather than the affective symptoms which were related to cognitive function.
CONCLUSIONS: These data indicate that the assessment of mood in HIV-1-infected individuals must take into account physical illness. Consistent with other findings from the MACS, neuropsychological performance was predicted by the presence of physical symptoms, but not by dysphoric mood.

Soins
Care

W.B.P.237

EVALUATION OF TRAINING FOR PHYSICIANS AT THE NATIONAL REFERENCE CENTERS IN BRAZIL

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Under the sponsorship of the National Division of STD/AIDS, an evaluation of the clinical training on AIDS delivered by the three Reference Centers--Emílio Ribas (ER), Universidade Federal do Rio de Janeiro (UFRJ) and Gaffrée & Guinle (G&G)--was carried out. The evaluation took into account guidelines set up by the National Comission on AIDS and derived its framework form Stufflebeam's evaluative model (1977). The model comprises four components--Context, Input, Process and Product--which corresponded to the aspects to be assessed in the evaluation. Instruments of three kinds were used: (a) interviews with those in charge of the Reference Centers, (b) direct observations by the evaluator, and (c) three paper-and-pencil instruments, i.e., the Knowledge Test on AIDS, the Interpersonal Skills Inventory, and the Course Evaluation.
The scores derived from the trainees' responses--ER, UFRJ, and G&G--to the Knowledge Test and the Course Evaluation Showed no statistically significant differences according to the Kruskal-Wallis method (1975). However, a closer look into particular aspects of the three Centers showed positive characteristics as well as aspects deserving improvement. Such data allowed of some extrapolations pertaining to the evaluator, the DN STD/AIDS, the Reference Centers and the entities responsible for the trainees.

W.B.P.238

A COMPREHENSIVE APPROACH TO COMMUNITY HOSPITAL CARE OF AIDS PATIENTS

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Objective. To provide clinical care, education, counseling, testing and social services to HIV infected patients (pts) served by an 850 bed tertiary care community teaching hospital in central Connecticut.
Methods. An AIDS Task Force acts in a reflective and advisory capacity, recommending policy and procedure to the Infection Control Committee. A patient oriented multidisciplinary HIV Team coordinates the delivery of services to in-pts with HIV disease and provides support to hospital staff. Community based volunteers provide support and social services for HIV pts and families. An AIDS Program office provides an INFO-line, resource referral and speakers for community groups. A newsletter is periodically distributed updating national and regional AIDS related developments. The hospital provides referrals and acts as a resource for various community based organizations which provide education, outreach and support. The hospital is part of a city wide network of social service agencies coordinating community services. Close, collaborative working relationships have been established with local Health Depts., the Visiting Nurse Association and area church groups. A regional task force has established a data base, and addresses public policy and legislative issues.
Conclusion. Since each hospital's HIV population and problems are both generic and specific, internal coordination and problem solving must be coupled with the establishment and strengthening of links to community services in order for both the hospital and its patients to survive.

W.B.P.239

INVERSE CORRELATION OF COMPLEMENT-MEDIATED, ANTIBODY-DEPENDENT ENHANCING TITERS WITH STAGE OF DISEASE IN INDIVIDUALS INFECTED WITH HIV-1.

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Objective: Complement-mediated, antibody-dependent enhancement (C'-ADE) of HIV-1 infection has been demonstrated to accelerate infection, to inhibit neutralizing antibody titers *in vitro* (Lancet i:790, 1988), and to cause a > 100 fold increase in infectious HIV-1 yields (*JAIDS* - in press). Our objective in this report is to ascertain whether titers of antibodies involved in C'-ADE and the relationship between neutralizing antibodies and C'-ADE correlate with stage of disease.
Methods: Sera from twenty-eight subjects in the Nashville area were examined at a single time point for C'-ADE titers as well as neutralizing antibodies in the presence or absence of human complement. Stage of disease was evaluated by the Walter-Reed classification scheme. C'-ADE as well as the ratio between neutralizing antibodies in the absence and presence of human complement and the ratio between C'-ADE and neutralizing antibody titers in the absence of complement were correlated with disease stage by linear regression analysis.
Results: No correlation between neutralizing antibody titers in the presence and absence of complement or C'-ADE and neutralizing antibodies was found with the stage of HIV-1 induced disease. An inverse correlation between C'-ADE and the stage of disease appears to exist but with considerable scatter of the data points ($r = -0.4$) on initial analysis of a limited number of subjects.
Conclusion: The data in human subjects is consistent with our observation in chimpanzees following initial challenges with HIV-1: C'-ADE titers rise prior to neutralizing antibody titers. Titers of the latter increase as C'-ADE declines. Efforts will continue to expand our data base to correlate with stage of disease as well as to examine the speed of disease progression as a function of C'-ADE.

W.B.P.240

IMPEDIMENTS TO IVDA ENROLLMENT IN ACTG CLINICAL TRIALS

Fairchild, Patrick; Jaffarian, C; Cheeseman, S; Bova, C; Tolson, K; Blacklow, N; et al. University of Massachusetts Medical School, Worcester, Massachusetts, USA.

Objective: To ascertain reasons that hinder enrollment of HIV-infected intravenous drug abusers (IVDA) into clinical trials.
Methods: One hundred forty one IVDA (76 males + 65 females) were evaluated at UMMS for entry into NIH ACTG clinical trials assessing AZT in asymptomatic infection (protocol 019) and early ARC (protocol 016) utilizing standard inclusion and exclusion criteria.
Results: Of the 141 patients, only 38 (27.0%) were considered eligible for study protocol. Eleven (7.8%) of the 141 patients have been enrolled, 15 (10.6%) eligible patients are considering entry and 12 (8.5%) have refused participation in study. IVDA's considered ineligible for study (103 patients) often had more than one reason for not entering a protocol. These included psychosocial difficulties (53.1%), active IV drug use (23.4%) and exclusion for medical conditions (40.0%). IVDA that entered and remained in study were more likely to be enrolled in a long-term drug free residential facility or have a stable and supportive home environment than those who did not enter study. In contrast, of 78 non-IVDA, 49 (62.8%) were considered eligible for study and 19 (24.4%) were enrolled.
Conclusions: Multiple factors contribute to the low enrollment rate of IVDA into clinical trials. Increased availability of social service support and improved access to drug rehabilitation facilities may enhance IVDA participation in clinical trials. Expanded medical study inclusion criteria and less restrictive exclusion criteria may further promote entry into study.

W.B.P.241 ~~THE ROLE OF THE GOVERNMENT OF CANADA IN THE NATURE~~ AND DIRECTION OF CLINICAL RESEARCH IN THE MANAGEMENT OF HIV-DISEASE IN CANADA

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Objective: To identify and discuss the key role played by Health and Welfare Canada in supporting, expediting, facilitating, and implementing clinical research in the management of HIV-disease in Canada.

Methods and Results: The Health Protection Branch (HPB) of Health and Welfare Canada plays a crucial but delicate role in determining patient accessibility to experimental drugs for the management of HIV-disease and its ancillary opportunistic infections and neoplasms. New policy initiatives and administrative changes have been recently announced which are intended to streamline the regulatory process and improve patient accessibility. It is our intention to examine the impact of these changes on the availability of experimental agents in Canada and on the climate for clinical research in this country. In addition, we will discuss the mechanisms for the introduction of experimental agents in Canada, the organizational and regulatory framework of HPB, the philosophy governing the evolution and implementation of regulatory change, and the consultative role of the Drugs Directorate.

Conclusion: The Health Protection Branch will continue to play a key role in improving patient accessibility and promoting clinical investigation in the management of HIV-disease in Canada

W.B.P.242 THERMOGRAPHIC IMAGING OF HIV PATIENTS

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Objective. To assess the role of high resolution infra-red imaging in HIV infection and Kaposi's sarcoma with particular reference to monioring abnormal patterns that may arise because of peripheral neurological impairement and/or the presence of KS lesions.

Methods. High resolution thermal imaging equipment using an 8 element SPRITE detector system working in the 8-13 micron waveband has been used in a study to assess whole body skin temperature patterns in 20 HIV positive patients with biopsy proven KS lesions and to determine the thermal status of representative KS lesions before and during treatment with iodostearic acid.

Results. Characteristic and abnormal thermal patterns were found in a high proportion of the patients studied. In addition, a range of quantifiable thermal activity of KS lesions at different body sites was recorded. Some lesions showed measurable changes in thermal activity during treatment. These findings will be illustrated.

Conclusion. It is suggested that cutaneous neurological changes associated with HIV infection may produce abnormal thermal patterns on the skin surface and that the technique of infra-red thermography may have a role in identifying such abnormalities and provide an index of peripheral neurological change in HIV patients. Thermographic patterns may also be able to characterize the vascular and metabolic status of cutaneous lesions and thereby help in the assessment of the activity of Kaposi's sarcoma.

W.B.P.243 ART THERAPY WITH PEOPLE WITH AIDS

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Abstract:

Art Therapy is a useful medium for the expression, recognition and processing of the anxieties of People With AIDS.

In this paper and slide presentation, issues of pain, incompletion, failure, isolation, dependency, punishment, fear of the unknown and homophobia are expressed in the artwork and subsequent discussion.

The workshop will present one PWA artwork produced over the course of 3 months to illustrate the development of the process of art therapy. Several other examples of specific statements through artwork will also be shown. Two aspects of denial will be suggested.

W.B.P.244 MAINTENANCE OF HOPE IN AN HIV SAMPLE

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HIV Center for Clinical and Behavioral Studies, New York State Psychiatric Institute and Columbia University, NY, NY, USA

Objective: To identify social and psychological conditions, susceptible to intervention, that contribute to maintenance of hope in an HIV sample.

Methods: 156 gay, predominantly white, well educated and financially successful community volunteers were evaluated to identify overall level of psychological functioning, psychiatric syndromes and symptoms, life outlook, social relationships, life events, HIV status and illness stage. 73% of participants were HIV seropositive.

Results: The following were positively associated with higher levels of hope (Pearson r's, $p < .02$): social supports (+0.52), internal locus of control (+0.36); commitment (+.060); number of positive life events (+0.28), and global psychological functioning (+0.31). HIV illness stage and T cell count among HIV+ subjects were not significantly related to level of hope. In the absence of current psychiatric disorder (DSM-III-R), mean difference in level of hope between HIV+ and HIV- subjects was not statistically significant. There was, however, more variability of response and more extreme scores within the HIV+ group, at both ends of the distribution.

Conclusion: The large majority of respondents have been able to preserve a sense of faith in the future and the conviction that living is worthwhile, despite HIV infection.

W.B.P.245 A REHABILITATION PROGRAM FOR CLIENTS WITH HIV ASSOCIATED CONDITIONS

Gentile, Patricia, Marshall K., Bennett M., Laqueur P., Alexander H., Davis I.- Woodhull Medical & Mental Health Center, Brooklyn, NY, USA

Objective. This poster presentation will highlight the special and unique role Rehabilitation Medicine can provide in servicing people with AIDS (PWAs).

Methods and Results. Woodhull Medical & Mental Health Center, as part of NY City's Health & Hospitals Corporation, provides comprehensive tertiary-care service to a large impoverished and medically underserved community. As part of the Department of Ambulatory Care, Rehabilitation Medicine offers physical and occupational therapy services to a wide variety of patients, including those diagnosed as having AIDS or AIDS-related complications. The growing number of PWAs is challenging all health care specialities to define their role in providing services to this population; Rehabilitation Medicine is no exception. PWAs or AIDS-related conditions may present with a wide variety of physical, emotional, and psychological problems. Consequently, the role of Rehabilitation Medicine will include: 1) maximizing level of functioning in activities of daily living; 2) supporting continued participation in occupational roles; and 3) improving the quality of life.

This presentation will describe and demonstrate a therapeutic rehabilitation group developed for PWAs. Lead by an occupational therapist, the goals of the group lie chiefly in teaching coping and adaption skills specifically for PWA's. Conditioning exercises, breathing and relaxation activities, and self-care training are integral parts of the comprehensive program.

Conclusion. People with AIDS are faced with the daily challenge of living with their condition. This presentation will highlight what role Rehabilitation Medicine, especially occupational therapy, can play in promoting skills to achieve maximal independence.

W.B.P.246 COMPLIANCE OF HIV-INFECTED INTRAVENOUS DRUG USERS IN CLINICAL TRIALS

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Objective: To compare compliance of clinical trial subjects whose risk factor is intravenous drug abuse (IVDU's) with those from other risk groups.

Methods: Subjects are UMass patients in NIH ACTG placebo-controlled trials of zidovudine in asymptomatic infection (019) and early ARC (016). IVDU's were either drug-free or on methadone maintenance at the time of protocol entry. The number of pills returned at each visit was tallied and periods for which patients returned < 20% of study drug were deemed to represent good compliance. This corresponds to missing no more than one dose per day.

Results: Four of 11 IVDU's have left the studies for reasons other than protocol endpoints, compared with one of 20 from other risk groups. All 5 were asymptomatic. None of the 9 patients with symptoms of early ARC have left 016, although 4 are IVDU's.

	Percent of Study Weeks in Good Compliance	
	IVDU's	Others
All patients on study	92	93
016 (early ARC)	99	94
019 (asymptomatic)	86	93
1st 15 weeks (biweekly follow-up)	90	95
≥ 16 weeks (monthly follow-up)	98	89

Conclusion: Although IVDU's discontinue study participation more often than others, their adherence while on study, as measured by pill returns, does not differ markedly from subjects from other risk groups.

W.B.P.247 INSURING QUALITY OF DATA IN COMMUNITY-BASED CLINICAL TRIALS

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Community-based clinical trials of experimental HIV treatments offer the potential for rapidly expanding the number of drugs being tested, increasing participation by community physicians in HIV research, and improving access to promising experimental therapies for large numbers of patients. Critics of community-based clinical trials, however, argue that the quality of data obtained in community settings is unlikely to achieve standards established in academic research settings.

To meet this challenge, the San Francisco County Community Consortium (SFCCC) designed data collection, protocol management and quality assurance systems which could be implemented in community physicians' offices. In Fall 1988, the SFCCC trained 45 physicians to use these systems and launched 5 clinical trials. Studies include Phase II/III trials of readily available agents as well as observational databases of current HIV therapies.

To insure consistent data collection by large numbers of physicians located over a wide geographic area, the SFCCC uses the same set of case report forms for all clinical trials. To minimize the amount of record keeping required of physicians, the SFCCC staff use a computerized followup system to prompt physicians to collect data and to dispense study medications at prescribed intervals. To insure data are recorded accurately and completely, SFCCC staff systematically review all case report forms before data are removed from physicians' offices and entered into the SFCCC database management system.

The experience of the SFCCC suggests that frequent (weekly) monitoring by research staff is necessary but sufficient to insure that data collected in community settings achieve standards established in academic research centers.

W.B.P.249 AIDS TREATMENT REGISTRY (ATR) OF NEW YORK

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Objective. To provide information about ongoing clinical trials to individuals seeking to enroll in clinical trials, physicians, health facilities and AIDS service organizations in New York and New Jersey.
Method. A local, non-profit organization has established a computerized database to give accurate, reliable information on AIDS-related clinical trials because up-to-date, accurate information is not easily accessible.
Results. It is generally accepted that access to health care and experimental treatments will extend the lives of many infected with HIV. Acquiring information about clinical trials is limited. This has led to underrepresentation of minorities and overall underenrollment in trials. The latter is one of the factors slowing down the drug approval process. According to the Food and Drug Administration, there are currently over 80 drugs approved for trials and over 100 drug trials. In October 1988, a federal law was enacted requiring sponsors of AIDS drug trials to make public all AIDS efficacy trials. The impact of the new legislation on the project will be discussed.
Conclusion. The ATR will identify all AIDS/HIV-related clinical drug trials underway locally, collect data from principal investigators conducting such trials to determine where "open slots"exist and what is required of prospective drug trial participants. This information will be developed into a readily accessible report format and distributed to all potential end-users.

W.B.P.251 PROGRAM DIRECTORS' ATTITUDES TOWARDS RESIDENTS' CARE OF PERSONS WITH AIDS.

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Objective. To evaluate the educational strategies and experiences of United States residency programs regarding the training of primary care providers for persons with AIDS (PWAs).
Methods. We mailed questionnaires to directors of all 772 non-military United States internal medicine (IM) and family medicine (FM) programs. 59% have responded.
Results. While 91% of directors felt that primary care of PWAs is an important educational experience and 94% of programs reported usually having AIDS inpatients, only 15% reported that the majority of trainees cared for PWAs in their continuity clinics. Even at programs with a high inpatient load (average census ≥ 6), only 39% reported that most residents had either cared for a PWA in their continuity clinic or had rotated through an AIDS subspecialty clinic. More IM than FM directors considered care of PWAs to be too complicated for most generalists (24% vs 9%, $p<0.01$) and IM directors were less likely to encourage housestaff to provide PWAs with primary care (51% vs 72%, $p<0.01$). Among 57% who did not believe or were unsure if their residents were adequately trained in AIDS ambulatory care, only 38% reported improving education in this area to be a high priority. Among the 39% who do not encourage residents' assumption of primary care, 60% had at least one of the following concerns: resident stress (24%), AIDS care too complicated (31%), or clinic faculty not qualified to supervise them (39%).
Conclussions. While program directors view education in ambulatory care of PWAs as important, most do not believe residents are adequately trained, many do not encourage residents' assumption of primary care of PWAs and residents have not provided such care in their programs. Strategies to augment residents' ambulatory experience in the care of PWAs are needed.

W.B.P.248 EVALUATION DE LA CHARGE DE TRAVAIL INFIRMIER : COMPARAISON ENTRE PATIENTS HOSPITALISES INFECTES ET NON INFECTES PAR LE VIH.

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La structure et l'intensité des soins infirmiers ont été étudiés fin 1988 de manière prospective dans un service universitaire de Maladies Infectieuses par recueil quotidien des informations. 64 dossiers sont évaluables : 29 patients infectés par le VIH (dont 19 IVC1 ou IVD) et 35 patients hospitalisés pour pathologie infectieuse ou parasitaire non VIH, correspondant respectivement à 516 et 342 journées d'hospitalisation. Les soins de base (alimentation, locomotion, mobilisation, élimination, hygiène et confort), techniques (diagnostiques et thérapeutiques), relationnels et éducatifs, sont classés de 1 à 5 en fonction de leur intensité.

Intensité des soins

		1	2	3	4	5
	minute/jour	1,8	29,5	55,2	87	5,0
VIH+	(%)	(1)	(16,6)	(30,9)	(48,7)	(2,8)
VIH-	minute/jour	1,3	52,5	36,6	22,6	0,51
	(%)	(1,1)	(46,2)	(32,3)	(20)	(0,4)

Structure des soins

		base	technique	relationnel
VIH+	minute/jour	47,3	40,8	90,5
	(%)	(26,5)	(22,9)	(50,6)
VIH-	minute/jour	33,3	49,2	30,9
	(%)	(29,3)	(43,4)	(27,3)

Les patients VIH+ requièrent des soins relationnels maximum. L'intensité des soins est doublée par rapport aux patients VIH-.

W.B.P.250 ATR: A REGIONAL MODEL FOR ESTABLISHING A COMMUNITY-BASED, COMPUTERIZED REGISTRY OF AIDS/HIV CLINICAL DRUG TRIALS.

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Objective: To establish community-based registries of AIDS/HIV-related clinical drug trials at local levels to increase awareness of, and access to, such trials for all persons affected by the epidemic, especially among minority populations heretofore largely excluded from enrollment.
Method: Discussion of the steps taken by the ATR to gather information on AIDS/HIV-related clinical trials underway in their area and disseminate that information to members of all affected populations, including intravenous drug users (IVDUs), Blacks and Hispanics, women and children, and the poor. Discussion topics will include: becoming your own "expert" on clinical trials; developing a database; developing data collection materials; volunteer recruitment and training; overcoming obstacles in collecting data; producing "user-friendly" report formats; developing culturally sensitive education materials covering trial enrollment issues and the use of experimental drugs; establishing a community outreach and distribution network; and qualifying for available funding.
Results: ATR's effort has been highly successful. They have obtained the aid of City and State health officials in collecting trial data and were funded by N.Y. State in their first year of operation. A bi-lingual "Handbook for Clinical Trial Participants" has been produced. Trial enrollment statistics are closely monitored to quantify the overall impact of the effort. Conclusion: A community-based registry of trials can promote greater access to potential treatments and enhance trial enrollment.

W.B.P.252 IMPACT OF SERUM P24 HIV ANTIGEN SCREENING ON PATIENT ELIGIBILITY FOR ANTIVIRAL CLINICAL TRIALS

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Objective. To examine the impact of serum p24 HIV antigen (p24) screening on patient eligibility for an antiviral clinical trial.
Methods. [ACTG #034 Phase I Trial of Ribavirin in the Treatment of Patients with AIDS and Advanced AIDS-Related Illnesses (ARC)] requires positive serum p24 for inclusion. Screening interviews and review of medical records determined clinical stage of HIV-related illness and Zidovudine (AZT) use. Blood was obtained from patients with ARC or AIDS and serum tested for p24 using the Abbott ELISA. A level of ≥ 70 picogram/ml was interpreted as positive (+) and qualified patients for study enrollment.
Results. 45 patients were screened to the point of p24 testing with the following results:

31 p24 +	14 p24 -
8 ARC; 23 AIDS	4 ARC; 10 AIDS
15 had prior AZT use	4 had prior AZT use

P24 positivity did not significantly correlate with either clinical stage or AZT use by Chi square analysis. Four - patients were later retested and 2 had converted from - to +.

Seventeen + patients have been serially tested and have remained +.

Conclusion. Use of p24 positivity as an eligibility criterion for phase I antiviral trials will limit access of significant numbers of clinically indistinguishable patients to these trials. The impact of such exclusion on patient accrual and on the applicability of trial results may be significant.

W.B.P.253 NEW DEVELOPMENTS IN A MODEL PROGRAM OF AIDS HOSPICE CARE.

Bruce Priebe, RN; Visiting Nurses and Hospice of San Francisco, CA, USA

OBJECTIVE
To present the most current developments in a model program of comprehensive AIDS hospice care.
METHODS
For five years Visiting Nurses and Hospice of San Francisco has provided both residential and inpatient AIDS hospice care. Utilizing interdisciplinary teams of nurses, social workers, volunteer service coordinators and home health aides. VNH has cared for over 2,000 people with AIDS. The program is linked with other community resources, operating as an integral part of the continuum of care required for effective AIDS treatment. The program also includes pastoral services and bereavement follow-up with family members and care partners. For the past two years, the program has operated a fifteen bed hospice facility.
RESULTS
VNH has offered comprehensive services to 2,000 PWAs as well as hundreds of family members over a period of five years. We have trained thousands of people worldwide through direct contact and the development of training materials. Hospice care is an integral link in the widely acclaimed S.F. model of AIDS care, helping to keep costs per patient down to $100/day.
CONCLUSION
The VNH model of AIDS hospice care has proven to be successful medically, financially, and emotionally. Furthermore, it has shown its usefulness to many communities throughout the world, who have an increasing need to develop compassionate and cost-effective models of service delivery.

W.B.P.254 A BRIEF HEALTH STATUS INSTRUMENT FOR USE IN AIDS CLINICAL TRIALS

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Objective. While drug trials for HIV infection would ideally measure patients' health status and quality of life, most available instruments are too long to be acceptable to investigators and subjects. We aimed to develop a brief yet valid questionnaire for use in clinical trials.
Methods. We modified the Medical Outcome Study Short-form General Health Survey to include subscales with particular relevance to HIV infection, such as energy and cognitive function. We studied whether this new 32-item instrument would measure health concepts reliably and distinctly and would discriminate between clinically different patient groups.
Results. We administered the instrument to 73 subjects with asymptomatic HIV infection and 44 with AIDS-Related Complex (ARC). Respondents were able to complete the questionnaire in less than 5 minutes. Questionnaire items were more highly correlated with items in the same subscale than with items in other subscales. Reliability coefficients were greater than 0.78 for all but one of the multi-item subscales. Compared to patients with ARC, asymptomatic patients had significantly less pain (difference between means 0.7; 95% C.I. 0.5,0.8), more energy (1.4; C.I. 0.5,2.2), better physical function (0.6; C.I. 0.5,0.7) and cognitive function (1.6; C.I. 1.0,2.3), and superior overall health (0.5; C.I. 0.3,0.8). The groups scored similarly on subscales of social function, mental health, and health distress.
Conclusion. We conclude that the instrument is acceptable to patients, reliably measures distinct health concepts, and discriminates between clinically different groups of patients with HIV infection.

W.B.P.255 NEUROPSYCHOLOGICAL TEST PERFORMANCE IN HIV-1 SEROPOSITIVE PATIENTS ON AND OFF AZIDOTHYMIDINE (AZT)

Sidtis, John J; Sadler, AE; Keilp, J; Brew BJ; Aronow, HA & Price RW. Memorial Sloan-Kettering Cancer Center, NY, NY, USA

Objective. To compare the levels of neuropsychological and neurological performance in patients treated with ad hoc AZT with untreated patients.
Methods. The Neuro-AIDS Study Group (NASG) neurological history, examination, and neuropsychological battery was administered to HIV-1 seropositive patients at various stages of disease: a group not receiving AZT (evaluations=374) and a group receiving AZT (evaluations=187).
Results. There was no significant group difference in a composite score based on the neurological history and examination. Despite a significantly higher mean Walter Reed Stage in the treated (5.9) compared to the untreated group (4.7) ($t=8.65$; $p<0.001$), a composite neuropsychological impairment score was higher in the untreated group ($t=3.06$; $p=0.002$). Tests showing the largest group differences included: Trail Making B (24%) and A (13%), and errors on the Benton Visual Retention Test (25%).
Conclusions. Although the overall neurological status was not significantly different in the groups treated and untreated with AZT, the NASG neuropsychological test battery demonstrated significantly better performance in the treated group. Whereas the functional significance of such differences remain to be determined, neuropsychological evaluation is effective in quantifying subclinical changes in HIV-1 seropositive groups.

W.B.P.256 TEST-RE-TEST PERFORMANCE ON NEUROPSYCHOLOGICAL TESTS IN A GROUP OF HIV-1 SEROPOSITIVE PATIENTS

Sadler, Abigail E; Keilp, JG; Thaler H, Brew BJ, Aronow HA, Price, RW & Sidtis, JJ. Memorial Sloan-Kettering Cancer Center, NY, NY, USA

Objective. To accurately evaluate test-re-test performance on the Neuro-AIDS Study Group (NASG) neuropsychological battery. In order to assess efficacy in treating the AIDS Dementia Complex (ADC) in prospective therapeutic studies, the effects of repeated testing must be understood.
Methods. A heterogeneous group of HIV-1 seropositive patients who were evaluated for AIDS Dementia Complex using the NASG neurological history, examination, and neuropsychological battery twice within a 12 week period served as subjects. Only patients not receiving anti-viral therapy, and not changing overall dementia or motor ratings on the neurological examination were included (n=27).
Results. The median time between evaluations was 7.4 weeks. There were no significant differences between time 1 and time 2 scores on any of the tests. For patients with normal motor function (n=14), performance on 9/13 tests decreased at re-administration (mean=5.9%) while 4/13 increased (mean=5.3%). For patients with mild dysfunction (n=9), the average decrease (6 tests) was 12%, the average increase (6 tests) was 4.8%.
Conclusions. Although disease progression can mask practice effects, with appropriate administration, practice effects on the NASG neuropsychological tests do not appear to be a significant factor in repeated measures studies of HIV-1 seropositive subjects.

W.B.P.257 NEW MODALITIES FOR CLINICAL TRIALS: A SYNTHESIS OF PHARMACOLOGY AND HEALTH CARE.

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AIDS Coalition to Unleash Power, New York NY, USA.

Objective: To resolve the contradictions between the goals of those conducting clinical trials, who seek data, and those participating in them, who seek health care. Method: Protocol analysis, discussions with clinicians, researchers, officials and patient advocates. Discussion: <5,000 people,(<0.5% of the HIV+ US population) are enrolled in NIAID's ACTG program. Accrual is impeded by poor outreach, poor trial design, inaccessability, denial of PCP prophylaxis and reluctance to enroll in placebo-controlled trials. Data are skewed by subjects' recourse to unapproved drugs off trial. A growing consensus among the medical establishment and AIDS advocates is calling for new trial designs which guarantee treatment, allow prophylaxis and eschew placebos for life-threatening conditions. San Francisco and New York clinicians have begun treatment protocols with computer modeling of serologic and clinical results to evaluate optimal dosages and combinations. Conclusion: Clinicians, researchers and patient advocates can cooperate to develop new modalities for wider, faster, better-designed and more humane drug trials embodying a new synthesis of scientific and therapeutic aims.

W.B.P.258 CO-MORBID EVENTS IN FIRST HIV IDENTIFIED HOSPITALIZATIONS, NEW YORK STATE (NYS), 1984-86

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Objective To describe the disease experience in those first hospitalized with HIV infection and/or sequelae in NYS acute care facilities between 1984 and 1986.
Methods Discharge data abstracts (DDA) from all non-federal acute hospital stays in NYS were searched; any DDA with an ICD-9-CM diagnosis of 042-049, 795.8, 279.10, 279.19, 279.30, or 136.3 was considered to have an HIV specific diagnosis (HIVSD). DDA were then linked by individual into an HIV longitudinal file (HIVLF). The first HIVLF discharge for each patient was reviewed for co-morbid events; diseases were designated as HIV related (HIVRD) if identified in the 1/88 ICD-9-CM revision of the HIV infection codes as associated with HIV; and as OTHER if not.
Results Of 13,014 who first appeared on the HIVLF between 1984-86, 9880 (75.9%) had an HIVRD on first DDA; total HIVRD=20,549 (1.6/person). 3134 (24.1%) persons had no HIVRD coded on their first DDA. Prevalent HIVRD were PCP 5705 (27.8%); Candidiasis, 3006 (14.6%); Anemia Group, 281 (11.1%); KS 1204 (5.9%); TB Group, 817 (4.0%); septicemia, 717 (3.5%); and pneumonia, 653 (3.2%). OTHER diagnoses frequently seen on DDA without any HIVRD were mental disorders (including drug abuse) (1529,19%); digestive system (361, 4.5%) or respiratory system disease (455, 5.7%); pneumonia/flu (321, 4%); and venereal disease, including syphilis (51, .6%)
Conclusion In first HIVLF admissions without an HIVRD, many have mental disorders or "garden-variety" pneumonia. Current ICD-9-CM codes may need to be expanded to include more non -traditional HIVRD to accurately reflect the extent of HIV morbidity.

W.B.P.259 NEUROPSYCHOLOGICAL PERFORMANCE AS A FUNCTION OF AIDS DEMENTIA COMPLEX (ADC) SEVERITY

Sadler, Abigail E; Keilp, JG; Dorfman, D; Brew, BJ; Aronow, HA; Price, RW & Sidtis, JJ. Memorial Sloan-Kettering Cancer Center, NY, NY, USA

Objective. To review the sensitivity of the Neuro-AIDS Study Group (NASG) neuropsychological battery as a function of clinical severity of cognitive, motor, and behavioral dysfunction in ADC.
Methods. 210 HIV-1 seropositive patients at various stages of disease who were not receiving anti-viral therapy and whose evaluation for ADC was not confounded by other disease were evaluated using the NASG neurological history, examination and neuropsychological test battery.
Results. Patients were classified as normal, mild, moderate or severe with respect to cognitive, motor, and behavioral function based on neurological history and examination. The following tests revealed significant ($p<.05$) decrements across all 3 clinical severity classifications of both cognitive and motor function: timed gait, finger tapping, grooved pegboard, trail making and digit-symbol transcription. In contrast, test performance only differentiated between normal and moderate to severe behavioral dysfunction. A composite neuropsychological impairment score revealed decreased performance across severity classifications for the dementia and motor ratings but not for the behavioral severity subgroups.
Conclusions. Performance on the NASG neuropsychological battery reflects the severity of cognitive and motor impairment. Although behavioral disturbances also occur, they do not have a comparable effect on neuropsychological test performance.

W.B.P.261 CLINIC FOR HIV-RELATED CONCERNS: ONE MODEL OF OUTPATIENT PSYCHIATRIC CARE

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Objective. To provide an example of a model of care for outpatient psychiatric and psychosocial services in Canada. Such a model can then be used as a basis for developing suitable clinics in other areas of the country where these services are required.

The Clinic for HIV-Related Concerns opened in July 1986. It is part of the Department of Psychiatry, Mount Sinai Hospital, Toronto. The objectives are to provide: (1) psychiatric and psychosocial services for persons affected by HIV disease, including family members and significant others. Services provided include individual, couple, family and group therapy; (2) a centre to which health care professionals and students can come to train in areas related to the psychiatric, neuropsychiatric and psychosocial aspects of HIV disease; (3) ongoing research, e.g. to develop a brief screening test for cognitive deficits in HIV infection.

Two hundred and fifty-eight persons have been assessed and treated between July 1, 1986 and December 31, 1988. Ninety-two are PWAs, 98 have other forms of HIV infection, 68 are not infected (including "worried-well"). Highest increase in referrals in last 12 months is of married bisexual/homosexual men and their wives. Feedback from patients, referring agencies and the Community Advisory Board of this Clinic is that such clinics are urgently needed for provision of care, liaison with the community, education and research.

W.B.P.263 SACRAMENTO CARES: ONE COMMUNITY'S RESPONSE TO PROVIDING COMPREHENSIVE MEDICAL CARE TO PEOPLE WITH HIV-RELATED DISORDERS

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Objective. To develop a system of medical care to meet the need for comprehensive, coordinated, high-quality care for people with HIV infection in the Sacramento, CA area, which has a total of >600 reported cases of AIDS.
Methods. To reach our objective, local hospitals, AIDS agencies, physicians (P), and a regional philanthropic foundation (SF) formed a task force in 9/87 to study the problem. It recommended creation of the Sacramento Center for AIDS Research, Education and Services (Sacramento CARES), a private, non-profit corporation. SF, local hospitals, and county and state governments have provided initial funding for the project.
Results. The facility will open in 5/89 and accommodate 300 visits/mo, expanding to 1500/mo by 1992. It is designed to attract private practice and academic P to carry out their HIV-related practice and clinical research activities. It plans to offer: an attractive site; a private practice setting for private P and their patients (pts); a clinic setting for "public" and "academic" P and their pts; formal affiliation with UCD; computerized pt records designed to facilitate clinical research; on site medical, transfusion, phlebotomy, pharmacy, dental, psycho-social, case management and drug abuse services; AIDS library; child care; consultative services for Pts and P in inland Northern California.
Conclusion. We present a unique public-private-academic model for health care services to people with HIV-related disorders.

W.B.P.260 THE ORGANIZATION OF AIDS SERVICES AT COOK COUNTY HOSPITAL, CHICAGO

Sherer, Renslow*; Katiyalis, S.*; Sable R.*; Cohen, M.**; Goth, L.**; Raab A.***; et. al.
* AIDS Prevention Service (CCHAPS) and Section of Retrovirology, Division of Infectious Disease; ** Division of General Medicine, Cook County Hospital; *** Cermak Health Services, Cook County Jail, U.S.A.

Objective. To implement a rational and comprehensive AIDS service organization for a diverse, multi-racial indigent population based in the only public hospital in Chicago.
Methods. Distinct expertise and service capability for persons with AIDS, HIV infection, and risk for HIV evolved in the Divisions of General Medicine and Infectious Disease and merged.
Results. Comprehensive service delivery begins with the AIDS Prevention Service, which provides bilingual, culturally sensitive, and confidential counseling and testing for 200+ persons at risk of HIV infection monthly. Targetted interventions for ivdus, minority women, Afro-Americans, Hispanics and prisoners are available by consultation in all clinical care areas. All new HIV-infected persons (20-30/mo) are referred for medical and immune evaluation and entry into therapy protocols. Seven weekly clinics serve 1000+ patients, 300+ of whom receive AZT. CCHAPS provides case management and volunteer support managers, as well as community-service links for residence, substance abuse care, home care, and others. The in-patient AIDS consultation service averages 20-30 patients throughout the hospital; a designated in-patient ward is planned. New initiatives include the women and children's clinic, providing medical, pediatric, ob-gyn, psychosocial, and on-site substance abuse services; and a planned 4-week out-patient detoxification program for HIV-positive active ivdus. Palliative home care for terminally ill PWAs is available.
Conclusions. Comprehensive services for persons with AIDS and HIV infection maximize client identification, early interventions for HIV prevention and treatment, access to medical care and experimental protocols, and appropriate psychosocial services and community referrals for primarily indigent and minority clients at Cook County Hospital. Collaborations with community-oriented agencies and the Cook County Jail Health Service enhance client services.

W.B.P.262 PRINCIPLES OF REHABILITATION OF PATIENTS WITH IMMUNODEFFICIENCIES

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Rehabilitation of immune system is a complex and versatile process which includes not only medical but professional, social and psychological aspects as well. It has its own peculiarities and regularities at different pathological processes constituting the base of a new field of knewledge in medical science, immunology in particular.

We have suggested the following main principles of rehabilitation of patients with immunodefficiencies:
I. Early beginning. 2. Prolongness of rehabilitetion measures.
3. Continuity and stageness of rehabilitation period:
a) I stage-specialized clinics or departments at the hospitals of common type; b) II stage-sanatorium, a specialized rehabilitation center at a resort; c) III stage-dispensaries and polyclinics at the clinics of scientific institutions or hospitals. 4. Complexity of carried out therapeutic procedures.

Usage of these principles in rehabilitation of patients with AIDS will promote lengthening of remission time, reducing the number of different exacerbations and as a result improving of the general state of the patients, heightening of their ability to work and reducing among those patients primary disablement and mortality.

W.B.P.264 REFERRAL PATTERNS IN A COMPREHENSIVE AIDS CLINIC

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Objective: To assess referral patterns of physicians in a comprehensive AIDS clinic with regards to source and number of referrals.
Methods: Comprehensive services at the New York Hospital -Cornell Medical Center are provided by 4 primary physicians (2 infectious disease specialists, a hematologist and an internist) 2 psychiatrists, a nutritionist, a nurse practitioner, 2 social workers and assistance from rehabilitation medicine. Consultations requested by the primary physicians were recorded for all patients newly enrolled from August 1, 1988 to January 20, 1989.
Results: Of 76 patients enrolled, there were 106 initial referrals for 56 patients, and no referrals for 20 patients. Twenty-seven patients were referred to nutrition, 20 to psychiatry, 20 to dermatology, 10 to neurology, 8 to ophthalmology, 5 to surgery, 4 to pulmonary, 3 to gynecology, 2 to gastroenterology, 1 to rheumatology. No major differences were noted in number or type of referrals obtained by the primary physicians. There was a trend toward more referrals to nutrition, psychiatry and dermatology than other specialities. For nutrition and psychiatry referrals this may represent increased utilization of services immediately available. However, significant weight loss, cachexia and coping with terminal illness are major problems confronted by AIDS patients. The number of dermatology referrals reflected a need to accurately diagnose a variety of skin lesions. Referrals to neurology, opthalmology, pulmonary and gastroenterology were primarily for diagnostic procedures. Five patients were referred to surgery for operative procedures.
Conclusion: These referrals underscore the need for various specialists to participate in the care of AIDS patients. Physicians consult with other specialists who perform specific procedures in their field of expertise. Since AIDS is a multisystem disease collaboration among health care professionals is critical for the comprehensive evaluation and treatment of all AIDS related illness.

W.B.P.265 CLINICAL CARE AS PART OF INTEGRATED AIDS MANAGEMENT IN A ZAMBIAN RURAL COMMUNITY

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The Salvation Army Chikankata Hospital, Mazabuka, Zambia.

Object. 1) to present an analysis of clinical symptomatology with a summary of major protocols for clinical management of hospital inpatients compared with patients in the home based care and prevention programme;
2) to analyse drug use and drug costs in the hospital and in the home based care setting.
Methods. A retrospective analysis of 200 inpatients and 200 patients in the home based care programme was done. The observed manifestations of AIDS are described, by organ systems, and treatment protocols are described, incorporating an analysis of drug use and cost on some of these patients.
Results. Tables and figures are presented showing main presenting symptoms found both in hospital and at home, and indicating that treatment protocols in the home setting are simpler and cheaper with respect to drug costs.
Conclusion. It is proposed that home based care and prevention with hospital intervention where required is the most practical and sustainable form of organisation for an integrated approach to management for a district rural hospital. Furthermore it is proposed that therapeutic constraints of certain kinds are acceptable in the context of "shared acceptability" by therapeutic teams, by patients, and by communities connected to the patients.

W.B.P.266 STUDY OF A SERIES OF 121 CONSECUTIVE AIDS PATIENTS.

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Clínica Médica A, of the Universidade do Rio de Janeiro, UNI-RIO, Brasil.

The aim of the work was to study epidemiologically, Clinically and laboratorially a series of 121 consecutive AIDS patients, admitted to the Clínica Médica A of the Universidade do Rio de Janeiro, during the 1985-88 period.
METHODS: All the 121 consecutively admitted patients were studied trying to figure out the possible forms of transmission and therefore grouping them in the so called-risk groups. They were worked up as thoroughly as possible, either clinically as laboratorially.
RESULTS: Nineteen of the patients were women and 102 were men. Of the men 93 were homosexuals and 6 were bisexuals (one of them was also an intravenous drug addict. One was a hemophiliac and 2 received blood transfusions. Regarding the women 16 did receive blood transfusions, 1 was partner of a bisexual and 2 were drug addicts. The most frequent infections were systemic candidiasis (36), *P.carinii* pneumonia (28), tuberculosis (24), toxoplasmosis (12) and cryptosporidiosis (11). Five patients only had Kaposi's sarcoma.
CONCLUSION: Although the Clínica Médica A of UNI-RIO addmits both women and men (twice more women) 102 of the 121 patients (84,29%) were men. Homosexuals and bisexuals represented 97,05% of the total of males while 84,21% of the women probably got the infection through blood transfusions.

W.B.P.267 AIDS ISSUES FOR RURAL HOSPITALS IN U.S. FRONTIER AREAS

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Objective. To identify and assess the experiences rural frontier hospitals (under 50 beds) in 8 western states have had in the provision of care to HIV infected patients and to evaluate the preparedness of these hospitals to provide AIDS care via education and policy development.
Methods. A survey addressing the incidence of HIV infection in the hospital's service area, services provided to HIV infected patients, concerns of hospital employees regarding care of AIDS patients, provision of education and policy development was mailed to all frontier hospitals (N=108) in 8 states.
Results. Frontier hospitals in 7 states had had experience with HIV infected patients. Of the 46 hospitals who responded 13 had had experience with AIDS patients and 33 had not. Of the 13 with experience 9 provided care in the facility and 4 referred the patients. Suprisingly, employees in hospitals with experience expressed more concern about acquiring AIDS than those in hospitals without experience. Nurses Aids had the highest concern & 4 had refused to provide care. AIDS education consisted mainly of video programs, presentations by in-house staff and sending employees away to workshops. Major concerns expressed by the hospitals related to enforcing universal precautions, confidentiality of patient information, staff response, community acceptance & costs of care. Only 16 hospitals (36%) have AIDS policies.
Conclusion. The incidence of AIDS is increasing in rural areas throughout the U.S. Effectiveness of educational programs is questionable given the concern of staff in frontier hospitals with AIDS experience and education. Education and policies are essential to guide hospital personnel in the provision of AIDS care.

W.B.P.268 SEROPREVALENCE OF HIV, HERPES VIRUSES AND IMMUNOLOGIC ABNORMALITIES IN A GROUP OF IV DRUG ABUSERS

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Objective: To determine the prevalence of infection with Epstein Barr Virus (EBV), Ctyomegalovirus (CMV), herpes simplex virus,(HSV), and HIV, and to correlate seroprevalence with immunologic abnormalities in a group of IV drug abusers.
Methods: HIV status was determined by ELISA and confirmed by Western Blot; viral serology was done by indirect immunofluorescence; lymphocyte subsets were done by flow cytometry.
Results: The seroprevalence of CMV, EBV, HSV, and HIV were respectively 74/104, 103/103, 76/103, and 4/111. No patient had evidence for clinical infection with any of these viruses. Of the EBV infections 26/103 had recent and 11/103 had chronic active infection. These 37 patients had higher percentages of lymphocytes but no difference in CD4/CD8 as compared with all others. Patients with recent or chronic active EBV infection with dual infection with CMV had higher CD8 and lower CD4/CD8 than either those without CMV infection or all others. A similar effect on the CD4/CD8 was not seen with the combination of recent or chronic active EBV infection and HSV infections.
Conclusion: Since dual infection with CMV and EBV may lower the CD4/CD8, use of this parameter as a prognostic factor or as an indicator for starting therapy in HIV positive patients should be done with caution.

W.B.P.269 PSYCHOSOCIAL ISSUES ASSOCIATED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN A CITY HOSPITAL: EXPERIENCE OF THE MULTIDISCIPLINARY PATIENT CARE MEETING.

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Objective. To survey the prevalence and range of psychosocial issues associated with HIV infection as discussed at QHC AIDS Team multidisciplinary meetings.

Methods. Records of the AIDS multidisciplinary patient care meetings at QHC from March, 1988 to October, 1988 were evaluated for psychosocial issues presented. These issues were broken down into 7 categories: denial, anxiety, depression, suicidal ideation, drug sue, psychosis and organicity.

Results. 108 patients were discussed at the patient care meetings. Of these, more than 80% had psychosocial difficulties. The age range was 20 to 64 (median=34). 74.1% were Black, 11.1% Hispanic and 7.4% were White and Haitian. 73.1% were IVDU, homosexual 11.1%, heterosexual 13.0% and blood transfusion related 2.8%. The psychosocial issues were: denial 7/108 (6.5%), anxiety/fear 18/108 (16.7%), depression 30/108 (27.8%), suicidal ideation 7/108 (6.5%), drug use 15/108 (13.9%), psychoses 13/108 (12.0%), organicity 20/108 (18.5%).

Conclusion. The data reflect the significant psychosocial morbidity associated with HIV disease. This study supports the importance of a multidisciplinary approach to dealing with HIV.

W.B.P.270 TRIAGE SYSTEM FOR POTENTIAL RESEARCH SUBJECTS INTO ACTIVE AIDS CLINICAL TRIALS.

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Objective: To facilitate accrual of potential research subjects by prescreening volunteers, collecting important laboratory and clinical data, identifying individuals and specific populations for a targeted recruitment effort.
Methods: A data base has been created to facilitate accrual into active AIDS clinical trials. Individuals interested in participating in clinical research are mailed a brief description of the prescreening process, a lay-language summary of clinical research methodology, and a preliminary registration form. After completion, the registration form is returned to the AIDS Triage Service. A research nurse then contacts the individual to complete a research profile which is entered into the data base. The profile includes dates and quantitative values of most recent p24 antigen (p24ag), Beta-2 microglobulin, T-lymphocyte counts, as well as the date of diagnosis of HIV-related events and treatments. The data is used to preliminarily screen subjects by comparing trial inclusion/exclusion criteria to the population in the data base. Continuing data base participation requires research profile updating every three months.
Results: A total of 659 subjects are currently in the data base; 188 asymptomatic (CDC II, III), 241 ARC (CDC IVA, IVC2), and 230 AIDS (CDC IVB, IVC1, IVD, IVE). Subjects have the following CD4+ lymphocyte count and p24 antigen status.

	CD4+ Lymphocytes				
	</=200	201 - 400	>400	Unk	Total
p24ag +	53(45%)*	30(42%)*	11(26%)*	5	99
p24ag -	65(55%)*	42(58%)*	31(74%)*	3	141
p24ag unk	149	85	84	101	419
TOTAL	267	157	126	109	659

*Represents % of subjects who know their antigen status

Conclusions: A data base of potential research subjects containing clinical and laboratory data enables targeted research recruitment and preliminary screening of eligibility criteria.

W.B.P.271 ASSESSMENT OF THE NEEDS OF A HIV ACUTE/CHRONIC LEVEL CARE UNIT

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To date the traditional medical model of acute and chronic level care has been used to provide services to the affected HIV population. There has been increasing demand for chronic level care beds to alleviate hospital acute care bed use. This study presents data from the Lemuel Shattuck Hospital HIV Unit which provides medical care on both the acute and chronic level.Objective.This review is to assess consultative needs of HIV long term care to aid in future planning. Methods.Data compiled by chart review of individuals admitted from June 30, 1987 through Nov. 1,1988.Results.Demographics 60% white, 30% black, 10% hispanic.Risks factors 60% Homosexual/Bisexual, 28% IVDA, 12% other.Length of stay (1 day - 285 days), average June 87-June 88; (52 days) July 88-Nov. 88,(36.5 days).63 individuals received care.80% of admissions were for initial chronic level care with the primary HIV disease necessitating chronic care being 70% neurologic; 24% infectious; 6% neoplastic.68% chronic level patients required acute level medical management.30% of all patients required acute psychiatric intervention during hospitalization (psychotic, suicidal ideation).20% of patients had an extended hospitalization due to lack of lower care facilities i.e. supervised housing. We conclude that in the future planning of HIV long term care these acute medical needs as well as significant neurologic and psychiatric services be addressed.Cost per hospital patient day is $810,thus the economic burden to even chronic level care facilities is exacerbated by lack of lesser care facilities.

W.B.P.272 THE ROLE OF THE PHARMACIST IN THE HIV TEAM

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Objective: To discuss the role of the pharmacist in the management of HIV and AIDS patients.

Method: In April, 1988 a pharmacist was appointed to the team managing HIV and AIDS patients in Camberwell Health Authority.

Results: The appointment has led to a large pharmaceutical input into the management of this group of patients.

The main areas of involvement are:-

(1) A clinical attachment to the team looking after HIV and AIDS patients.
(2) Provision of advice and information on new drugs, drug interactions, adverse drug reactions and establishment and maintenance of an AIDS data base.
(3) Surveillance of drug usage to provide costing predictions for budgeting purposes.
(4) Education of clinicians, patients and health care staff on drug related subjects.
(5) Co-ordination of clinical studies involving research into new drugs.

Conclusion: As the management of HIV and AIDS patients often involves complicated drug therapy, the pharmacist is the most appropriate person to monitor and advise on this important aspect of care.

W.B.P.273 CAUSES OF HOSPITALIZATIONS FOLLOWING AIDS DIAGNOSIS IN A POPULATION-BASED COHORT.

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Objective. To accurately determine causes of hospitalizations after an AIDS diagnosis by following all cases in a statewide population-based cohort.
Methods. We follow all AIDS cases detected by active AIDS surveillance in Oregon who remain in the state for follow-up medical care. At six month intervals, we review each patient's medical record and abstract information about every hospitalization requiring at least an overnight stay.
Results. Records were available for 381 (94%) of the 407 Oregon AIDS cases diagnosed between 1/01/81 and 6/30/88. Of these, 59 (15%) died during the hospitalization in which AIDS was diagnosed. Following their diagnosis, the remaining 322 patients were hospitalized 523 times during 3,965 case-months of observation. For 240 (46%) subsequent admissions, the primary discharge diagnosis was not linked to an opportunistic condition diagnostic of AIDS (OC). The most common causes for these admissions included fluid and electrolyte disorders (12%), anemia (7.5%), and fever of unknown origin (7%). For 283 (54%) subsequent admissions, an OC was linked to a primary discharge diagnosis. 153 of these subsequent admissions were due to the OC that resulted in the patient's initial diagnosis. Compared to the OC's that resulted in the diagnosis of AIDS, OC's causing subsequent hospitalizations were less likely to be *P. carinii* pneumonia (PCP) (78% vs. 36%, p<.001) and more likely to be lymphoma (4% vs 13%, p=.001), Kaposi's sarcoma (2% vs 13%, p<.001), and atypical mycobateria (1% vs 8%, p<.001). Certain OC's leading to hospitalization were more likely to develop only after a diagnosis of AIDS had been made. These included candidiasis (present in 14% of patients at AIDS diagnosis, causing hospitalizations in 29% of others subsequently); cytomegalovirus (3% at dx, 7% of others subsequently); atypical mycobacterial infection (3% at dx, 6% of others subsequently) and M. tuberculosis (1% at dx, 3% of others subsequently).
Conclusions. Although PCP most commonly leads to an AIDS diagnosis, other OC's and other illnesses are more common causes for subsequent hospitalizations. Strategies to reduce inpatient days may be more effective if they are general rather than disease specific.

W.B.P.274 TUBERCULIN SKIN TESTING IN HIV INFECTED PERSONS.

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HIV infection is a probable risk factor for reactivation of latent M.Tb. but there is little data on the value of tuberculin skin testing in HIV infected persons. We prospectively evaluated the diagnostic utility of 1 and 2 step PPDs, anergy panels (mumps and candida) and chest x-rays to identify latent M.Tb. infection in 58 HIV infected persons (19 with AIDS, 39 male/19 female, age range 20-50, 47 black, 11 white, 41 IVDA, 12 homosexual, 5 heterosexual). Results of skin tests were correlated with mean T4 cell count and Hgb. Control group: inner city residents matched by age, race and zipcode who received a 1 Step PPD in a pre-employment physical.

	Number of Persons	Mean T4 Cells*	Mean HgB*	Abn. CXR
1 Step PPD +	8/58 (16%)	329	13.5	1
1 Step PPD -	50/58 (86%)	244	13.0	0
Anergic	42/50 (84%)	314	11.8	0
2 Step PPD -	18/18 (100%)	115	12.0	0
Control	28/185 (15%)	–	–	1

*No significant difference between groups by student t-Tests.

PPD testing can be diagnostic even when T4 count < 350; neither CXR or 2 Step PPD added diagnostic information in this group; prevalence of positive PPDs in HIV infected persons was similar to control group; high prevalence of anergy makes evaluation of negative PPD difficult. All persons will be followed prospectively for development of symptomatic M.Tb. infection.

Immunomodulateurs
Immunomodulators

W.B.P.275 CELLULAR PHARMACOLOGY AND CLINICAL PHARMACOKINETICS OF 2',3'-DIDEOXYADENOSINE AND 2',3'-DIDEOXYINOSINE

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Objective. To study the cellular pharmacology and the clinical pharmacokinetics of 2',3'-dideoxyadenosine (ddA) and 2',3'-dideoxyinosine (ddI), anti-HIV agents with low *in vitro* cytotoxicity.
Methods. Samples from AIDS or ARC patients receiving oral or IV ddA or ddI are analyzed by reversed-phase HPLC. Phosphorylation of ddA and ddI are studied in human T-cell lines and analyzed by anion-exchange HPLC.
Results. Since ddA is rapidly deaminated to ddI by adenosine deaminase, only ddI is detected in plasma of patients receiving ddA. Doses of ddI from 0.2 to 1.6 mg/kg produce peak plasma levels of 0.6 to 5 µM respectively, within the range of effectiveness seen *in vitro* (ED_{50} 2-5 µM vs. HIV in the ATH8 test system). ddI has a plasma half life of approximately 35 minutes. This may not be representative of the biological effect of the compound, however, as both ddA and ddI are converted intracellularly to the active species ddATP which has an intracellular half-life of up to 24 hours. Because of the acid lability of ddI, antacids are given prior to oral administration; in this form oral bioavailability is about 35%. Approximately 20% of the administered dose of ddI is excreted unchanged in the urine. ddI can be detected in the CSF of patients receiving both ddA and ddI in the range of 12 to 27% that of the simultaneous plasma concentration.
Conclusion. Plasma levels equal to those found to be effective *in vitro* are achievable in patients given ddI IV or orally. The long intracellular half-life of ddATP may allow a sustained anti-HIV effect with intermittent dosing.

W.B.P.276 IMMUNOSTIMULATION COMME UN SUPPORT CHEZ SIDA - MALADES ET HIV-SEROPOSITIVES

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Objectif.Présenter les 3 ans du traitement des SIDA et HIV-séro+. par l'immunostimulation utilisée dans le but d'activisation physilogique des mécanismes de défense immunitaire surtout par la production d'interferon et d'interleukine II- endogéne,en respectant des résultats précédents positifs de cette actión dans certaines maladies infectieuses.
Méthodes, L'action des immunostimulateurs comme un support thérapeutique avec du traitement obligatoires des infections opportunistes,chez SIDA-malades et comme prophylaxie chez HIV-sero+.,était observé dans le milieu africain à la base des critéres cliniques et laboratoires divers.
Résultats, Parmis plusieurs immunostimulateurs,le plus efficace se revelé des extraits du Thumus : THYMEX L à I50 Mg ou TFX-Thymomodulin à 20Mg données IM 3 x par semaine,pendant 2 mois et répétées dans les cures 3 - 4 fois par an.

SONT VIVANTS PLUS QUE:			3 ANS	2 ANS	1 AN	DECEDES
SIDA-Malades	avec immunostimulation	/N 51/	6	6	20	19
	sans immunostimulation	/N 45/	0	0	6	39
HIV-Séro +	avec immunostimulation	/N31/	8	10	12	1
	sans immunostimulation	/N 12/	0	2	5	5

Conlusions: L'immunostimulation ne donne pas des effets secondaires. Elle a prolongé la vie des SIDA-malades en condition que on a traité des infections opport.Elle est moins efficace chez les sujets epuisés et cachectiques.Chez HIV-sero+;elle améliore l'état physique et psychique, protége contre les infections opport.et fraine leur évolution.

W.B.P.277 DIETHYLDITHIOCARBAMATE INHIBITS THE PROGRESSION OF HIV INFECTION. RESULTS OF A PROSPECTIVE RANDOMIZED CLINICAL STUDY

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Objective. Diethyldithiocarbamate (DTC) is a chelating agent with in vitro and in vivo influence on the production of HIV. Recently, J.M. Lang et al. (Lancet, Sept. 24th, 1988, 702-705) presented their data of a 4-months treatment study with positive response both in improvement of patients and increase in T4-cells. In 1986, we initiated a study in order to evaluate the efficacy of DTC in patients with HIV infection, Walter Reed 2-4.
Methods . 60 patients were randomized to DTC 5 mg/kg i.v., DTC 10 mg/kg orally once a week for a period of 6 months. Both groups were placebo-controlled.
Results . The results were evaluated by the following parameters: progression to a higher CDC classification, progression to AIDS, changes in immunological parameters. I.v. application resulted in a significantly higher progression of the CDC classification in the placebo group compared to DTC ($p< 0.05$). The oral application showed the same trend (7 placebo patients progressed in contrast to 3 of DTC). In the DTC i.v. group, none progressed to AIDS during treatment in contrast to 6 placebo patients (Log Rank test $p< 0.05$). The interleukin-1 production and interleukin-2 receptor presenting monocytes were significantly different at the end of the treatment. The ratio of T4-cells before and after treatment was significantly different between placebo and DTC treated patients.
Conclusion. DTC is effective to slow down the progression of HIV infection in patients, WR classification 2-4. It seems not to be able to increase the absolute number of T4-cells.

W.B.P.278 TREATMENT OF HIV-INFECTED PATIENTS WITH D-PENICILLAMIN - TENTATIVE CLINICAL AND IMMUNOLOGICAL RESULTS -

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Objective. To evaluate the compatability and clinical, immunological and virological efficacy of D-Penicillamin - before, during and after a 6-week therapy in HIV-1 seropositive patients(pts).
Methods. On-going prospective randomised placebo-controlled study. test criteria: lymphocyte-subsets (CD3+,CD4+,CD8+, CD8+/Leu7+, CD4+/Leu8+),lymphocyte-proliferation test (LPT) after PWM and tetanus-toxoid-antigen stimulation), p24 antigen (Dupont Co.) and HIV-cultivation on primary blood lymphocytes.
Results. Until now 17 male pts (15 homosexual men, 1 i.v. drug-user, age 22 to 52 y., CDC-stage II 4, III 6, IV 6) are randomised to receive either placebo (n=8) or D-Pen (escalating dosing: 600,1200,2100 mg/d) for 6 weeks orally. The side-effects were generally mild. But in 2 pts therapy was discontinued because of drug adverse reactions (fever, diarrhea/vomiting). No stage progression could be seen. The first analysis showed a slight reduction of leukocytes and granulocytes during therapy. Furthermore, before/at the end of/6 weeks after therapy with D-Pen (placebo): leukocytes: 5667/5182/6040 G/l (6417/5800/6300), creatinine: 82/86/80 umol/l (82/74/81), protein/day in urine: 0.7/0.4 g/l (0.3/0.1), CD4+ lymphocytes: 486/445/575* /ul (404/470/507), CD8+: 824/824/1230* /ul (800/866/865), CD8+/Leu7+: 358/387/504 /ul (413/387/299), CD4+/Leu8+: 600/251*/384* /ul (630/436/253).(* Wilcoxon test p<0.05). No change was seen in the LPT: PWM 14/9/13 E3 cpm (20/18/17 E3 cpm). P24 antigen could only be detected in three pts. before therapy and seems to be of limited value for monitoring.

Conclusions. First results show a good compatibility of D-Pen in HIV-infected patients; the relevance of the observed alterations in the lymphocyte subsets is not clear yet.

W.B.P.279 RECOVERY OF DELAYED-TYPE HYPERSENSITIVITY (DTH) IN PATIENTS WITH AIDS-RELATED COMPLEX (ARC) IN RANDOMIZED TRIAL OF IMREG-1

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Objective. IMREG-1, an immunoregulator containing tyrosine-glycine(-glycine) enhances multiple immune functions. We have studied IMREG-1 in patients with ARC or Kaposi's sarcoma (KS) regarding efficacy and immunoenhancing effects.
Methods. Forty anergic patients in a placebo controlled, randomized, 6 month trial of IMREG-1 and 6 other patients in Southern California were tested every 2-3 months with tetanus toxoid (TT) during the trial and with TT and candida (CA) during compassionate IMREG-1 administration after the trial. The following were analyzed: (a) re efficacy 29 patients (2 with KS and 27 with ARC) in the IMREG group and 11 patients (all ARC) in the placebo group; (b) re DTH 22 and 7 patients respectively. The 2 groups were comparable with respect to baseline characteristics and the number of dropouts.
Results. In the IMREG group, 9(41%) became reactive to TT after an average of 280 days whereas, in the placebo group, 1(14%) recovered DTH after 437 days. Six(27%) IMREG-1 treated patients and 2(29%) from the placebo group became responsive to CA in the compassionate phase. Two cases of Pneumocystis carinii pneumonia (PCP) occurred in the IMREG group during 11,621 person-days, and 5 opportunistic infections (2 PCP's, 2 wasting syndromes, and 1 dementia) developed in the placebo group during 3,914 person-days (rates 0.17 (IMREG)vs 1.27 (placebo) infections per 1000 person-days, relative risk = 7.47, P=0.003).
Conclusions. Forty-one percent patients recovered DTH to TT after an average of 280 days of IMREG-1 treatment. Patients initially in the IMREG-1 group had better clinical outcome during and after the trial.

W.B.P.280 EFFECT OF ISOPRINOSINE ON HIV-ANTIGENAMIA

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Malmö Almänna Sjukhus,Sweden,* Statens Seruminstitut,Denmark.

Objective:
To evaluate the effect of isoprinosine on HIV-antigen levels.

Methods:
A multicentre, double-blind placebo controlled study of isoprinosine was carried out in 21 clinical centers in Denmark and Sweden.
Eight-hundred sixty-six patients received treatment for 6 months with either isoprinosine 3 gram a day or matching placebo.
The study population included anti-HIV-positive patients without AIDS. The patients were block randomized according to the number of CD4+ lymphocytes.
Serum samples were collected at entry and during treatment and stored frozen for later antigen detection.

Results:
The data will be presented and correlated with clinical and other immunological markers of disease progression.

W.B.P.281 Induction of T Lymphocyte-Related functions by Imuthiol^{R} through down regulation of prostaglandins secretion by moncytes/macrophages.

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Objectif. Description of immunostimulating effect of Imuthiol® (sodium ditiocarb, DTC).

Methods. PBL, their adherent subsets and T cells were assayed for their capacity to produce IL2 and their mitogenic responses to PHA with/without 10^{-7} mg/ml Imuthiol®. The effect of Imuthiol on IL1 and PGE 2 secretion by adherent cells was also evaluated using thymocytes assay and RIA method respectively.

Results. Imuthiol® increased proliferative responses of PBL to PHA as well as their ability to secrete IL2. This stimulating activity was not seen when these cells were depleted from their adherent cells. In addition Imuthiol displayed high inhibitory effect on PGE 2 production by these cells but IL1 levels remained unchanged.

Conclusion. Imuthiol enhanced most T cell related functions through its ability to down regulate monocytes/macrophages derived PGE2 as these molecules were known to inhibit most T cell related functions and specially helper activities.

W.B.P.282 A MULTICENTER RANDOMIZED DOUBLE-BLIND PLACEBO CONTROLLED DOSE-RESPONSE TRIAL OF LF 1695 IN P24-ANTIGEN SEROPOSITIVE PATIENTS

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Objective. LF 1695 is a synthetic biological response modifier with immunorestoring and enhancing effects in animal as well as in human in-vitro and in-vivo. He has also shown in some in-vitro experiments an inhibitory effects on HIV-1 replication. On the basis of these findings, we conducted a clinical trial to evaluate the virological, immunological and clinical impact of LF 1695 in P24-antigen seropositive patients.
Methods. A multicenter randomized, double-blind, placebo-controlled, dose-response trial is in progress in 60 HIV infected patients (CDC groups II to IV), with a P24-antigen level higher than twice the cut-off level (Abbott). Patients receive twice a day a placebo or 120 mg or 240 mg of LF 1695 in capsules for three months. Parameters measured are reverse transcriptase level, P24-antigen, T-cell antigens expression, serum immunoglobulins and β2-microglobulin, clinical evolution and routine haematological and biochemical tests.
Results. Forty seven of the 60 expected patients have actually entered the trial.
Conclusion. Final results of this ongoing trial will be presented and discussed.

W.B.P.283 AS 101, A NEW IMMUNOMODULATING COMPOUND IN THE TREATMENT OF AIDS.

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AS 101 (Nature 1987,330:173-176) was administered IV 3 times a week at the dosage of 5 mg/m^2 on AIDS patients. 44 patients entered the study (41 M, 3 F) median of age 27 (22-61) years.CDC staging : stage IV all of them (C:30 patients, D:14, A:3, B:5). HIV antigenemia was positive in 50 % of the cases. Most patients were included because of toxicity and/or failure of AZT (80 %). 31 patients were evaluable. Median duration of therapy was 4,5 months (1.5-14). Results : Clinical improvement occured in 54 % of the cases with weight gain and improvement of Karnosky status. However clinical improvement was not sustained in time : median duration 3 months (1,8). In 3/8 patients Kaposi Sarcoma improvement of specific lesions was transiently observed during a median of 2 months. Biological : In 4 cases we observed disappearance of cytopenia. HIV culture was performed in 18 patients and positive in 14. HIV antigenemia was positive in 17 cases, negative in 14 cases. We never observed negativation of antigenemia. T4 level increased (2 to 9 fold) in 30 % of patients and T4/T8 ratio increased in 48 % of cases. Level of IL2 increased in 4/8 tested patients. Toxicity was moderate - garlic smell of the breath (59 %) - hair lightening (50 %) - transient exanthema (20 %) at the beginning of therapy . In 3 cases, AS 101 was stopped because of recurrence of cutaneous rash. Conclusion : AS 101 was safe and well tolerated. Positive results occured in half on AIDS patients, however theses effects, in our serie, are not always sustained. Combination therapy with antivirals should be tested.

W.B.P.284 Enhancement of T cell growth, in HIV+ patients treated with Ditiocarb (IMUTHIOL®) : evidence for monocyte involvement.

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Objective. Testing the in-vivo immunostimulating effect of Imuthiol® (sodium ditiocarb, DTC)

Methods. 48 HIV+ patients were randomized into two groups : 22 had no treatment, and 26 were given Imuthiol® (10 mg/kg weekly for 8 weeks).
Blood was collected, and mononuclear cells assayed for the following : T colony formation in agar, and ^{3}H thymidine uptake, in response to PHA and rIL2.
IL2 synthesis by T cells in response to PHA, was evaluated on CTLL2 line.

Results. IL2 synthesis was comparable in both groups. In contrast, the treated group showed significantly higher T-CFC, and T cell proliferation than the untreated one ($0.01 < p < 0.05$), when PBL were assayed. This difference was abolished when E+ (monocyte depleted) cells were tested for the same functions.

Conclusions. IMUTHIOL® treated HIV+ patients, have better T-cell-related functions than untreated ones. Our data provide evidence that monocyte population is the target for ditiocarb-mediated effect, and corroborate other findings that ditiocarb down regulates monocyte-derived PGE2 synthesis.

W.B.P.285 SURVIVAL RATE IN AIDS PATIENTS FOLLOWING TRANSFUSION THERAPY WITH CR1 ENRICHED ERYTHROCYTES

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Objective. Erythrocyte C3b recptors (CR1) play a crucial role in the inactivation and clearance of circulating immune complexes. We previously reported the induction of temporary clinical remission in AIDS patients (Pt) following transfusion (Tx) of CR1 enriched packed erythrocytes (PRC). We report our data using this therapy in AIDS patients with primary PCP infection.
Methods. Two groups of Pt were enrolled. In both primary PCP had been diagnosed within 90 days prior to the onset of Tx. Group I (N=21) received 2-4 units of PRC at the end of initial PCP therapy. This group received further Tx only if new opportunistic infections arose or if the Hct fell below 30%. Group II (N=9) received 2-4 units of PRC regularly every 8 weeks. All Pt in group II were on same form of PCP prophylaxis. None of Pt in Group I or II took Zidovudine (AZT). All Pt were monitored monthly. A group of 9 Pt with primary PCP receiving neither AZT or Tx served as retrospective controls.
Results. Survival rate at 52 weeks for group I was 62% (13/21), and for group II was 78% (7/9). Of those group II Pt surviving >1 year, 5/7 remain alive at 15-22 months from the onset of therapy, 3 of which remain well and without any new opportunistic infection at present time (Ave.15 months). In the control group the survival time at 52 weeks was 22 % (2/9).
Conclusion. Our study appears to indicate that use of timed Tx of CR1 enriched PRC with PCP prophylaxis given to AIDS-PCP Pt prolongs life expectancy and disease free interval. We feel this form of therapy may be used as an alternative for those Pt not tolerating AZT or in conjunction with AZT.

W.B.P.286 PEPTIDE T PHASE I STUDY:IMMUNO/VIROLOGIC RESULTS

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Objective. To evaluate the toxicity and possible response measures to Peptide T (D-ala-1-peptide-T-amide), a homologue of VIP and gp-120, and gp-120 receptor blocker. Methods. In this ongoing study, 9 AIDS and 5 ARC patients have received IV Peptide T (dose range:.06-.8mg/kg/day) or intranasal (25 mg/day). For 12 weeks,4 AIDS and 5 ARC patients had fixed doses; the others received escalating doses for 30 days. No other antiviral agents were given. Results. Pruritis led to drug withdrawal in 1 patient. No other toxicity was observed. Return of skin test response was seen in 3 anergic patients:1 to tetanus and Old TB; 2 to ≤ 2 antigens. T4 counts rose and p24 level fell in 1 patient with p24>50 pg/ml; returning to baseline off drug. After 12 weeks on drug, in vitro mitogen response to tetanus increased in 5/6 and to PHA in 2/5 patients; mean weight gain was 2 kg., and POMS increased by 1 S.D.in 6/9. Conclusion. Peptide T was well tolerated for 12 weeks, with increases in body weight and well-being noted. Preliminary results indicate that these measures and mitogen, skin test reaction, and p24 levels may be useful efficacy parameters for Phase II testing of Peptide T.

W.B.P.287 DOSE RESPONSE STUDY OF DAILY DIETHYLDITHIOCARBAMATE (DTC) IN PATIENTS WITH ARC/AIDS

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Objective. Daily DTC at a dose of 200-600 mg/kg (equivalent to 600-1800 mg/m2 human) is clearly effective in treating mice infected with LP-BM5. Weekly dosage is less so. Thus, this study was designed to determine the toxicity effect of DTC given daily to patients with ARC or AIDS.
Methods. Patients with AIDS or ARC were given daily DTC in 4 groups. Group 1, 100 mg/m2 per day; Group 2, 200 mg/m2 per day; Group 3, 400 mg/m2 per day and Group 4, 600 mg/m2. Toxicity, pharmacokinetics and effect on symptomatology and immune functions were studied following one month of treatment.
Results. The 100 mg/m2 dose was well tolerated by all subjects. At 200 mg/m2 two patients had gastrointestinal disturbances and one patient had a mild CNS reaction. At 400 mg/m2 all patients experienced extreme fatigue, inability to concentrate and a loss of memory. In addition 1 patient developed a rash. At 600 mg/m2 4-5 patients also experienced extreme fatigue, agitated sleep patterns, mild anorexia and 1 patient experienced hallucinations. DTC did not affect CD4, CD8 or total T cells.
Conclusion. DTC in its current formulation cannot be given to patients in therapeutic equivalent doses which were found effective in the murine AIDS model. Side effects are mainly central nervous system and gastrointestinal tract related. Determination of the mode of action of DTC should provide the basis for molecular alteration reducing its human toxicity profile.

W.B.P.288 The Effect of Isoprinosine ® (inosine pranobex) (IP) in HIV-Seropositive Patients with Low Risk for Developing AIDS.

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Laboratory studies have suggested modest improvements in mitrogen response and IL-2 production in peripheral blood lymphocytes from HIV-infected patients treated with IP. Small scale studies of HIV-patients treated with IP have demonstrated increases in T-helper cell counts, increased NK-cell activity, and decreased CMV shedding in semen. To determine whether IP could delay the progression of disease in HIV-seropositive male patients, 696 patients with CD4+ cell counts between 200 and 400 per cu.mm. were enrolled in a multicenter US/UK prospective double-blind randomized trial to receive either IP 4.0 gm daily or placebo. Patients were followed at monthly intervals for six months of blinded study, then all patients were allowed to receive IP 4.0 gm. per day for six months of open-label therapy. The demographics of each group were similar except that more patients in the IP group had experienced a sexual exposure with a person later known to develop AIDS. 101 patients were discontinued from the double-blind portion leaving 595 evaluable patients. There were no significant differences in clinical endpoints (development of AIDS, or CD4+ cells <200 and 2 HIV-related signs or symptoms) between the IP and placebo groups. CD4+ lymphocyte counts were significantly lower in the IP treated patients during the first two months in the U.S. study centers, but this difference disappeared by six months. There was no signifcant toxicity of the drug; mild hyperuricemia was noted in the IP group. IP was not effective in delaying the progression of HIV-disease or decreasing the severity of incidence of lesser opportunistic infections and/or conditions in HIV-positive patients with CD4+ lymphocyte counts between 200 and 400 per cu. mm.

W.B.P.289 EFFECT OF ORAL DEXTRAN SULFATE ON THE MOUSE INTESTINE.

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Objective. Because oral dextran sulfate causes severe diarrhea in AIDS patients (typically occuring after several weeks of therapy), we investigated the effect of oral dextran sulfate on mice.
Methods. Dextran sulfate (7000-8000 MW, 17-20% sulfur) was placed in the drinking water (8 mg/ml) of Swiss Webster mice. Intestinal flora and histology were examined over various intervals.
Results. Light microscopy of ileal and colonic segments indicated that oral dextran (38 days) caused shortening and blunting of villi, as well as a mild dysplasia of epithelial cells. Gram stains of intestinal contents of treated mice showed numerous large gram-positive bacilli resembling *Clostridia* or *Bacillus* species; similar morphologies were not observed in control mice. Dextran treated mice also had a leukocytic infiltrate in the intestinal lumen (Wright-Giemsa stains) and an overgrowth of facultative gram-negative bacilli (quantitative culture of intestinal segments on MacConkey agar).

Experiment	Treatment	Days	No. of mice	Tissue segment	Avg±SD $\log_{10}$ viable facultative gram-negative bacilli/gram
1	H_2O	38	4	cecum	3.4 ± 0.5
	dextran	38	4	cecum	5.8 ± 0.4[a]
2	H_2O	21[b]	3	ileum	3.3 ± 0.7
	dextran	21	3	ileum	5.5 ± 1.4
	H_2O	21	3	colon	3.2 ± 0.7
	dextran	21	3	colon	7.5 ± 1.5[c]

a. Significantly increased compared to control, p = 0.006.
b. Mice sacrificed at 7 days had no differences in the numbers of viable ileal or colonic bacteria.
c. Significantly increased compared to control, p = 0.041.

Conclusion. Oral dextran was associated with qualitative and quantitative changes in the intestinal flora, as well as histological alterations of the mouse intestinal mucosa.

W.B.P.290 IMMUNOLOGICAL DATA FROM AN ISOPRINOSINE (IMUNOVIR) DOUBLE BLIND, PLACEBO CONTROLLED STUDY

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Objective: To evaluate possible differencies between baseline, midway and final outcome values for mitogen-induced lymphocyte proliferation on 85 HIV-infected persons without AIDS. Theese persons are a one-center-subgroup of Scandinavian Isoprinosin double blind, placebo-controlled study.

Methods: PHA and PWM was used a stimulant for lymphocytes before, during and at end-point of 6 months treatment-period.

Results: Baseline values were similar for treatment/placebo-group, PWM at 27.5%, and PHA at 68.5% relative value. At mid-point and end-point of treatment-period only a positive trend for the active treatment group was observed, but no significant difference was reached.
Conclusion: The results of mitogen-stimulated lymphocyte proliferation during Isoprinosin treatment are not strong predictors of the clinical benefit found as reported elsewhere.

W.B.P.291 INTRAVENOUS IMMUNOGLOBULINS IN ADULTS WITH ARC AND WR5 - A DOUBLE BLIND LONGITUDINAL TRIAL

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Objective: Evaluation of the influence of Intravenous Immunoglobuline (IVIG) on T4-cell-count and clinical status in advanced HIV 1-infection.
Methods: Inclusion-criteria were (1) < 400 T4-cells/µl and (2) oral thrush or cutaneous anergy or (3) two clinical ARC-criteria (fever, diarrhea, weight loss, fatigue, night sweats). Thirty patients (28 m, 2 f, median age 40 (24-64) years) with ARC (8), WR5 (12) and both (10) were stratified according to T4-cell-count (> versus < 300/µl). Fifteen patients received 0,4g/kg IVIG and 15 patients placebo (albumine 0,03%) every two weeks for 28 weeks. All patients were followed up for another 28 weeks. The clinical status was defined as a score consisting of fever, diarrhea, night sweats, fatigue, weight loss, oral candidiasis, mucosal or cutaneous herpes simplex. Clinical examination and routine laboratory assessments were performed before each application, lymphocyte subsets every four weeks and cutaneous reaction, microbiological serology and tests of phagocytosis and lymphocyte stimulation every 12 weeks.
Results: Results of the treatment period are presented. Both groups were comparable in initial clinical symptoms and laboratory values. Seven patients developed AIDS (3 treatment-, 4 placebo-group), 1 patient died by homicide. In the treatment group the clinical score (particularly fatigue and fever) improved significantly, while T4-cell-count and other clinical and immunological parameters did not show any difference.
Conclusion: IVIG can improve clinical status of patients with ARC and WR5. Further follow-up for 28 weeks may reveal a better insight into the significance of the results reported.

W.B.P.292 CLINICAL EFFICACY OF TWO KINDS OF KAMPO MEDICINE ON HIV INFECTED PATIENTS

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1)Tokyo Medical College, Tokyo, 2)Tohoku Univ., Miyagi, 3)Niigata Univ., Niigata, 4)Keio Univ., Tokyo, 5)Teiko Univ., Tokyo, 6)Shizuoka Children's Medical Center, Shizuoka, 7)Toyama Medical and Pharmaceutical Univ., Toyama, 8)Nara Medical Univ., Nara, 9)Hyogo College of Medicine, Hyogo, 10)Univ., of Occupational and Environmental Health, Fukuoka, 11)Kumamoto Univ., Kumamoto, 12)Kagoshima Univ., Kagoshima, Japan

Objective. Two kinds of Kampo Medicine (Sho-saiko-to : SST : Ninjin-to : NT) were administered to HIV infected patients in attempt to improve their immunoabnormalities.
Methods. SST or NT were administered to 56 patients whoes CD4/CD8 ratio pointed below 1.0. And lymphocyte proliferation reaction, single and dual color analysis of lymphocyte were obsereved for 24 weeks.
Results. Clinical data were statistically analyzed for 18 cases which were completed for 24 weeks observation. Immunological improvements were observed in SST treated 7/13 patients and NT treated 9/10 patients from scored analysis used CD4, HLADR$^+$ CD8$^+$ cells and PHA.
Conclusion. The results of this expanded study strongly suggest that especially NT might be a mixture of immunomodifing components.

W.B.P.293 THE EFFECT OF THE POLYENE MACROLIDE ANTIBIOTIC AMPHOTERICIN B AND ITS METHYLATED DERIVATIVE (AME) ON HUMAN IMMUNODEFICIENCY VIRUS AND PHAGOCYTOSIS IN MACROPHAGE CULTURES

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The polyene antibiotic amphotericin B and its methylated derivative AME were tested in continuous macrophage cell lines for activity against HIV-1. At non-cytotoxic levels the expression of HIV-1 was inhibited as shown by the measurement of antigen with both a fluorescent and enzyme marker. At 10 ug/ml there was complete inhibition of virus activity.

To examine the effect of these drugs on the enhancement of monocyte activity, phagocytosis was measured using primary murine adherent cells. Either Sheep red blood cells, naked or coated with antibody, or Listeria monocytogenes were added to the cultures which had been incubated in the presence of each drug at concentrations of 0.1, 1, and 10 ug/ml. Tuftsin was added as a positive control. With both systems there was a significant increase in phagocytic activity in the presence of the polyenes.

These compounds may provide an alternative to AIDS therapies due to their multifunctional cellular activities.

W.B.P.294 Activation of Methionine-Enkephalin (MEK): Enhancement of Cytotoxic T cells in HIV + patients .

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Asymptomatic HIV + patients were administered infusions of methionine enkepahlin (MEK) at a dose of 60 µ/kg once a week for four months. Numbers of cytotoxic T cells CD3, CD8, CD16 and Leu19 were increased. No side effects were observed. ARC patients receiving MEK, 25-100 µ/kg, 1 to 3x a week also showed increases in numbers of cytotoxic T cells with accompanying reductions in constitutional symptoms (fever, night sweats, lymphadenopathy, weight loss, and diarrhea). Zurawski et al. reported that MEK is a lymphokine that is derived from T helper cells. We are proposing that MEK is a "second messenger" in the expression of receptor numbers and levels of interleukin 2. The resultant increases of NK-K cell activity has been reported to facilitate the inactivation of HIV. MEK may be considered to be an "antiviral immunomodulator".

Zurwaski, G. M. Benedik, B.J. Kamb, et al., Science, 232, 772, 1986.
Fauci, A.S., D. Klatzaman, IV Int. Conf. AIDS, June 12-16, 1988, Stockholm, Sweden

Research Grant from: TNI Pharmaceuticals, Inc., 5105 N. Pearl St., Schiller Park, Chicago, IL 60667 (312) 678-3067.

W.B.P.295 THERAPEUTIC EFFECT OF INTRAVENOUS IMMUNOGLOBULINES (IVIG) IN HIV INFECTED HEMOPHILIAC CHILDREN AND ADOLESCENTS

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Objective. To evaluate the effect of long-term application of IVIG in early stages of HIV infection of hemophiliac children and adolescents.
Methods. 36 HIV infected, hemophiliac patients aged 5-20 years (median:15 years) were enrolled in this study. Inclusion criteria were LAS,ARC or a decreased ratio of T helper cells to lymphocytes (<0,35). No patient had AIDS. A group consisting of 18 patients received IVIG, 18 patients served as controls. Stage of HIV infection and age were comparable in both groups, matched pairs were used for analysis.
In the beginning the first group received 0,4g/kg IVIG (Venimmun)on five consecutive days, followed by 0,3 g/kg IVIG given at 14 days intervals. Every 3 months clinical, routine and immunological data, such as incidence of infections, lymphocyte subpopulations, skin reactivity to antigens and lymphocyte response to mitogens and antigens were recorded.
Results.From June 88 until November 88 patients entered this study. At the entry the staging of HIV infection according to the CDC classifications was as follows:

<13 years	>13 years	
P1B 4 patients	IIA 8 patients	III B 4 patients
P2A 7 patients	IIIA 12 patients	IV A 1 patient

Preliminary results 6 months after recruiting the last patient will be presented, including stage progress of the HIV infection, rates of infections as well as development of lymphocyte subpopulations, skin reactivity and lymphoyte stimulation test.

(Supported by the Bundesministerium für Arbeit und Soziales)

W.B.P.296 LONG-TERM ADMINISTRATION OF DITIOCARB IN HIV-SEROPOSITIVE SUBJECTS.

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Objective. To assess the effects of prolonged administration of ditiocarb (Imuthiol) in HIV-seropositive subjects after double-blind, placebo-controlled short-term trial has shown both clinical and immunological benefit.
Methods. 43 consecutive HIV-infected male homosexuals entered the present open-label study on the basis of CD4+ cell counts ≤ 400/microL and absence of AIDS symptoms as defined by the CDC. Mean CD4+ cell number at entry was 298/microL (± 87). 8 out of 43 subjects had constitutional symptoms at entry. Ditiocarb was given at the dose of 10 mg/kg orally once a week for 4 to 60 months with a median follow up of 22 months. Clinical and immunological evaluation was carried out at 4 month intervals.
Results. During the follow up period 7 patients progressed to AIDS (3 with Kaposi sarcoma and 4 with opportunistic infection) including 3 with initial IVA symptoms. 5/8 with initial constitutional symptoms clinically improved, including 2 with the longest follow up (54 and 60 months). The mean CD4+ cell count at last visit was 310/microL (± 168).
Conclusion. Since about 50 % of asymptomatic male homosexuals with CD4+ cell counts less than 400/microL progress to AIDS in 3 years, the present study cohort given ditiocarb compares favorably with historical untreated cohort. Our data futher suggest that ditiocarb may delay progression to AIDS and demonstrate that the drug can be given safely in HIV infection for a prolonged period of time.

W.B.P.297 SIDE EFFECTS OF IMUTHIOL® (DITHIOCARB, DTC, DIETHYLDITHIOCARBAMATE) IN THE THERAPY OF EARLY STAGE HIV-1 INFECTION.

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Objective. We report on the side effects of DTC seen during a prospective randomized placebo-controlled double blind study in 54 HIV-positive male patients. Methods. 13 pat. were treated orally with DTC, 14 pat. orally with placebo (10mg/kgBW once per week) and 13 pat. were treated i.v. with DTC and 14 pat. i.v. with placebo (5mg/kgBW once per week) for 24 weeks. Side effects were reported weekly, clinical, neurological and dermatological examinations were performed in 6 weeks intervals. Results. In oral as well as in i.v. DTC groups, 77% of the patients reported on metallic taste in the mouth for some hours after i.v. medication and for as long as one day after oral medication. Nausea, gastric complaints, flatulence, diarrhea and fatigue were seen with a lesser frequency in both DTC groups. A superficial gastritis was diagnosed in one patient after 24 weeks of oral DTC administration. Due to the antabus-activity of DTC, intolerance to alcohol (palpitation of the heart, skin rush, dizziness, nausea, headache) was realized. In the placebo group, imaginary side effects were seen in a low frequency and irregularly. No allergic-toxic reactions nor neurologic or haematopoetic side effects could be found.

W.B.P.298 CLINICAL EVALUATION OF GLYCYRRHIZIN ON HIV-INFECTED ASYMPTOMATIC HEMOPHILIAC PATIENTS IN JAPAN

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Objective. To evaluate the clinical effectiveness of glycyrrhizin (GL) by long -term oral administration on HIV-infected asymptomatic patients.
Methods. Glycyrrhizin is one of the biologically active components present in extract of glycyrrhiza glabra roots. The chemical structures of GL and its aglycone component, glycyrrhetinic acid (GA) are known. Both GL and GA have the ability to induce interferon in mice received the drugs orally (a report by Abe et al.), and GL has the antiviral activity on HIV infection in cell culture system (a report by Ito et al.) In this clinical trial, HIV-infected asymptomatic patients were divided into two groups, untreated and treated with GL. The patients in the latter group have received daily oral dose of 150 to 225mg of GL for 12 to 24 months. Lymphocyte and lymphocyte subsets counts of peripheral bloods of the patients were carried out at least twice a year, and immunologic abnormalities were compared among the patients by the scale scores, as described by Zolla-Pazner et al. (PNAS, 84: 5404, 1987).
Results. It has been found that the long-term oral administration of GL to the ten asymptomatic HIV-infected patients whose immunologic abnormalities are the score 1 or 2, is effective to maintain their asymptomatic stages. Neither progression of immunologic abnormalities nor development of diseases has not been seen upto now. Of the ten untreated patients, two have developed AIDS (score 3) and died. One has developed lymphadenopathy (score 3).
Conclusion. The treatment with GL appears to be effective to the patients in preventing disease development from their asymptomatic stages.

W.B.P.299 INTRAVENOUS VERSUS ORAL APPLICATION OF PENTOSAN-POLYSULFATE (HOE/BAY 946) IN HIV INFECTED PATIENTS.

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Pentosan-polysulfate has been shown to have HIV-1 inhibitory properties in vitro and perhaps in vivo. It is poorly absorbed through the gastrointestinal tract. Therefore, with oral application, effective intracellular concentrations will be achieved only after a long period. This implicates high oral dosages. We performed a prospective clinical study in HIV infected patients with an initial two week period of intravenous (IV) application of pentosan-polysulfates before oral maintenance therapy. The aim of the study was to compare clinical status and immunological parameters of orally treated patients and of patients with initial IV application of the drug.

We compared patients who had initial IV treatment (1 x 100-300 mg/d) with patients who were only treated orally (3 x 150-450 mg/d). Patients were in stages LAS or ARC. Changes of blood coagulation parameters after onset of therapy and transiently impaired liver function have been noted in IV treated subjects. Patients who had oral application only did not show any side effects. Differences concerning the data of clinical examinations, immunological data, and some serum kinetics will be presented.

Initial IV application of pentosan-polysulfate with a subsequent oral maintenance therapy may be recommended, because of a probable initial cellular loading effect. However, more detailed clinical data are needed. Since almost every patient with IV treatment developed side effects, IV therapy should be performed only in careful clinical trials in hospitalized patients.

W.B.P.300 TWO YEAR CLINICAL TRIAL WITH PENTOSAN-POLYSULFATE (HOE/BAY 946) IN HIV INFECTED PATIENTS.

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Pentosan-polysulfate has been shown to be effective against HIV-1 in vitro. We performed an open clinical pilot study with pentosan-polysulfate (HOE/BAY 946) in HIV infected patients in order to find an appropriate dosage, investigate antiviral properties, reveal possible side effects, and to determine whether subsequent clinical studies are needed.

We examined a total of 40 patients over a period of two years. 15 patients were stage LAS, 10 stage ARC, and 15 patients were in the stage of AIDS (CDC classification). Pentosan-polysulfate was given orally three times a day with an increasing dosage from 150 mg to 450 mg. Full clinical status was obtained on every clinical examination; additionally routine laboratory data and immunological examinations (lymphocyte counts and subsets, neopterin, β_2-microglobulin) were performed.

None of the patients changed the stage of HIV infection. Three patients in stage ARC, and 12 AIDS patients developed opportunistic infections. Eight of the 15 AIDS patients died. Immunological parameters showed increasing lymphocyte counts and lymphocyte subsets in LAS patients, stable cell counts in ARC and decreasing cell counts in AIDS. None of the patients developed side effects caused by pentosan-polysulfate.

Pentosan -polysulfate could be an effective agent against HIV in early stage disease, whereas in AIDS beneficial effects have been seen only rarely. ARC patients remained stable. Our data justify longer examination periods and randomized placebo-controlled trials.

W.B.P.301 Clinical influence of Imuthiol^{R} (sodium ditiocarb) in HIV-infected patients.

A review of 4 controlled studies and long term influence.

Caraux, Jean The International AIDS Imuthiol study group (France, Germany, USA.) Lyon France.

Between November 1983 and December 1988, more than 2,100 HIV-infected patients have been enrolled in double-blind, placebo controlled studies of Imuthiol^{R} (sodium ditiocarb, DTC). To date, results from three controlled studies in 170 ARC patients are available and results from a study in 267 ARC patients and 105 AIDS patients in 8 US medical centers will be available before June 1989. In France, 1,600 asymptomatic/LAS patients have been enrolled in a long term double-blind, placebo controlled study between July 1987 and July 1988. This study is ongoing.

From the first three controlled studies (US, France, Germany), three clinical end points have reached statistical significance :

1. Imuthiol delayed progression to AIDS in ARC patients : 15 patients progressed to AIDS in the controlled group vs 2 in the Imuthiol groups. This was statistically significant in the German study (6 progression vs none, $p < 0.05$, Logrank test).
2. Imuthiol slowed down progression in CDC class in ARC patients
3. Imuthiol induced regression in some constitutional symptoms of HIV-infection (group IV-A symptoms, lymphadenopathy, splenomegaly).

The US multicenter study on 372 patients is now terminating and results on major clinical efficacy endpoints will be available in June.

W.B.P.302 TWO MONTH DOUBLE BLIND PLACEBO CONTROLLED TRIAL OF CYCLOSPORIN IN HIV ASYMPTOMATIC SUBJECTS

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OBJECTIVE : To evaluate, in a multicenter, double blind, placebo controlled trial, the short term effects of cyclosporin on peripheral CD4 counts.

METHODS : 98 HIV asymptomatic or lymphadenopathic seropositive patients with initial CD4 counts between 300 and 600/mm3 were randomly assigned to cyclosporin 7.5 mg/kg per day or placebo for a 9 week period of treatment. Doses were adapted in order to maintain trough whole blood levels ranging from 400 to 700 ng/ml. Cyclosporin dose was in average more than 6.9 ng/ml throughout the trial. The double blind design was preserved by adapation of placebo doses of matched controls.

RESULTS : A significant ($p<0.001$) CD4 cell increase was observed in cyclosporin group compared to placebo at week 1 (+107/mm^3) and week 2 (+98/mm^3). Similar increase was observed in CD8 cell and total lymphocyte counts, thus the proportions of CD4 and CD8 subsets and the CD4/CD8 ratio did not change. At week 9 CD4 cell counts were in average identical in the 2 groups. Side effects observed were mild and no adverse reaction or progression to AIDS or ARC occured during the 4 month period (treatment and follow-up) of the trial.

CONCLUSION : The effect of cyclosporin on circulating CD4 + lymphocytes was limited to a transient and weak increase, but it is not possible to come to a conclusion regarding the efficacy of a long term immunosuppressor treatment on the basis of the results of this 2 month trial.

W.B.P.303 ACUTE RESPONSES TO AMPLIGEN INFUSIONS IN HIV-INFECTED PEOPLE

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OBJECTIVE: To report our clinical and laboratory observations in HIV-infected persons associated with acute reactions during intravenous infusions of synthetic mismatched double-stranded RNA (Ampligen).

METHODS: Ten acute reactions (flushing, diaphoresis, shivering, chills, fever and chest tightness) occurred in 3 of 17 persons receiving twice weekly infusions. Infusions were stopped temporarily during reactions then finished at a slower rate. No reactions required discontinuation of treatment.

RESULTS: Reactions were observed in 0/6 persons receiving 10 mg/M^2, 1/6 receiving 40 mg/M^2 (person #200g) and 2/5 receiving 120 mg/M^2 (persons #217c and #229j). Acute depressions of PMNs were observed as soon as reactions subsided (within 15 minutes) and at end of reinfusions and were followed by leukocytosis. Leukocyte counts ($x10^3/\mu l$) are summarized as follows:

Patient	Pre-infusion	End-reaction	End-infusion	1-2 hrs. later
#200g (3 obs.)	5.6	-	2.9	8.8
#217c (3 obs.)	6.7	3.1	7.5	9.3
#229j	3.3	2.1	3.2	4.3

Granulocytes were mainly responsible for these changes. During 6/7 reactions cytotoxic activity of peripheral leukocytes against K562, U937 and HIV-infected U937 targets were depressed 2 hr post-reactions as compared to pre-infusion values. CONCLUSIONS: Acute leukopenia associated with Ampligen-infusion-reactions was followed by leukocytosis 1-2 hrs. later. Cytotoxicity against three different targets was also suppressed at 2 hours.

W.B.P.304 Failure of isoprinosine in prevention of ARC to AIDS

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Objective. To determine the effect of an immunomodulator, Isoprinosine(Inosine pranobex) in delaying the progression of disease in HIV seropositive male patients with CD4 counts of 200-400/mm^3.

Methods. A prospective, multicenter, randomized, double blinded, placebo controlled clinical trial. 202 seropositive homosexual males were screened in Dallas County and 50 patients were entered into the study.

Results. 21 patients completed 12 months of the trial. 19 patients were discontinued; of these 8 discontinued themselves to go on AZT, and 11 were lost to followup. 9 patients endpointed with AIDS. 1 patient developed interstitial nephritis-one of the four reported adverse reactions.

Conclusions. Isoprinosine was ineffective in preventing the progression of ARC to AIDS. Overall, there was no toxicity noted but the drug failed to prevent the destruction of CD4 lymphocytes, development of HIV antigenemia and clinical deterioration. Further studies combining this agent with other antivirals need to be performed.

W.B.P.305 Neopterin and T-helper/neopterin ratio in the monitoring of long-term treatment of HIV-infected patients by Imuthiol^{R} (sodium ditocarb, DTC)

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Objective. To investigate whether urinary neopterin (UN) and T-helper (T4) / UN ratio correlates with prognosis in long-term therapy by Imuthiol^{R}.

Methods. 36 HIV-infected male homosexuals (age 37, range 22-45 years, weight 71 kg, range 57-84) were treated with Imuthiol^{R} (10 mg/kg once a week) for a mean duration of 17 months (range 6-30 months), starting in August 1986. 21 belonged to group III and 15 to groups IV-A and IV-C2 at entry. 27 had less than 400 T4 cells at entry. Patients were monitored every 3 months. UN (μ mol/l) was assayed by HPLC and T4 cell counts by cytofluorometry.

Results. Among over 100 evaluations, the T4/UN ratios correlated well with absolute T4 levels. In 3 instances, an elevation of UN was seen without decrease of T4 counts. This was related to associate viral infections. Under Imuthiol therapy, T4/UN ratios increased in 10/36 patients, was stabilized in 20/36 patients and dropped in 6/36 patients. Only one of those 6 progressed to an Aids-OI.

Conclusion. T4/UN ratio is useful in monitoring progression of HIV-infected patient. It remains stable or increases in 30/36 patients treated with Imuthiol for prolonged periods of time.

W.B.P.306 TIMOMODULINE AND LITHIUM CARBONATE FOR HIV PATIENTS

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OBJECTS: It is well known the trophism of HIV, which affects the lymphocytes T4 and Monocytes; leading to immunosuppresion. A study was undertaken using Timomoduline, a stimulator of lymphocytic maturation and a Granulocytic-Monocytic colony forming unit activator(GMF-CSF) and Interleukina II in vitro, Lithium Carbonate.

METHODS: (7) seven patients infected with HIV,(2) two with demential complex,(I) one with ARC,(I) one with AIDS and (3) three with LAS were (5 homosexuals, 2 sevral blood transfusions; they were all males with an age average of 37 years). They had a positive serology for HIV and immunosuppresion was showed up, caused by a fall of CD4 under 400 cel./ mm3. They were treated with Timomoduline 60 mg/day/orally and LITHIUM Carbonate 900mg./day during a I6 week period.

RESULTS: during the study period (2) two of the seven patients died because of demential complex. The remaining ended the treatment protocol. All of the patients experienced physical improving. Four of them gained weight. None of the patients experienced any kind of side-effects. There was an increased in the lymphocyte total level, monocyte and CD4.

CONCLUSIONS: After this study period we can conclude that; the anti-HIV treatment is necessary for patients who experienced a demential complex. The remaining ones manifested a clinical improving. We conclude that Timomoduline and Lithium Carbonate should be used for Pre-AIDS,and Anti-HIV association for patients on advanced AIDS stages.

W.B.P.307 CASE REPORT OF DISULFIRAM AS FIRST LINE THERAPY IN SEROPOSITIVE PATIENTS ATTENDING A COMMUNITY CLINIC

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Objective: To use disulfiram in treatment for HIV seropositive asymptomatic patients and explore if there is a significant correlative change between T4/T8 ratio and/or absolute T4 count. Method: Seropositive patients with T4/T8 ratios less than 1.20 or absolute T4 counts <500 were started on disulfiram - a split weekly dosage of 1000 mg. T4/T8 counts and ratios were followed every three months for a period of six months. Pre-treatment and post-treatment differences were evaluated by the student T test. Results: In a sample of 10 patients on disulfiram alone, a comparison of initial and nine month followup in the ratio of T4/T8 cells, absolute T4 and absolute T8 counts reveals a statistically significant improvement at the .05 level with a one sided T test. Of these 10 patients, 8 had documented improvement in T4/T8 ratio. Assuming a population probability of .5 the power to detect a difference is less than 50%. Graph and data will be presented. Conclusion: Although the sample size is small, a statistically significant difference was noted in seropositive patients on disulfiram treatment. These results suggest a large scale study of disulfiram should be initiated to further delineate the treatment effect.

W.B.P.308 IMMUNOLOGIC AND VIROLOGIC PARAMETERS IN 100 HIV-INFECTED PATIENTS (PTS) TREATED WITH ISOPRINOSINE (ISO) OR PLACEBO (PLB) AS PART OF A MULTICENTER PHASE III CLINICAL TRIAL

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Objective: To provide confirmation that ISO (inosine pranobex) exhibits immunorestorative effects, and establish whether it exhibits HIV suppressive effects in a large scale double-blind placebo-controlled clinical trial.

Methods:

Study Design: Randomized double-blind, placebo-controlled multicenter (19 centers in the USA/UK) phase III clinical trial. Subjects: HIV-seropositive males, aged 18-75 years; CDC Groups II, III, IV-A, IV-C2; CD4 counts between 200-400/mm^3.

Treatment: ISO - 4 gm/day po (1 gm QID) or PLB for up to 6 months.

Results: A total of 696 PTS were enrolled, of which 100 were treated at our center. Baseline and post-treatment parameters of 79 PTS who completed 6 months of therapy are shown in the table below.

Treatment Group		Mean CD4/mm^3	Mean MLR (% Control)	Mean Tetanus (% Control)	Mean IL-2 (% Control)	Mean NK (% Control)	# DTHS Anergic	# p2[illegible]
ISO	pre-rxn	333	37	18	69	92	13/32	[illegible]
(n=37)	post-rxn	264	28	11	71	87	8/32	9/37
PLB	pre-rxn	333	49	20	70	93	14/40	18/39
(n=42)	post-rxn	261	37	20	97	84	16/40	19/40

On serial monitoring (Q 2 months), no significant differences were seen on virologic (p24), or in vivo (DTHS) or in vitro immunologic parameters [lymphoproliferative responses to alloantigens (MLR), soluble antigens (tetanus), PHA-induced IL-2 production, or NK activity], in PTS treated with ISO or PLB. Mean CD4 counts, and in vitro immune reactivity tended to decrease gradually with time in both groups. No drops in serum p24 levels were observed.

Conclusions: We could not confirm that ISO exhibits immunorestorative effects in HIV-infected PTS.

W.B.P.309 RECOMBINANT HUMAN GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR (GM-CSF): A PHASE I TRIAL IN NEUTROPENIC AIDS PATIENTS.

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Objective. To evaluate the safety, efficacy and biological activity of subcutaneously (SC) administered GM-CSF in AIDS patients (pts) who were neutropenic as a result of treatment or their underlying disease. Methods. AIDS pts with ANC<2000/mm^3, PS≥60, Hb≥9, platelets ≥75,000 and SGOT≤50 were eligible. GM-CSF was given by daily SC injection for 10 days. After an 18 day rest, treatment was resumed for 28 days. Pts were then evaluated for maintenance treatment. Results. Twelve pts have been entered at GM-CSF doses of 0.3, 1, 3 and 10 µg/kg/d. The median ANC was 900/mm^3 (range 400-1700). Five pts were receiving AZT and 7 had sustained neutropenia after stopping AZT treatment. Dose-dependent increases in ANC were seen. Mean maximum ANCs were 3467 (0.3 µg), 3833 (1µg) and 6520 (3µg). At each dose there was considerable variation in the ANC response and the degree of eosinophilia. Peak ANCs were generally lower in pts receiving AZT, but in some who had previously discontinued it, AZT could be reinstituted at reduced doses. Fever, malaise, weight loss and increased liver enzymes were observed in some pts. We saw no evidence for stimulation of HIV, as measured by serum p24 antigen or cultures of peripheral blood cells, nor were there consistent effects on T cell subsets or the functions of NK cells, neutrophils or monocytes. Conclusions GM-CSF can reverse established neutropenia in AIDS pts. Given the variable response, optimal treatment may require dose titration.

W.B.P.310 REESTABLISHMENT OF A NORMAL IMMUNOREGULATORY MECHANISM IN HIV-INFECTED PATIENTS WITH IMMUNE THROMBOCYTOPENIC PURPURA (ITP)

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Objective - To modulate activity of platelet-directed IgG (PDIgG) and circulating immune complexes (CIC) by PROSORBA® column treatment of plasma from patients with ITP. Methods - Ninety-seven patients with chronic ITP (39 patients with HIV-infection) received 4-8 treatments, involving adsorption of 250-2000 ml plasma, with the U.S. FDA approved PROSORBA column over a 4-6 week period. Results - PDIgG and CIC were significantly reduced in both HIV-infected and uninfected ITP patients. In HIV-infected patients this was shown to be in response to stimulation of broadly cross-reactive anti-F(ab')$_2$ antibodies which bound to both PDIgG and CIC and enhanced their clearance from the circulation. In uninfected ITP patients, this was shown to be in response to stimulation of specific anti-idiotypic antibodies which neutralized the activity of idiotypic PDIgG. In both patient populations, these activities were associated with normalization of platelet counts in many patients (47% overall) which are continuing to be sustained over a mean follow-up period of 8 months. Conclusion - PROSORBA column treatment of plasma to remove IgG and CIC induces reestablishment of normal immunoregulatory mechanisms which suppress autoantibodies and prevent development of ITP. This leads to long-term remission from disease.

W.B.P.311 AMELIORATION OF DETERIORATED POLYMORPHONUCLEAR LEUKOCYTE(PMN) PHAGOCYTI FUNCTION OF HEMOPHILIACS WITH HIV INFECTION BY ADMINISTRATION OF LONG-TERM POLYSACCHARIDE IMMUNOPOTENTIATOR (LENTINAN)

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ObjectivePMN phagocytic function(PMN-PF) of hemophiliacs(H) was evaluated in vitro and the effect of long-term treatment with lentinan on impaired PMN-PF was studied. Method.PMN-PF of 39 H, including 22 cases with HIV infection, was measured as the intensity of PMN chemiluminescence(PMN-CL) evolved from PMN when stimulated with opsonized zymosan(OZ) and/or phorbol myristate acetate(PMA). Ten mg of lentinan was injected(iv) to 7 H(5AC, 1ARC & 1 HIV negative) with an impaired PMN-PF. Results. OZ stimulated PMN-CL of 22 HIV positive as well as 17 HIV negative H was revealed to be deteriorated to 0.68 ±0.31 & 0.74±0.22(normal range;0.8-1.2) respectively. This tendency of deterioration was confirmed with PMA stimulated PMN in both HIV positive(0.74± 0.31) and negative(0.96±0.24) groups. PMN-CL in 6 out of 7 H on long-term lentinan treatment was recovered to the near normal range within less than 3 months and this normalized PMN-CL was maintained for 6 to 28 months after cessation of the medication. Moderate to marked increment in CD4/CD8 ratio was observed in 3 cases. Conclusion. Long-term treatment with lentinan offers a therapeutic potential for HIV infected individuals with impaired PMN-PF by by which PMN dysfunction is corrected and the onset of oppotunistic infection is prevented. On the basis of these results, open trial of lentinan for HIV infected patients has just started in 16 medical universities and hospitals throughout Japan.

W.B.P.312 AN OPEN LABEL DOSE-RANGING TRIAL OF AL721 IN PGL AND ARC.

Mildvan, D.[1]; Armstrong, D.[2]; Antoniskis, D.[3]; Sacks, H.[4]; Balfour, H.[5]; Buzas, J.[6]; Pettinelli, C.[7]; et. al.
[1]Beth Israel Med. Cent., NY; [2]Memorial Sloan-Kettering Cancer Cent., NY;U.S.A. [3]U. of S.Cal., LA; [4]Mt. Sinai Med. Cent., NY; [5]U. of Minn.; [6]Res. Triangle Inst., NC; [7]AIDS Clin. Trials Group, NIAID. Objective: To assess the safety and tolerance of escalating doses of AL721, a lipid compound with reported anti-HIV activity via cell membrane or virion cholesterol depletion. Methods: The study was a multi-center open label dose-ranging trial in patients with PGL and ARC. AL721 was administered for 8 weeks at 20, 30, 40, or 50 grams twice daily to 10 patients at each dosage level. Patients were evaluated for toxicity and disease progression. Immunologic (T-cell subsets), virologic (HIV cultures, p24 antigen levels), and serum lipid profiles were also monitored. Results: 40 patients were treated. Toxicities were confined to the GI tract: 60% of patients across doses experienced mild, and 10%, moderate diarrhea. Mild to moderate nausea and abdominal pain occurred in 40-50%. Reactions were usually self-limited, and none led to termination of therapy. Disease progression was not noted in this short-term study. No consistent trends were observed in T-cell quantitation or HIV cultures. 3 patients were p24 antigenemic (≥70pcg/ml) at entry; all remained so on treatment. Statistically significant increases over baseline were noted in weight (2%), total cholesterol (13%), HDL (10%), and LDL levels (14%). Conclusions: AL721 was well-tolerated, even at high doses, over 8 weeks, and resulted in modest wt. gain. One consequence of therapy, however, was a significant increase in serum cholesterol levels. No preliminary indication of an antiviral or immunorestorative effect was noted in this trial. Additional p24+ patients are being treated to assess antiviral endpoints.

W.B.P.313 INOSINE PRANOBEX THERAPY IN HIV SEROPOSITIVE PATIENTS AT RISK OF DEVELOPING AIDS.

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Inosine Pranobex(ISO), a synthetic immunopotentiating agent, was administered orally in a prospective, placebo-controlled, randomised, double-blind trial to 122 HIV seropositive, non-AIDS, male patients(pts) with an absolute CD4 count between 200-400 cells/mm^3 at entry. Objectives were to determine whether ISO can delay progression of disease and/or decrease severity and incidence of lessor opportunistic infections and conditions associated with HIV. Study pts received ISO 1.0g PO QID or placebo(c) for 6 months(mo). After 6 mo, all pts were offered ISO for an additional 6 mo.

CD4 count (cells/mm^3)

Results:	Baseline	6 mo.	Δ0-6 mo.	12 mo.	Δ 6-12 mo.	Δ 0-12 mo.
ISO Pts:	322.8	287.6	-35.2	248.1	-51.6	-73.4
C Pts:	322.8	291.3	-31.5	261.8	-43.7	-64.9

3 ISO and 3 C pts developed AIDS during the study. There were 4 adverse reactions in each group. 8 ISO and 11 C pts were antigen(AG)⊕ at baseline. By the end of the study, 4/7 Ag⊕ ISO pts converted to ⊖ and 3/47 Ag ⊖ pts became ⊕ 3/11 Ag⊕ C pts converted to ⊖ and 3/47 Ag ⊖ pts became ⊕.
Conclusions: There were no statistically significant differences between the groups at baseline, 6 months or 12 months in regard to CD4, P24 antigen or clinical status. ISO was ineffective in altering the immunologic and clinical findings associated with HIV infection in this moderately immunosuppressed seropositive group of patients at risk for developing AIDS. Other study sites have reported similar findings.

W.B.P.314 EFFECT OF PASSIVE IMMUNIZATION IN PATIENTS WITH ARC AND AIDS

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Objective: To determine the benefits of passive immunization in ARC and AIDS.
Methods: Plasma was collected from healthy HIV positive donors who had high titres of antiviral antibodies as monitored in the Karpas cell test. β-propiolactone was used to inactivate viruses. ARC and AIDS patients received monthly transfusions of 500 ml pooled plasma. Level of HIVp24 antigen, antibody titre, T-4 cell counts, weight as well as other parameters were measured at monthly intervals.
Results: Plasma transfusion to the 10 consistently viral-antigen-positive patients (mean 76 months) resulted in sustained clearance of HIV|p24 antigen. All patients maintained or increased their antiviral antibody titres. Two ARC patients had a significant increase in endogenous antibody synthesis. Only in the ARC patient with the rapid increase in antibody levels was there a noticeable increase in T4+ cells. Four of the remaining 8 patients (one went abroad and one died) did not require hospitalization during the past 10 months. No toxicity was observed in patients receiving plasma from donors of the same ABO group.
Conclusion: The above beneficial observations combined with no obvious toxicity merits further evaluation in ARC and AIDS patients. The significant increase in antiviral antibody level (synthesis) in two ARC patients suggests that an early institution of passive immunization might prevent the deterioration to ARC and AIDS.

W.B.P.315 A PHASE I/II DOSE RANGING TRIAL OF ORAL DEXTRAN SULFATE IN HIV p24 ANTIGEN POSITIVE INDIVIDUALS (ACTG 060): RESULTS OF A SAFETY AND EFFICACY TRIAL

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Objective. To evaluate the long-term toxicity, establish the maximally tolerated dose (MTD) and evaluate the antiretroviral activity of oral dextran sulfate (DS) (MW 7,000-8,000, 17-20% sulfur, Uendex) in HIV p24 antigen positive patients.
Methods. A multi-center unblinded 6 month trial of at least 2 doses of DS was designed. HIV p24 antigen positive patients were enrolled and stratified into 3 different cohorts: AIDS, ARC and asymptomatic. Ten patients were enrolled in each of these cohorts at 2700 mg/day. At least 5 of the asymptomatic and 5 of the ARC patients retained CD4 lymphocyte counts of greater than 200/mm^3. The next 30 patients were begun on DS at 5400 mg/d. Patients were monitored with physical examinations and laboratory testing every other week for 3 months, then monthly for 3 months. Toxicities were graded using the standard Recommendations for Grading of Acute and Subacute Toxic Effects. An MTD was defined as the highest dose for which less than 5 of the 10 patients in a cohort developed toxicity of Grade 3 or above. Dose escalation beyond 5400 mg was planned if the MTD had not been reached by that dose level.
Results. To date 60 pts have been accrued since the study began in August 1988. The mean and median duration of therapy is 12 weeks. Nine patients have developed Grade 3 episodes of diarrhea; however a significant additional number also report intolerable bloating and crampy abdominal pain. Five patients report polyuria; 4 developed skin rashes and pruritus; 3 mental status changes. The most common laboratory toxicities reported include elevated hepatic transaminases (9 patients); granulocytopenia (5 patients); and Grade 3 thrombocytopenia (2 patients). Twenty-two patients are currently off study drug; 5 because of toxicities; 9 voluntary dropouts; 4 others and 4 because of physician advice after preliminary data from a pharmacokinetic study suggested poor bioavailability of oral DS. Immunologic and virologic parameters are currently being analysed.
Conclusion. Oral DS is not without toxicity despite the current lack of conclusive evidence of systemic absorption. Lymphocyte subsets and HIV p24 antigen are being evaluated.

W.B.P.316 *EFFET DU MM1 SUR LES MALADES ATTEINTS DU SIDA*

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Nous avons suivi 464 patients atteints de SIDA du 13 mai 1987 au 20 mai 1988. Ces patients sont soit ambulants soit hospitalisés aux CUA ou à la Clinique Ngaliema. Parmi eux, il y a 196 hommes dont l'âge est entre 19 et 56 ans et la moyenne d'âge est de 38.5 ans; et 268 femmes dont l'âge est situé entre 15 et 50 ans avec une moyenne d'âge de 29 ans.

Les manifestations cliniques sont dominées par l'amaigrissement (88.5%), l'asthénie (99.9%), la diarrhée (63.7%), le prurit (40%), la candidose digestive (60.9%), le prurigo (40%), les pneumopathies (70%), le sarcome de Kaposi (20.1%), le zona (20.4%), l'herpès cutanéo-muqueux (20%), la fièvre (68.7%), la furonculose (10.3%), la méningite à cryptocoque (7.1%).

Après 20 injections de MM1 administré soit par IM soit par IV (perfusion) et un traitement classique des infections opportunistes, nous avons noté l'évolution suivante: un gain pondéral dans 90.4% de patients; une disparition de l'asthénie dans 97.1% de cas; un amendement de la diarrhée dans 62.9%, du prurit dans 83.4%, du prurigo dans 52.9%, de la fièvre dans 97%: une réduction de l'adénomégalie dans 90.7% et une guérison de la méningite à cryptocoque dans 40.2%. Au contraire, le sarcome de Kaposi ne semble pas être influencé par le MM1. Nous avons aussi remarqué l'amélioration des paramètres biologiques suivants: le nombre total des lymphocytes "helper" dans 80% des cas; tandis que l'hémogramme, les fonctions rénales et hépatiques aussi bien que les protéines sériques ne sont pas perturbées. Dans le cas des patients dont le taux des transaminases était augmenté, nous avons remarqué une diminution.

Thérapie et évaluation clinique : tests contrôlés
Therapy and Clinical Evaluation: Controlled Trials

W.B.P.317 USE OF ZIDOVUDINE IN INJECTION DRUG USE (IDU) RELATED HIV INFECTION - DRUG COMPLIANCE AND CLINIC ATTENDANCE.

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UNITED KINGDOM

Objective: The evaluation of drug compliance and clinic attendance in zidovudine treatment of injection drug use related HIV infection (IDUHIV).
Method: 322 HIV seropositives were assessed at the City Hospital, of which 253 (79%) were infected between 1983-85 by IDU. Of 51 treated with zidovudine, 37 were male (22 IDUHIV, 15 homosexuals [HO]) and 14 were female (13 IDUHIV, 1 heterosexual partner of IDUHIV). Drug use included opiates, benzodiazepines and cannibis. Compliance was assessed by attendance records, weight (wt) and mean corpuscular volume (mcv).
Results: 27 (75%) of 36 were on oral opiates (19 methadone, 8 other opiates) 8 were ex IDUHIV, (but 5 continued with cannibis/benzodiazepines). Six patients continue to inject.

Group No. ( )		Homos. (15)	Ex/non-users(8)	Oral Opiates (27)	Inject/Oral Opiates (6)
No of Defaults:	0	14	4	15	3
	1-3	1	5	10	3
	>4	0	0	2	0
Mean Wt gain [kg](Range)		0.4(-11to13)	2.7(-2to10)	-0.1(-13to9)	1.0(-5to9)
Mean mcv gain[fl](Range)		19.2(-8to32)	15.5(4to25)	16.6(-1to38)	27.7(20to30)

Conclusions: Rise in mcv and wt were comparable in both groups. IDUHIV were worse attenders than HO patients and the most reliable attenders were those prescribed methadone by ourselves and was unrelated to continued IDU.

W.B.P.318 EFFECTIVENESS OF LOW-DOSE-COMBINATION THERAPY WITH ACIDOTHYMIDINE (ZIDOVUDINE) AND ACYCLOVIR IN AIDS- AND ARC-PATIENTS

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Objective: Examination of effectiveness of AZT/ACV low-dose therapy in regard to clinical, virological and immunological parameters in AIDS- and ARC-patients.
Methods: Open prospective study of 54 patients (19 AIDS, WR6; 35 ARC, WR 4-5) receiving low-dose-comb. of AZT/ACV (200 mg 4x daily). We evaluated clinical and labor. data (red and white cells, OKT 4, P-24 Ag, immunolog. paramet.) and influence on quality of life due to side effects.
Results: After an average treatment-duration of 36(20) weeks, we evaluated data of 50 patients (mean age 33,4,8,4y). 4 patients died within the first 4 weeks. No serious side effects were observed. Therapy had to be interrupted in 17 cases, in 11 cases because of leukopenia and/or anemia. 10 patients required transfusions, in 7 cases due to AZT/ACV therapy. Mortality was 8% (4/50). Morbidity caused by opp. Inf. was 12% (6/50). We observed 4 of these OI after therapy interruption > 4 weeks. 4 patients suffered from a lymphatic neoplasia, lethal in 2 of them. In 8 of 10 cases initially high P-24 Ag concentrations were suppressed during therapy. Effects on parameters of cellular (OKT 4) and humoral immunity (CIC,B-2M) were transitory.
Conclusion: A low-dose therapy with 800 mg AZT and 800 mg ACV seems to have similar positive effects on reduction of mortality and prevalence and severeness of opp.Inf. as standard AZT monotherapy. Toxicity seems to be reduced. Effects on compliance are positive.

W.B.P.319 ALLOGENEIC BONE MARROW TRANSPLANTATION (BMT) PLUS AZIDOTHYMIDINE (AZT) IN AN AIDS PATIENT WITH NON-HODGKIN'S LYMPHOMA (NHL)

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Objective. To evaluate the effect of combined modality therapy (AZT plus allogeneic BMT) on HIV-1 infection in a lymphoma patient with AIDS.
Methods. The patient, a 41 yo HIV-1 culture+ man with NHL, received cyclophosphamide and total body irradiation to ablate tumor, bone marrow and marrow derived cells. AZT (5 mg/kg q 4h) was begun 2 wks prior to BMT. Nine days after initiation of ablative therapy he received 4x10^8 nucleated BM cells/kg from his HLA identical sister. At this time AZT was reduced to 1.3 mg/kg q 4h and maintained at that level for the duration of treatment. HIV-1 was monitored by culture and polymerase chain reaction gene amplification (PCR, LTR and ENV, DNA and reverse transcribed RNA).
Results. Despite continuous AZT, engraftment was prompt (17 days to neutrophils>500/mm^3). Peripheral blood mononuclear cells and BM samples became HIV-1 negative by culture and PCR 32 days after BMT. The patient died of tumor relapse 47 days after BMT. Complete autopsy showed no evidence of HIV-1 by PCR (brain, BM, spleen, tumor, heart, kidney, liver, lung, colon) or culture (brain, BM, lymph node, tumor).
Conclusions. 1) The patient tolerated intensive therapy associated with BMT 2) Prompt engraftment was attained despite AZT therapy 3) PCR and culture data suggest clearance of host cells harboring virus and prevention of infection of repopulating donor cells.

W.B.P.321 EFFECT OF COMBINATION OF ZIDOVUDINE AND INTERFERON-ALPHA COMPARED WITH ZIDOVUDINE AND ACYCLOVIR ON HIV-ANTIGENAEMIA IN ASYMPTOMATIC PATIENTS

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Objective: To assess the antiretroviral effect of zidovudine (AZT) in combination with either lymphoblast interferon-alpha (INF) or acyclovir (ACV) in asymptomatic HIV infected pts.
Methods: 15 pts in CDC stage II/III with positive p24 antigen were randomized to receive 12 weeks of AZT 2x250 mg/d and either ACV 2x800 mg/d or INF 1.5 Mu s.c. 3x weekly. Following a washout period of one month, 6 pts (pts 1,2,4,6,8,10) agreed to continue with a crossover phase. Antiretroviral activity was assessed by measuring serum p24 antigen levels.
Results: p 24 antigen levels (Abbott EIA) recorded as a coefficient were:

	AZT+INF		wash-	AZT+ACV	
	wk 0	wk 12	out	wk 0	wk 12
pt 1	11.35	1.63	|	4.74	4.45
pt 2	1.30	0.99*		1.92	0.99*
pt 3	2.50	1.14	|		
pt 4	2.13	1.28		1.87	1.87
pt 5	1.94	0.99*	|		
pt 6	3.94	1.01		2.37	NEG**
pt 7	1.50	1.42	|		

	AZT+ACV		wash-	AZT+INF	
	wk 0	wk 12	out	wk 0	wk 12
pt 8	5.52	3.37	|	9.07	4.46
pt 9	1.59	1.17			
pt 10	1.41	NEG**	|	2.73	1.29
pt 11	4.97	3.90			
pt 12	1.08	NEG**	|		
pt 13	2.86	1.23			

*0.99 = cut off
**NEG < 0.99
pts 14 and 15 discontinued due to side effects

P 24 antigen was transiently negative during AZT+INF at wk 1 and 6 in pts 2 and 7, respectively. Temporary mild neutropenia occurred in 3 pts with AZT+INF.
Conclusions: P 24 antigen declined in all pts with the above dose regimens. Preliminary results suggest a superior antiretroviral activity of AZT+ACV, but require dose range finding studies and continuation of treatment to evaluate clinical long term benefits.

W.B.P.323 AN OPEN-LABEL STUDY OF THE SAFETY AND EFFICACY OF CO-ADMINISTRATION OF ZIDOVUDINE AND RECOMBINANT IFN-BETA.

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Objective. A phase I study of the long-term tolerance of recombinant interferon-beta-ser (Betaseron) at doses of 45 or 90 million units when administered subcutaneously on a daily basis to HIV-infected individuals receiving 200mg of Zidovudine (ZDV) every four hours.
Methods. Seventeen patients who had previously been maintained on ZDV alone, for standard indications, were enrolled in the study; 8 patients at 90 million and 9 patients at 45 million units per day (MU/D).
Results. Seven of the 17 patients have terminated from the study; 1 expired, 4 of the remainder terminated due to local skin reactions and/or systemic symptoms such as fevers and malaise. Four of 8 patients enrolled at 90 MU/D underwent dosage reduction, 3 of these secondary to increased hepatic transaminases. In the entire group, an overall two-fold increase in transaminases was seen, which peaked at 12 to 16 weeks of therapy. Other toxicities, particularly myelotoxicity (1 of 17 patients) were infrequently observed. The total white blood cell counts after 36-44 weeks of therapy were approximately equivalent to the patients' entry values. An AIDS-associated opportunistic infection or neoplasm occurred in 7 patients.
Conclusion. Full-dose ZDV and Recombinant-IFN-Beta-ser at doses of 45 to 90 million units/day are well tolerated for periods in excess of 40 weeks. Unlike IFN-alpha, patients receiving IFN-beta tolerated full dose ZDV well, without significant myelotoxicity. Prospective, controlled studies are needed to assess the efficacy of this combination.

W.B.P.320 AS 101 IN ASSOCIATION WITH AZT IN AIDS PATIENTS : A PHASE I PILOT STUDY.

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Interesting clinical and biological results have been obtained with AS 101 (a new immunomodulating agent, Nature 1987,330:173-176) in AIDS patients. However in an effort to further improve patients with advanced disease, we tried to associate AZT with AS 101. 5 patients (all male - median age 30 y ; range 26-37) stage IV entered the study. AS 101 and AZT were given respectively ; IV 5 mg/m² x 3/week and per os 1 gr/day. 4/5 have had previous toxicity of AZT (severe pancytopenia). Results : one patient with pulmonary Kaposi sarcoma died from progression of K. S. .The 4 others patients are alive. The median duration of the association was 3 months (3-5). We did not observe any clinical sign of intolerance. 1 patient experienced neutropenia and AZT was stopped. Hematological tolerance in the 3 other patients was good. 1 patient increased ASAT or ALAT level but he had tuberculosis of the liver. We observed no change of the other biological parameters. In 3 patients the clinical status improved. Further data of AS 101-AZT association will be provided.

W.B.P.322 ZIDOVUDINE VS. ALPHA INTERFERON VS. THE COMBINATION IN PATIENTS WITH EARLY HIV INFECTION.

Zunich, Kathryn M.; Davey,V.; Metcalf,J.A.; Masur,H.; Fauci, A.S.; Lane,H.C.; et al. National Institutes of Health, Bethesda, MD, USA.

Objective. To compare the effects of zidovudine (AZT), alpha interferon (αIFN), and a combination of these 2 drugs in delaying the progression of HIV disease.
Methods. HIV-infected persons with >500 CD4+ cells/mm3 and no history of opportunistic infection (OI) are being entered in this trial. Following a screening evaluation that includes HIV serology, HIV culture, p24 antigen, polymerase chain reaction (PCR), and immune profile, patients are randomized to either AZT alone (200 mg q4h), αIFN alone (5x10^{6}u qd x 2wks then increase as tolerated), or a combination of the 2 (AZT 100 mg q4h + αIFN 1x10^{6}u qd x 2wks then increase as tolerated). End point criteria include a decline in CD4+ cells to < 200/mm3 or the first occurrence of an AIDS-defining OI.
Results. The patients enrolled thus far (n=30) have a mean age of 35 (26-49) and a mean CD4 count of 696 cells/mm3 (515-1293). Eight of 30 have had a positive (+) culture for HIV and 2/30 have been p24 antigen +. Utilizing primer pairs from env, LTR and gag regions, 26/28 have been + by PCR.
Conclusion. Patients with early HIV infection and CD4+ cells >500/mm3 almost uniformly have demonstrable virus by PCR testing. However, HIV culture and p24 antigen are generally negative, suggesting that the patients have a low viral burden. The data generated over the next 6 months should permit an evaluation of the relative toxicities and a preliminary evaluation of the efficacies of AZT, αIFN, and the combination in delaying the progression of HIV disease.

W.B.P.324 EFFECT OF A COMBINED DEXTRANESULFATE/ZIDOVUDINE THERAPY COMPARED TO ZIDOVUDINE MONOTHERAPY IN AIDS

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18 HIV infected patients (status WR 6) were randomly attached to a combined dextranesulfate (1800 mg/d)/ zidovudine (800 mg/d) therapy (DZ) or a zidovudine (800 mg/d) monotherapy (Z). Each group consisted of 9 patients, age 23 to 35 years, with equivalent amounts of CD4+ lymphocytes in both groups prior to therapy. Before and every 8 weeks during the treatment period we performed a complete history and physical examination, standard medical tests of enzymes, kidney, liver and blood parameters, isolation and enumeration of lymphocytes and lymphocyte subsets, assessment of complement components, immunoglobulins and immune complexes in serum as well as measurement of in vitro lymphocyte blastogenic response to mitogens.

Evaluation of the first 6 months of the study revealed 1 relapse of pneumocystis carinii pneumonia in each group. No alterations were found concerning the individual HIV antibodies and p24 antigen levels. Apart from an initially more profound improvement of immunostatus after 8 weeks of DZ compared to Z there were no differences between the two groups within the first 6 months of study. Dextranesulfate application did neither enhance adverse drug effects of zidovudine nor induce severe disorders of blood coagulation. The study is still in progress.

W.B.P.325 THE SAFETY OF ZIDOVUDINE AND INTERLEUKIN 2 IN ASYMPTOMATIC HIV INFECTED PATIENTS

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Objective: To study the safety of combining zidovudine (ZDV) and interleukin 2 (IL2) in patients with asymptomatic HIV infection.
Methods: Patients with WR2 HIV infection were given ZDV 200 mg po 5x/day for 8 wks, 4 wks of both ZDV and 100,000 u/m^2 IL2 qd, and finishing with 8 wks of ZDV alone. Four patients have completed the study; additional patients at higher IL2 doses will be included.
Results: All developed mild hematologic toxicity; mean HGB fall 0.5 gm/dl and mean WBC fall 500/mm^3. One patient developed transient neutropenia (nadir=912/mm^3) at wk 12. Non hematologic toxicity essentially occurred only during IL2. Two patients developed fevers, 1 chills, 1 myalgias and 1 nausea. One additional patient was dropped due to severe nausea at wk 2. Absolute CD4 counts fell over the 20 study wks (mean -146/mm^3) but during the 4 wks of ZDV and IL2 rose transiently (mean +360/mm^3). Interestingly, using in vitro assays virus-specific non-MHC restricted cellular cytotoxicity, NK activity and LAK activity were significantly augmented in all 4 patients during IL2 administration, and have remained elevated in 1 patient. One patient was p24 Ag and virus culture positive at entry; both remained positive throughout the study. No patient became antigenemic or viremic during IL2.
Conclusions: ZDV and IL2 are well tolerated by patients with asymptomatic HIV infection. IL2 related toxicities were minor and the mild hematologic toxicity of ZDV was not worsened by IL2. Reactivation of latent HIV infection did not occur with IL2 in the presence of ZDV as assessed by stable CD4 counts, p24 Ag levels and virus cultures. Given the promising evidence of stimulated immunologic reactivity, this combination deserves further clinical study.

W.B.P.326 COMBINED TREATMENT WITH ZIDOVUDINE AND LYMPHOBLAST INTERFERON ALPHA IN PATIENTS WITH HIV-RELATED KAPOSI's SARCOMA

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Objective: To assess efficacy and side effects of combination therapy with low dose zidovudine (AZT) and lymphoblast interferon alpha (IFN) in patients (pts) with AIDS-related Kaposi's sarcoma (KS).
Methods: In an ongoing study 16 homosexual HIV-positive men with histologically confirmed KS are treated initially with 10 MegaU IFN/d s.c. and 2 x 250 mg AZT/d. Evolution of KS (CR = disappearance of all lesions, PR = ≥ 50% of lesions resolved, MR = minor remission, <50%), adverse effects, immunological parameters and effect on p24-antigenaemia are assessed. Follow up ranges from 4 weeks to 8 months.
Results: 11/16 pts responded: 2 pts with CR, 2 pts with PR, 4 pts with MR, 3 pts with stabilisation of progressive disease. No effect was noted in 5/16 pts: 3 pts had progressive disease, KS-lesions were unaffected in 2 pts.
P24-antigenaemia was present in 10 pts at the beginning of the study, p24 became undetectable in 7 pts, 5 of them showed also tumor regression. No substantial rise in CD4 counts was noted.
Marked anemia (< 10g/dl) occurred in 8 pts, minor decreases in hemoglobin developed in all other patients. Neutropenia (0.6<PMN<1.2 [x10^9/l]) was observed, but required no dosage modifications. Alterations in liver function tests were frequent, but less than 2 times base line values. No effect was seen on platelet counts, electrolytes and renal function. Full dosage was tolerated by 2 pts for 3 and 6 months, respectively. In 5 pts IFN dose was reduced because of adverse experiences attributable to IFN (3 pts) and anemia (2 pts). Treatment duration after dose adjustment ranges from 3 to 4 months.
Conclusions: Antitumor as well as antiretroviral effects of combined AZT/IFN-treatment can be demonstrated at considerably lower doses than used in previous trials. However, progressive anemia is a limiting factor and adverse effects attributable to IFN require further dose range finding studies.

W.B.P.327 LONG-TERM (18 MONTH) TREATMENT OF SEVERE HIV INFECTION WITH AN ALTERNATING REGIMEN OF AZT AND 2',3'-DIDEOXYCYTIDINE (DDC)

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Objective. AZT and ddC are 2 pyrimidine dideoxynucleosides (ddN) with activity against HIV and different limiting toxicities. AZT can cause bone marrow suppression, while continuous high-dose ddC can cause painful peripheral neuropathy after 6 to 11 wks. We explored whether an alternating regimen of AZT and ddC would reduce toxicity from both drugs.
Methods. 18 patients (pts) with AIDS or poor-prognosis ARC (median 118 T4 cells/mm3 at entry) were given AZT (200 mg orally every 4 hrs for 7 days) alternating with ddC (0.03 mg/kg every 4 hrs [10 pts] or every 8 hrs [8 pts] for 7 days).
Results. Of the 18 pts, 9 are on the original regimen 42-85 wks after entry (mean 61 wks) without developing substantial toxicity. Of the 9 pts who were taken off, 4 developed complications of HIV infection (1 *M. avium* sepsis, 1 lymphoma, 1 thrombocytopenia, 1 increased KS) and 5 pts developed drug toxicity (1 rash at wk 5, 1 arthralgias at wk 10, and 3 neuropathies at wks 25, 27, and 61). One pt died of KS; 16 are known to be alive. In pts receiving ddC every 4 hr, mean T4 cells increased 62/mm3 above entry at wk 18 ($p<0.05$) and were still 40/mm3 above entry at wk 54. In pts receiving ddC every 8 hr, the mean T4 cells were 38/mm3 above entry at wk 18 (wk 54 data not available as the 1st 10 pts entered received ddC every 4 hr). Serum HIV p24 Ag declined substantially in both groups. Overall, pts noted increased energy upon starting the regimen and gained a mean of 3.9 kg by wk 24.
Conclusion. Alternating regimens of AZT and ddC can be tolerated for at least 18 months in some pts. The regimens have clinical activity against HIV and appear to be less toxic than either drug used alone.

W.B.P.328 DAILY SUBCUTANEOUS RECOMBINANT GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR IMPROVES THE NEUTROPENIA INDUCED BY AZIDOTHYMIDINE IN PATIENTS WITH AIDS/ARC; Follow-up.

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OBJECTIVE - To determine safety and efficacy of subcutaneous recombinant Granulocyte-Macrophage Colony Stimulating Factor in patients with AZT induced Neutropenia.
METHODS - We have studied the use of once daily subcutaneous (GM-CSF) in 17 patients who developed neutropenia (<1000 Neutrophils) on full dose (1200 mg/d) AZT therapy.
RESULTS - Prior to beginning rGM-CSF, the mean neutrophil count was 790 (range 378-1023) and the mean T4 count was 38 (range 0-139). 14/17 patients required 1.0 mcg/kg/d rGM-CSF to maintain an absolute neutrophil count (ANC) of >1000. 2/17 required 3.0 mcg/kg/d and 1/17 required 5.0 mcg/kg/d. ANC was >1000 (mean 3111 - range 1376-7476) within one week in 15/17 patients. There was no stimulation of HIV by serum p24 antigen or culture of peripheral blood mononuclear cells. 14/17 patients required red cell transfusions for AZT induced anemia. Toxicities were mild and included fever responsive to ibuprofen 11/17, erythema at the injection sites that resolved after continued use in 14/17 and thrombocytopenia (platelet count <50,000/ul) in 5/17. There was one episode of OI (PCP) and 3 episodes of documented bacterial infections (2 with ANC >1000/ml one with ANC 225/ml). All responded to appropriate therapy.
CONCLUSION - rGM-CSF is well tolerated in patients who become neutropenic on full dose AZT.

W.B.P.329 THE USE OF AN ALTERNATING REGIMEN OF AZT AND SUBCUTANEOUS (SC) GM-CSF IN PATIENTS WITH SEVERE HIV INFECTION AND LEUKOPENIA

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Objective. To evaluate the toxicity and activity of an alternating regimen of AZT and GM-CSF in patients (pts) with severe HIV infection and leukopenia.
Methods. SC GM-CSF was administered to four pts who had used prior AZT and 5 who had not on a continuous basis 3 times a day for 12 days. Following a 2 day rest period, 200mg of AZT orally every 4 hours was given for 7 days, followed by 5 days of SC GM-CSF as before, followed by a 2 day rest period. This 14 day cycle was administered repeatedly.
Results. During the initial 12 days of continuous GM-CSF, there was an increase in serum HIV p24 antigen (1413 ± 1195 pg/ml at wk 2 vs. 505 ± 384 at entry, $p=0.05$) in each of 6 patients who had detectable levels. Subsequently, these levels fell on AZT. All pts had significant elevations in their leukocyte counts while on GM-CSF. During alternating therapy, the WBC increased during GM-CSF and declined on AZT. Pts' Hgb values declined, and their MCV's rose, but less than was reported using continuous AZT alone. The T4 cells in pts with no prior AZT treatment rose significantly ($p=0.05$), while those with prior AZT usage did not. Toxicity from GM-CSF was minimal and the regimen was well tolerated. Most pts reported improvements in their sense of well-being.
Conclusion. GM-CSF given SC increased WBCs in pts with severe HIV infection and leukopenia. However, an increase in HIV p24 Ag was seen after 2 weeks of continuous GM-CSF. When GM-CSF was then given alternating with AZT, there was less hematologic toxicity than seen with full dose AZT. Also, rises in T4 counts were seen, particularly in pts with no prior AZT use. Combination therapies with concurrent GM-CSF and AZT may be worth exploring further.

W.B.P.330 AUGMENTATION OF NON-MHC RESTRICTED CELLULAR CYTOTOXICITIES IN PATIENTS RECEIVING ZIDOVUDINE PLUS INTERLEUKIN 2

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Objective. To correct defects in cellular cytotoxicities among asymptomatic HIV-1 infected individuals by administration of IL-2.
Methods. Patients entered onto ACTG Protocol 042 received 200mg Zidovudine (ZDV) orally 5 times daily for 21 weeks. During weeks 9-12, patients received 10^5 BRMP units/M^2 of recombinant IL-2 by I.V. bolus injection. At specific timepoints before, during and after IL-2 administration, peripheral blood mononuclear cells (PBMC) were obtained and tested for cytotoxic reactivity in 6-hr ^{51}Cr release assays against gp120 expressing cells as well as K562 (NK) and Daudi (LAK) targets.
Results. Administration of recombinant IL-2 produced significant augmentation of HIV-1 gp120 specific non-MHC restricted cytotoxicity in all 4 patients. Peak levels of cytotoxicity were observed between the first and second weeks of IL-2 administration. Parallel increases in NK and LAK activities were observed. Augmentation was transient and apparently not linked to significant changes in CD16$^+$ effector cell populations. Slight improvements in the proliferative responses to mitogens and/or recall antigens were noted in a few of the patients.
Conclusions. Administration of IL-2 produces a significant increase in generalized cytotoxic reactivities in the absence of any overt toxicities. The augmentation is, most likely, due to a transient correction of an effector cell defect which appears early in the course of HIV-1 infection.

W.B.P.331 ZIDOVUDINE (AZT) TREATMENT OF THE AIDS DEMENTIA COMPLEX (ADC): RESULTS OF A PLACEBO-CONTROLLED, MULTICENTERED THERAPEUTIC TRIAL

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Objective: To determine the efficacy of AZT in alleviating mild to moderate ADC in HIV-1-infected patients with relatively preserved $CD4^+$ cells.
Methods: 40 patients with mild to moderate ADC from 9 centers were randomized to 3 treatment arms: AZT 400mg 5/day, AZT 200mg 5/day, or placebo 5/day. We report the results of preliminary analysis of the initial 16-week phase of the trial comparing the 2 AZT groups (which remain blinded) to the placebo group. Therapeutic efficacy was evaluated using standardized neurological assessments and 8 "screening" neuropsychological tests.
Results: This phase of the trial was administratively aborted before the planned accrual. 27 patients completed 8 weeks and 24 completed 16 weeks of the trial; 12 patients were prematurely terminated when the trial was aborted while 2 suffered adverse events and 4 withdrew from the study. The 3 groups were well balanced with respect to baseline parameters including $CD4^+$ counts (entry mean, 525). While there was no appreciable change in the overall classification of ADC severity across the 3 groups and individual test comparisons were significant ($p<.05$) in only 2 of 8 neuropsychological tests at 16 weeks, the placebo group exhibited the least favorable change in 7 of the 8 tests at 8 weeks and in all 8 tests at 16 weeks.
Conclusion: Despite the small sample size, these data support a therapeutic effect of AZT in improving neuropsychological performance in ADC patients. Further analysis will be needed to determine whether this is dose-related.

W.B.P.333 SURVIVAL OF PATIENTS WITH HIV DISEASE TREATED WITH ZIDOVUDINE (AZT)

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Objective. To determine the probability of survival in patients with HIV disease treated with zidovudine (AZT).
Methods. From 11/86 through 12/87, patients meeting current USFDA indications for treatment received AZT. Initial dose used was 1-1.2g/day with reductions made at the discretion of the physicians when patients experienced toxicity. Survival was calculated using Kaplan-Meier plots.
Results. 116 patients with the following characteristics were treated: 96 men, 20 female, 54 gay, 47 IVDA, 15 other risks, 100 white, 16 non-white, median age 35. The indication for treatment was AIDS in 60 and T-helper depletion (THD) in 56. The median follow-up was 68 weeks. Survival at 26, 52, and 78 weeks was 88, 76, and 64%, respectively. Median survival was 94 weeks. Patients with THD had better survival than those with AIDS (89 vs. 63% at 52 weeks, $p=0.02$). Among patients with AIDS, those starting AZT within 8 weeks of the AIDS-defining OI survived better than those starting later (80 vs. 44% at 52 weeks, $p<.01$). When those starting later were excluded, survival was 92, 84 and 76% at 26, 52 and 78 weeks. Survival was not different when analyzed by sex, risk factor, or age ≥ 40. A trend toward worse survival in non-whites did not reach significance.
Conclusion. This study provides survival data useful for prognostication in patients treated with AZT according to current practices. Because survival is improved in those treated for THD or early after diagnosis of AIDS, initiation of AZT therapy should not be delayed.

W.B.P.335 A PHASE I/II TRIAL OF THE COMBINATION OF ZIDOVUDINE AND INTERLEUKIN-2 IN THE TREATMENT OF HIV-RELATED KAPOSI'S SARCOMA

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Objective. To evaluate the toxicity and efficacy of the combination of zidovudine and interleukin-2 in the treatment of HIV-infected patients with Kaposi's sarcoma. Methods. In an open study, patients with HIV infection documented by ELISA, western blot, or culture, and biopsy-documented Kaposi's sarcoma were begun on zidovudine 200 mg q4H. After six weeks, the patients were begun on continuous infusions of IL-2 for 3 weeks, during which time zidovudine therapy was continued. Groups of three patients were enrolled at increasing doses of IL-2, beginning at 250,000 U/d, until the the maximum tolerated dose was determined. The combination of drugs was evaluated for toxicity and efficacy by weekly monitoring of routine blood values, including CBC and chemistries, as well as CD4 count, p24 antigen and HIV cultures. Results. Three patients have completed the study to date, all at a dose of 250,000 U/d of IL-2. No significant toxicity has been seen, although 1 patient had recurrent bacteremia due to infected central lines. No significant immunostimulating or anti-retroviral effects have been seen at this dose of IL-2. Two patients remained HIV culture positive, and 1 patient with p24 antigenemia had no change in antigen levels during IL-2 therapy. Conclusions. IL-2 can be safely administered at a low dose in combination with zidovudine. Completion of the study will determine if higher doses of IL-2 can also be safely administered, and if there is a beneficial effect seen during combination therapy.

W.B.P.332 STUDY COMPLIANCE AMONG ASYMPTOMATIC HIV SEROPOSITIVES (ASX HIV+) BEING TREATED WITH AZIDOTHYMIDINE (AZT)

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Objective. To measure compliance and identify factors related to degree of compliance among participants in an experimental trial of the efficacy of AZT in preventing/slowing the development of AIDS.
Methods. Twenty (19 male, 1 female) ASX HIV+ enrolled in a double-blinded, placebo controlled trial in which 5 doses (3 capsules each) per day of high or low dose AZT or placebo were prescribed (ACTG Protocol 019) completed daily forms assessing missed doses and physical symptoms for an average of 60 days (Range=10 to 162) and underwent brief psychological assessment.
Results. Subjects reported missing an average of 6% (Range=0-24%) of all doses. Average number of missed doses per day was approximately 1 of 15 capsules, with the last dose of the day the most frequently missed - average of 13% of the time. No subject dropped out or reported using other nonprescribed treatments during the period of study. More missed doses was significantly ($p<.05$) correlated with younger age, nausea, diarrhea, psychological distress, and health beliefs.
Conclusions. Data from one center indicate that, while drop-out among ASX HIV+ enrolled in a placebo-controlled AZT study is not encountered, missed medication doses are common. Patient self-monitoring provides a useful means of estimating missed doses and investigating the determinants of noncompliance.

W.B.P.334 Reduction of Zidovudine Side Effects by an intermittent Therapy Scheme

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In a dosage from 1000 - 1200 mg/d, Zidovudine (AZT), in spite of its life prolonging effect, causes myelotoxic side effects. By an intermittent therapy scheme with a drug-free regeneration period, these side effects on hematopoesis might be avoided.
We therefore report on 16 patients (7 AIDS, 9 ARC) with an intermittent AZT regimen. Therapy scheme consits of application intervalls (AI) of 4 wks (1000 - 1250 mg/d), followed by a 4 weeks' break. At present, 16 patients have finished 2 AIs, and of these, 10 pts. have finished 3 AIs. Total observation time is 176 ds (median); min. 120, max 254 ds. Initial symptoms (nausea, headaches) mainly occured during 1st. AI and in only 2 cases also at early 2nd AI. Mean body weight increased > 10 % of inital value (from median 59 to 67 kg). Also the patients' physical and mental abilities increased significantly. CD4+ cell count increased by 37 % (median) after 1st AI, by 7 % after 2nd AI. During 3rd AI, it went down to initial value. Hb and leucocytes were normal; anemia or leucopenia was not found. MCV was only slightly increased. Up to now, there have been no opportunistic infections nor death cases.
Conclusion: Intermittent AZT regimen, as continuous therapy, led to an increase in patients' well-being, and to transient increase in CD4+ cell count. However, the lack of any myelotoxic side effects was remarkable.

W.B.P.336 ZIDOVUDINE USE IN INTRAVENOUS DRUG USERS.

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Objective: To describe characteristics and effects of zidovudine usage in an intravenous drug user population.
Methods: A retrospective review of 43 patients studied from 2/87 through 7/88 who were followed bi-weekly in a clinic environment with complete cell counts (CBC) chemistry profiles and physical examinations.
Results: Seven patients never filled their prescriptions. Of the remaining 36 (30 males, 6 females) the mean duration of therapy was 6 months. CBC testing showed 14/36 with a significant decrease in white cell count, and 4/36 with a significant decrease in hemoglobin (all four with Mycobacterium Avium-Intracellulare infection). Subsequently 6/36 felt improvement with four showing greater than 10 pounds of weight gain, 7/36 had worsening of their condition with five developing Mycobacterium Avium-Intracellulare infection. No patients showed improvement in CD 4 cell counts and 50% showed decreases.
Conclusion: Leukopenia was the primary effect noted and Mycobacterium Avium-Intracellulare infection the principal documented reason for deterioration on therapy. Side effects however are comparable to those reported in the homosexual cohorts studied.

W.B.P.337 OUTCOMES OF TREATMENT WITH AZT OF PATIENTS WITH AIDS AND SYMPTOMATIC HIV INFECTION (ARC)

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Objective. To assess the effectiveness of AZT and the incidence of hematological toxicity in a standard clinical practice.
Method. A retrospective chart review of 101 patients with AIDS (73%) and ARC (27%) treated with AZT at a public hospital clinic in Los Angeles County. The patients have been followed for a mean of 7 months (range 1-20) by MD's and NP's. Initiation of AZT required a CDC-defined diagnosis of AIDS or an absolute CD-4 lymphocyte count of $<200/mm^3$. The AZT dose was 200 mg q4h.
Results. The patients are 60% Cauc., 21% Hisp. and 20% Blk., mean age 37 and predominant risk factor of homo/bisexuality (76%). After 7 months (mean) of AZT therapy, 77% of the patients survive, 18% are dead and 5% lost to follow up. Decrease in AZT dose due to anemia, neutropenia or both was necessary in 33 patients. Transfusions were required for 23. Five modified their dose for personal reasons. In most instances, (84%) the need for modification was permanent. Most of the patients who required dose modification had AIDS and/or CD4 lymphocyte counts $<150/mm^3$. AZT treatment had been carried out for an average of 11 months in the patients that died; most had already discontinued AZT.
Conclusion. Compared to historical controls, AZT prolongs life for patients with HIV infection. Drug toxicity and the progression of immunodeficiency limit survival.

W.B.P.338 AZT THERAPY IN INFECTED PEOPLE: EFFICACY AND SIDE EFFECTS.

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Objective. To study the efficacy and toxicity of long term administration of Zidovudine (AZT).
Methods. From August 1987 to December 1988, 40 HIV Ab +ve subjects with various clinical features (5 OI-AIDS, 2 SK-AIDS, 27 ARC-CDC IVa, 14 GF/PGL (WR5) were treated with AZT (10 mg/Kg/d) for an average period of 9 months.
Results and conclusion. Nine/40 patients (5 AIDS + 2 ARC) developed Opportunistic Infections during the treatment period. An important improvement of lymphocytes number was found in 26/40 patients, but the CD4+ cells have raised significantly in 10 patients. Clinical side effects occurred in 19 patients as follow: slight fever (11), nausea (7), headache (4), rash (4) and convulsions (2). The most important adverse reactions were haematologic - TABLE I. After 4 months five/25 patients needed blood transfusions for severe anemia and therapy became discontinue and then was stopped. A raise of MCV was seen in 20/25 subjects. Analysis of red cells volume hystogram showed a progressive appearance of a double peak picture due to the arise of a new population of red cells with higher size, although the average MCV could be within normal values. We underline the opportunity of including this analysis to monitorize the haematologic side effects of AZT therapy.

TABLE I

Hb g/l*	0
> 12	6
12 > 9	14
9 >	5

* after 4 months

W.B.P.339 ZIDOVUDINE TREATMENT OF HIV INFECTION: CLINICAL&IMMUNOLOGICAL EVALUATION.

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Objective: To evaluate the effect of zidovudine in HIV infection.
Methods: 33 HIV-patients were included: 24 with AIDS and 9 with ARC. Mean age was 30 y (r:24-59). There were 24 IV drug abusers, 5 homosexuals, 2 bisexuals and 1 heterosexual contact. The AZT dose was 1.200 mg/d,adjusted to the haematologic parameters. The patients were divided in 2 groups: A) AIDS, B)ARC. The mean follow-up time was 20 weeks (8-28). A monthly clinical evaluation was performed and an immunological evaluation was done every 8 weeks.
Results: Group A) The incidence of tumors and infections was not significantly lower than previous treatment. 10 patients died (42%) (6 opportunistic infections, 2 progressive encephalopathy, 2 non-Hodgkin linphoma). A transient improvement in the immunological parameters in the 8th. week was observed with subsequent decrease to lower levels than pretreatment ($\bar{x}$ CD4 week 0: $111/mm^3$; $\bar{x}$ CD4 week 24: $39/mm^3$). Group B) Neither opportunistic infection nor tumors were seen. No patient died and the general clinical state was better than the beginning of treatment. There was an improvement in the immunological parameters during the first weeks followed by a impaired in the later weeks ($\bar{x}$ CD4 week 0:$165/mm^3$; $\bar{x}$ CD4 week.16: $466/mm^3$; $\bar{x}$ CD4 week 48:$253/mm^3$).
Conclusions: AZT did not show useful in the advanced disease. In previous stage it seems to be clinically effective, but it did not produced immunological improvement. It's necessary to establish a patient selection.

W.B.P.340 ZIDOVUDINA(AZT) TREATMENT IN AIDS AND ARC

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Objective.To evaluate efficacy of AZT (2.8mg/kg/q4h) on lymphocyte subset and antigenaemia(HIV1Ag) in an open controlled trial.
Methods. The study concerns 58 AIDS with Candida Esophagitis,P.Carinii pneumonia,chronic mucocutaneous ulcers due to HSV,AIDS dementia complex,Wasting Syndrome,disseminated CMV or Criptococcosis,and Toxoplasma encephalitis.Every pt. had at least two major infections associated.AZT treatment included also 54 ARC belonging to CDC group 4A or 4C2,with CD4<200mm3.Peripheral lymphocytes(PL) CD4 and CD8 determined by monoclonal antibody with Epics C cytofluorimeter and the optical density(OD) of HIV1Ag,by Abbott Elisa(cut-off 0.86±0.19),were evaluated before and during AZT treatment.
Results.AIDS cases:PL,CD4 and CD8 did not improve on AZT,but HIV1Ag showed significant reduction with 4-8 weeks from the beginnig of treatment (OD 0.28±0.35 v.s. 0.64±0.62;P>0.001,by the Wilcoxon's test for coupled data).53.3% of pts became HIV1Ag negative.ARC cases:an imrovement of CD4 was present on day 90 of AZT therapy(299±162 mm3 v.s.125±58,P>0.05)and HIV1Ag was reduced within 4-8 weeks (OD 0.12±0.05 v.s. 0.44±0.46,P>0.001).
Conclusion.AZT treatment determines a significant reduction of HIV1 antigenaemia in AIDS and ARC pts. with or without immunological improvement.

W.B.P.341 NEUROLOGICAL AND IMMUNOLOGICAL EVALUATION OF A PATIENT TREATED WITH AZT WITH ACUTE HIV INFECTION AND ENCEPHALOPATHY.

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Objective: We describe a 30-year-old patient with signs of acute HIV infection treated with AZT because of persistent neurological dysfunction.
Methods: HIV serology, CD4 count, neopterin, β2 microglobulin, delayed hypersensitivity, MRI and neuropsychological evaluation regularly.
Results: A 30-year-old man with high risk homosexual behaviour months before was admitted with a one month history of severe weakness, lethargy, weight loss, mild fever, severe dysarthria and gait disorder. CSF revealed aseptic meningitis. MRI showed high signal intensity on T2 weighed images in the white matter of the cerebellum. A CT-scan was normal. HIV serology was repeatedly inconclusive for one month (only p 17 in WB) and thereafter positive. Immunological evaluation showed an immunosuppressed patient (WR 4). Because of the severity of the neurological dysfunction (AIDS dementia complex, stage 2) with corresponding findings in the MRI, AZT was started. In the following months, he slowly recovered clinically and immunologically (WR 1); even the MRI findings seem to be slightly improved.
Conclusions: (1) Persistent encephalopathy could follow seroconversion. (2) AIDS dementia complex and meningoencephalitis of acute HIV infection could be difficult to differentiate. (3) Immunological markers could be markedly changed during seroconversion and improve thereafter possibly under the influence of AZT.

W.B.P.342 FOLLOW UP AND TREATMENT OF 58 HIV-INFECTED PATIENTS IN GREECE.

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*1st IKA Hospital, Athens; **National Center of AIDS, Athens, GREECE

Objective: To present our experience from the follow up and treatment of 58 patients with HIV-infection in Greece.
Method: 58 patients with AIDS or ARC were studied, according to their clinical and laboratory findings, their CDC classification, their course in a period of 9 months, their response to treatment with AZT and their adverse reactions to therapy. AZT was administered to all patients with AIDS (14 subjects) and to those with ARC and a T4-lympocyte count <200 (10 subjects), initially at a dose of 1000 mg qd p.os which was gradually reduced to 300 mg qd within 6 months. The group of patients with AIDS consisted of 3 patients with P.carinii pneumonia, 5 with disseminated M.tuberculosis infection, 3 with HIV encepalopathy and 3 with Kaposi's sarcoma.
Results: The study lasted 9 months. The patients tolerated AZT well. Five of them showed a decrease of their Hct that led to early dose reduction and required multiple blood transfusions. Six patients with AIDS and all with ARC showed a clinical improvement.
Conclusions: 1. The patients in good physical condition and normal haematologic profile responded favorably to AZT.
2. The AZT-induced anemia was not severe enough to prevent us from administering the drug.
3. The platelet count was not significantly altered.
4. The 34 patients with ARC, who did not receive AZT showed a clinical deterioration but never fulfilled our criteria for administering AZT.

W.B.P.343 UPDATE ON AZT THERAPY IN AN INNER CITY POPULATION.

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OBJECTIVE: To evaluate efficacy, toxicity and compliance (comp) with AZT therapy among patients (pts) of poor, minority and intravenous drug use (IVDU) background in a clinic in New York City.
METHODS: Prospective data was derived on all AIDS and ARC pts on AZT for at least 4 weeks from 7/87-1/89.
RESULTS: 99 pts were evaluable:75 males,24 females;64 hispanic,25 black,8 white, 2 Asian: IVDU 59,homosexual 18,heterosexual contacts 15,transfusion 1, no known risk 6; 72 AIDS,27 ARC with low CD4(mean 138);mean age 35(range 22-59): mean Hct 34.3(range 21-54),WBC 4400(range 1.8-10.7);baseline mean Karnofsky score 83.6(range 50-100). 87/99(88%) were comp and received AZT for a mean of 30.3 wks(range 2-95 wks) total 2636 pt wks. All pts eventually received PCP prophylaxis. 57% had ≥1 adverse drug reaction (ADR) requiring dose reduction (44%) or cessation(13%). ADRs included: anemia 37%(18% required transfusion): leukopenia 33%: GI complaints 29%: headache 14%: fever 11%: rash 5%. Rates of anemia,transfusion,leukopenia,myalgias and insomnia were comparable, and nausea and headache less frequent than in published studies of other populations ($p<.05$). 83/87(95%) comp pts tolerated AZT for ≥ 4 wks. 17 opportunistic infections (OIs) occurred in 14/83 pts(17%) at mean of 35 wks (range 6-63 wks). 13/17(76%) OIs occurred in pts on reduced AZT. 6/83(7%) comp pts died (only 1 on full-dose AZT) vs 9/16(56%) noncomp or intolerant pts ($p<.05$). 85% of pts kept > 75% of clinic appointments: 10% kept 50-75%: only 5% kept < 50%.
CONCLUSION: AZT can be administered to IVDUs and others in inner city clinic settings with acceptable efficacy, tolerance and compliance.

W.B.P.345 EXPERIENCE WITH ZIDOVUDINE IN A CITY HOSPITAL AIDS CLINIC

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Objective: To evaluate the efficacy and toxicity of zidovudine (AZT) in patients (pts) with AIDS and ARC at Denver Department of Health and Hospitals (DHH).
Methods: A retrospective chart review of clinic and hospital records at DHH was done for all pts started on AZT between Nov. 1986 and June 1988. Follow-up was obtained through Dec. 1988. Product limit method was used for survival analysis (SA). Pts analyzed included those who survived >60d after Pneumocystis pneumonia in both the AZT and pre-AZT periods.
Results: A total of 137 pts received AZT, 11 for less than 28d. Of the remaining 126, 93 had AIDS and 33 ARC at the time of initiation of AZT. AIDS pts were diagnosed 0-608d (mean 83d) before starting AZT, ARC pts 0-1121d (mean 160d). Pts took the drug for 35-580d (mean 254d). Of 126 pts, 81(64%) experienced at least one adverse event (AE) requiring dose adjustment (mean 2.7 AE, range 1-10AE). AE included granulocytopenia (90), anemia (57), thrombocytopenia (4), malaise (18), GI intolerance (16), fever (10), rash (8), CNS effects (7), headaches (5). Of 126 pts, 27 (21%) required blood transfusions (range 2-12 units, mean 5 units/pt). AZT was discontinued (DC) in 31 pts (25%) 41-580d after initiation (mean 182d). Reasons for DC included malaise (6), granulocytopenia (5), GI intolerance (4), fever (3), other myelosuppressive treatment (6), hospice placement (4). Of the AIDS pts, 24 were followed from diagnosis to death at DHH and were hospitalized 0-8 times (mean 2.9). Twenty nine similar pts previously studied at DHH from 1982 through 1986 (pre-AZT) were hospitalized 1-16 times (mean 3.1). SA showed mean survival of 333d in pre-AZT pts compared to 593d in the AZT pts ($p<0.01$).
Conclusions: AZT significantly prolongs survival in AIDS pts although it is associated with frequent side effects leading to dose adjustments and DC of therapy. A retrospective analysis reveals no decrease in the number of hospitalizations since AZT has become available.

W.B.P.347 BENEFITS OF AZT WHEN STARTED AT INCREASING TIMES AFTER AIDS/PCP DIAGNOSIS.

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The survival of 172 patients who had PCP at AIDS diagnosis and received AZT was compared, by a retrospective case control analysis, to survival of 149 controls who had PCP at AIDS diagnosis but never received AZT. Case survival was calculated from day AZT was begun or day of AIDS diagnosis, whichever came later. Control survival was calculated from day after AIDS diagnosis its matched case started on AZT. Survival of subjects who received aerosolized pentamidine (AP) was censored at the day AP was begun. We specifically examined the difference in survival between cases and controls as a function of how long after AIDS/PCP the cases were started on AZT:

Days After PCP AZT Begun	N	Case Survival	Control Survival	P (Wilcoxon)
0-90	88	508	172	<.03
91-180	37	681	157	<.02
181-270	17	411	59	<.001
271-365	13	189	195	NS
>365	17	210	123	NS
All Cases	172	411	158	<.0001

Within the limits of a retrospective case-control method and in the population studied, a statistically significant benefit of AZT was found only in the subset that began AZT within 270 days of AIDS/PCP.

W.B.P.344 DEVENIR DE 365 MALADES ATTEINTS D'ARC OU DE SIDA ET TRAITES PAR AZT PENDANT 4 A 18 MOIS

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Objectif. Apprécier à moyen et long terme l'activité de l'AZT.
Méthodes. 365 malades atteints d'ARC (80) ou de SIDA (285) depuis 0.5 à 36 mois (médiane 4) ont été inclus dans cette étude prospective. La posologie initiale a été de 200 mg/4h chez 260 malades, de 200 mg/8h chez 105 en raison de leur état hematologique. L'age moyen était de 36 ans (extrêmes: 20-66). 71.5% des malades étaient homosexuels. Parmi les malades atteints de SIDA, 19 avaient un sarcome de Kaposi (SK) isolé, 190 une ou plusieurs infections opportunistes (IO), 72 un SK et une ou plusieurs IO, 2 un lymphome, 2 une encephalopathie VIH. Au début du traitement le nombre de T4/mm^3 était de 75±90 chez les SIDA, 140±105 chez les ARC. Le recul moyen depuis le début de l'AZT est de 50 semaines (médiane 40, extrêmes 24-77) pour les ARC et 59.4 semaines (médiane 60, extrêmes 16-78) pour les SIDA.
Résultats. Chez les ARC, 6 SK, 3 lymphomes et 27 IO sont apparus 27.4±16.3 semaines après le début de l'AZT. Dix (12.5%) malades sont décédés. Parmi les 32 malades suivis pendant ≥ 52 semaines (médiane 58), 9 (28.1%) sont morts, 8 (25.0%) sont au stade de SIDA. Chez les malades atteints de SIDA, 281 IO (chez 162 malades), 18 lymphomes, et 23 SK sont apparus et 56 des 91 SK préexistants se sont aggravés. Au total, 115 (40.4%) malades sont morts et 106 (37.2%) se sont aggravés. Chez les 213 malades suivis ≥52 semaines, sont apparus: 242 IO (chez 135 malades), 15 lymphomes et 18 SK: 44 (81.5%) des 54 SK préexistants se sont aggravés. 105 (49.3%) de ces malades sont morts.
Conclusion. En dépit du traitement par AZT, le pronostic des formes symptomatiques de l'infection par le VIH reste très sombre.

W.B.P.346 EFFECTS OF ZIDOVUDINE DIFFERENT DOSE REGIMENS ON CLINICAL, IMMUNOLOGICAL AND VIROLOGICAL INDICES OF ARC PATIENTS FOLLOWED FOR ONE YEAR.

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Objective The aim of this study was to assess the progression of clinical symptoms and laboratory indices in HIV infected patients (intravenous drug users = IVDU) who received Zidovudine for 12 months at least in different dose regimens with or without Acyclovir in comparison with untreated subjects
Methods The trial included 60 IVDU (mean age 27.1 years) belonging to groups III and IV (AIDS excluded) of the CDC classification system. For all the subjects the number of peripheral blood CD4 lymphocytes was more than 150/cmm. The IVDU were allocated at random in groups of 20 subjects each, to one of the 3 following strategies: group A, AZT 200 mg/4 h; group B, 200 mg/6 h; group C, AZT 200 mg + Acyclovir 300 mg/6 h. Other 17 IVDU- ARC patients (ma = 26,7 y) who refused any antiviral therapy were considered as control (group D). During the follow-up, clinical and laboratory data were regulary collected (including CD4 cell number, virus isolation, serum HIV-Ag and anti-p24 titres, B2 microglobulin and Neopterin serum levels
Results During the trial 4 subjects dropped out the study (2 in group A, 1 in group C and 1 in group D) and no patient died. Among the treated subjects only 1 in group B (5%) developed AIDS in comparison with 3/16 (18.7%) in control group D. CD4 number significantly increased in treated subjects if compared with control group. The mean number of CD4/cmm in groups A and B changed from 221 and 196 at beginning of the study to 330 ($p=0.04$) and 337 ($p = 0.03$) respectively at month 12 of the follow-up; similarly, CD4 increased in group C (m0 = 303; m12 = 383; $p=0.02$). A decrease was observed, on the contrary, in the control group: m0 = 323; m12 = 244. Initially, 21 patients were HIV-Ag positive (6 in group A, 7 in group B, 5 in group C and 3 in group D). The appearance of HIV-Ag was not observed in anyone of the treated subjects, while it occurred in 2 untreated patients. A statistically significant decrease of HIV-Ag geometric mean titre was observed in the 3 groups of treated patients while it increased in group D. Anti-p24 titre was initially similar in all the 4 groups examined even if lower than in asymptomatic subjects (CDC II). This titre was constantly low in treated subjects while progressively decreased in untreated patients even if not significantly. The frequency of HIV isolation from peripherial blood lymphocytes was similar in treated and untreated patients. No significant change in B2M and Neopterin serum level was observed in the 4 groups. During the study no severe side-effect was observed and, consequently, no adjustment of the therapy was necessary. Nevertheless, a significant increase of MCV ($p<0.0001$) was noted in groups A, B and C; this often is an early sign of AZT toxicity.
Conclusions After 1 year AZT treatment of 60 ARC patients, no disease progression was observed (except 1 case) even in the groups who received drug every 6 h (instead of 4 h). Immunological and virological indices too, showed that HIV infection progressed slower in treated patients in comparison with untreated subjects.

W.B.P.348 PROGRESSION OF HIV INFECTED HEMOPHILIAS UNDER AZT TREATMENT ONE YEAR FOLLOW UP STUDY.

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Objective. To evaluate the tolerance, safety and effectiveness of zidovudine (AZT) treatment according to the clinical stage (Walter-Reed system) at the beginning of the treatment.
Methods. 15 HIV(+) Hemophiliacs aged 17-62 years,classified to WR 3,4 (n=11)(group A) and WR5(n=4)(group B) were under AZT(1 gr/day) for 6 to 15 months and evaluated clinically and laboratory monthly.
Results and Conclusions. All patients showed clinical and laboratory improvement during the follow-up months 1-3. 2 out of 11(gr. A) and 3 out of(gr.B) patients developed opportunistic infections at 6-12 months. Laboratory findings (see table). During the follow-up 2 out of 11(gr. A) and 2 out of 4 (gr. B) showed rising titers of HIV-Ag after the initial decrease.

Time (months)		0	1	3	6	9	12
Group A:	T4 (/mm3)	129	207	220	266	282	211
	Hct(%)	41	37	37	37	38	37
	WBC	4.200	3.800	2.300	3.000	3.300	3.500
Group B:	T4 (/mm3)	45	175	89	48	70	31
	Hct(%)	33	33	31	27	27	29
	WBC	3.400	3.500	2.300	2.400	1.700	1.900

These data suggest an early initiation of AZT treatment.

W.B.P.349 ZIDOVUDINE(AZT) IN HIV POSITIVE HAEMOPHILIACS

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Objective. To review the effect of zidovudine in HIV positive haemophiliacs

Methods: A retrospective analysis of 21 patients treated with zidovudine at the Haemophilia Centre of the Royal Free Hospital was performed. 14 were CDC IV, 1 was CDC III with thrombocytopenia, 4 had oral candidiasis, and 2 were CDC II but elected to purchase zidovudine privately. Median age was 33yrs(range 21-69) and they had been known to be HIV Ab positive for 42 -107 months (median 73 months) They received zidovudine for 1 - 55 weeks (median 20 weeks)

Results. 9 patients tolerated full dose zidovudine(1000 mg/d) without a change in dosage or side-effects. 12 patients required dose modification or cessation of medication due to anemia requiring transfusion(3), granulocytopenia(5), pancytopenia requiring transfusion(1), vomiting(1), poor compliance(1) and conversion to alternative medicine(1). Other side-effects were anorexia, headaches and fatigue. Opportunist infections that occured whilst on zidovudine were oral candidiasis(2), a possible relapse of PCP(1), Salmonella typhimurium septicaemia(1), cryptosporidiosis(1) and E. Coli sepsis from a UTI(1). 3 patients improved their T4 counts, 6 deteriorated, and 11 remained the same - some of these had a non-sustained rise in their T4 counts. 4 of 5 thrombocytopenic patients responded to zidovudine. 5 of 8, P24 Ag positive patients became negative, 2 remained positive and 1 has only had therapy for 1 week.

Conclusion. zidovudine is an effective treatment for symptomatic HIV infection in haemophiliacs, particularly for thrombocytopenia. However, there were significant side-effects anemia in 3/21(14.3%),granulocytopenia in 5/21(23.8%), and pancytopenia in 1/21(4.7%)

W.B.P.350 ZIDOVUDINE THERAPY IN HOMOSEXUAL/BISEXUAL PATIENTS WITH AIDS-RELATED COMPLEX (ARC) IN AUSTRALIA.

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Objectives: To monitor the efficacy, toxicity and safety of zidovudine (ZDV) therapy in patients with AIDS-related complex (ARC) in a multi-centre clinical trial in Australia. Methods: Patients with ARC have been enrolled in the study since June, 1987. By June 1988, 301 homosexual/bisexual males had been enrolled, 95% of whom were still alive by 30 November, 1988. Using time to development of an AIDS-defining condition (TTAIDS) as a measure of the efficacy of ZDV, Kaplan-Meier survival curves were prepared for baseline clinical and laboratory values for these patients (Hb, WCC, CD4, age, time from diagnosis (Dx) to ZDV therapy, Karnofsky performance status (PS), and compared using the log rank test. A multivariate analysis of these same variables was performed using Cox regression analysis. Safety and toxicity were evaluated in terms of mean dose level of ZDV tolerated and need for transfusions during therapy. Results: Sixty-nine of the patients (23%) had developed AIDS conditions. Significant differences (< 0.05) in survival curves for TTAIDS were found for CD4 counts < 50 x 10^9, Hb < 12g/dl, Dx to ZDV time > 12/52 and PS <80. CD4 counts < 50 x 10^9 was the only baseline variable independently associated with poorer TTAIDS in this analysis. The mean dose of ZDV was 1.0g. Sixty-five patients (21%) required transfusions during therapy, of whom 27 were transfused only once.

Conclusion: ZDV appears to be well-tolerated in this group of ARC patients and baseline CD4 counts is independently associated with TTAIDS.

W.B.P.351 CESSATION OF ZIDOVUDINE (AZT) THERAPY LEADS TO INCREASED FREQUENCY OF VIRAL ISOLATION.

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Jewish General Hospital, Montreal, Quebec, Canada, and the Canadian Multicentre Study.

Objective: To carry out a dose-finding-toxicity study on 72 HIV-infected adults (CDC stages II and III) and to assess viral burden in such individuals.

Methods: HIV-1 was isolated from the circulating mononuclear cells of each subject at regular intervals throughout the study. Subjects received 600 mg drug per day for 18 weeks, 900 mg for 9 weeks, and 1200 mg for an additional 9 weeks. After 36 weeks, drug was withheld for 6 weeks and restarted at 42 weeks at 1200 mg/day.

Results: HIV was isolated from patients about 40% of the time both prior to treatment and at the end of 36 weeks, with average time to culture positivity of 19 days. At the end of the wash-out and following re-initiation of therapy, HIV was isolated in 75% of cases, with time to positivity of 12 days. These data correlate with the results on circulating p24 levels in these patients, and suggest that a 6-week drug wash-out period may result in increased viral burden.

Conclusion: Shorter wash-out periods should be used, when appropriate, to overcome the toxic effects of this drug.

W.B.P.352 IMPROVEMENT OF SURVIVAL IN AIDS PATIENTS WITH ZIDOVUDINE THERAPY.

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Objective. To compare survival after AIDS diagnosis, in patients admitted to our department before and after the introduction of zidovudine therapy.

Methods. We evaluated survival after the diagnosis of AIDS (Kaplan-Meier method) during 1985-1986-1987 (before zidovudine became available at our department) and in 1988 (when zidovudine was available for routine therapeutic use). Zidovudine was administered according to the Italian National AZT Programme (200 mg every four hours).

Results. Out of 100 patients, 93 were evaluable (minimal follow-up of 2 months); most of them (89%) were IVDA. 49 patients, observed in 1985-1987, did not undergo zidovudine therapy, regardless of their clinical condition. 43 patients, observed in 1988, were treated with zidovudine if responding to the inclusion criteria of the Italian National AZT Programme.

SURVIVAL FROM AIDS DIAGNOSIS % (Kaplan-Meier method)

month	3	6	12
1985-1987 ("pre-AZT era")	61.4	38.6	27.3
1988 ("AZT era")	76.4	69.4	59.5

Conclusions. Earlier diagnosis of AIDS and improvement in treating opportunistic infections, probably contributed to the observed increase of survival rates. Nevertheless, our results seem to confirm the favourable effect of zidovudine treatment on the survival of AIDS patients, also in IVDA, for which a poor compliance to long term therapies is to be expected.

W.B.P.353 EFFICACY OF AZT IN A MUNICIPAL HOSPITAL CLINIC

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Objective. To evaluate survival of AIDS and ARC patients treated with zidovudine (AZT) at a municipal hospital clinic.

Methods. Patients (pts) eligible for AZT under the Treatment IND or the FDA's licensed indications were treated in a specially designated clinic at Bellevue Hospital. Records of patients with at least one follow-up visit between Dec 86 and Nov 88 were reviewed using a standardized data form.

Results. 245 pts fulfilled the criteria for analysis: 220 males, 25 females; 141 whites, 61 hispanics, 39 blacks and 4 others; 146 homo/bisexual men, 82 with history of IV drug abuse; 82 pts had ARC and 163 AIDS. Median age was 37. Median survival (ms) of the entire group by the product limit method was 529 days (range 6-721) from the time of starting AZT. There was no difference in survival by sex. ARC pts lived longer than AIDS pts (ms 553 v 480, p=.01). Pts with 1 opportunistic infection (OI) prior to AZT lived longer than those with more than 1 OI (ms 501 v 357, p<.02). Initial absolute lymphocyte count above 1188/cu mm, absolute CD4+ lymphocyte count above 110, and albumin over 4 g/dl were associated with significantly longer survival by univariate analysis. Pts who started AZT within 90 days of their first AIDS diagnosis lived significantly longer. Those who tolerated an average AZT dose above 5.6 grams/week survived longer than pts treated with lower doses (p<.003). Adverse reactions included anemia in 80 pts, leukopenia in 51, nausea in 28, thrombocytopenia in 25, hepatitis and myositis in 16 each, and other toxicity in 36.

Conclusion. Patients from a municipal hospital population treated with AZT survived at least as long as those reported in other trials.

W.B.P.354 THE EFFECT OF ZIDOVUDINE (AZT) ON SURVIVAL OF AIDS PATIENTS IN SAN FRANCISCO

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Objective. To evaluate the effect of zidovudine (AZT) on survival trends for AIDS patients diagnosed in San Francisco (SF) in 1986 and 1987.

Methods. Information on antiviral therapy was available for 668 (25%) of 2,723 AIDS patients diagnosed in 1986 or 1987 in SF. We evaluated survival for 172 AIDS patients treated with AZT at some point during the course of their illness compared with survival for 485 AIDS patients who were not on any antiviral therapy at time of diagnosis (and, if known, subsequent to diagnosis). Eleven patients using other antivirals were excluded. Median survival was calculated using the Kaplan-Meier product-limit method.

Results. The median survival for patients on AZT (21.3 months) was significantly longer than for patients not on any antiviral therapy (13.9 months) (p<0.001). Improved survival for patients on AZT was found for both patients with (21.6 vs. 14.9 months) and without (21.3 vs. 13.1 months) Pneumocystis carinii pneumonia within 3 months of diagnosis (p<.001). Improved survival for patients on AZT was found for all subgroups of patients when stratified by initial diagnosis, year and hospital of diagnosis, age, race/ethnicity, or risk group, suggesting that the improved survival for patients on AZT was probably not due to biases inherent in the sample.

Conclusion. Survival for patients on AZT was significantly longer than that for patients not on antiviral therapy in a sample of AIDS patients in SF.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

W.B.P.355 ZIDOVUDINE (AZT). PREVENTIVE TREATMENT OF AIDS IN HIV SEROPOSITIVE PATIENTS ?

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To assess the efficacy of Zidovudine (AZT) in the prevention of AIDS we conducted, in September 1987, an open study in 75 non AIDS/HIV seropositive patients with a low T4 cell count (CD4 < 300/ul). 39 patients (groupe I) received AZT (20 mg/kg/d) and 36 patients (groupe II) received no treatment. At entry, group I and II patients were comparable in terms of age, sex and risk factors.

	Asymptomatic	PGL	ARC	P24 Ag	P24 Ag pg/ml mean	CD4 cell/ul mean
Group I (n=39)	12	11	16	15	387	180
Group II (n=36)	7	17	12	14	285	185

During the first 12 months of follow-up, AIDS occurred in 10 group II patients (7 opportunistic infections (OI) ; 3 Kaposi's sarcoma (KS)) and in 2 group I patients (2 OI). The 12-month actuarial rate of AIDS occurrence was 12% and 36% in groups I and II respectively (P=0.089) AZT related side effects occurred in 33% of patients. Major side effects included 1 case of hepatic toxicity (temporary discontinuation of AZT) 5 cases of hematological complications (blood transfusions were necessary in 4 of these patients).
In conclusion, at 12 months follow-up, AZT seems to prevent the occurrence of AIDS in HIV patients with low CD4 cell counts. However, a study enrolling a larger number of subjects is needed to confirm such a trend and a longer follow up period might eliminate the fact that the drug only postpones the occurrence of AIDS.

W.B.P.357 DISEASE STATUS AND HIV ISOLATE REPLICATION IN 31 HAEMOPHILIACS INCLUDING 11 AZT TREATED PATIENTS

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Objective. Correlation of disease status to the replicative properties of HIV isolates in 31 infected haemophiliacs including 11 AZT treated patients.
Methods: 31 haemophiliacs contracted HIV infection between 1980 and 1984; at present, 10 are classified CDC group II and 21 group III. Clinical, immunological and virological analysis have been routinely done since 1984.
Results: Although no overt disease was observed, a low percentage (<30%) and number (<400) of T4 cells occured in most of them. HIV was isolated from 27 haemophiliacs and isolates showed high, moderate and low replicative properties. Eight highly replicating HIVs were isolated from patients, who showed signs of disease progression (trombocytopenia, T4 cell loss or antigenemia). On the contrary 7 subjects, with relatively good clinical status and immunological parameters, released slow replicating viruses and no detectable p24 in the serum. Independently from the type of HIV isolate, AZT therapy slightly improved the clinical and immunological conditions.
Conclusions: Antiviral treatment should be started immediately after virus isolation regardless the clinical status.

W.B.P.359 AN OPEN TRIAL OF ZIDOVUDINE(AZT) IN 17 ZAIRIAN PATIENTS WITH AIDS.

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Objective. To observe the clinical efficacy of AZT in African patients with AIDS hospitalized at Mama Yemo Hospital (MYH), Kinshasa, Zaire.
Methods. Between March and December, 1988, at MYH, 17 patients with AIDS were treated with AZT in a dosage of either 200 mg/4 hours or 600 mg/12 hours. To have parameters which could be used to quantify drug efficacy, patients fulfulling the WHO clinical criteria for AIDS and presenting with a history of persistent diarrhea and/or pruritic dermatitis and/or Kaposi's sarcoma were included in the trial. Patients were followed weekly. Clinical and hematological parameters were monitored for evidence of AZT-induced toxicity.
Results. Ten women and seven men (age range 27-46 years) were included in the trial. All 17 patients experienced weight gain during the first several weeks of treatment (average weight gain=6 kgs; average time between start of treatment and maximum weight gain=4 months). The 17 patients have now been followed for a total of 321 weeks. Anemia and/or leukopenia requiring temporary drug cessation occurred in 5(29%) of the 17 patients for a total of 29 weeks(9% of the total length of time of enrollment of patients in the trial). Total treatment time was 292 weeks. During the trial patients have collectively experienced fever for 6% of the total observation period. They have had 30 episodes of diarrhea (average duration=6 days) for an incidence of 102 episodes/100 years of patient observation. There were 18 episodes of dermatitis giving an incidence of 62/100 years. The two cases of Kaposi's sarcoma which were present at the start of therapy both progressed while on treatment. Herpetic infection (35% of patients), oral candida (18%), deep skin abscess (24%) developed during therapy.
Conclusion. AZT induced a transient amelioration in the overall clinical status. Nevertheless, while on therapy many patients continued to experience diarrhea, dermatitis and opportunistic infections.

W.B.P.356 OPEN TRIAL OF THE LONG-TERM SAFETY OF ZIDOVUDINE - INTERIM ANALYSIS

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Objective.To present an interim safety analysis of this ongoing Canadian "Open Trial of the Long-Term Safety of Zidovudine."
Methods. There are 9 provincial study centres in Canada. Follow up is required on each patient entered every 2 weeks for the first 2 months and then once every month afterwards.
Results.On January 6, 1989 the study, which began in November 1986, had enrolled 2 482 patients. At baseline they were grouped according to the following CDC classifications: 850-4C1(post PCP);98-4C1(post other OI's);718-4C2;272-4A; 480-3(PGL). Sixty-four patients were transferred into this study from another Zidovudine study which ended in 1988. There are 2 131 (85%) patients taking Zidovudine. Approximately 75-80% of them are not on the full daily dose (1200mg). There are 212 patients deceased and 139 patients who are permanently discontinued. The most frequent adverse reaction reported requiring treatment was anemia. The number of patients transfused per province varies and there appears to be a declining trend in incidence of transfusions.
Conclusion.This Canadian Zidovudine study will generate much useful data on the safety and use patterns of patients taking Zidovudine. An effort must be made to improve the overall rate of follow-up.

W.B.P.358 MAJOR OPPORTUNISTIC INFECTIONS IN AIDS PATIENTS AFTER EIGHT TO ONE HUNDRED FIFTY WEEKS OF ZIDOVUDINE THERAPY

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Objective. To describe the incidence and types and outcomes of AIDS-defining opportunistic infections (OI's) in patients treated with ZDV for 8-150 weeks.
Methods. Twenty-two patients with previous Pneumocystis Carinii pneumonia (PCP) were enrolled. Nineteen of the 22 completed more than 8 weeks of ZDV therapy. Eleven received ZDV 250 mg every four hours for 10-12 weeks and then 200 mg every four hours thereafter. The other 8 patients received ZDV 200 mg every 4 hours. ZDV was reduced to 100 mg every 4 hours for granulocytopenia (PMN's <750) or discontinued (PMN's <500). ZDV was resumed when the toxicity was reversed.
Results. Fifteen of the 19 patients (79%) developed recurrences of PCP between weeks 10 and 130. Most of these recurrences were mild. However, fatal complications developed in 3 of the recurrent PCP patients. Three patients developed cryptococcal meningitis between weeks 12-60. Two were ultimately fatal. Four developed cytomegalovirus (CMV) retinitis, another CMV viremia with wasting syndrome, and another CMV colitis. Four developed disseminated Mycobacterium Avium. Two developed central nervous system toxoplasmosis. One developed cryptosporidial diarrhea. Two developed chronic peri-rectal herpes simplex. Adverse reactions to ZDV were minimal except for bone marrow toxicity. Dosage interruptions were required in all patients but seldom lasted over 7 days.
Conclusion. Eighteen out of 19 patients (95%) developed major OI's during long-term ZDV therapy. Ten of these OI's were fatal. While ZDV therapy may decrease the incidence of OI's initially, such OI's continue to occur and can result in fatalit y. However, Six of 19 patients have demonstrated long-term (> 3 years) survival. Patients tolerate well long-term ZDV therapy with occasional dosage modifications if significant granulocytopenia occurs.

W.B.P.360 ZIDOVUDINE DELAYS DEVELOPMENT OF AIDS FOR PATIENTS WITH 4C-2, 3 and 4A HIV DISEASE

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Objective: To establish drug use patterns and the rate of progression to AIDS in a group of 4C-2, 3 and 4A patients treated with zidovudine.
Method: A group of patients was followed for at least 6 months in the Ontario Canada open zidovudine treatment study: 136 4C-2 patients, 67 category 3 patients and 23 patients in category 4A.
Results: At a mean follow-up of 38.5 weeks, 75% of the sample remained on zidovudine at full or reduced dose. On average, of each 100 days, patients received full dosage for 30 days, a reduced dose for 40 days and had therapy suspended for 30 days. The majority of dose reductions and discontinuations were due to drug-related hematologic toxicity. Eight patients experienced 4C-1 opportunistic infections (OIs): 6 developed PCP and 2 had CMV disease. One had died at follow-up. Patients with previous 4C-2 OIs had AIDS diagnosed at a mean of 249 days after the original minor OI. For the rest of the 4C-2 patients the mean number of days without major infection was 512. The following did not appear to be predictive of progression to AIDS: anemia, thrombocytopenia, neutropenia or a severely depressed CD4 count at entry or the length of time at a reduced dose or time off zidovudine.
Conclusion: Progression to AIDS for 3.5% of the sample duplicates results of the initial placebo-controlled trial and is lower than rates obtained from historical controls. Of note is the fact that patients were at reduced dose or off the drug for 70% of the follow-up period. Further study is warranted to establish if a lower, less toxic dosage is, in fact, an efficacious one.

W.B.P.361 TREATMENT WITH RETROVIR IN DIFFERENT STAGES OF THE HIV INFECTION

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54 HIV-Ab positive patients(6of II group,13 of III group,35 of IV group of CDC classification)received AZT in doses of 1200mg/die for 6-20 months:48 of these patients(89%)were drug abusers(d.a.); 16 of then(33%)resulted dropped out(d.o.)during the first three months(1 of II group,6 of III group and 9 of IV group):there weren't d.o. among those who aren't d.a..47% of the followed since the beginning(time 0)showed n° of CD4 > 400.There were serious side effects in 26% of the patients,which resulted in interruptions of the treatment.There were none in those from II and III groups. In spite of the treatment,40% of the patients of the II group and 29 of those of III group showed development in more advanced stages of the syndrome,without correlation with the number of CD4 at time 0.Among the followed 26 patients of IV group,73% showed stationary conditions during the time and 19% died(we have registered deaths in 54% of other 39 patients of IV group,who didn't receive AZT).Among 32 d.a. followed,we observed a development of the syndrome in more advanced stages in 60% of those who went on taking drugs and only 30% of those who had given up this habit (P > 0.01).Of the six patients not d.a.,66% have remained stationary and 1(16.6%)died.

W.B.P.362 EFFICACY AND TOLLERANCE OF ZIDOVUDINE IN PATIENTS WITH ASYMPTOMATIC HIV INFECTION OR WITH PGL.

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Objective. Evaluation of the effects and tolerance of Zidovudine (ZDV) in HIV seropositive patients..
Methods. 10 asymptomatic patients (CDC group II) and 10 with PGL (CDC group III) all with initial T4 counts ranging between 150 and 300/mmc were given ZDV 7 mg/kg for 4 times a day for the first month and 3.5 mg/Kg for 4 times a day for an additional seven months.
Results. No patients showed OO.II. and/or tumor. Nausea and headache were not frequently observed. All subjects developed mild decrease in hemoglobin (mean Hgb=14.38 gm/dl at entry and 14.04 at month 8) and in PMN cell counts (mean PMN=2532/mmc at entry and 2407 at month 8). Anormal CPK values were observed in 3 subjects during treatment. In 2 patients GPT values 3 times the normal value was observed in the first month followed by normalisation. HIV Ag was detected in serum of 3 patients at entry and 2 became persistently HIV Ag negative during the treatment. Mean T4 count was 198/mmc at entry and 179/mmc after 8 months.
Conclusion. ZDV at the dose indicated was fairly well tolerated during first 8 months of therapy. The slight T4 cells decrease is an expression of the efficacy of the treatment. Further study will be needed to determine the long-term effect of therapy.

W.B.P.363 LONG TERM ASSESSMENT OF TOXICITY AND CLINICAL OUTCOME IN TREATMENT OF HIV INFECTION WITH ZIDOVUDINE

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Objective. To evaluate the toxicity and assess the long term clinical outcome of Zidovudine therapy in HIV infected individuals diagnosed with AIDS or who have been symptomatic with less than 200 CD4 cells.
Methods. A prospective, open-ended uncontrolled study of Zidovudine therapy began in December of 1986. By the end of December 1988, we enrolled and treated 27 patients with AIDS and 19 patients with HIV related symptoms and less than 200 CD4 cells (CDC stage IVa disease).
Results. Mean follow-up of 69 weeks is available for 26 patients with AIDS and 56 weeks for 12 of 19 patients with CDC stage IVa disease. Neutropenia with less than 750 cells per cubic millimeter occurred in 37% of patients (11 with AIDS; 3 with stage IVa disease). Transfusions were required in 24% of patients (8 with AIDS; 1 with stage IVa disease). Recurrent opportunistic infections including PCP, CMV retinitis, CMV colitis, and disseminated MAI were noted in 50% of the AIDS patients. 3 of 12(25%) evaluable CDC stage IVa patients have progressed to AIDS. 56% of patients diagnosed with AIDS at start of therapy have died while 27% remain on drug. 8% of evaluable patients with symptoms and less than 200 CD4 cells at start of therapy have died while 75% remain on drug.
Conclusion. Our experience with Zidovudine therapy in HIV infection is similar to that of other investigators. Zidovudine prolongs survival in this population by decreasing morbidity from recurrent OIs. The major limiting factor in prolonged use remains the hematologic toxicities.

W.B.P.364 ZIDOVUDINE TREATMENT IN 100 CONSECUTIVE PATIENTS WITH AIDS OR AIDS RELATED COMPLEX.

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Objective. To analyse Zidovudine treatment in severe HIV infection in terms of survival, toxicity and dose maintenance.
Methods. 100 consecutive patients with AIDS and ARC received Zidovudine at a starting dose of 600-1200 mg per day. The drug was always given orally every 6 hours. The patients comprised 55 AIDS patients (30 O.I., 16 isolated K.S., 7 with boths, 2 with neurologic disorders) and 45 ARC patients. The mean duration of follow-up under treatment was 8,2 mo (0,2-18). 15% of the patients were IVDA.
Results. At 6 mo after beginning AZT only 35% of the patients (63% of ARC) received the initial dose. The causes of regimen alteration included hematological toxicity (41%), intercurrent events (10%), combination therapies.9 ARC patients progressed to AIDS under treatment. 42 O.I. were observed in 24 patients. The 12 mo survival rates from the beginning of AZT treatment were 70.4% in ARC patients, 69.4% in AIDS with I.O., 72.4% in KS patients, 42.9% in KS + O.I. patients. The 18 mo rates were 70.4 % in ARC but only 55.5 % in AIDS.
Conclusion. Zidovudine provided a better quality of survival which might be slightly prolonged. But starting doses are reduced in 2/3 of the patients within 6 mo because of toxicity. Moreover 20% of ARC patients moved to AIDS while treated although the initial dose had been maintained in most.

W.B.P.365 CORRELATION BETWEEN P24 ANTIGENAEMIA AND CD4+/NEOPTERIN RATIO IN AZT-TREATED PATIENTS

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Objective: to verify whether CD4+/neopterin ratio (R) correlates with clinical course and p24 Antigenaemia (p24Ag) in AZT-treated patients infected with HIV.
Methods: 14 HIV-positive pts (10 males,4 females,mean age 24.3,range 20-32 years; 6 p24Ag pos.,8 p24Ag neg. at enrolment) were daily administered 10 mg/Kg AZT per OS for 1 year. Every 3 months they were clinically evaluated (according to CDC criteria) and tested for serum Neopterin levels (SNL), CD4+ cell counts and p24Ag; R was also 3 monthly calculated for each patient.
Results: Clinical condition did not worsen in any of the 14 pts during the 12 months' treatment; in fact clinical improvement was noted in 4. According to "between-variance" analysis,however,no statistically significant immunological improvement (CD4 and R increase,SNL decrease) was observed in our pts,regardless of their initial p24Ag status.
Conclusion: in our experience,R proved to be the most sensitive index of immunological response to treatment correlating, to a certain extent,with p24Ag. In fact,it may be proposed as the only immunological index (replacing p24ag) in the monitoring of AZT-treated patients.

W.B.P.366 Suivi clinique et biologique de 106 malades traités par ZIDOVUDINE sur une période de 12 à 18 mois.

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Objectif : évalué à long terme, la survie, l'apparition des infections opportunistes et la modification des lymphocytes T4 chez 106 malades du groupe 3 et 4 traités par ZIDOVUDINE.
Méthode : suivi clinique et biologique mensuel des 106 malades sur une période de 12 à 18 mois.
Résultat : - pourcentage de survie : stade 3 et 4 confondus.

6 mois	12 mois	18 mois
88 %	78 %	65 %

- à 6 mois:78 % sous placébo (Wellcome Mai 87)

- apparition ou récidive d'infections opportunistes :

	6 mois	12 mois	18 mois
Stade 4C1	33 %	44 %	61 %
Stade 3+4	18 %	32 %	48 %

- à 6 mois, 48 % sous placébo (Wellcome mai 87)

- Pourcentage de patients en fonction des taux de T4 et du temps :

	1e	2e	3e	4e	5e	6e	7e	8e
↗>20%	64%	52%	39%	24%	21%	38%	21%	8%
Stable	20%	18%	17%	30%	41%	19%	25%	32%
↘>20%	16%	30%	44%	46%	38%	43%	54%	60%

Conclusion : malgré une baisse progressive des lymphocytes T4 et d'un pourcentage important d'apparition ou de récidive d'infections opportunistes la survie sous ZIDOVUDINE est appréciable (65 % à 18 mois).

W.B.P.367 AZT THERAPY IN INTRAVENOUS DRUG USERS (IVDU'S) AND THEIR SEXUAL PARTNERS

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Objective: Describe the experience of our clinic in administering AZT to IVDU's and to sexual partners of IVDU's.
Methods: 59 consecutive pts who were IVDU's or who were sexual partners of an IVDU were begun on AZT between 1/87 - 3/88.
Results: 35 were male IVDU's (mean age:37.5, range:23-54). 24 were female (mean age:33.2, range:24-39); 10 females were IVDU's and 14 were sexual partners of an IVDU. 46 had AIDS (pneumocystis pneumonia-39, other opportunistic infection-7); 13 had ARC with a mean T4 of 135 (range:60-292). 39/59(66%) pts were compliant with therapy for a mean of 10.9 months of follow-up (425 pt-months): 16 died after a mean of 10.5 months (range:5-19), 12 are alive after a mean of 15.8 months (range:10-24), 7 required discontinuation of AZT due to adverse reactions after a mean of 8.7 months (range:1-19), and 4 transferred to another facility after mean of 9.8 months (range:2-24). 20/59(34%) were lost to follow-up after mean of 5.7 months of therapy (range:1-15)(114 pt-months). 23 developed an opportunistic infection while on AZT. 16 required RBC transfusions. 22 required dose reductions due to anemia (11) or neutropenia (11).
Conclusions: Most pts in this cohort of IVDU's and sexual partners of IVDU's were compliant with AZT therapy as judged by their record of clinic attendance. Efficacy can not be assessed due to the lack of a control group. Adverse reactions to AZT were similar to those previously described in other groups of pts.

W.B.P.368 TREATMENT OF SYMPTOMLESS HIV SEROPOSITIVE SUBJECTS BY AZIDOTHYMIDINE (AZT). A CONTROL STUDY IN 56 PATIENTS.

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Objective. To determine the effect of AZT in symptomless HIV seropositive subjects.
Methods. Comparison of 2 cohorts of 28 asymptomatic subjects (CDC II ou III) matched according to CD4 cell count (+/- 20/mm^3) and p24 antigenemia (ag) (detectable or undetectable). A group of subjects was untreated while the other received AZT (300mg every 6 hours) + acyclovir (800mg/day) during one year. Clinical and biological (CD4 and CD8 cell count, p24 ag) evaluation was performed at 0, 6, 12 months.
Results. 26 treated subjects were evaluated ; 2 subjects were excluded due to drug induced anaemia. No significant modification of haemoglobin level and total leucocyte count occurred in the others. No modification of clinical staging was noticed in treated subjects while 3 untreated subjects became CDC IV ; p24 ag, initially undetectable in 11 subjects in both groups, remained undetectable in all treated subjects while it became detectable in 2 untreated subjects. A decrease of p24 ag level was noticed in treated subjects when p24 ag was initially detectable (respectively 210,78 and 80 pg/ml at 0,6,12 months; $p<0.001$). No modification of total lymphocyte count was noted in either groups. A CD4 cell count increase was noted in treated subjects (350,429 and 445/mm^3 at 0,6,12 months; $p<0.05$), contrasting with a decrease in those untreated (354,286 and 274/mm^3; $p<0.01$). A CD8 cell increase was also noted in treated subjects (701,927 and 999/mm^3; $p<0.01$).
Conclusion. AZT is of interest in symptomless HIV infection despite the risk of anaemia.Placebo controlled trials requiring long follow-up are warranted and ethically suitable only in subjects having CD4 cells >400/mm^3 and an undetectable p24 ag.

W.B.P.369 AN INTERMITTENT ZIDOVUDINE REGIMEN: TOXICITY AND EFFICACY

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Objective. To assess the efficacy of an intermittent regimen of zidovudine.
Method. 21 men (6 with AIDS, 15 with ARC) who developed hematotoxicity on continuous zidovudine therapy despite dose reduction (1.2g → 0.75g/day) were followed on an intermittent regimen of AZT (4 weeks of 1 g per day, 4 weeks without drug). The effect of zidovudine on clinical response, transfusion requirements, blood counts, viraemia and CD4 cells was analyzed on continuous therapy (26.1 weeks) compared with intermittent therapy (23.4 weeks).

Results.	Pre AZT	Continuous AZT	Intermittent AZT
New OIs or KS	-	3 (2 subjects)	3 (2 subjects)
p24ag no +ve	10	10	9
pg/ml	377 ±136	112 ±38	272 ±20
CD4 cells x10^6/l	131 ±18	105 ±17	63 ±15
Transfusions patients	-	14	2
number (units)	-	36 (240)	4 (16)
Hb g/l	13.4 ±.31	7.9 ±.42	11.6 (11.2* 12.1†)
WCC 10^9/l	4.29 ±.34	2.53 ±.20	2.95 (2.81* 3.09†)
G'cytes 10^9/l	2.44 ±.23	1.30 ±.13	1.64 (1.61* 1.67†)

all values are mean ±SE. * on zidovudine. † off zidovudine.

Conclusion. Anaemia improved markedly on intermittent AZT and transfusion requirements were minimal. Despite more severe immunodeficiency and anaemia consistent with more advanced disease at the time of commencement of intermittent therapy, the occurrence of new opportunistic disorders was similar for both regimens. On the basis of these findings, studies of the efficacy of intermittent zidovudine as initial therapy should be undertaken.

W.B.P.370 LONG-TERM SAFETY AND EFFICACY OF ZIDOVUDINE IN LARGE COHORTS OF IV DRUG ABUSERS: 20 MONTH EXPERIENCE WITH 200 AYMPTOMATIC, 500 ARC AND 400 AIDS PATIENTS.

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Objective. To evaluate the long term safety and efficacy of zidovudine (ZDV) when administered in I.V. drug abuser HIV-infected patients.
Methods. Data contained in the Italian National Registry of ZDV-treated patients have been analyzed. The Registry prospectively collected enrollment and quarterly follow-up forms of 1100 patients referring to 105 clinical centers involved in ZDV open therapy, which started in Italy in July 1987. Multivariate analysis has been performed in order to evaluate the effect of possible co-factors on therapeutic response and survival patterns, and on the occurence of adverse events in this particular population.
Results. Frequency of adverse effects appeared to be similar to frequency reported in other risk categories of patients, haematological adverse reactions beeing minimal in AIDS and ARC patients who initiate therapy with over 200 CD4/cells. ZDV also appeared to be very well tolerated in asymptomatic patients, with no unexpected adverse reactions. One-year overall survival of AIDS patients was 90.9%. The 18-month actuarial progression rate to ARC and AIDS has also been evaluated for the studied population.

W.B.P.371 USE OF ZIDOVUDINE (AZT) IN INJECTION DRUG USE (IDU) RELATED HIV INFECTION - CLINICAL OUTCOME

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Objective: To evaluate clinical outcome of AZT therapy with IDU-related HIV infection (IDUHIV) in view of increased AZT levels in opiate users.
Method: 322 HIV seropositives were assessed of which 253 (79%) were infected between 1983-85 by IDU. Of 51 AZT treated patients 37 are male (22 IDUHIV, 15 homosexuals [HO]) and 14 female (13 IDUHIV, 1 heterosexual). Outcome was assessed in terms of clinically significant opportunistic infections (OI), side effects (SE) attributable to AZT and survival since starting AZT.
Results: 22 patients started AZT when they developed AIDS (CDC 4C1/4B/4D). 13 were HO (mean duration of treatment [D]=48 weeks) and 10 were IDUHIV (D=36 weeks). SE requiring dose reduction developed in 5 (50%) IDUHIV and in 6 (46%) HO. Significant OI 6 weeks post start of AZT occurred in 3 (30%) IDUHIV and in 8 (62%) HO. Three (23%) HO with AIDS have died of their disease (mean time after starting AZT=56 weeks). Two HO started AZT when they had ARC (CDC 4C2/4A/4E) (D=43 weeks) compared with 19 IDUHIV (D=39 weeks). SE requiring dose reduction developed in 6(32%) IDUHIV and in 1(50%) HO. Significant OI developed in 3(16%) IDUHIV but in neither HO. As yet no ARC patients have progressed to AIDS. One (6%) IDUHIV has to date died from non HIV causes. Four IDUHIV were CDC status 3 (D=44 weeks). None of them developed SE or OI.
Conclusion: The frequency of serious events (OI and SE) is not greater or efficacy less in IDUHIV despite opiates/benzodiazepines having an effect on AZT pharmokinetics.

W.B.P.372 ZIDOVUDIN IN ARC AND AIDS PATIENTS: CLINICAL, IMMUNOLOGICAL AND VIROLOGICAL EFFICACY.

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Objective. To evaluate the clinical,immunological and virological efficacy of Zidovudin (AZT) in ARC and AIDS patients (pts).
Methods. Open, non-comparative prospective trial. Evaluation criteria (3-months interval): (1)clinical: incidence of AIDS-indicative diseases and disease progression,resp., (2)immunological: T-lymphocyte phenotyping with immunofluorescence by flowcytometry (CD4+,CD8+,CD8+Leu7+) and whole-blood lymphocyte proliferation assay with pokeweed mitogen and tetanus toxoid stimulation, (3)virological: HIV culture in primary blood lymphocytes and p24 antigen capture test (Dupont Co.).
Results. Until 1/1988 38 HIV seropositive (ELISA,WB) ARC and AIDS pts. (all male homosexuals, [illegible]) are treated with 1.0g/d AZT orally for a mean duration of 276±174 days, 16 pts >6 months.In 12 and 10 pts dose reduction and cessation because of drug toxicity (leukopenia,anemia,hemolysis) became necessary,resp..12/38 pts.(16/19 with AIDS) developed CDC-C1/D classified diseases, 5 pts died due to infectious complications. CD4+(CD8+ and CD8+Leu7+,resp.) lymphocytes decreased from 116±86 (902±431 and 438±234/µl,resp.) before therapy to 48±53 (376±333 and 179±104,resp.)after 6 months. No change in lymphocyte proliferation could be detected (PWM 4027±4313 vs.2886±4404,tetanus 1300±2304 vs.1737±3600, normal >60.000 and 8000cpm,resp.).HIV could be cultured in 13/20 (65%) before and in 11/16 (69%) after 6 months of therapy.

Conclusion. The efficacy of zidovudin in AIDS pts was limited. No improvement of immunological,functional and virological parameters could be seen. Only in ARC pts AZT demonstrated some clinical value.

W.B.P.373 COMPLIANCE WITH ZIDOVIDINE (AZT) THERAPY IN AN INNER-CITY HIV-INFECTED POPULATION.

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Compliance to AZT was retrospectively evaluated in HIV-infected outpatients. Eighty-two patients (pts) were prescribed AZT between 11/86-7/88. Thirty-five are alive and on treatment (Rx), 7 were refered elsewhere, 1 requested stopping AZT and 11 never started AZT. Twenty-eight pts were followed from start of Rx to their death. There were inadequate data on 4 pts. Charts of 24 of the latter group were reviewed. All 24 pts were black and 22 (92%) were men. The mean age was 40.4±9.4 yrs (range 25-63 yrs). Eighteen of the 24 (75%) were Intravenous Drug Users (IVDUS), 5 of 24 (20.8%) were homosexual men and 1 (4%) denied all risks. The primary diagnoses were esophageal candidiasis in 10 of 24 (41.6%), P. carinii pneumonia in 8 of 24 (33.3%), cryptococcal meningitis in 2 of 24 (8.3%) and 1 (4.1%) each of Kaposi's sarcoma, TB, salmonellosis and HIV positive. The pts were on AZT for a mean of 6.9±5.2 months (mths) before their death (range 1-18, median 9 mths). Four of 24 pts were excluded as they remained hospitalized. There were 222 scheduled appointments (Appt) for 20 pts and 42.3% were kept. The mean percentage (%) of appt. kept by pts was 24.2% (range 0-75%, median 35.5%). There was no statistically significant difference in compliance % between IVDUS versus homosexual men, those below and above 40 yrs, those living in and outside the hospital catchement. There was a significant association between compliance % and the duration of AZT Rx, 40.2% in those 9 months versus 28.5% in those 9 months. In conclusion, this study shows that acceptable though not ideal compliance was achieved in a subgroup of black predominantly IVDUS with HIV disease.

W.B.P.375 OUTPATIENT TRANSFUSION THERAPY FOR RETROVIR-ASSOCIATED ANEMIA

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Objective. To demonstrate the feasibility and safety of outpatient transfusion therapy for patients with Retrovir-associated anemia (RAA)
Methods. In a designated section of the general outpatient clinic of a large municipal hospital in New York, up to three patients with RAA, with a hematocrit between 18 and 30, were transfused during each of 1 or 2 weekly 8-hour sessions. The transfusion was initiated by an MD, who remained on call for emergencies. A RN observed the patient continuously. Adverse effects were managed by strict protocol.
Results. During the period from 7/87 until 1/89, a total of 604.5 units of packed RBC's were transfused in 66 patients with RAA (62 males, 4 females) including 51 homo/bisexual males, 10 patients with history of intravenous drug abuse, 3 with multiple AIDS-risks, 2 with other risks. 28 patients received transfusions on multiple occasions. Each patient was transfused an average of 3.7 units per session. Nine patients had indwelling catheters for access. Only 6 adverse effects were observed including 4 non-hemolytic febrile reactions, 1 severe allergic reaction, and 1 episode of hypotension caused by concurrent infection, resulting in hospital admission. There were 0.04 adverse reactions per patient transfusion session.
Conclusion. Transfusion therapy for patients with RAA can safely be provided in the outpatient clinic setting. Stable clinical status can be maintained in patients with RAA requiring transfusions without the need for admission to the hospital.

W.B.P.377 COMPLEMENTARY THERAPIES AT CASEY HOUSE HOSPICE: A MODEL FOR TRADITIONAL/ALTERNATIVE INTERACTION

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Casey House Hospice Inc.
Vice-President, Casey House Hospice Inc.
Founding Board Member, Psychiatry Clinic for
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The descriptors "alternative" and "traditional" regarding care of the HIV infected individual often suggests a dichotomy which can imply a rift between "medical" and "non-medical" orientation. Casey House Hospice made a firm commitment, from the outset, to utilization of "alternative" therapies in its hospital-affiliated program. This presentation will describe the philosophy, planning, and implementation of Complementary Therapies at Casey House, touching on the affiliation agreement with St. Michael's Hospital, educational aspects, and case studies involving a variety of therapies. The broader implications for both the overall treatment of HIV infected persons in the community or hospital setting and the marriage of the "traditional" and "alternative" health care systems will be introduced.

W.B.P.374 INTERFERON (IFN) ALPHA + AZT IN AIDS-ASSOCIATED KAPOSI'S SARCOMA (KS): FINAL RESULTS OF A PHASE I TRIAL.

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Objective. To evaluate the safety, tolerance and maximum tolerated dose (MTD) of IFN-α + AZT in AIDS patients (pts) with KS; to assess antitumor, immunological and antiviral effects of the combination.
Methods. HIV-positive adults with biopsy-proven KS, PS≥70, ANC≥1500, Hb≥9.5 and no prior IFN or AZT were eligible. Cohorts of 4-6 pts were entered at various daily IM doses of IFN-α2a or N1 plus AZT, 100 or 200mg PO q4h.
Results. IFN-αN1 at a dose of 9x10^{6}U(MU) + 100 or 200mg of AZT induced dose-limiting toxicity in 4/6 and 4/4 cases, leading to discontinuation of this arm of the study; tumor response was seen in 3/6 and 1/3 evaluable pts, respectively. For IFN-α2a, a wider dose range was evaluated:

IFN Dose(MU/d)	AZT Dose(mg)	≥Grade 3 Toxicity/Eval.	CR+PR/Eval.	(%)
4.5	100	1/6	1/6	(17)
4.5	200	2/6	3/5	(60)
9	100	1/6	2/6	(33)
9	200	3/4	4/4	(100)
18	100	2/6	3/6	(50)

Two MTDs were defined: 4.5MU IFN-α2a QD + 200mg AZT q4h and 18MU IFN-α2a QD + 100mg AZT q4h. Neutropenia was the major dose-limiting toxicity. Skin test reactivity increased, while CD4 and CD8 cells declined. Of 7 pts with elevated serum p24 antigen, 6 showed a decline to undetectable levels.
Conclusion. IFN-α2a and AZT can be safely combined and induced a high tumor response rate and p24 suppression in some patients. (Supported by NIAID-ACTG)

Soins
Care

W.B.P.376 Self Care Nursing for AIDS/ARC via Computer Networks

Patricia Flatley Brennan, RN, PhD, Principal Investigator

Stefan Ripich RN, Project Director
Frances Payne Bolton School of Nursing, Case Western Reserve University

This three year study evaluates the use of a free, public access computer network as a vehicle for the delivery of nursing services in the treatment of Acquired Immune Deficiency Syndrome (AIDS) and AIDS-Related Complex (ARC). We proposed to augment traditional methods of nursing care delivery with a new approach that will (1) enable nurses to meet the informational needs of well persons concerned about AIDS/ARC; (2) foster self-care of people with AIDS/ARC ("PWA/PWARC") and their carepartners through in-the-home support, counselling, and education. Currently underway is a six month needs assessment involving 100 PWA's and their carepartners.

Computer networks create electronic links between remote sites. In this project we will put computers in the home of PWA/PWARC to provide links to clinical agencies or to other homes. Through these terminals people can access an existing computer system and use the special programs and communication services constructed to support the entire range of AIDS/ARC patients: healthy persons needing information, persons diagnosed with AIDS/ARC, and the informal care partners of PWA/PWARC. The messaging and support services will facilitate peer as well as professional contact, serving as a "support group without walls".

This intervention's effectiveness in disseminating information, enhancing problem solving skills, and diminishing isolation will be evaluated in a series of field studies. The increasing emphasis on non-institutional care demands new approaches to delivering treatment and support, while the availability of computer technology provides the means to do so. Preliminary findings from the needs assessment suggest that due to cognitive impairments computer interfaces employ icons (pictures) as well as text.

W.B.P.378 PROBLEMS IN AN AIDS HOSPICE SETTING

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Casey House is a free standing hospice dedicated to people with AIDS. The Hospice has 13 beds (12 palliative, 1 respite care) and opened in March 1988. It was expected that the emphasis of medical/nursing care would be on symptom management (pain, nausea, skin problems and minor infections). Although the residents/legal guardians (for demented residents) accept the philosophy of palliative care, denial of their own situation often impacts on choices. In the first 11 months, Casey House has admitted 82 people. 58 have died and 12 have been discharged. The health and functional capacity of the residents in the House affect the criteria of the next admission. As acute health situations arise, residents may elect to be transferred to an acute care facility. Unexpectedly, some residents improve so they no longer require the level of care provided at the Hospice. Because their recovery was unexpected, discharge planning has been difficult. Community systems are not presently organized to assist these people. Problems occasionally arise regarding residents who wish to continue to use unapproved drugs or home remedies with which the care-providers are unfamiliar.
Conclusion: AIDS is much less predictable than cancer in the final stages. With everchanging approaches to therapy, all involved persons must be ever flexible in the definition and provision of palliative care. We must continually review the policies of the Hospice in accordance with changes in the disease and encourage change in the community to provide an effective continuum of care.

W.B.P.379 DEVELOPMENT OF A DAY FACILITY FOR PEOPLE WITH AIDS/HIV INFECTIONS

KELLY, ANN

Objective: The Kobler Centre, attached to St Stephen's Hospital, London, aims to provide day care for AIDS/HIV patients in order that the patients remain at home independently for longer than previously.

Method: A description of the commissioning and activities of the Centre during its first year of operation.

Result: The facility was constructed at a lost of £3.2 millions in eighteen months from planning to completion. It has 6 day beds and 5 consulting rooms for outpatients. The Centre performs endoscopies, minor procedures, blood transfusions and drug therapies.

Conclusion: The Centre has reduced pressure on hospital inpatient facilities and provided an environment that enables patients to maintain their independence and remain at home for longer than previously.

W.B.P.380 FONCTIONS DU PSYCHIATRE DANS UN HOPITAL DE JOUR POUR PATIENTS HIV+

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Objectifs : Evaluer le rôle du psychiatre dans un hôpital de jour recevant des patients HIV+, auprès des malades et au sein de l'équipe soignante.
Méthodes : 1) Consultations psychiatriques : 1/2 j/semaine x 2 ; 30 consultations/mois
Il s'agit d'entretiens psychiatriques soit uniques, soit répétés, voire de suivis psychothérapeutiques
2) Participation aux réunions de l'équipe soignante de l'hôpital (6 médecins et 10 para-médicaux...)
Résultats : Une année d'expérience montre que la demande a été en progression constante tout en se diversifiant. Il s'agit soit de traiter des manifestations d'angoisse et/ou de dépression souvent rencontrées chez ces patients, parfois même dans l'urgence ; soit de prendre en psychothérapie certains patients névrosés dont les symptômes ont été exacerbés du fait de la maladie et de son impact psychologique ; enfin de faire face à des décompensations psychiatriques graves, par un traitement médicamenteux. Le psychiatre peut être consulté aussi, à la demande du médecin, pour aider à discriminer la part psychogénétique et/ou organique de tel ou tel symptôme. Sa fonction ne peut se limiter à ces interventions. L'équipe soignante a besoin d'untiers dans la relation médecin-malade, même en l'absence de demande de soins spécifique. Lorsque règne une proximité trop grande avec les patients, une distance doit être rétablie pour le confort de chacun.
Conclusion : La fonction du psychiatre n'est pas univoque. Thérapeute de certains patients, il est aussi par rapport à l'équipe soignante en position de tiers, permettant une analyse déculpabilisante, ou désangoissante de certains comportements.

W.B.P.381 IMPLANTABLE INFUSION PORTS IN PATIENTS WITH AIDS

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Objective. To review our experience with the use of implantable infusion ports (PAC) in AIDS patients compared to their use in non-AIDS patients. Methods. Retrospective chart review of 15 AIDS and 16 non-AIDS (NA) patients who had a PAC inserted by the same surgeon. Results. Since 1987, 15 of our AIDS patients (all men, av. age 34.5 yrs.) have had PAC placement for future and current antibiotic use (15/15) and/or TPN (2/15) an av. of 30 (range < 1-120) wks. after their AIDS diagnosis. Ten were done under general and 5 under local anesthetic with antibiotic prophylaxis (11/15). The PAC remained in place an av. of 302.4 (range 9-706) days from the time of insertion to the endpoint (death, PAC removal, or Jan 31/89). Thirteen NA patients (all men; av age 40.4 yrs.) had hematologic or solid tumour malignancies. AIDS and NA patients had an equal number of readmissions (av. 3.3 vs 3.4) with use of PAC (77.6% vs 78.2%) and little need for other IVs (10.2% vs 10.9%). In 2 AIDS and 1 NA patients there were difficulties with PAC insertion; in all 3 the tubing was subsequently replaced or removed. None of the AIDS and 7/16 NA patients had PMN counts < 500; 6 AIDS and 2 NA patients had bacteremias (2 and 1 line-related, respectively). In only 1 (AIDS) patient was the PAC removed because of infection. There were no other complications in either group. Conclusion. PAC insertion provided safe and convenient longterm venous access in AIDS patients.

W.B.P.382 FOLLOW-UP OF INFANTS BORN TO HIV-INFECTED MOTHERS IN ARGENTINA.

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Objective. To determine the risk factor and the serological, immunological and clinical evolution of the new-borns of HIV-positive women.
Methods. A group of 8 infants born to HIV-infected women were admitted to a Children's hospital in Buenos Aires City between December 1987 and March 1988. They were studied clinically, immunologically and serologically every 3 months. Anti-HIV antibodies were studied by EIA, gelatine agglutination IF and Western blot techniques.
Results. 6 of the infants studied were born to IVDA women, and admitted to the hospital 24 hours after births performed by caesarean. In 5 of these cases the father was IVDA - HIV-positive and in 1 case the father was unknown. The remaining 2 babies were abandoned at 20 and 30 days old, their mothers were prostitutes and the fathers unknown. The clinical follow-up performed until 9-14 months of age showed in 6 of the babies a ponderal and neurological development corresponding to normal standards (1 of them developed withdrawal symptoms). The immunological profile was normal in the 6 infants during the follow-up. The only baby to arrive undernourished died 1 month later of a sepsis and the last one abandoned the follow-up. The initially very strongly positive screening and supplementary tests changed to negative or with fading intensity in the following months.
Conclusion. Of 8 HIV positive babies interned in a Children's hospital of Buenos Aires City 75% were born to HIV-positive IVDA mothers and the remaining 25% to HIV-positive prostitutes. One of the 8 babies died 1 month after admission to the Hospital, another could not be followed further and the remaining 6 showed normal clinical and immunological development with disappearance or a drastic decrease in the anti-HIV antibodies.

W.B.P.383 THE IMPACT OF AIDS ON FAMILIES OF HAEMOPHILIACS IN WALES

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Objective. To describe the impact of Aids on the familes of affected Welsh Haemophiliacs.
Anyone involved with haemophiliacs has to be impressed by their courage in getting on with the business of living in spite of the debilitating nature of the disease. Now over fifty individuals living in Wales are facing a new obstacle - HIV infection as a result of contaminated blood products; five have already died. The sex linked mode of inheritance means that more than one family member may be affected. Method. The data on which the study is based was collected over a period of twelve months from the families of adult males and children attending a haemophilia centre. The qualitative holistic approach of grounded theory is used to explain the subjective dimensions of their human experiences. Results. At least one wife has seroconverted, others have not made love since their husbands were found to have contracted the Aids virus, largely due to the fact that their husbands recoil from physical contact for fear of infecting their wives. They are experiencing enormous strain. Parents have a huge burden to bear, some have experienced publicity surrounding the death of a child, several having other affected children face stigma and social isolation, others live in fear of being identified. Conclusion. Marriages are under stress, there is evidence of poor communication between partners who frequently keep the knowledge to themselves. A number have turned to drink or drugs in an effort to come to terms of their plight.

W.B.P.384

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Aspects cliniques
Clinical Aspects of AIDS

Hémophilie
Hemophilia

Th.B.P.1

LYMPHOCYTES CYTOCHEMISTRY BEHAVIOR IN HEMOPHILIC PATIENTS WITH HIV INFECTION.

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The cytochemical and immunological characterization of lymphocytes of 31 hemophilic patients (6 of whom anti HIV positive without symptoms and signs of AIDS) chronically treated with commercial clotting factor concentrates were studied. In comparison to aged cross matched male controls, haemophiliacs presented significant increase of absolute number of lymphocytes and of subpopulation of T cells (CD_3 ,CD_4 ,CD_8) and of B cells (Ia_1 ,CD_{20} ,sIg). PAS reaction showed a lower grading score in haemophiliacs and the staining for α-naphtyl butyrate esterase(NBE), acid phosphatase(AP), N-acetyl-β-glucosaminidase (NABG), gave significant reduction of the percentage of the lymphocytes with coarse granules in the same pts. The percentage number of AP reactive lymphocytes with coarse granules was directly related to the percentage number of CD_3 and CD_4. The anti HIV positive pts presented lower percentages of CD_4 and of dot-like AP reactive lymphocytes. In conclusion we suggest that acid hydrolase cytochemistry, expecially the Dot-like AP reaction, may represent a useful, simple and unexpensive method for following modification of CD_4 subset in pts at risk of developing AIDS.

Th.B.P.2

ANTIPHOSPHOLIPID ANTIBODIES AND HIV INFECTION IN HEMOPHILIA.

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Objective: to study the presence of antiphospholipid antibodies: lupus like (LAC) and anticardiolipin (ACA) in Hemophilia. Patients: 30 pts. with Hemophilia A. 6 pts. with Hemophilia B; 9 pts. positive for anti-HIV antibodies, without symptoms and signs of AIDS. Methods: LAC diagnosed by prolongation of Russell Viper Venom Time (RVVT), not corrected by adding of normal plasma. ACA detected by Immunoenzimatic Test (ELISA), using POD coniugated with anti-murine antibodies against human IgG, IgA, IgM. Results: we detected ACA in 8 out the 9 pts. with HIV infection and in 4 of them also LAC. Among the anti-HIV neg pts. only 4 showed ACA and 2 LAC. In pts. with ACA no correlation was found between serum Ig levels and IgG ACA. Prevalence of IgG ACA was observed in anti-HIV pos pts. (87.5%) while IgM ACA in HIV neg ones(75%9). Conclusions: our data suggest that in Hemophilia: 1)HIV infection induces the production of antibodies against phospholipid components; 2)different behavior of ACA Ig Isotypes (IgG, IgM) was observed in relation to the presence of HIV infection; 3)HIV infection promoves the formation of ACA earlier than of LAC.

Th.B.P.3

ABSENCE OF HIV-2-INFECTION IN HEMOPHILIA IN BUENOS AIRES

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Objective. Since HIV-2 probably spread via the same transmission routes as HIV-1, and considering that our patients received American and European concentrates, we evaluated HIV-2 antibodies in hemophiliacs previously screened for HIV-1.

Methods. Presence of HIV-2 antibodies was investigated in the sera of 60 hemophiliacs: 33 HIV+, 27 HIV-. Sera were screened for HIV-2 antibodies by an ELISA assay (ELAVIA 2) (Diagnostics, Pasteur). Samples repeatedly positive or undeterminated were tested by RIPA.

Results. None of the 60 sera was HIV-2-positive when confirmed by RIPA; however, 21 samples were initially considered positive in the ELISA assay. No sample could be confirmed when tested by RIPA.

Conclusion. Although the number of tested sera does not allow to ascertain conclusions, it seems HIV-2-infection is very infrequent in this high-risk group in Argentina.

(Supported by a grant from Fundación Roemmers).

Th.B.P.4

HIV-INFECTION AND CHAGAS' DISEASE IN HEMOPHILIACS IN ARGENTINA

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Objective. To analyze the relation between HIV-infection and Chagas' disease (CH) in 72 hemophiliacs (HF).

Methods. HIV serology was assayed thru ELISA (Abbott, recombinant). Positively reacting samples were confirmed thru Immunofluorescence or Western Blot (Dupont). CH diagnosis was performed by means of direct agglutination and indirect hemoagglutination assays (Polychaco). Titers > 1:16 for both serologic tests were considered positive.

Results. Twenty-two out of 37 HIV-1 positive sera showed a positive test for CH. In addition, 18 out 35 HIV-1 negative sera gave a negative reading in the CH assay.

Conclusion. Ch is an hemoparasitosis, endemic for our country. Blood transfusions constitute one of the major ways of dissemination. Ch shows the same prevalence on HIV-1 positive and HIV-1 negative HF ($p > 0.05$). Similar results were observed in other HIV-1-risk groups, such as homosexuals (30) and drug abusers (30). By contrast with the reported occurrence of other endemic diseases (for ex., tuberculosis) as second opportunistic infections, in our series infected patients did not present higher susceptibility to CH than that exhibited by HIV-1 negative HF.

Th.B.P.5

RESPONSE TO HEPATITIS B IMMUNIZATION IN HEMOPHILIAC CHILDREN: RELATIONSHIP TO HUMAN IMMUNODEFICIENCY TYPE I (HIV-I) VIRUS INFECTION.

Chan, Wendy, Petric, M[1], Wang, E, Koren, G, Read, S., Blanchette, V.. Departments of Pediatrics and Virology[1], Hospital for Sick Children, Toronto, Ontario, Canada.

Hemophiliacs who receive pooled plasma concentrates for control of bleeding are at high risk for hepatitis B infection. In our Hemophilia Clinic, children susceptible to hepatitis B infection (-ve HB$_s$Ag; -ve anti-HB$_s$Ag) have been immunized using a plasma-derived hepatitis B vaccine (Heptavax-B® Merck Sharp and Dohme). Three injections are given at 0, 1 and 6 months. We now report serial anti-HB$_s$Ag titres, measured by radioimmunoassay (Ausab®, Abbott), in a population of 23 children with hemophilia A (n = 19) or B (n = 4). Twelve of the children were HIV-1 antibody +ve (11 CDC Group II/III, one Group IV-E), and 11 were HIV-I antibody -ve. The median age of the HIV-I positive and negative groups were 5.6 and 5.3 years respectively (range for both groups 9 months to 13 years, 8 months). Results are as follows:

Time from start of Hepatitis B Immunization (months)	HB$_s$Ag Antibody Titres (RIA Units)		
	HIV-I Positive	HIV-I Negative	P
12-24	11147 ± 18983	43686 ± 53960	≤0.05
25-36	3127 ± 4384	25996 ± 29685	≤0.01
37-48	1724 ± 2275	22611 ± 21069	≤0.005

Values are means ± 1 S.D.

At the time of reporting, anti-HB$_s$Ag titres have fallen below protective levels (< 40 RIA units) in 4 children (3 HIV-1 +ve, 1 HIV-1-ve). One HIV-I positive child, not included in this series, failed to respond to immunization. We conclude that hemophiliac children with HIV-I infection have an impaired response to hepatitis B immunization. In such children, follow-up of anti-HB$_s$Ag titres at completion of immunization and yearly thereafter is recommended.

Th.B.P.6

BENEFICIAL EFFECT OF AN ULTRAPURE FACTOR VIII CONCENTRATE ON HYPERGAMMAGLOBULINEMIA IN HIV-POSITIVE HEMOPHILIACS.

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Objective. Elevated IgG-levels are often seen in hemophiliacs. The etiology is multifactorial, including passive transfer of IgG via the factor concentrate, allogenic stimulation by foreign proteins, chronic hepatitis and HIV-infection. Until recently the concentrates contained a multitude of plasma proteins and <1% of F VIII. Since 1987, we have had access to an ultrapure factor concentrate, containing only F VIII and albumin.

Methods. Immunoglobulin G, A and M were followed at 3 months intervals since 1985 in 17 HIV-positive patients. Nine of those were switched to an ultrapure factor concentrate (Hemofil M, Baxter) during Aug 87 - Apr 88. The remaining 8 patients ("control group") continued using conventional concentrates. Results were analysed with Wilcoxon's signed rank test.

Results. The mean IgG-level in the Hemofil M-group increased from 16.4 in 1985 to 20.6 at the time they were switched to Hemofil M ($p=0.05$) and then decreased during the following year to 17.9 ($p=0.02$). In the control group the mean IgG-level was, at corresponding times, 15.6, 19.2 and 18.7, thus also an initial increase ($p=0.02$), but thereafter no change. In the Hemofil M group it was mainly the 3 patients with the highest IgG-levels (23.0; 29.7 and 37.6 g/L), who had a beneficial effect. The last one also had pulmonary hypertension, which improved simultaneously. IgA and IgM did not change.

Conclusion. Switching to an ultrapure factor concentrate seems to have a favourable effect in HIV-positive hemophiliacs, especially in those with pronounced hypergammaglobulinemia.

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Th.B.P.7 HEMOPHILIA, SEPTIC ARTHRITIS AND HUMAN IMMUNODEFICIENCY VIRUS

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Objectives: Recent clinical observations have led us to believe that the incidence of septic arthritis (SA) in the hemophiliac population has risen sharply. To confirm this and determine the cause we examined the records of patients enrolled in the Canadian National Hemophiliac Study (CNHS).
Population Studied: 372 patients were enrolled in the study. No cases of SA were noted among HIV seronegatives. 170 were HIV seropositive of whom 7 had a total of 8 episodes of documented septic arthritis (incidence of 4.7%). A literature search spanning 40 years revealed 18 cases of SA in hemophiliacs (incidence < 0.1%).
Results: All of the patients had severe classic hemophilia. Infections were diagnosed late and associated with significant morbidity. The most common infectious agent was *Staphylococcus aureus*, although *Staphylococcus epidermidis* and *Neisseria meningitidis* each accounted for an infectious episode. The clinical course of the joint disease was difficult to distinguish from a hemarthrosis, but in every case of SA the patient was febrile and poorly responsive to factor concentrate (AHF) therapy. The peripheral leukocyte count averaged $5.9\ 10^9$/L, and was not a good indicator of sepsis.
Conclusion: HIV seropositivity correlated with a marked increase in the incidence of SA among hemophiliacs. This incidence will likely increase as more patients develop CDC group IV HIV disease. We suggest 1) that strict attention be paid to sterile technique with self infusion of blood products, 2) any hemophiliac with prolonged joint pain unresponsive to AHF therapy or fever should undergo immediate arthrocentesis to rule out septic arthritis.

Th.B.P.8 LONGITUDINAL ANALYSES OF HIV-SPECIFIC ANTIBODY RESPONSES IN HEMOPHILIACS WITH LONG-TERM HIV INFECTION

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Objectives. To identify parameters of the serological response to HIV which may correlate with prognosis, using sequential bleeds from a 40 hemophiliacs, infected for an average of seven years.
Methods. Titers of antibodies against specific HIV antigens were determined by a sensitive radioimmunoprecipitation assay (RIPA), using ^{125}I-labeled viral lysates (Pinter and Honnen, J. Immun. Methods *112*, 235-241). Neutralization titers were determined with a quantitative, 24 hour immunofluorescent focus assay which we have developed.
Results. Three major RIPA patterns were detected in the group of patients studied. In 26 patients, antibodies to all major HIV structural proteins (gp120, RT, gp41, p24, and p18) were always present (pattern a). In 11 patients, antibodies to p24 disapppeared over time, whereas all other antibodies persisted (pattern b). Notably, 3 patients were identified who never made antibodies to p24, but did have antibodies against all other components (pattern c). Most patients with patterns 'b' and 'c' (9/14) developed T4 counts < 400, and approximately a third of each of these groups have ARC or AIDS. In contrast, only 2/26 of patients with pattern 'a' have ARC. Antibody titers to other antigens were stable for most patients. However, in two patients with AIDS, the loss of antibody to p24 was followed by a 10-fold decrease in antibodies to all other viral antigens. In preliminary tests, varying levels of neutralizing titers were detected in all patients, but no direct correlation was observed between levels of neutralization activity and clinical status. Two unique patients were identified with high neutralizing titers (1:1000-1:1500), who developed progressively increasing anti-p24 titers over a period of 7 years. Both patients have remained asymptomatic with normal T4 counts.
Conclusions. A general, but not absolute correlation was observed between lack of reactivity or loss of antibodies against p24 and disease progression. The presence of both high titers of neutralizing antibodies and increasing titers of anti-p24 correlated with good clinical status.

Histoire clinique de l'hémophilie
Hemophilia: Natural History

Th.B.P.9 ETUDE PROSPECTIVE D'UN GROUPE DE 28 JEUNES HEMOPHILES INFECTES PAR LE VIRUS VIH.

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Objectif. Etude prospective sur 3 ans de l'évolution clinique et biologique de 28 hémophiles âgés de 9 à 20 ans (M : 14 ans) infectés par le virus VIH.
Méthode. Les bilans cliniques, biologiques sont effectués tous les 6 mois. Ces derniers comprennent une étude hématologique, immunitaire et virologique (Western Blot, IgG, IgM, dosage de AC p24, Ac gp41 et Ag p24).
Résultats. Cette étude nous permet de noter :

- une évolution clinique pour le stade III de 11 à 66 %
- une baisse régulière des T4 : T4 500/mm3 de 32 à 46 %
- la présence de l'Ag p24 : de 6 à 18 %
- la disparition de l'Ac p24 : de 15 à 53 %

La répartition des enfants dans 2 groupes suivant le taux des T4 pris au début de l'étude (groupe I : T4 500/mm3 ; groupe II : T4 500/mm3), nous montre une progression plus rapide du groupe I par rapport au groupe II. Pour 10 autres enfants, nous n'avons pas un recul suffisant pour pouvoir les inclure dans l'étude et parmi eux deux sont décédés de SIDA (6 %)
Conclusion. Sur 3 ans, le potentiel évolutif chez 28 jeunes hémophiles infectés est inquiétant et rejoint l'évolution constatée dans les autres populations à risque.

Th.B.P.10 IMMUNOLOGICAL AND VIROLOGICAL FINDINGS IN PARADOXICAL HIV1 SERONEGATIVE MULTI-TRANSFUSED HAEMOPHILIACS (1983-1989)

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Absence of anti gag/anti env Ab. seroconversion in a number of multitransfused haemophiliacs (treated before 1985 with the same blood products as seropositive haemophiliacs), appears paradoxal. In this view an immunological and virological study was conducted in 30 seronegative haemophiliacs (replacement therapy before 1985 : FVIII or FIX conc. > 10 000 IU).
METHODS : HIV1-HIV2 Ab. (ELISA : W.B.), HIV_1p25 Ag. (ELISA), Anti-nef Ab. (W.B. - RIA).
Immunological study : CD4-CD8, Ly. functional assays, Iglob., β2m, IFN system ...
Immunological study : As early as 1983-84, immunological disorders were observed in some sero(-) haemophiliacs such as : decreased CD4 ly in 13% of seronegative patients, abnormal proliferative response to recall Ag. in 18%, diminished IFN γ production in 50%, high β2m level in 58% (>2mg/L).
The long term study (1985-89) shows persistent disorders in the same patients (CD4 < 400 in 8/30, IgA > 4 g/L in 6/30 and β2m > 3 mg/L in 8/30...) suggesting a possible HIV1 latent infection and therefore prompted us to look at new virological markers (albeit all patients were asymptomatic).
Virological findings :

- Absence of HIV1 p25 Ag. and HIV2 Ab. (1985-89) in all seronegative patients.
- 2 anti gag/anti env Ab. seroconversions in 1986 (ie 1 y. after use of treated concentrates).
- Anti-nef Ab. in 1983 in 1 patient who seroconverted in 1986 only.
  . in 1987 in 2 persistently sero(-) haemophiliacs (HIV_1 DNA sequences detected in 1/2)

CONCLUSION : Delayed seroconversion in 2 haemophiliacs (latent phase 1-3 y) and detection of anti-nef Ab. in 2 persistently sero(-) haemophiliacs (contamination confirmed in ½ by detection of HIV1 DNA sequences), and in addition anti-nef Ab. detection in 1979 in 2 haemophiliacs who seroconverted in 1982 only, as well as in 3 sero(-) sexual partners, provide arguments in favour of HIV1 latent infection, not revealed by conventional tests, in individuals with known exposure.

Th.B.P.11 EVOLUTIVITE DE L'INFECTION AU VIRUS DE L'IMMUNODEFICIENCE HUMAINE CHEZ 69 HEMOPHILES SEROPOSITIFS.

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Objectif et patients. L'infection au virus de l'immunodéficience humaine (VIH) est analysée chez 69 hémophiles séropositifs, soit 38% de la population des déficits congénitaux suivis au CNTS. La répartition entre hémophile A (78%) et B (22%) est classique ; les adultes représentent 74% des patients.
Résultats. La classification CDC de cette population isole 41 asymptomatiques (stade II), 12 porteurs de lymphadénopathies (stade III) et 16 SIDA (stade IV) (23%) dont 3 sont décédés. Dix patients sont traités par la Zidovudine dont neuf depuis plus de 6 mois. Tous correspondent au stade IV. La posologie est de 1200mg/24 heures. La compliance est bonne. On observe une reprise de poids chez 6 patients avec une amélioration de l'indice de Karnofsky pour 5/9. Il a été observé 7 infections opportunistes (4 patients). L'antigénémie P24 positive 5 fois sur 9 s'est négativée dans 3 cas ; son taux a diminué dans deux cas. L'augmentation du nombre des lymphocytes CD4, constatée chez 6 patients, a été transitoire pour trois d'entre eux.
Conclusion. La date de séroconversion vis-à-vis du VIH des hémophiles en France est située entre 1982 et 1984. L'évolution de la maladie dans cette population semble identique à celle des autres groupes à risques.
L'hémophilie et ses accidents hémorragiques ne sont pas modifiés par le VIH mais le retentissement psychosocial de l'infection sur cette population est important.

Th.B.P.12 PROGRESSION OF HIV-INFECTION IN 46 HEMOPHILIC PATIENTS

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Objective. To study the incidence of AIDS in relation to progression parameters in hemophilic patients.
Methods. 47 patients (age 13-58) who seroconverted between 1982-84 were examined during 24 mo (1987/88). CDC stage and the following parameters were documented: p24 antigen, disappearance of p24 antibodies, CD_4^+ cells < 400/ul, elevation of IgA, pathological ESR and number of thrombocytes < 150.000/ul.
Results.

CDC	II	III	IV	total
1987	n=13 (28%)	n=23 (50%)	n=10 (22%)	n=46 (100%)
1988	n=13 (28%)	n=21 (46%)	n=12 (26%)	n=46 (100%)

3/46 patients died of opportunistic infections. The investigated progression parameters were significantly more frequent in stage IV patients compared to the lower CDC stages (II 0-3, III 0-4), IV 4-6). In the two patients who progressed later to stage IV, 4 of 6 parameters were found, whereas in the other 21 patients of stage III only 0-3 parameters could be recorded.
Conclusion. In a group of 46 HIV-infected patients 25% have progressed to stage IV during 4-6 years observation period. In hemophilics as in patients of other risk groups additional parameters may help to identify patients with high risk for progressive disease.

Th.B.P.13

CLINICAL SIGNS AND DEATH CAUSES IN HIV + HEMOPHILIACS (hem) WITH PROGRESSING DISEASE

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Objective: To study clinical signs of hem with AIDS.
Methods: Up to January, 1989, 467 hem were studied:407 Hemophilia A (HeA) (87.15%) and 60 Hemophilia B (HeB) (12.85%). HIV antibodies were detected in 158 hem (33.83%) thru EIA(Abbott) and confirmed thru IFA and ENVACORE (Abbott).
Results: Out of the 158 hem,37(23.41%) - 32HeA (86.48%) and 5HeB (13.52%)-developed AIDS; 75%HeA (24/32) and 80% HeB (4/5) are severe. In frequency order, infection signs were: 8 candidiases,8Pneumocytis non-CMV,7CMVs,4TB, 3 Gram + sepses, 3 long-lasting fever syndromes without focus,2salmonelloses, 2 shigelloses,2 histoplasmoses,2nocardioses,2 Herpes Zoster, 1 brain acute Chagas',1strongyloidiasis, 1enteropathogenic streptococcus,1Pneumocystis carinii,1 slim disease; 2 cancers were diagnosed: a) pial cerebrospinal carcinoma, and b) undifferentiated adenocarcinoma metastasis.
Conclusion: The low number of Pneumocystis carinii cases microbiologically recorded may be due to the fact that hem cannot be subjected to invasive techniques. Out of the 37 AIDS hem, 19 (51.35%) died. Oral candidiasis was the most frequent sign observed and CMV was the agent causing the death of 7 patients.

Th.B.P.14

HEMOPHILIAC POPULATION OF COSTA RICA FROM 1979 to 1989

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Objective: To analyze the serological profile in the hemophiliac population in Costa Rica.
Methods: Serum samples stored in the LSU-ICMRT serum bank were tested with anti-HIV ELISA (Abbott HTLV-III), Western Blot (LSU-ICMRT), HIV antigen (vironostika-Organon), IRMA HB_sAg and anti-HB_s (LSU-ICMRT). Clinical data were obtained from the hospital case files.
Results: Of the 147 hemophiliacs, 80 (54%) were positive for either HB_sAg or anti-HB_s. 64 (44%) were positive for anti-HIV-1 with the following distribution:

Anti-HIV-1	Hemophilia A	Hemophilia B	Hemophilia C	Von Willebrand
Positive	44	18	0	3
Negative	46	3	2	31
TOTAL	90	21	2	34

Sixteen (36%) of the A hemophiliacs were anti-HIV-1 positive since 1980 or before, while 11 (55%) of the B hemophiliacs were positive since 1986. HIV-1 antigen test was done in 59 of the 64 anti-HIV-1 positive hemophiliacs whose sera were available. The presence of the HIV-1 antigen was evaluated in correlation with seroconversion, development of ARC or AIDS and death of the hemophiliac.
Conclusion: The analysis of HIV-1 seropositivity in Costa Rican hemophiliacs provides some new insights into the origin of this disease in Central America.

Th.B.P.15

AN IMMUNOLOGICAL FOLLOW-UP IN HEMOPHILIC NON-CONVERTERS AFTER TREATMENT WITH AN HIV-CONTAMINATED BATCH.

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Objective. In 1985 four Swedish hemophilia B-patients were infected by a batch of a F IX-concentrate, contaminated with HIV. Another 11 patients -the "risk group", treated with the same batch, did not show seroconversion for anti-HIV. We have followed them carefully for signs of HIV-infection, and we have compared them with 20 hemophilia B-patients, who did not receive this batch -the "control group".
Methods. Anti-HIV was checked at least annually. T-lymphocyte subsets (CD4 and CD8) were also analysed annually.
Results. No seroconversions have occurred since 1985 in any of the patients. The CD4 number and the CD4/CD8-ratio have not decreased, neither in the risk group, nor in the control group.
Conclusion. During a 3-year follow-up we have not identified any late seroconversions or signs of false anti-HIV-negative cases in a cohort of 11 hemophiliacs, treated with a contaminated batch of F IX-concentrate.

Th.B.P.16

NATURAL HISTORY OF HIV INFECTION IN LARGE HEMOPHILIA COHORT: FOLLOW-UP SINCE 1983; 1988/89 UPDATE.

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Objective. Multidisciplinary longterm follow-up studies on a large cohort of subjects (>100 HIV+ of 280 patients) with coagulation defects to establish the effect and outcome of HIV infection and co-factors in hemophiliacs.
Methods. Immunologic and virologic profiles are evaluated twice yearly and correlated with clinical presentation in order to determine the natural history of HIV infection (abstr.: Paris '86, Wash. '87, Stockholm '88, Beth-Giraldo et al., S. KARGER, A.G., 1987).
Results. Infection by HIV-1 has persisted in >98% of HIV+ patients in f.u.

Clinical stage	1985/6	1986/7	1987/8	T4 mm^3	1988/9	T4 mm^3
Asymptomatic	51%	42%	24%	371	22%	324
LAS	40%	42%	55%	311	50%	331
LESSER AIDS	9%	11%	11%	192	7%	277
AIDS	0%	5%*	10%		21%	

* 1 patient with hemophilia A developed AIDS/KS

Conclusion.Follow-up will continue in order to correlate immunologic profile with virologic responses to HIV, EBV, CMV, HHV-6, HSV and HTLV-I, particularly in HIV+ asymptomatic patients and patients with persistent T4 cells↑.

Th.B.P.17

NATURAL HISTORY OF HIV INFECTION IN A GROUP OF HEMOPHILIACS WITH KNOWN YEAR OF SEROCONVERSION

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Objective. To determine the incidence of the serious clinical outcome of HIV infection and to assess various prognostic markers of progression.
Methods. Seroconversion to HIV was documented by ELISA and WB or RIP in 42 hemophiliacs. The seroconversions occured between 1980-1985.
Results and Conclusions. By November 1988,4 cases of AIDS or ARC2 (ARC plus T4<200μl) have been diagnosed (Incidence Rate 18 cases/1000 person-years).However 10 out of 35(28.6%) cases developed WR5 or WR6 stage of the Walter Reed classification system. A steady decrease in the absolute number of the T4 lymphocytes was noted between follow-up years 1-5 but the gradient was slower between years 6-8.Declining titers to antibody p24 was an earlier prognostic marker of poor clinical outcome or immunologic deterioration compared to p24 antigen and the loss of anti-p24 reactivity usually occured 1 year before the appearance of p24 antigen.

Th.B.P.18

HIV-1 INFECTION IN CHILDREN WITH HEMOPHILIA A AND B. A REPORT FROM THE CANADIAN PEDIATRIC HEMOPHILIA AIDS STUDY GROUP.

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A survey of HIV-1 antibody +ve pediatric hemophiliacs (age ≤ 18 years on 01/01/89) followed in comprehensive care hemophilia clinics in Canada, was conducted in January 1989. Seventeen Centres in 9 Provinces are represented in this report. The results of the survey are as follows:

FACTOR DEFICIENCY	VIII: C		IX	
	≤1%	≥1%	≤1%	≥1%
Ontario	102*(43/101)**	78 (4/78)	21 (11/21)	22 (2/22)
Quebec	63 (30/63)	49 (4/49)	5 (0/5)	14 (0/14)
Eastern Canada	14 (4/12)	62 (6/41)	0 (0/0)	6 (1/5)
Western Canada	32 (13/31)	33 (4/18)	9 (0/3)	17 (0/7)
	211 (90/208)	222 (18/186)	35 (11/29)	59 (3/48)

*Number of cases followed ** # Western blot confirmed HIV-1 antibody +ve cases/# tested. Twenty six% (122/471) of the pediatric hemophiliacs identified in this survey are HIV-1 antibody +ve. Seropositivity was higher in children with severe vs mild/moderate hemophilia (42.6 vs 8.9%), and in children with factor IX deficiency followed in the Province of Ontario as compared to elsewhere (52 vs 0%). Two patients have developed AIDS; one of these cases died of an intracranial haemorrhage related to trauma. Four children are currently on AZT [CDC Group:II (1), IVC-1(1), IVC-2(1), IV-B(1)]. In 55 hemophiliac children followed in one Ontario Centre, 11 cases have declining p-24 antigen levels and CD4 cell counts less than 200/μl, findings associated with a poor prognosis in adult seropositive hemophiliacs. We conclude that criteria for use of AZT in pediatric hemophiliacs are urgently needed, and efforts to formulate a National policy are currently underway.

Th.B.P.19 HEMOPHILIAC AGE AFFECTS IMMUNE FUNCTIONS IN HIV INFECTED PATIENTS.

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We have followed approximately 200 hemophiliacs (H) at our State Center since 1980. Overall 55% (103) of the patients who used any non-treated factor VIII or IX concentrates seroconverted. Of those children (C <13) 29/99, adolescents (Ado <18) 22/45, and adults (Adu) 52/117 developed specific HIV antibodies. C (n=5) took longer to asymptomatically develop T4's <500 but without AIDS than Ado's (n=6) or Adu's - 60, 28, and 37 months respectively (p <0.01). Of those whose T4 cells declined to <500 this reduction occurred at a rate of approximately 20 (11-36) T4 cells per month. Eight patients have been followed for a total of 122 man-months with <200 T4 cells without developing disease though 8 others suffered AIDS with such low numbers. Fourteen patients - 3 C, 1 Ado, and 10 Adu - have developed AIDS after a period of 23-75 months following seroconversion. Of 41 H who remain seronegative, 2/60 T4 counts have been <500 and none have developed AIDS.

Such findings may offer avenues of approach of therapy of HIV infected H and a better understanding of the immune abnormalities such patients exhibit. Patients may remain well with few T4 cells. No reassurance can yet be offered since some will deteriorate, usually after suffering symptoms suggestive of imminent AIDS.

Th.B.P.20 A PROSPECTIVE STUDY OF HIV INFECTION IN CHILDREN WITH HEMOPHILIA

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Objectives: A multicenter study was conducted in Canada between Jan.1,1985 and Jan.1, 1989 to determine the prevalence of HIV infection among hemophiliacs and to monitor their clinical and immune status.
Methods: 98 children were initially enrolled and 89 are currently followed. Physical examinations and immune evaluations including DHS skin testing, T cell subsets, quantitative immunoglobulins, lymphocyte mitogen responses and viral serologic assays were carried out every 6 months.
Results:

	At Entry (1985)		At Last Testing (1988)	
	HIV (-)	HIV (+)	HIV (-)	HIV (+)
	n = 67	n = 22	n = 62	n=27*(*5 patients seroconverted)
T Cell Subsets (mean cells/MM³±S.E.M.)				
CD4	893±86	896±11	1092±73	773±136
CD8	434±44	876±12	415±35	723±84
Clinical HIV Disease				
CDC Gr.II, III		16 (73%)		9 (33%)
CDC Gr.IV		6 (27%)		18 (67%)

Conclusions: Although there were no significant decreases of CD4 cells between the first and last testing date, a significant proportion (67%) of seropositives now have severe HIV disease (CDC Group IV). Thus the rate of progression of HIV disease in children is similar to that of adult hemophiliacs.

Hémophilie : autres virus
Hemophilia: Other Viruses

Th.B.P.21 CONTAMINATION D'UN JEUNE HEMOPHILE PAR LE VIRUS VIH 2

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objectif. Possibilité de contamination d'un jeune hémophile par le virus VIH 2 en mars 1986 à partir d'une perfusion de facteurs de substitution non chauffés gardés par négligeance.
Méthode. Surveillance régulière clinique et biologique depuis 1984. Les études virologiques comportent un dosage des AC en Elisa, un dépistage en Western-Blot pour VIH 1 et VIH 2 (IgG et IgM), RIPA et culture virale sur lymphocytes pour confirmation.
Résultats. Les différents bilans révèlent une séro-conversion pour le virus VIH 2 en Décembre 1986.
Un an après le contage, il va développer un syndrome lymphadénopathique avec parallèlement une baisse des lymphocytes T4 (600/ml) et une inversion transitoire du rapport $\frac{T4}{T8}$

La confirmation de l'infection par le virus VIH2 a pu être apportée par RIPA et culture sur lymphocytes.
Conclusion. La contamination d'un hémophile par le virus VIH 2 est rare en France. Il n'y a pas de différence dans l'expressivité clinique et biologique entre l'infection par le virus VIH 1 et VIH 2 étant donné qu'ils présentent des caractéristiques communes de lymphotropisme et cytopathogénicité.

Th.B.P.22 PRE-EXISTING CYTOMEGALOVIRUS INFECTION INCREASES THE PROGRESSION TOWARDS AIDS IN A COHORT OF HAEMOPHILIACS.

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Objective Does CMV enhance HIV pathogenicity?
Methods IgG antibodies against CMV and against HSV (as a control) were measured by radioimmunoassay. HIV antibody was measured by enzyme immunoassay (Wellcome).
Results The presence of CMV but not HSV antibodies, was associated with the development of AIDS (See Table).

	CMV serostatus		Totals	HSV serostatus		Totals
Symptoms	+	-		+	-	
Yes	18	4	22	14	8	22
No	40	39	79	46	31	77
Totals	58	43	101	60	39	99

Kaplan-Meir plots related to the time of HIV seroconversion showed that CMV positive patients progressed to develop AIDS significantly more rapidly than did CMV negative patients. There was no difference for HSV.
Conclusions These results are consistent with the hypothesis that CMV cooperates in vivo with HIV to enhance the rate at which AIDS develops. Controlled trials of anti-CMV drugs would be warranted in individuals infected with both viruses to see if this cooperation can be suppressed.

Th.B.P.23 HIGH BURDEN OF EPSTEIN-BARR VIRUS IN HIV-INFECTED HEMOPHILIAC PATIENTS.

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Objective. To determine if HIV-infected hemophiliac patients have an excessive burden of Epstein-Barr virus (EBV) that potentially could produce subsequent deleterious complications.
Methods. The patient group consisted of 47 patients with hemophilia (predominantly type A) and an underlying HIV infection (31 asymptomatic, 13 ARC, 3 AIDS) and 7 others lacking the HIV infection. EBV levels were determined by qualitative and quantitative transformation assays while antibody determinations were performed by indirect immunofluorescence.
Results. The asymptomatic, ARC, and AIDS groups of HIV infected hemophiliac patients had a greater prevalence/value of infectious EBV in oropharyngeal secretions (range of 56.5 - 100%), spontaneous proliferation of peripheral blood mononuclear cells (≥40% of specimens), and EBV infected cells (30 [±40.6]) - 203 [±664.6] per 10^7 peripheral blood mononuclear cells) than the non-HIV infected hemophiliac and normal control groups. A variable elevation of EBV antibody responses was found.
Conclusion. HIV-infected hemophiliac patients had as highly an increased burden of EBV in body secretions/fluids and, to a lesser extent, abnormal EBV antibody responses as that previously found in adult HIV-infected homosexual groups. The consequences of the abnormal immunoregulation of EBV in HIV-infected hemophiliacs, ie, development of lymphoproliferative or lymphomatous lesions, needs to be monitored closely.

Th.B.P.24 HTLV-1 IN HEMOPHILIACS IN ARGENTINA

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Objective. To study the seroprevalence of HTLV-1 antibodies on hemophiliacs.
Methods. Sera previously drawn from 127 hemophiliacs for assessment of HIV-1 incidence (51 -40.2%- HIV-1-pos. and 76 -59.8%- HIV-1-neg.) were studied to determine the impact of HTLV-1. Sera were screened for HTLV-1 antibodies by means of an ELISA assay (CPI). Samples repeatedly positive or undeterminated were tested thru Western Blot.
Results. Only 1 (0.79%) out of 127 was HTLV-1-pos. Western Blot showed bands at p24, p36, gp46, p53. A retrospective study of this patient demonstrated seropositiveness as from 1985. No cross-reaction was observed between HIV-1 and HTLV-1. The HTLV-1-positive serum sample was HIV-1-negative.
Conclusion. No co-infection with HIV-1 and HTLV-1 was found. Our data suggest that in our country HTLV-1-infection among hemophiliacs is very low, although more studies should be performed to ascertain the seroprevalence of this virus on the group.
(Supported by a grant from Fundación Roemmers).

Th.B.P.25 SIGNIFICANCE OF VIRAL SUPERINFECTIONS BY HTLV-I, EBV AND CMV FOR IMMUNOLOGICAL DISORDER IN HIV-INFECTED HEMOPHILIACS

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In order to clarify the influence of viral superinfections by HTLV-I, EBV and CMV for immunological disorder in HIV-infected persons, 55 hemophiliacs were examined. Twenty-two of 55 were seropositive for HIV. Two of 22 were AIDS and 20 were AC. Results: 1. Although more rapid decrease in CD4+ cell count and CD4/8 ratio could be seen in one patient beeing positive for both anti-HIV and anti-HTLV-I antibodies, our two AIDS patients were seronegative for HTLV-I. 2. Irrespective of these viral superinfections, such autoantibodies as RF, LE factor, anti-nuclear ab. and anti-DNA ab. could be found in none of HIV-infected hemophiliacs. Nevertheless, one AC patient with ITP revealed relatively high anti-EB VCA IgG ab. level (X320), though anti-HTLV-I and anti-CMV antibodies were negative. 3. No difference on the frequencies of the positive anti-HTLV-I, EBV or CMV antibody could be seen between patients with and without positive serum HIV Ag. and HIV isolation. Conclusion: No clear immunosuppressive or AIDS-facilitating effects attributable to these viral superinfections could be recognized, though such possibility seemed to be undeniable in some HIV-infected hemophiliacs.

Hémophilie : aspects psycho-sociaux
Hemophilia: Psycho-Social

Th.B.P.26 LIVING WITH HIV: A WEEKEND RETREAT FOR TEENAGERS AND YOUNG ADULTS WITH HEMOPHILIA

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Objectives. A weekend "retreat" was planned to: (1) provide a non-medical setting for socialization among teenagers and young adults with hemophilia. (2) promote discussion about HIV and hemophilia issues, (3) provide accurate information about hemophilia and HIV, (4) discuss issues of sexuality and transmission of HIV, (5) help develop beneficial coping strategies. The team would be able to observe their social and functional capabilities in an informal setting.
Method. Seventeen teenagers and young adults with hemophilia (aged 14-29) spent three days in a resort setting. Educational methods included one to one and group instruction and group discussion. Young adults with hemophilia acted as role models focusing on social and educational concerns and ways of coping. The health team (nurse, social worker and physiotherapist) were able to observe and assess social interaction and functional capabilities throughout the weekend.
Results. Completed evaluations showed that all participants were enthusiastic about the opportunity to meet others with hemophilia, to develop stress management techniques, to learn more about hemophilia and/or HIV and to develop exercise programs related to specific areas of concern. Observations by staff led to better understanding of the needs of these patients.
*Funding for the retreat was provided by the Federal Centre for AIDS, Health and Welfare Canada.

Th.B.P.27 RESPONDING TO THE PALLIATIVE CARE NEEDS OF PERSONS WITH HEMOPHILIA AND AIDS

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Recent surveys and national workshops among comprehensive care centre personnel have indicated the growing concern to give attention to the palliative care needs of persons with hemophilia.

Two surveys conducted in 1988 have shown that 950 of Canada's 2,300 classic hemophilia population have been infected with HIV. 84% of those infected are under 40 years of age. Epidemiological projections indicate that 50% of those who are now infected will have developed AIDS by 1993.

This presentation will show that the infected population is different from other risk groups in that they include all age groups, often include several members of one family, many of the adults are married with children; they all suffer from a pre-existing life-threatening illness (hemophilia); they have very little pre-existing financial security (e.g. life insurance); and they all have access to a pre-existing care program.

The challenges now facing the hemophilia community will be described. How the Canadian Hemophilia Society will respond to the palliative care needs of persons with hemophilia and AIDS (e.g. development of palliative care program components, home care and formal liaison with and adaptation of other palliative care related programs/services) will be presented.

Th.B.P.28 PSYCHOSOCIAL MANAGEMENT OF HIV INFECTION AMONG HEMOPHILIACS IN WESTERN CANADA

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Objective: To evaluate the current psychosocial management of HIV infection among hemophiliacs at the five Western Canadian Comprehensive Hemophilia Centres.
Method: All centres submitted a written report on their current approaches to the psychosocial management of HIV infection in hemophiliacs. The reports covered the following areas of clinical activity: education, pre and post test counselling, quiescent phase of HIV infection, counselling of AIDS patients and their families and bereavement counselling.
Results: 508 hemophiliacs are registered with the Western Comprehensive Hemophilia Centres. 85% of patients have Factor VIII deficiency and 15% Factor IX deficiency. 133 or 26% have seroconverted to HIV of which 11% have died. The Centres concurred that the current methods of management are inadequate to deal with the problems posed for hemophiliacs and their families. Thus, poor education about HIV issues, increasing patient anxiety, continuing low self-esteem of infected patients and inappropriate decision making are likely to continue to plague this population.
Conclusion: Structured psychosocial programs with pre-defined objectives are necessary if beneficial outcomes are to be achieved for this population of patients.

Th.B.P.29 AIDS AND HEMOPHILIA: CREATING UNIQUE FAMILY DYNAMICS

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Hemophilia is a hereditary blood clotting disorder usually passed on from mother to son. The genetic aspect of hemophilia creates family dynamics unique within the AIDS community.

HIV was acquired:

1) as a result of medical treatment for hemophilia. Families where HIV and hemophilia are present are faced with the dilemma of mistrusting the medical team they are dependent on for treatment;
2) because of an inherited condition. Anger and guilt are compound dynamics within these family systems;
3) and is found throughout the extended family;
4) by children with hemophilia therefore, parents are faced with the responsibility of telling them of their HIV infection;
5) by the brothers of women who are known carriers of the hemophilia gene. Sisters of hemophiliacs with HIV/AIDS are giving serious consideration to having children. They live in fear of what unknown catastrophic illness will next infect the hemophilia community.

The author will discuss these five clinical issues specific to families where hemophilia and HIV/AIDS are present and make treatment recommendations for social work professionals.

Th.B.P.30 CONDOM USAGE REPORTED BY FEMALE SEXUAL PARTNERS OF ASYMPTOMATIC HIV SEROPOSITIVE HEMOPHILIC MEN

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***Centers for Disease Control, Atlanta, GA, U.S.A.

Objective. To report condom usage rates among a sample of female sexual partners of HIV seropositive hemophilic males.
Method. ACTG 036 is a placebo-controlled clinical trial of Zidovudine (ZDV) in HIV seropositive hemophilic men. Female sexual partners of these men are being enrolled in a prospective study of the efficacy of ZDV in preventing male-to-female transmission of HIV. Behavior and HIV serostatus of these seronegative women will be evaluated at entry and when their partners complete study therapy with ZDV or placebo. The women enrolled are not receiving ZDV.
Results.

	Percent Condom Usage Reported							Not Sexually Active	Total
	100	99	90	80	50	10	0		
Number of respondents:	10	3	1	1	1	1	4	4	25

Twenty-five women have thus far (January, 1989) been enrolled; mean age at enrollment was 35.1 years (range 25 to 56). Reasons for not using condoms were not surveyed. 7(28%) reported children of ages 2 to 6 years, indicating previous high risk for exposure to HIV.
Conclusion. Only 47.6% (10/21) of sexually active female partners of HIV seropositive hemophilic males reported condom usage at 100%, despite awareness of male serostatus and risk reduction counseling.

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

Th.B.P.31

PSYCHOSOCIAL AND NEUROPSYCHOLOGICAL STATUS OF HAEMOPHILIACS AND GAY MEN WITH HIV INFECTION : A CONTROLLED INVESTIGATION.

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*Dept.Clinical Psychology and **Oxford University Dept.Psychiatry, Warneford Hospital, Oxford, and *** Oxford Haemophilia Centre, Oxford, U.K.

Objective. To establish prevalence of psychosocial and neuropsychological problems in HIV+ subjects; to compare the two transmission groups; to identify the characteristics of those with problems.
Methods. HIV+ haemophiliacs (n=36) and HIV- haemophiliac controls (n=36)and HIV+ gays (n=20) and HIV- gay controls (n=25) were studied. Measures included psychiatric state (PSE, POMS, Hopelessness); coping (Hardiness, locus of control); social and sexual adjustment; neuropsychological screen (Trails A and B, digit symbol, verbal fluency).
Results. In both transmission groups HIV+ individuals had higher levels of psychological symptoms and hopelessness than HIV-. Irrespective of HIV status gay men had higher levels of psychosocial problems than haemophiliacs, and this difference was especially marked in the case of negative individuals where it was found that gay men had much higher levels of psychosocial problems than negative haemophiliacs. No differences were found between groups on neuropsychological measures.
Conclusions. HIV infection appears to be associated with psychosocial problems irrespective of transmission category. Asymptomatic individuals do not show neuropsychological impairment. Gay men (whatever their HIV status) seem more likely to experience psychological problems. The therapy implications of this finding need to be considered.

Th.B.P.32

RISK FACTORS FOR PSYCHIATRIC DISTRESS AMONG HEMOPHILIACS INFECTED WITH HIV1

Dew, Mary Amanda*; Ragni, M.*,**; and Nimorwicz, P.**
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Objectives. To examine psychiatric correlates of HIV1 infection in a major risk group for AIDS; to identify psychosocial characteristics of HIV1+ men that increase their risk for psychiatric distress following infection.
Methods. All moderate/severe hemophiliacs residing in western Pennsylvania, USA, plus mild hemophiliacs known to the regional Hemophilia Center, were contacted. Seventy-five men (73% of the population) were interviewed and their medical records were reviewed: 31 were HIV1+ and 44 were HIV1-.
Results. HIV1+ men had significantly higher SCL-90 symptom scores than HIV1- men, particularly in depression and anxiety areas. There were no differences among HIV1+ men according to infection stage or clinical severity of hemophilia. Seven psychosocial factors exacerbated the effects of infection on mental health: family psychiatric history, low social support from wife, low family support, low friend support, a poor sense of personal efficacy, perceiving high daily stress related to HIV1, and experiencing recent life events involving loss. HIV1+ men with one or more such characteristics were highly symptomatic; remaining HIV1+ men had lower symptom levels similar to all HIV1- men. The likelihood that HIV1+ men would experience clinically significant distress accelerated when multiple factors were present.
Conclusion. These data suggest that clinical services to alleviate distress in infected populations should be targeted to intervene on these psychosocial assets and liabilities that individuals bring to the situation.

Th.B.P.33

PREDICTION OF SAFER SEX PRACTICE AND PSYCHOSOCIAL DISTRESS IN ADULTS WITH HEMOPHILIA AT RISK FOR AIDS

Parish, Kathy L.*, Mandel, J.**, Thomas, J.*, and Gomperts, E.* *Childrens Hospital of Los Angeles, ** University of California San Francisco, San Francisco, CA, U.S.A.

Objective. To determine which behavioral factors are predictive of consistent condom use and psychosocial distress in hemophilic adults at risk for AIDS.
Methods. A self-administered questionnaire was sent to all 975 identified persons with hemophilia in California in 1987-88. Items were designed to identify factors associated with decreasing transmission of HIV to partners and with psychosocial distress levels indicative of need for intervention.
Results. Analyses of data from 351 respondents indicate that only one-third report consistent condom use during vaginal intercourse. Predictors to consistent condom use were discussion of safer sex with partner, knowledge of HIV test results, and postponement of childbearing; these factors produced a cumulative R^2 of .44. 24% of respondents indicated experiencing significant distress. Predictors to psychosocial distress were worrying about transmitting HIV, perceived chance of developing AIDS oneself, recreational drug use, and knowledge of HIV test results, again with a cumulative R^2 of .44.
Conclusion. Awareness of HIV+ sero-status appears to be linked both to safer sex practice and psychosocial distress, emphasizing the need for ongoing support to these individuals and their families. Couple communication and perceived risk of AIDS for self and others are key factors in coping with AIDS. A better understanding of the impact of the AIDS threat on partners and couple functioning, in order to facilitate communication and shared responsibility for risk reduction in couples, is needed.

Th.B.P.34

GUIDELINES FOR DEALING WITH PREGNANCY IN SEROPOSITIVE HEMOPHILIACS AND THEIR SPOUSES

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Objective. To describe a protocol for HIV testing in pregnancies of seropositive hemophiliacs and their spouses.
Methods. All patients followed at the New England Hemophilia Center receive counselling concerning HIV transmission. "Safe sex" practices and avoidance of pregnancy is strongly advocated. However, pregnancies among seropositive hemophiliac males and their spouses have occurred. Since 1985, a protocol for testing wives insisting on pregnancy has been instituted. The wife is tested every 2-3 mos. until conception, condom use is recommended except at time of ovulation. HIV Ab testing is performed at 6 to 8 and 12 to 16 wks. gestation (so that termination is an option if seroconversion occurs), and at 8 mos.
Results. Since 1985, 13 pregnancies have occurred in 9 couples with a seropositive hemophiliac. Eight pregnancies were monitored according to our protocol, and all wives were seronegative. There were 3 full term pregnancies (children alive and well at ages 4 mos. to 2 1/2 yrs.), 2 were miscarriages and 3 are ongoing (2 at 3 mos. gestation, 1 at 6 mos. gestation). Two pregnancies have been monitored without our protocol, one completed and one ongoing at 5 mos. gestation. At 8 wks. gestation of the first pregnancy the wife was found to be seropositive. The couple elected to continue the pregnancy after intensive counselling. The baby was seropositive at birth and died of AIDS at age 11 mos. In the 3 pregnancies that occurred without any HIV testing, the children are alive and well at 1 1/2 yrs. to 3 yrs.
Conclusion. Despite efforts to inform seropositive patients and their wives of the risks of HIV transmission, some will choose to become pregnant. HIV testing during the pregnancy will allow the couple to make informed decisions about the pregnancy should seroconversion occur.

Th.B.P.35

A TEAM RESPONSE TO HIV/AIDS CARE IN PERSONS WITH HEMOPHILIA

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This presentation will describe how interdisciplinary "dialogue days" was used as an approach to team building in introducing HIV/AIDS care in Canadian Hemophilia Care Centres.

Dialogue days conducted in 1987 and 1988 involved hemotologists, nurses, coordinators, social workers and psychologists. The different health care professionals identified dimensions of HIV/AIDS care needs in the hemophilia community, shared information, re-examined roles and recognized important linkages.

The extended "results" of these dialogue days will be presented at this conference. The results will demonstrate how interprofessional "dialogue days" can be a critical step in redefining the roles of various health care team members in response to a new health care situation.

Maladies mycobactériennes
Mycobacterial Diseases

Th.B.P.36

TUBERCULOSIS IN AIDS PATIENTS IN RIO GRANDE DO SUL: A NEW EPIDEMIC?

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Universidade Federal, Porto Alegre, Rio Grande do Sul, Brasil.

Objective: Establish the incidence and the most common sites affected by Mycobacterium tuberculosis in AIDS patients in Rio Grande do Sul (RS) state.
Methods: It was reviewed, at random, 50 AIDS inpatients at Hospital de Clinicas de Porto Alegre between July and December 1988. It was considered positive if the culture, from any site, "in vivo" or "post-mortem", identified Koch bacilli.
Results: In 20 patients (40%) Koch bacilli was present. 25% (N=5) were at three or more sites (mainly lungs, bones, lymph nodes and gastrointestinal tract); 25% (N=5), at gastrointestinal tract; 20% (N=4), in lungs; 20% (N=4), in lymph nodes; 1, in pericardium and the other with lung and joint involvement.
Conclusion: These are expressive numbers. First, it is one of the highest incidence of tuberculosis in the world. Second, the site of involvement does not seem to influence the mortality of the group. Last, it is very import- and to consider the presence of Koch bacilli in AIDS patients coming from RS state.

Th.B.P.37

Th.B.P.38

THORACIC RADIOGRAFIC ASPECTS OF TUBERCULOSIS IN AIDS

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The authors present an evaluation of thoracic X-rays in patients with AIDS and tuberculosis,its value for the diagnostic and therapeutic orientation.

Patients were clinically classified according to CDC (centers of Disease Control),of USA,being 25 men and 2 women ,aged between 18 and 66 year,16 homosexuals,5 bisexuals,2 users of intravenousdrugs and 3 undeterminated.All cases with positivie ELISA . The diagnostic of the Mycobacterium tuberculosis was comproved by analyses of sputum(6 cases),bronchial washing(1 case) , endoscopic biopsy(1 case),pleural biopsy(1 case),necropsy(9 cases) and therapeutic trial(5 cases).Others 4 cases had comproved disease by ganglion biopsy(3 cases) and liquor(1 case).

Lesions more frequently found were adenomegaly,in 20 cases and nodular lesions,less than 5mm,in 17 cases.The association between nodular and adenomegaly were the most significant.

Patients with correct diagnostic and treatment showed partial or total resolution of the thoracic lesions(16 cases). Later diagnostic or untreated patients had not good prognostics.

Association of thoracic lesions and therapeutic trials can give us the diagnostic of the tuberculosis as showed in 4 patients treated wich died,with proven diseases in autopsies.

Th.B.P.39

GASTROINTESTINAL TUBERCULOSIS IN AIDS PATIENTS: THE RIO GRANDE DO SUL EXPERIENCE

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Universidade Federal do Rio Grande do Sul, Brasil.

Objective. Study the incidence of gastrointestinal tuberculosis and its relation with diarrhea in Rio Grande do Sul(RS)state.
Methods. The registers of 50 AIDS inpatients at HCPA between July and december 1988 were reviewed(8 were excluded, as they did not have diarrhea.
Results. From the remaining 42 cases, in 9(21,4%) cultures obtained from stools(N=7) or gastrointestinal biopsy at necropsy(N=2) yielded Mycobacterium tuberculosis. In all 7 cases the diarrhea improved with the use of anti-tuberculous drugs.
Conclusion. Our findings support the importance of gastrointestinal tuberculosis as a common treatable cause of diarrhea in patients with AIDS.

Th.B.P.40

TUBERCULOSIS AND AIDS

Biancalana, Maria Lucia Neves; Mendes M.S., Rodrigues G.A., Stefani, H.N., Levi G.C., Mendonça J.S.
Department of Infecctious Diseases - Hospital do Servidor Publico Estadual - São Paulo - Brazil.

Between 1985 and 1988 we studied 19 patients with positive anti-HIV scrologic test and tuberculosis diagnosticated by positive culture for M. tuberculosis. Tuberculosis was the first manifestation of HIV related infections in 12 patients; concomitant with other HIV related conditions in four cases (two Kaposi sarcoma); three patients had presented an opportunistic infection previously. M. tuberculosis was cultured from sputum in 11 patients, lymphonode in three, liver two, lung one, urine one and gastric lavage one. CD4 + count was performed in all patients but three and was low in all cases with a median count of 154 cells/mm³ (range 17 to 378), CD4 + count was above 200 in five patients (group A) and lower than 200 in 11 cases (group B). Group A had two patients with pulmonary tuberculosis, two with disseminated tuberculosis and one with ganglionar tuberculosis. Group B had eight patients with disseminated tuberculosis, two with pulmonary tuberculosis and one with renal tuberculosis. Seven of 14 (50%) patientes treated with RMP, INH and PZA had hepatitis during the first two weeks of treatment. There was total normalization in all cases after change to EBT and SM. Further reintroduction of INH 6 cases was well tolerated. The authors call attention to the low CD4 + counts in all cases, not related to the clinical form of tuberculosis. They also observe that hepatitis was very frequent, early and probably not related to INH.

Th.B.P.41

DRUG-RESISTANT TUBERCULOSIS IN AIDS AND ARC

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Objective: Tuberculosis (TB) is now frequently reported in AIDS, and its proper treatment remains to be determined. We reviewed the prevalence of drug-resistant Mycobacterium tuberculosis in patients with AIDS or ARC.

Methods: We searched our mycobacteriology registry for all cases of TB from 1982 to 1988. Of 137 patients, 13 had AIDS or ARC: their clinical records were reviewed.

Results: There were 11 men and 2 women (mean age 38); 6 were Hispenic, 3 black, 3 white and 1 Asian. Risk factors were: homo/bisexuality in 7, intravenous drug abuse in 4, heterosexual contact in 1, and unknown in 1. Two patients had ARC, 11 AIDS. Five patients had a history of TB. M. tuberculosis was isolated from lungs (11), blood (2), bone marrow (2), CSF (1), lymph node (1). Chest X-ray showed apical lesions with or without cavitation in 4 patients, and diffuse interstitial infiltrates in 6. In only 5 patients was TB only and alone in the lungs. Most patients initially received 3 drugs and improved; two died of other AIDS-related diseases. Resistance to either INH, RMP, EMB or SM was present in 3 cases (0.23 versus 0.13 in our total TB population), and in 2 of them (homeless) to both INH and RMP.

Conclusions: Atypical manifestations of TB were common in our patients with AIDS or ARC. Resistance was seen in 3 cases; in 2 of them to 2 drugs, but these patients were homeless and drug-resistant TB may be expected. Thus, AIDS/ARC per se is not associated with increased drug-resistant TB, and an initial 2-drug regimen is probably sufficient.

Th.B.P.42

MYCOBACTERIUM KANSASII (MK) INFECTION IN HIV INFECTED PATIENTS: A 5 YEAR REVIEW

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Objective. A significant increase in the number of isolates of (MK) associated with HIV infected patients has been observed. We reviewed all patients (PTS) with + MK cultures identified at our mycobacteriology reference laboratory.
Methods. A retrospective review of all PTS with a + culture between 1983-88 was performed. Clinical presentations, radiographic findings, therapy, and outcome were reviewed to identify MK disease with an emphasis on HIV PTS.
Results. MK was cultured 205 times from 72 PTS over a 60 month period; 23(32%) were HIV coinfected. Of these 21 had AIDS and 2 had ARC with the first isolation. An increasing % of isolates were from HIV PTS (zero in 1983 to 50% by 1987-88). Respiratory isolates were the main source of + cultures (90.3%), yet only HIV PTS manifested dissemination (liver, stool, bone marrow, blood) with 1 exception. Most had high level INH (>1.0 ug) resistance (60%). The clinical presentations were nonspecific. Fever, weight loss, cough, and night sweats were seen in 90%. The chest radiographic findings (63.2% pneumonitis, 0% cavitation) as well as the frequent coexistence of PCP (82%) made it difficult to identify true MK disease in this population. Nineteen (82.6%) PTS expired within 30 months of isolation.
Conclusion. The isolation of MK from HIV infected PTS may contribute to their overall morbidity and mortality. Distinguishing disease from colonization is difficult using currently accepted criteria.

Th.B.P.43 TUBERCULOSIS IN HIV PATIENTS : CORRELATION BETWEEN NATURAL HISTORY, CLINICAL PRESENTATION AND IMMUNOLOGICAL STATUS

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Tuberculosis (TB) associated with HIV infection is classified as TB of lungs and/or lymph nodes (LTB - CDC group IV C2) or disseminated TB (DTB - CDC group IV C1; AIDS). In order to assess the clinical and immunological relevance of considering both entities separately we studied 31 cases of TB (20 DTB, 11 LTB) diagnosed among 686 HIV patients (P). Median CD4 cell count at the time of TB diagnosis, occurence of opportunistic infections (OI) or Kaposi's sarcoma (KS) and survival were evaluated. Median CD4 cell count was low (73/mm3 - range: 3-657) and similar in both DTB and LTB (82/mm3 versus 76/mm3 p: NS). OI or KS were found to occur before or concomitantly to TB in 7/20 P with DTB and 5/11 P with LTB (p: NS). Occurence of first diagnosis of OI or KS after diagnosis of TB was also similar in both groups (4/18 P with DTB vs 2/11 P with LTB - p: NS). When TB occured as a first infection, 7 of 18 evaluable P with DTB and 4 of 11 evaluable P with LTB (38% vs 36% - p: NS) remained free of OI or KS for a median follow up period of 12 months. Probability of survival 10 months after TB diagnosis was similar for DTB and LTB (0.8 vs 0.6 - p: NS).
This study suggests that disseminated tuberculosis in HIV P is not significantly linked to a more profound immunological impairment or a worse prognosis than TB limited to lungs or lymph nodes. Relevence of considering both entities separately should be reassessed.

Th.B.P.44 SURVEILLANCE FOR HIV/AIDS-RELATED TUBERCULOSIS (TB) IN THE UNITED STATES (U.S.)

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Objectives: To assess the magnitude and distribution of HIV/AIDS-related TB morbidity and mortality in the U.S.
Methods: To describe TB and AIDS morbidity, State and local health departments match TB cases to AIDS cases diagnosed within the preceding 3 years. To describe TB and HIV/AIDS mortality, we used national vital statistics for 1980-86 and focused on men 25-44 years of age.
Results: Of the 32,490 patients with AIDS reported in 1981-87 and 122,756 TB cases reported in 1978-87 from 44 States, 1 Territory, and 10 local jurisdictions, 1,197 persons appearing on both registers have been identified to date, accounting for 3.7% of AIDS cases and 1.0% of TB cases nationwide. The areas with the highest percentage of AIDS cases with TB are Florida (8.4%), Connecticut (6.6%), New York City (5.3%), and Houston (5.2%), although cases have been found in all regions. From 1980 to 1986, TB mortality rates (underlying cause) increased from 0.23 to 0.41 deaths/100,000 men 25-44 years (71 to 155 deaths) for the U.S. and from 0.32 to 0.88 in 5 States with the highest AIDS incidence (26 to 89 deaths--66 of which also had a diagnosis of immune deficiency, Kaposi's sarcoma, or *Pneumocystis carinii* pneumonia). In contrast, TB mortality declined (0.19 to 0.06/100,000) in States with the lowest AIDS incidence.
Conclusion: TB is an important cause of morbidity in AIDS patients. The HIV epidemic is probably a leading reason for recent increases in TB in young adults and is contributing to TB mortality in some areas.

Th.B.P.45 INCIDENCE,DIAGNOSIS AND TREATMENT OF MYCOBACTERIOSIS IN AIDS

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Objective: To describe the main microbiological and clinical aspects and the incidence of mycobacteriosis in 33o HIV patients.
Methods: Different specimen(blood,urine,broncoalveolar lavage,sputum,bone marrow,spinal fluid,stool,biopsies) were examined for mycobacteria microscopically and culturally.Clinical symptoms like fever,diarrhea or weight loss were related to positive bacteria findings.
Results: Mycobacteria were isolated in 7o/33o (21,2%) HIV patients.In 14 cases with M.tuberculosis most of the patients presented with pulmonary or gastrointestinal symptoms.Dissemination was found in 7 cases. Non-tuberculosis mycobacteria were found in 56 patients (51x MAI,3x M.kansasii, 2x M. gordonae,1x M.fortuitum)whereas 8o% of these patients presented mainly with fever and weight loss.Colonization was found more often(3ox BAL or sputum,14x gastrointestinal tract) than dissemination (14x blood,1x liver,1x bone marrow,3x lymph node).Therapy for non-tuberculosis mycobacteria(ansamycin,clofazimine,ethambutol,ciprofloxacin) was reported in one third of the cases.
Conclusion: The incidence of mycobacteriosis in AIDS is high reaching 21,2% in our clinic. 8o% of these are due to non-tuberculosis mycobacteria. Clinical symptoms are not specific,fever and weight loss are a common finding in MAI infection.Therapy may be succesful even in atypical mycobacteria.

Th.B.P.46 EVIDENCE OF ANOTHER EPIDEMIC: Tuberculosis and HIV in a NYC Community Hospital.

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Objective: To analyze the recent rise of *Mycobacterium tuberculosis* (MTB) infection and disease in a NYC community hospital.
Methods: Review of MTB data from epidemiology files of 1984 - 1988. Retrospective analysis of data from patient and personnel health medical records.
Results: This 250 bed hosptal, with a 75 bed dedicated AIDS Unit, is experiencing a surge in the incidence of MTB disease. The hospital's annual caseload of MTB patients has grown from 20 in 1985 to 155 in 1988. Further analysis reveals a classic epidemic curve in 1988 case reports. To date, 52(33%) are culture confirmed. Cases are associated with one or more known risk factors; homelessness, incarceration, HIV infection and reactivation. However, 13/52 (25%) had no evidence of HIV infection. Concurrently, a rise in the number of personnel exposures to undiagnosed patients and an increase in utilization of single rooms for acute pulmonary TB also occured. PPD skin test conversions among staff members increased from 5 (1986) to 12 (1987) to 19 in the first half of 1988. 1/5 (20%) conversions in 1986 as compared to 9/19 (42%) in 1988 occured in non patient care workers. There were no clinical cases of MTB among staff.
Conclusion: PPD conversion among hospital staff demonstrates a spread of this agent in both the community and the hospital. In most cases, clinical disease remains confined to high risk individuals. However, this hospital's increase in clinical cases suggests that the rise in MTB among HIV+ individuals is impacting on the general community. Early, aggresive community screening and treatment procedures must be instituted to control this epidemic.

Th.B.P.47 INFLUENCE OF GEOGRAPHIC DISTRIBUTION ON ATYPICAL MYCOBACTERIOSIS AND ISOSPORA BELLI IN RIO GRANDE DO SUL(BRASIL)

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Universidade Federal do Rio Grande do Sul
Hospital de Clinicas de Porto Alegre(HCPA)

Objective. Show that in Rio Grande do Sul(RS) state atypical mycobacteriosis and Isospora belli are not frequent
Methods. Were reviewed 140 registers of AIDS inpatients at HCPA between june 1986 and november 1988 for the occurence of atypical mycobacteriosis or Isospora belli infections.
Results. It was found a possible case of Mycobacterium marinum(it has been successfully treated with tetracycline) coming from Santa Caterine state and 3 gastrointestinal I.belli infections(2 coming from Rio de Janeiro and 1 from New York).
Conclusion. When treting AIDS patients coming from RS, one must hardly consider I.belli or an atypical mycobacteriosis as probable pathogens.

Th.B.P.48 FACTORS INFLUENCING MORTALITY IN DISSEMINATED M. AVIUM (MAI) INFECTION IN ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) :

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Disseminated MAI in patients with AIDS is a common opportunistic infection (OI) and is unresponsive to therapy; yet its effect on the duration of survival is controversial. 54 patients with AIDS and MAI (Group I) and 23 patients without mycobacterial disease (Group II) were studied. The two groups were similar in demographic, nutritional assessments and HIV, risk factors, but differed with respect to hematocrit (HCT) and total lymphocyte count (TLC); Group I; HCT=22.7 (± 9.4), TLC=573 (± 45.4); Group II; HCT= 31.44 (± 11.3), TLC= 883 (± 74) p <0.001. (± SEM given in parenthesis). Regression analysis showed that these two factors and history of other O.I. were the only factors that related to survival (r = 0.68, p <0.05). Other indices of bone marrow function or treatment did not influence survival. Duration of survival decreased sharply in MAI patients with preceding O.I..

	AIDS (Group II)	MAI without O.I.	MAI with O.I.
Days (Survival)	275	290	140 (p <0.001)
TLC	883	690	443 (p <0.01)

Conclusion: MAI shortens survival in AIDS if it occurs late in the course of disease, if it is preceded by O.I. and if it is accompanied by significant anemia.

Th.B.P.49 MYCOBACTERIUM KANSASII INFECTION IN 15 PATIENTS WITH CLASS IV HIV INFECTION: CLINICAL AND MYCOBACTERIOLOGIC FEATURES

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Objective: To evaluate the clinical and mycobacteriologic features of M. kansasii infection in the presence of Class IV HIV infection.
Methods: All patients with M. kansasii infection between 10/83 and 11/88 were cross-referenced with all persons with Class IV HIV infection, and a retrospective chart review was conducted, including clinical, radiographic, immunologic, and mycobacteriologic data assessment.
Results: Of 40 patients with M. kansasii, 15 (37.5%) had Class IV HIV infection; of these, 11 (73.3%) were black and 4 (26.7%) white. One (6.6%) was a woman, and 14 (93.4%) men. 10 (66.6%) were gay/bisexual men, 2 (13.3%) IVDU, and 3 (20%) other risk behaviors. 11 (73.3%) had AIDS and 4 (26.7%) had Class IV HIV infection. 11 (73.3%) were diagnosed by sputum evaluation and 4 (26.7%) by bronchoscopy and sputum. 12 (80%) patients had pulmonary disease. 6 (40%) had disseminated disease, of which all were gastrointestinal, 1 bone marrow, and 1 skin. Radiographically, 1 (6.7%) had cavitary disease, and 14 (93.3%) local alveolar or interstitial disease. In 9 patients, the mean T4 cell count was 96/ml. Sensitivity studies revealed resistance to PZA in 3 of 4 isolates and partial resistance to INH in 3 of 4 isolates. Satisfactory clinical responses were observed in 8 of 11 (72.7%) of patients with pulmonary disease only, and in none of the patients with disseminated disease.
Conclusions: M. kansasii infection is common in HIV infection in an endemic area. Dissemination is more common in later stages with advanced immunodeficiency. Upper lobe cavitary disease is uncommon; alveolar and interstitial infiltrates are common. Dissemination to GI tract, skin, and bone marrow occurs. Treatment may be successful in early stages. Resistance to PZA and INH occurs; alternatives for empiric treatment are necessary.

Th.B.P.50 SEROPREVALENCE OF HIV INFECTION IN 183 CONSECUTIVE PATIENTS WITH TUBERCULOSIS (TB) AT A NEW YORK CITY HOSPITAL

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Objectives: 1)Determine the prevalence of HIV infection in pts with TB. 2)Determine the extent of immunosuppression in HIV infected pts with TB.
Methods: Between 10/87-6/88, all hospitalized adults with newly diagnosed, culture-proven TB, were offered HIV testing and T4 lymphocyte levels.
Results: 70(38%) were intravenous drug users(IVDU), 20(11%) were Haitian, 11(6%) were homosexual, and 82(45%) denied risk factors(RF)(except possible heterosexual contact). 74/80(93%) evaluable pts with RF were HIV infected (AIDS-14, oral candida(OC)-28, +HIV serology-32); 21 pts with RF were not evaluable due to refusal to undergo HIV testing(13), death or discharge prior to diagnosis(8). 8/54(15%) evaluable pts without RF were HIV infected(AIDS-2, OC-1, +HIV serology-5); 28 were not evaluable due to refusal(15), death or discharge(11), equivocal serology(2). Extrapulmonary TB(EPTB) was present in 33/82(40%) HIV infected pts and in 14/52(27%) HIV- pts(p=NS). Disseminated TB (+blood, marrow, or liver culture, or +cultures from 2 extrapulmonary sites) was present in 21/82(26%) HIV infected pts and in 2/52(4%) HIV- pts(p=.003). Median T4 of pts with +HIV serology (without AIDS or OC) was 207(range:23-677); median T4 of HIV- pts was 613(range:238-1614). Median T4 of HIV+ pts with pulmonary TB(241) was similar to median T4 of HIV+ pts with local EPTB (303)(p=NS) but not to median T4 of HIV+ pts with disseminated TB(70)(p=.01).
Conclusions: TB was often the first illness experienced by HIV infected pts. TB in IVDU, Haitians, and homosexuals was frequently associated with HIV infection. TB in pts without RF was also associated with HIV infection. Most HIV+ pts with TB had marked T4 lymphocyte depletion.

Th.B.P.51 TUBERCULOSIS AS PULMONARY COMPLICATION AIDS - ASSOCIATED

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Objective. To study pulmonary Mycobacterium tuberculosis (Mt) infection in AIDS patients (pts). Methods. In 42 cases of AIDS from june 86 to june 88 we observed 10 male pts affected by pulmonary tuberculosis: they were heroin-addicts aging from 28 to 40. Results. Bacteriological tests were positive for Mt in sputum (3 cases), in b.a.l. (4), in pleural (1) and in gastric fluid (2). The X-ray and CT examinations have shown an high frequency of medium and/or basal pulmonary infiltrates (8pts) and only one pulmonary cavitation. Only the last developed PPD positive. In 9/10 of the pts the 67-Ga scintigraphy proved the mediastinum involvement. The recovery occourred in 8/10 of the pts, they had X-ray modification in 60 days and bacteriological negativization in nearly 35 days. Conclusion. -In our country,at the opposite of USA, tuberculosis is often a pulmonary complication (23%) even if it isn't diagnostic for AIDS;- their X-ray patterns are topographically unusuals;- the diagnosis may be complicated by the coexisting other opportunistic infections;- the long-term therapeutic response is satisfactory in spite of immunodeficiency;- the high frequency of pulmonary tuberculosis suggest opportunity anti-Mt prophylaxis in early stages of HIV infection in narcotic-addicts.

Th.B.P.52 TUBERCULOSIS IN HIV-INFECTED INDIVIDUALS IN THE PROVINCE OF BRITISH COLUMBIA (1983-1988).*

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OBJECTIVE. To describe the clinical presentation, laboratory findings and outcomes of all cases of tuberculosis (TB) in HIV infected individuals diagnosed in the province of British Columbia over the 6 year period ending December 31, 1988.
METHODS. Cases of TB in HIV infected individuals were identified by a linkage between the provincial TB laboratory and the provincial AIDS Surveillance Registry. Medical records of all of the identified cases were retrospectively reviewed.
RESULTS. Fifteen cases were identified. None had AIDS at presentation. Systemic symptoms were present in 13/15 (87%). Respiratory symptoms were common (cough 50%, shortness of breath 50%). Diarrhea was present in 40%. Mean helper count and H/S ratio were already low at diagnosis (90 and .31 respectively). LDH was normal in all cases. Specimens from 51 sites in 15 patients revealed 21 smears (41%) and 32 cultures (62%) were positive. Sputum available in 10 patients was smear positive in 5 (50%) and culture positive in 8 (80%). Stool specimens available in 5 patients were culture positive in 2 (40%) where mucosal biopsy (rectum and small bowel) was also positive. CXR abnormalities were uncommon except for mediastinal adenopathy. All patients were treated with INH, RMP for 12 months + PZA or EMB for the initial 2 months. Except for 2 patients dying shortly after diagnosis from overwhelming disease, clinical response was apparent within the first week of therapy. No relapses or failures of treatment were seen. Eight of 13 survivors developed opportunistic infections (OI) diagnostic of AIDS within 8 months, 6 of these were PCP.
CONCLUSIONS. TB in HIV-infected individuals presented most commonly as disseminated disease. Systemic symptoms were common. However, respiratory symptoms were also prominent and frequently provided a source for diagnosis. Lymph node involvement and gastrointestinal complaints, when clinically apparent, provided an excellent source of diagnostic material. TB appeared to occur as a relatively late event in the course of HIV infection as demonstrated by an already low helper count and the rapid progression to OI.

* Supported in part by the National Health Research Development Programme (NHRDP), Health & Welfare, Canada.

Th.B.P.53 FEVER, WEIGHT LOSS, ANEMIA, SPLENOMEGALY AND ABDOMINAL LYMPHADENOPATHY ARE HIGHLY PREDICTIVE OF DISSEMINATED MYCOBACTERIOSIS IN PATIENTS WHO ARE HIV ANTIBODY POSITIVE.

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Disseminated mycobacteriosis due to M. avium-intracellulare (MAI) or less commonly due to M. tuberculosis (MTB) occurs in nearly 25% of patients with AIDS during the course of their illness. In most individuals the lungs are spared and organisms are found in lymph nodes, blood bone marrow, liver, spleen and gastrointestinal tract. Of 28 patients with AIDS in whom these sites revealed mycobacteria, 18 underwent CT scanning of the abdomen. Whereas all patients with mycobacteriosis exhibited an anemia (<Hb=10 gms), fever (>37.2°C 1 wk), weight loss (>10% in 3 mos), 78% also revealed splenomegaly and 72%, abdominal lymphadenopathy on CT. AIDS patients with other opportunistic infections (OI) (Pneumocystis carinii pneumonia (8), cytomegalovirus infections (11), disseminated coccidioidomycosis (1), and neoplasms (lymphoma (6) and Kaposi's sarcoma (4)) manifested lymphadenopathy in 0-35% except for Kaposi's sarcoma (75%) and coccidioidomycosis (100%), while splenomegaly occurred in less than 25% of patients with Kaposi's sarcoma and PCP. However, individuals with these OI and neoplasms failed to show the universal presence of anemia, fever and weight loss seen in patients with disseminated MAI and MTB. We conclude that this pentad of clinical and radiographic findings existing in HIV antibody positive persons is highly predictive of disseminated mycobacteriosis. This array of events relates to the pathogenesis of mycobacterial disease.

Th.B.P.54 MYCOBACTERIOSES AND AIDS. THERAPEUTIC APPROACHES.

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Objective. To gain data on the effectiveness of chemotherapy in mycobacterioses.
Methods. Course and the effect of therapy was evaluated in 51 patients. Drug susceptibility of strains involved was determined.
Results. Tuberculosis (TB): 17/21 patients were treated (common drugs for 9 months, followed by maintenance therapy). One of 17 (6 %) died of TB, five later on due to other causes. In all untreated cases TB was the cause of death. Follow-up: max. 36 months, patients alive › 1 year (n=7), › 2 years (n=4), no relapses. One of 21 strains was resistant against RMP and INH. All strains were in addition susceptible against rifabutine, clofazimine and ciprofloxacin.
MAI-infection: 17/38 patients were treated, 9 showed at least temporary improvement. 13/16 patients died, 3 due to MAI-infection. MAI was isolated post mortem in all cases in spite of treatment with clofazimine. 4/17 cases diagnosed early improved lastingly and treatment included rifabutine (n=2), and clofazimine and macrolides (n=2). All strains were nearly completely resistant against common drugs and chinolones, but were susceptible against rifabutin and clofazimine (MHK in the range of achieveable serum concentrations).
Conclusions. Therapy of TB is mostly successful. Maintenance therapy seems to be recommondable. MAI-infection treated in an early stage may be curable using modified regimens including rifabutin, clofazimine and macrolides.

Th.B.P.55 DETECTION OF ANTIMYCOBACTERIAL ANTIBODIES IN HIV INFECTION.

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Objective. To facilitate the diagnosis of mycobacterial diseases in HIV infected patients.
Methods. A serological assay detecting IgG directed against mycobacterial culture filtrate in HIV positive and AIDS patients with negative (ID -) and positive (ID +) PPD skin tests.

Results.	Negative specific IgG	Positive specific IgG
HIV carriers ID -	5	0
HIV carriers ID +	3	0
AIDS, no tuberculosis	5	0
AIDS, MAI	1	0
AIDS, ganglionnar tuberculosis	0	2
AIDS, pleural tuberculosis	0	1

Conclusion. Detection in the serum of IgG directed against mycobacterial antigens can be of help in the diagnosis of tuberculous disease in HIV infected patients.

Th.B.P.56 CLINICAL IMMUNOLOGICAL AND PROGNOSTIC ASPECTS OF TUBERCULOSIS (TB) IN HIV PATIENTS.

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OBJECTIVE. To correlate clinical aspects of TB with immunological data. To determine if any among chest X ray (XR) patterns of pulmonary involvement could be a predictor of evolution to overt AIDS.
METHODS. 35 HIV Ab +ve patients with pulmonary and extrapulmonary TB observed since March 1986 to Dec 1988 were evaluated. The mean follow-up time lasted 18 months (range 1-34).
RESULTS

	chest XR pattern		
	miliary	non miliary	p
CD4 + cells (mean ± SD) :	100.9 (± 66.3)	311.8(±263.9)	<0.01
progression to AIDS :	9/10 (90%)	2/14 (14%)	<0.005

Non-miliary patterns were: cavities in 5 cases, upper lobe infiltration in 5, lower lobe infiltration in 3, pleural effusion in 2 cases. Extrapulmonary TB was observed in 10 patients. In ARC cases progression to overt AIDS was observed after a mean of 7 months. When performed in 14 patients 67 Ga lung scanning showed focal or diffuse patterns and/or increased uptake of limph nodes. In 2 patients scintigraphic abnormalities appared before than XR lesions.
CONCLUSIONS. Chest XR miliary pattern in ARC patients with TB seems to be associated with lower CD4+ cell count ($p<0.01$) and with higher probability to develop AIDS within 7 months (<0.005). 67 Ga lung scanning is useful for an early and a more precise detection of pulmonary involvement in patients with TB.

Th.B.P.57 [illegible]

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OBJECTIF: valorer l'incidence et caracteristiques cliniques et radiologiques de la tuberculose (T) chez des malades avec SIDA, et observer la repercusion que represente le fait d'avoir inclus la tuberculose extrapulmonaire (TE) comme critaire diagnostique de definition de SIDA.
MATERIEL ET METHODES: nous avons etudié 145 cas consecutifs de SIDA. Le diagnostique de T fut établi selon critaires bacteriologiques et/ou histologiques.
RESULTATS: Des 145 malades de SIDA, nous avons diagnostiqué 52 T (35.8%), 12 Tuberculoses pulmonaires (TP) exclusivement (23%) et 40 TE (76.9%) étant cette derniere l'infection qui a defini le SIDA dans le 25.6% de nos cas; 37 des 52 malades (71.1%) étaient des droga-adictes. Le PPD était positif dans le 33% des cas. La TP apparut avant le diagnostique de SIDA, environ 12 mois dans le 66% des cas. La clinique plus frequente fut un syndrome fébrile d'environ un mois d'évolution, avec surtout symptomatologie constitutionnelle dans les patients avec TE; dans ceux-ci, l'affectation pulmonaire apparut dans 27 des 40 cas (67.5%) avec dominance de la forme disséminée dans les trois quarts des cas; la presentation adenopatique exclusive apparut en 11 cas et 2 cas avaient exclusivement affectation des meninges. La radiologie toracique, dans la TP qui avait apparu avant le diagnostique de SIDA montra une prévalence d'infiltrats pulmonaires (6/8), même avec cavitation, et chez les malades avec SIDA, soit avec TP ou TE, dans plus de la moitié des cas on pu observer un patron interstitiel accompagné parfois d'adenopaties mediastiniques. Le diagnostique de T a etait fait par culture dans l'expectoration ou rinçage broncho-alveolaire dans les cas de TP et dans la TE on a obtenu des meilleurs resultats a partir de l'étude des cultures des biopsies. On a administré traitement antituberculostatique habituel avec une resolution clinique et radiologique; 5 malades avec TE on souffer hepatotoxicité.
CONCLUSIONS: 1- La T est une infection frequente (35.8%) dans les patients avec SIDA avec une predominance de la TE (77%); 2- radiologiquement, a predominé le patron interstitiel pulmonaire avec ou sans afectation adenopatique; 3- dans la TE les meilleurs resultats ont été obtenus par culture des biopsies correspondantes; 4- on a observé une bonne tolerance et evolution clinique et radiologique avec le traitement antituberculostatique habituel.

Th.B.P.58 Generalized infection with an unidentified acid-fast microorganism (AFB).

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Case Report: A HIV-seropositive former i.v. drug user presented with enlargement of liver and spleen; he died 20 months later after a 30 kg weight loss, diarrhea, and ascites.
Results: During life, biopsies of liver and duodenum, ascites, buffy coat, urine and feces all revealed massive amounts of AFB; AFB infiltrated all organs examined at autopsy. Multiple attempts to cultivate the AFB on 10 different media at 30°, 37°, and 45° C failed. Evidence for metabolism was present in liquid Middlebrook 12B and 13A media (Bactec®), but attempts at subculture were unsucessful. The patient had not travelled to areas where leprosy is endemic, and he had no skin or nerve lesions suggestive of leprosy. Gas chromatography revealed clear evidence of tuberculostearic acid indicative of genus *Mycobacterium*, but not of secondary alcohols indicating M. avium-intracellulare. Hybridization of AFB in feces and blood with probes for *M. tuberculosis* complex and *M. avium-intracellulare* was negative.
Material from the patient was injected into 10 immunocompetent Swiss Webster mice. They were sacrificed after 12 months; $3x10^{8}$ AFB were found in 2 footpads of 1 mouse. In contrast, inoculated nude mice died after 2 months; granulomas containing AFB were present in liver and spleen. Control mice sacrificed at the same time did not show any lesions.
Conclusion: This patient died from infection with an unidentified mycobacterium, which behaved clinically like *M. avium-intracellulare*.

Th.B.P.59 TUBERCULOSIS AND AIDS IN FRANKFURT

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Objective: To describe frequency, clinical picture, course and significance of tuberculosis (TB) with AIDS in Frankfurt.
Method: since 1984, all TB cases with HIV infection have been examined prospectively. All patients (pts) get quadruple standard therapy and are clinically followed up regularly even after completion of treatment.
Results: In 4 years, 48 pts were diagnosed with TB, the total of AIDS pts in Frankfurt being 328. 37% of TB pts were not born in Germany. 10 TB pts have not developed AIDS, in 11 pts, TB was found 6mo before 1st AIDS manifestation, in 9 pts simultaneously, and in 16 pts, 11mo after 1st AIDS manifestation (mean values). 58% had isolated pulmonary TB, 21% had disseminated TB, and 21% had lymph node or renal TB, respectively. Compared with pts negative for HIV, efficacy of therapy was the same, but rate of side effects was significantly higher (7% of tested TB strains were INH-resistant). There was no difference in survival times of HIV-infected pts with TB and non-TB AIDS pts.
Conclusion: In Frankfurt, more than 10% of AIDS pts have TB with frequent dissemination. In spite of good response to standard therapy and unreduced survival times, the course of disease is complicated by frequent side effects and maintanance therapy being necessary for longer time.

Th.B.P.60 MNT INFECTION IN 63 OF 328 AIDS PATIENTS IN FRANKFURT

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Objective: To investigate occurrence and significance of evidence of different mycobacteria in HIV-infected (HIV+)patients (pts) in the course of disease.
Methods: All our HIV+ pts staged WR 4-6 are regularly tested for colonisation and/or infection with MNT (stool, urine, sputum); all pts with microscopic or cultural evidence for MNT get regular physical & immunological follow-ups. All pos. cultures are typed, and resistance is determined.
Results: Of 743 HIV+ pts tested, 63 (8.5%) had MNT (relative to total of AIDS pts [n = 328] 19%); 47 of 63 developed AIDS, 34 died. Except for 16 pts not having developed AIDS and 7 pts with MNT evidence 2mo (mean) before 1st AIDS manifestation, in 7 pts, MNT was found with 1st AIDS manifestation, and in 37 pts, 7mo later, respectively. A comparison of survival times between AIDS pts with MNT and AIDS pts without MNT showed no significant difference. In 42 pts, typing has been completed: MAI 50%, M. xenopi 33%, M. fortuitum 7%, M. kansasii 5%, M. gordonae 5%.
Conclusion: A high percentage of AIDS pts have colonisation with MNT, the frequency of subtypes geographically varying. As in other pts, evidence of MNT does not necessarily mean severe illness.

Th.B.P.61 AMINOGLYCOSIDE ANTIBIOTICS HAVE POTENTIAL VALUE IN THE TREATMENT OF MYCOBACTERIUM AVIUM COMPLEX (MAC) DISEASE IN AIDS PATIENTS

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Mycobacterium avium complex (MAC) cause serious opportunistic infections in AIDS patients. We established that the beige (C57Bl/6/bg/bg) mice are most susceptible to experimental MAC infections. In other studies we showed that in many immunobiological respects, beige mice are similar to AIDS patients. Using the beige mouse model we investigated the in vivo chemotherapeutic potentialities of more than 30 drugs. Of these, amikacin demonstrated high in vivo activity. With 50 mg/kg dose (comparable to 15 mg/kg in humans), given intramuscularly (IM) for 6-8 weeks, this drug caused remarkable elimination of MAC from all visceral organs of beige mice infected intravenously with a virulent strain of MAC. Combination chemotherapy with either rifabutin, clofazimine or both proved the major role of amikacin in the in vivo elimination of MAC. Recent studies indicated that streptomycin at a dose of 100 mg/kg given IM demonstrated equal activity to amikacin. Streptomycin being less expensive and more widely used should be valuable in the treatment of MAC disease in AIDS patients.

Th.B.P.62 PLASMIDS INFLUENCE VIRULENCE OF MYCOBACTERIUM AVIUM COMPLEX (MAC) STRAINS IN AIDS PATIENTS

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Mycobacterium avium complex (MAC) organisms are important opportunistic infections encountered in AIDS patients. More than 50% of AIDS patients are known to have MAC infections and most of them succumb to the disease within one year of diagnosis. Among several differences observed between MAC strains from AIDS and non-AIDS patients, plasmids are the most important. All (100%) of MAC strains studied contained plasmids, many of them possessing more than one plasmid, while 35-50% of strains from non-AIDS patients and only 5% of environmental isolates did so. The virulence of MAC strains as categorized by the beige mouse model is directly related to the total number of plasmids and to the number of large (100 m.dal) plasmids. Proof for the importance of plasmids to virulence of MAC is obtained by a comparison of virulence of a strain with plasmids and its plasmid deprived variant. While the former was highly virulent, its plasmid-free variant lost its virulence. The lose of virulence is confirmed by the inverse correlation of oxygen metabolite release from macrophages.

Th.B.P.63 Incidence of adquired immunodeficiency syndrome (AIDS) in outpatients with tuberculosis.

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This study was performed in a Health Center from Jan 1, 1987 to Dec 31, 1988; and 15 of 453 (3,3 percent) patients of tuberculosis had AIDS. In Brasil, the Association of both AIDS and tuberculosis had been related as 22% of outpatients and 50% of inpatients. Of 15 cases of tuberculosis and AIDS 87% were males and 13% were females, 21 to 41 years of age. All of them were white, and 73,3% were homosexual, 13,3% had transfusion-associated AIDS and 13,3% were intravenous drug users. 6,7% had tuberculosis diagnosed before AIDS, 46,7% had tuberculosis diagnosed simultaneously and 46,7% had AIDS diagnosed at least 1 month prior to the diagnoses of tuberculosis. 60% of the patients had pulmonary and 40% had extrapulmonary disease. 60% of the patients with tuberculosis and HIV infection responded well to standard antituberculosis drugs; 6,7% had progressive tuberculosis and 33,3% did not have avaliable follow up. Since tuberculosis was diagnosed the mean survival was 13.7 months.

Th.B.P.64 TUBERCULOSE (TB) ET SIDA ; FAITS CLINIQUES OBSERVES EN MILIEU HOSPITALIER PARISIEN ; IMPLICATIONS EPIDEMIOLOGIQUES.

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Dans le Service de Médecine Pulmonaire de l'Hopital Laennec, ont été recensés entre 1982 et 1988, 427 malades HIV (+) ; tous ont eu un lavage bronchoalvéolaire (LBA) et des examens bactériologiques répétés afin d'étudier l'association de TB et SIDA.
Il est apparu 4 traits particuliers : 1°/ la fréquence élevée de la TB : 12 % des cas de SIDA, 7,5 % des cas HIV (+). 2°/ la sévérité de l'atteinte TB : miliaire 15 %, foyers pulmonaires multiples 20 %, atteinte polyviscérale 21 %. 3°/ la haute densité bacillaire : frottis positif 52 %, culture positive 92 %, taux élevé de résistance des B.K. à INH (22 %) SM (18 %) RMP (7 %). 4°/ la négativité du Mentoux-test, chez plus de 90 % des TB/SIDA en opposition avec la mise en évidence des BK dans de multiples prélèvements. La négativation du Mentoux-test, initialement positif, est en outre observée chez les TB/HIV (+) quand l'évolution se fait vers le SIDA.

Ainsi donc, la singularité des cas de TB/SIDA réside dans la coexistence chez un malade de bacilles tuberculeux et d'un Mentoux-test négatif ; ce caractère est l'une des expressions du SIDA. De même, la négativation progressive du test cutané tuberculinique chez un TB/HIV (+) est un marqueur de l'évolution vers le SIDA.

C'est pourquoi, même si l'on ne dispose pas de la sérologie, il serait possible d'apprécier, dans les groupes de tuberculeux, le niveau de l'endémie HIV en utilisant les deux examens simples et peu onéreux que sont la recherche de BK par microscopie directe et le Mentoux-test. La positivité du premier, associée à la négativité du second traduit le SIDA. Les malades tuberculeux apportent ainsi des indices utiles à l'étude épidémiologique du SIDA.

Th.B.P.65 TUBERCULOSIS IN AIDS PATIENTS.

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Objectives: Evaluation of: a) the prevalence of extrapulmonary tuberculosis in AIDS patients, b) clinical forms of presentation of this disease, c) eventual development of opportunistic infections (OI), d) response to treatment and adverse therapeutic reactions.
Methods: A prospective study was made of 113 patients diagnosed as AIDS in our hospital between 1985 and December 1988. The reasons for instating tuberculostatic treatment served to categorize patients into four groups. I) Disseminated tuberculosis with bacteriological confirmation of M. tuberculosis at two or more different sites. II) Extrapulmonary tuberculosis with lymph node involvement. III) Extrapulmonary tuberculosis without lymph node involvement. IV) Patients with prolonged fever and positive response to tuberculostatic, with or without eventual bacteriological confirmation.
We also evaluated the development of OI, response to treatment and the incidence of adverse reactions to treatment.
Results: Forty tuberculostatic treatment were instated (35,7%): 18 in group I, most (16) with lung disease; 10 in group II; 5 in group III; and 7 on group IV. The incidence of side effects was 10% (4 patients). The type of OI that developed generally varied according to groups, and response to treatment was usually good if the patient's previous status was good.
Conclusions: 1. In areas with an elevated high prevalence of tuberculosis infection, TB is a frequent OI in AIDS patients. 2. An important subgroup of patients debut with prolonged fever and difficult bacteriological demonstration of M. tuberculosis. In these regions, tuberculostatic treatment should be tried before classifying patients as CDC stage IV. 3. The type of OI that developed on tuberculosis varied in accordance with the clinical form of TB. 4. Response to treatment depended on the clinical form and on the patient's general condition.

Th.B.P.66 ASSOCIATION BETWEEN TUBERCULOSIS AND AIDS IN RIO DE JANEIRO - BRAZIL

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Objective: To study the incidence and characteristics of TB among AIDS patients.
Methods: We retrospectively reviewed the medical records of 235 patients who met the current CDC surveillance case definition of AIDS. We look for clinical, pathological, radiological and microbiological evidence of TB and also compared epidemiological characteristics of AIDS patients with and without TB. Chi-square test was used where appropriate.
Results: TB was observed in 85 (36,2%) patients. Although the lungs were the most frequent site of infection, 58 (68,2%) had at least one extrapulmonary (EPTB) site of disease. Lymph nodes were involved in 43 (50,6%), liver in 11 (12,9%), genitourinary tract in 8 (9,4%), spleen in 7 (8,2%), pericardium in 6 (7,1%), gastrointestinal tract in 5 (5,9%) and meninges in 3 (3,5%). Common associated opportunistic pathogens were C.albicans in 48 (56,5%), T.gondii in 18(21,2%), and Cryptosporidium in 14 (16,5%). Kaposi's sarcoma was observed in 11 (12,9%). We found no statistically significant differences between AIDS patients with and without TB: they were frequently white, middle-aged, homosexual/bisexual males.
Conclusion: 1) These data suggest a strong association between M.tuberculosis and HIV infections in Rio de Janeiro. 2) EPTB is a common feature of AIDS. 3) We found no differences between AIDS patients with and without TB in relation to age, sex, race and risk group. 4) Subsequent studies will be needed to determine the impact of the HIV epidemic on TB prevalence in Brazil.

Th.B.P.67 THE CLINICAL IMPACT OF MYCOBACTERIAL INFECTIONS IN HIV INFECTED PERSONS.

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Objective: To assess the impact of Mycobacterial infections in AIDS and HIV infected patients in the Province of Alberta (to date 125 AIDS, 706 known seropositives).
Methods: Mycobacterially infected patients were identified by reviewing laboratory isolates from the Provincial Tuberculosis Laboratory for the period 1985-1988 where AIDS or HIV was noted as a clinical factor. Patient records were then reviewed to assess clinical correlates.
Results: Thirty isolates were grown from 29 patients. Species isolated were: Mycobacterium avium intracellulare (MAI) 22, M.avium intracellulare scrofulum complex (MAIS) 2, M.tuberculosis 6, M.xenopi 1. M.tuberculosis was grown exclusively from non Canadian born persons most of whom did not have AIDS. MAI/MAIS was grown from 19% (24/125) of our AIDS patients. Sites of MAI isolation included blood 48%, stool 43%, sputum 20%, bronchial washings 14%, urine 7%, lymph nodes 3% and other 6%.
Clinically, Mycobacterial infection was the initial presentation of HIV infection in many. Several patients with MAI bacteremia have survived more than one year without treatment.
Conclusion: In our HIV population, M.tuberculosis is exclusively a problem of persons with T.B. endemic areas who usually do not exhibit other features of AIDS. MAI infection is not necessarily a late presenting feature and long term survival can occur without treatment.

Th.B.P.68 POOR COMPLIANCE IS THE MAJOR OBSTACLE IN CONTROLLING THE HIV-ASSOCIATED TUBERCULOSIS (TB) OUTBREAK.

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Increasing TB in New York City is often linked to the HIV epidemic. However poor compliance(C) is a key factor leading to frequent readmission and probably many secondary cases. The impoverished population at risk for both HIV and TB has features strongly linked to low C: intravenous drug abuse(IVD), unemployment, homelessness, crack use, alcoholism(Alc). All inpatients(pts) at Harlem Hospital diagnosed with TB from 1/1/88-9/30/88 were studied by interview(133) or chart review(95). Of 228 pts 44 (19%) died during initial hospitalization. Of the 181 who were discharged 151 (83%) were lost to follow-up and 30 were compliant. 42/151 (28%) non compliant(NC) pts were readmitted for TB within 1 year and 30 (83%) were lost again.

Factor-	M	F	IVD	Crack	Gay	NR	Alc+	Alc-	Hm-	Hm?	Hm+	Jb-	Jb+	AA	HIV+	HIV-
%NC -	81%	95%	81%	94%	50%	88%	93%	69%	88%	81%	74%	83%	75%	64%	96%	82%
# Pts -	144	37	91	18	6	50	78	72	64	38	46	128	31	53	25	27

(M=male,F=female;crack=non-IVD crack user;NR=no HIV risk;Hm-=lives in street/shelter;Hm?=unstable housing; Hm+=apartment;Jb-=nojob>1year; Jb+=regular work;AA=AIDS/ARC on admission for TB; HIV+=HIV+ without AA)

AA pts had higher C than HIV+ or HIV-, probably because their HIV disease led them to seek ongoing medical care. However, NC AA pts were more likely to be readmitted for TB than non-AA NC pts(37% vs 30%). F were more likely than M to be NC(95% vs 81%) perhaps due to a higher rate of crack use(24% vs 6%). Alcoholics had significantly poorer C in all subgroups. JB- and Hm- were highly prevalent overall but tended to be more common in NC pts. New strategies are needed to treat pts most likely to have HIV and TB.

Th.B.P.69 SUCCESSFUL ANTITUBERCULOUS TREATMENT WITH VARIOUS DRUG REGIMENS IN PATIENTS WITH HIV INFECTION.

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OBJECTIVE: To asses short-term efficacy and toxicity for several antituberculous drug regimens in patients with HIV infection and tuberculosis (TB).
METHODS: 53 patients with HIV infection and TB (72% culture and sensitivity proved) received antituberculous therapy; drugs used and daily dosages were: Rifampin (RMP), 600 mg; Isoniazid (INH), 300 mg; Ethambutol (EMB), 1200 mg; Pyrazinamide (PZA), 2000 mg; Streptomycin, 1 g. A total of 61 therapeutic courses were distributed in: Regimen A: RMP and INH for 9 months (m) plus EMB during the first 2 m. Regimen B: RMP and INH for 6 to 9 m plus EMB and PZA during the first 2 m. Regimen C: Patients in whom RMP and/or INH had to be avoided and received other drug combinations. Drugs were self-administered and efficacy assesed after 6 m of chemotherapy. Presently, 25 patients have completed treatment having a mean subsequent follow-up of 17.6±14 m. Pulmonary TB (PTB) was found in 25 patients, extrapulmonary (ETB) in 13 and disseminated (DTB) in 15. Two patients had been previously diagnosed of AIDS and 12 of chronic hepatitis.
RESULTS: TB cure was reached in 44 patients (90%); 5 of them died from causes unrelated to TB and another 5 (10%) died during the course of treatment with probable active TB. Drug toxicity was appreciated in 9 patients (16%). The main differences among regimens were:

	REGIMEN A	REGIMEN B	REGIMEN C	P VALUE (*)
Complete / incomplete courses	22/7	19/7	3/3	
Lost/toxicity/Relapses/death	0/1/3*/2	4/3/0/0	0/0/0/3	0.08
PTB / ETB / DTB	15/6/8	12/6/8	1/2/2	
CD4 /µL (X̄ + SD)	249 ± 184	271 ± 246	90 ± 73*	0.05
Cure / failure	22/7*	19/0	3/3	0.05
Side effects	3.4 %	31 %*	0	0.01
Survival since diagnosis (m)	17 ± 16.5	16 ± 13	9 ± 7	

CONCLUSION: In the short-term, results in HIV-patients resemble that obtained for TB in immunocompetent subjets. Effective therapy can be expected mainly if INH and RMP are included in the regimen. Four-drug chemotherapy seemed superior to the three-drug regimen, which showed more relapses but a lower toxicity. Due to the delayed presentation and short follow-up of the severest cases, results could worsen in the future.

Th.B.P.70 NATURAL HISTORY OF M. LEPRAE AND HIV CO-INFECTION

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Objective To determine the natural history of leprosy in HIV-infected patients.
Methods We studied 275 leprosy patients between 1985 and 1988. HIV testing on all patients utilized an ELISA with RIA confirmation. The diagnosis and treatment of leprosy were according to WHO criteria and protocols. Patients were followed at least monthly during therapy and at 3 month interval thereafter.
Results Patients were 5 to 90 years old (mean, 33 yrs). Two hundred patients had the tuberculoid form and 75 were lepromatous. The HIV seropositivity rate was 6.5% (18/275) for the entire cohort, 9.4% (18/191) for those between 15 and 60 yrs. The rate was comparable for both forms of leprosy. Twenty-two per cent (4/18) of HIV-seropositive (HIV +) asymptomatic patients developed new skin lesions and lepromin anergy during dapsone/rifampin therapy, as compared to 2/257 (0.8%) of HIV-seronegative patients. All patients who developed new lesions had tuberculoid leprosy. In HIV + patients, new lesions appeared a mean of 4.8 months (3-7 mo) after the initiation of therapy and preceded the onset of HIV-associated illness by a mean of 21 months (12-31 mo). Ten additional HIV + tuberculoid patients developed AIDS or HIV-associated illness during the follow-up period but did not develop new leprosy lesions.
Conclusion Leprosy may represent another opportunistic infection of AIDS and also accelerate the appearance of the classic AIDS illness.

Th.B.P.71 Mycobacterium avium-intracellulare infection limited to the skin and lymph nodes in pateints with AIDS

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Three patients with the acquired immunodeficiency syndrome (AIDS) developed cutaneous abscesses from which Mycobacterium-avium intracellulare (MAI) was isolated. All three patients had begun therapy with zidovidine (AZT) within three months prior to their presentation. Patients were treated with incision/drainage/wound packing as well as short courses of routine antituberculous therapy. No evidence of dissemination was found by blood culture or bone marrow biopsy and culture. All three lesions healed completely within three months, despite the discontinuation of isoniazid, rifampin and ethambutol after cultures returned positive for MAI. This rare form of localized presentation of MAI is speculated to be an effect of zidovidine on this disease process.

Th.B.P.72 MYCOBACTERIAL INFECTION IN AIDS PATIENTS

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Objective: To evaluate the frequency of mycobacterial infection in AIDS pts.
Methods: 33 consecutively followed pts were examinated for the presence of mycobacteria in clinical specimens (blood, bone marrow, sputum, Bal, urine, stool, spinal fluid, biopsies) using standard techniques.
Results: Four pts (12,1%) had disseminated tuberculosis and M. tuberculosis (M.tb) was cultured in blood (1/33) and in bone marrow (3/33). Three pts (9%) had pulmonary tuberculosis (isolation from sputum or Bal). One pt had an extra-pulmonary disease with isolation of M.tb from lymphonodes and spleen. Dissemination was due to M. avium-complex (MAC) in 4 pts (12,1%) isolation from blood in 2 cases, from bone marrow in one case and from blood, bone marrow, sputum, urine and stool cultures in one pt. One pt had disseminated infection due to M. fortuitum-complex (M.fc) proven by blood and bone marrow cultures. Colonization with other mycobacteria was due to: M. terrae-complex (M.tc) in 7 pts (21,2) (4 urine, 2 Bal, 1 sputum); M. gordonae (M.g) in 4 pts (21,1) (2 urine, 1 Bal, 1 colonic biopsy); M.fc in one pt (sputum and urine). Mtc and M.g were detected each one in 3 pts with concomitant infection by M.tb and MAC.
Conclusion: M.tb and MAC are important and frequent opportunistic agents in AIDS pts; the role of the other non-tuberculous mycobacteria as opportunitic pathogens in these pts needs further studies.

Th.B.P.73

EPIDEMIOLOGICAL AND ENVIRONMENTAL FEATURES OF MYCOBACTERIA OTHER THAN TUBERCULOSIS IN GERMANY.

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Mycobacteria other than tuberculosis (MOTT) are common pathogens in AIDS patients. Mycobacterium avium-intracellulare (MAI) are the most important atypical mycobacteria species. To evaluate whether infections and colonisations with MOTT are common only in HIV infected patients, the frequency of MOTT in immunosuppressed patients without HIV infection was investigated. Blood, stool and urine specimens from 134 patients with non-HIV related immunosuppression were examined for mycobacteria. Mycobacteria have not been found. Additionally gastrointestinal biopsy specimens from 170 immunocompetent patients were examined histologically and microscopically. MOTT were isolated from one patient.

By contrast, in 58 of 190 AIDS patients MOTT have been found. 55/58 isolates were differentiated as MAI. 48 of these MAI isolates were identified as serovar 8/21. In contrast to our findings, serovar 4 is most frequently found in patients with AIDS in the USA. These results do not seem to be attributable to a different pathogenicity of the various serovars but suggest geographical predominances.

MOTT are ubiquitous environmental contaminants, frequently isolated from soil and hospital water supply in examinations performed in the USA. In our investigations we have recovered MOTT in 63 of 170 (37 %) of hot and cold water sites and in 3 of 20 soil samples. M. chelonae, M. gordonae, and M. gastri were found most frequently, whereas MAI have not been isolated.

Th.B.P.74

TUBERCULOSIS AND AIDS-RIO DE JANEIRO, BRAZIL :1983-1988.

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OBJETIVE To describe clinical aspects of patients with AIDS and Tuberculosis (AIDS/TB) and compare to AIDS patients without TB (AIDS/NON TB).
METHODS 718 persons meeting the CDC(1987) or Brasilian Ministry of Health (1987)criteria of AIDS reported form State of Rio de Janeiro, in the period 1983-1988 (24th week ending) were analysed.
RESULTS Among 718 AIDS patients, 171(23.8%)were also diagnosed as having TB. The number of AIDS/TB patients by year rose progressively from zero in 1983 to a peak of 76 in 1987; this number fell to 43 in 1988. The interval between reported of TB and diagnosis of AIDS ranged from 29 months before to 06 months after AIDS diagnosis; 29(16.9%)the diagnosis of TB preceded more than 1 month the diagnosis of AIDS, 127(74.2%) was made within a month before or after the diagnosis of AIDS and 15(8.9%) more than 1 month after the AIDS's diagnosis. AIDS/TB pts. were similar to AIDS/NON-TB patients with respect to age, sex, homo or bisexualism in men, intravenous drug addiction, blood transfusion and were more frequently in heterosexualism transmission (12.7% versus 3.3%). In 163 AIDS/TB patients; 109(66.8%) had pulmonary iuvolvement alone or associated to others organs; 55(33.7%)Lymphatic and 22(13.7%) disseminated form.
CONCLUSION In Rio de Janeiro, tuberculosis associated with AIDS is becoming high and is urgent to initiate research programs of HIV-related tuberculosis as a basis for intervention.

Immunologie : méthodologie/divers
Immunology: Methodology/Miscellaneous

Th.B.P.75

HIV INFECTION ALTERS IMMUNE RESPONSE TO CIGARETTE SMOKING

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Objective. To investigate immune response to smoking and HIV infection.
Methods. CD4 and CD8 T cell counts (cells/ul), smoking status and smoking dose (packs/day) were evaluated twice yearly for 3.5 years in the San Francisco Men's Health Study cohort, a probability sample formed in 1984.
Results. In 586 men not infected with HIV, initial CD4 and CD8 T cell counts were significantly higher ($p<.001$) in smokers compared to nonsmokers. Mean CD4 T cell counts increased with smoking dose ($p<.001$). During 3.5 years follow-up, significant differences persisted in CD4 and CD8 T cell counts by smoking status. In contrast, among 386 healthy HIV infected men, CD4 and CD8 T cell counts were not significantly different during the observation period, and no dose response in mean CD4 T cell counts was apparent ($p=.28$).

Packs/day	0		<1/2		1/2-1		1-2		2+	
Mean CD4	$\bar{X}$	(N)	$\bar{X}$	(N)	$\bar{X}$	(N)	$\bar{X}$	(N)	$\bar{X}$	(N)
HIV-	1001	(379)	1118	(29)	1130	(47)	1278	(97)	1138	(34)
HIV+	659	(199)	727	(18)	663	(34)	679	(83)	775	(36)

The percent difference in initial mean CD4 T cell count between smokers and nonsmokers was highest in uninfected men (23%) and lowest in men seropositive at study onset with an unknown duration of infection (7%). The percent difference was intermediate when measured at time of infection in 37 men who HIV seroconverted during the study period (14%).
Conclusion. Proliferation of T cells in smokers may indicate an activated immune response. In HIV infected men, immune response to smoking appears to be depressed and this effect may be related to duration of infection.

Th.B.P.76

NON SPECIFIC PNEUMONITIS (NSP) IN HIV SEROPOSITIVE ADULTS

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Objective. To determine incidence of NSP, which occurs in some HIV seropositive adults,and to compare usefulness of different procedures for its diagnosis.
Method. This is a retrospective study of 11 NSP diagnosed by transbronchial biopsy (TBB) on 63 HIV positive patients (pts) with respiratory symptoms. All underwent TBB,BAL with cellular differential count, coltures,hystological evaluation, standard chest X-rays, haemogasanalysis, Ga67 pulmonary scan, and peripheral lymphocyte subsets count.
Result. Mean peripheral CD4 lymphocytes were 268±84/cmm; only one pts showed a reticular-interstitial pattern on chest X-rays, 1 had low PaO2 and 2 increased Ga67 pulmonary uptake. Cell count on BAL fluid was 526±168x10^3/ml: macrophages 74%,Lymphocytes 6%,neutrophils 20%,which is significantly different from our findings in P. carinii pneumonia: 254±142x 10^3 /ml: macrophages 81 %, lymphocytes 14%,and neutrophils 5%. Five of 8 ARC developed AIDS within 6 months and 5 died within 18 months of NSP diagnosis.
Conclusion.NSP represents 17.5% of our HIV infected adults with respiratory involvement. Lung biopsy remains fundamental for NSP diagnosis while non invasive procedures are only complementary. Neutrophilia of BAL liquid, if further confirmed,could represent another useful marker of this pathology.

Th.B.P.77

EXPRESSION OF CELL SURFACE "ACTIVATION" ANTIGENS IN BRONCHOALVEOLAR LAVAGE (BAL) T CELLS FROM HIV-INFECTED PATIENTS UNDERGOING PNEUMONITIS.

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In the present study we comparatively analysed the cell surface phenotype of T cells obtained from BAL (BAL-T) and peripheral blood (PB-T) in twenty HIV-infected patients with pneumonitis. Samples derived from a control group of ten HIV (-) patients with non infectious miscellaneous lung disorders were as well analyzed. T cells were obtained by sequential centrifugation on Ficoll/Hypaque, plastic adherence and nylon wool-column filtration. Cells were labeled by indirect immunofluorescence with a panel of monoclonal antibodies specific for the following surface antigens: CD 45; CD 3; CD 4; CD 8; CD 28; CD 16; CD 11b; CD 14; transferrin receptor (TrR); VLA-1; MHC class II (DR); CD 38; CD 25; 4F2 and a novel early activation antigen (gp 33/28), preliminarily designated as Activation Inducer Molecule (AIM) (1).

Samples were analyzed by flow cytometry. Our results can be summarized as follows: 1.- The proportions of CD 4(+) lymphocytes were significantly decreased in both PB-T and BAL-T samples from HIV (+) patients as reported by others. 2.- The proportion of some activation antigens such as 4F2, DR, CD 38, VLA-1 and gp 33/28 were significantly increased in BAL-T as compared to PB-T in both groups (HIV (+) and control) of patients. In contrast no significant increment of the CD 25 (+) or TrR (+) cells was observed. 3.- The expression of such activation antigens was significantly higher in the HIV (+) BAL-T as compared to the control samples.

Altogether our data indicate that a substantial proportion of BAL-T cells from HIV-infected patients display phenotipic features that presumably reflect antigen specific stimulation.

(1): Cebrian et al. J. Exp. Med. 168:1621 (1988).

Th.B.P.78

MECHANISMS UNDERLYING THE FUNCTIONAL IMPAIRMENT OF PULMONARY NK CELLS FROM PATIENTS WITH HIV INFECTION

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Objective. We previously demonstrated that in the lung of patients with AIDS NK cells are quantitatively increased but do not kill NK-sensitive cells (Am Rev Respir Dis 1988; 138:1609). To evaluate the mechanisms accounting for this functional impairment, lymphocytes recovered from the bronchoalveolar lavage (BAL) fluid of 7 patients with AIDS, 6 patients with ARC, and 1 patient with LAS were investigated for their ability to bind, recognize and lyse K-562 targets.
Methods. Analysis of cell mediated NK activity was performed at resting conditions and after stimulation with IL-2 (100 U/ml) both in ^{51}Cr release and in single cell assays. The release of NK cytotoxic factors (NKCFs) by unstimulated or PHA (5 µgr/ml)-treated BAL cells was also evaluated.
Results. The frequency of conjugates between BAL lymphocytes and K-562 targets did not significantly differ in HIV patients with respect to controls. BAL cells from AIDS patients and from 4 out of 6 ARC patients showed a defective NK activity both in single cell and in ^{51}Cr assays, whereas in the subject with LAS the NK function was comparable to controls. IL-2 treatment of patients' BAL cells resulted in an enhancement of the NK cell killing. The release of NKCFs by unstimulated lung cells from AIDS patients was undetectable, but in 2 subjects with the full-blown syndrome the NKCF production was partially restored following PHA. BAL cells from the LAS patient and from the majority of ARC patients produced discrete amounts of NKCFs and/or could be triggered to release significant amounts of NKCFs by lectin treatment.
Conclusions. In patients with AIDS the defect of lung NK cells is primarily at the post binding stage of the cytotoxic pathway. The impairment of the pulmonary NK system may be involved in the development of lethal pulmonary opportunistic infections characterizing the syndrome.

Th.B.P.79

ALVEOLAR MACROPHAGES FROM PATIENTS WITH HIV INFECTION SPONTANEOUSLY RELEASE TUMOR NECROSIS FACTOR

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Objective. To clarify whether HIV infection affects functional capabilities of alveolar macrophages (AM), AMs from bronchoalveolar lavage (BAL) of 6 patients with full-blown AIDS and 4 patients with ARC were examined for their ability to kill tumor necrosis factor (TNF)-susceptible tumor cells and to release TNF.
Methods. Unstimulated AMs freshly recovered from BAL were tested against U937 target cells in an overnight ^{51}Cr release cytotoxicity assay. In addition, cell free supernatants obtained from unstimulated and IFN-γ (100U/ml), PMA (10 ng/ml), and LPS (5 μg/ml) treated AMs were tested for their cytotoxic activity against U937 targets in an overnight ^{51}Cr release assay. To confirm that TNF was the cytotoxic factor, pretiter anti-TNF MAb (Genzyme) was added to the cell free supernatants in the TNF bioassay.
Results. Unstimulated AMs from patients with AIDS and ARC exhibited a significative lytic activity against U937 targets at all effector:target ratios tested whereas normal AMs did not kill TNF-susceptible tumor cells ($P<0.001$). Supernatants from unstimulated AMs of HIV patients showed significantly higher levels of cytotoxicity with respect to normal AMs ($p<0.001$). Incubation of AMs with anti-TNF MAb inhibited the cytolytic effect exerted by supernatants. Treatment of AMs from HIV patients with IFN-γ, PMA and LPS failed to enhance the TNF production, whereas following these stimuli normal AMs significantly increased their TNF activity.
Conclusions. AMs from patients with HIV infection are activated and spontaneously release TNF. The hightened capacity of HIV AMs to produce TNF may be involved in the pathogenesis of pulmonary complications observed in patients with AIDS.

Th.B.P.80

CD4 LYMPHOCYTE COUNTS AND SERUM P 24 ANTIGEN OF NO DIAGNOSTIC VALUE IN MONITORING HIV INFECTED PATIENTS WITH PULMONARY SYMPTOMS.

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The aim of this study was to determine if the prognostic markers CD4 lymphocyte count and serum HIV p24 antigen were of any diagnostic value in HIV infected patients with pulmonary symptoms.
Method: During 1987 and 1988 143 fiberoptic bronchoscopic procedures were performed on 104 HIV infected patients with pulmonary symptoms. The bronchoscopic specimens were evaluated for Pneumocystis carinii (Pc), cytomegalovirus (CMV) and other pathogens. CD4 counts and serum p24 antigen were measured within 2 weeks before or after the bronchoscopy.
Results: Pulmonary opportunistic infection (o.i.) was found in 81 examinations (Pc=79, CMV=2). There was no difference in CD4 counts between the patients with and without o.i., $p=0.85$. The CD4 count was <200 in 67% and in 62% respectively. 41% of the patients with o.i. had p24 antigen, while this was the case in 42% of the patients without o.i. 32% of the patients in both groups had CD4 count below 200 combined with presence of serum p24 antigen. Conclusion: The CD4 count and p24 antigen have been shown in this study to be of no diagnostic value in monitoring HIV infected patients with pulmonary symptoms.

Th.B.P.81

IMMUNOLOGICAL SUBTYPING OF LEUCOCYTES OBTAINED FROM BRONCHOALVEOLAR LAVAGE (BAL) AND PERIPHERAL BLOOD IN HIV-INFECTED PATIENTS WITH PNEUMONIA.

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Objective. Recent reports have revealed that differential cell counts in bronchoalveolar lavages (BAL) of HIV-infected patients with pneumonia may provide important prognostic information. To further investigate these findings and to characterize the local immunological situation in the lungs we studied leucocytes of BAL compared to peripheral blood leucocytes by means of immunological subtyping. 11 HIV-positive patients with clinical signs of acute pneumonia (chest X ray, physical examination) were evaluated. Six of our patients suffered from histologically confirmed Pneumocystis carinii pneumonia (PCP) and five patients had pneumonia other than PCP.
Methods. Leucocytes obtained from BAL and peripheral blood were double-stained with the following combinations of monoclonal antibodies: CD3 / HLA-DR; CD4 / 4B4; CD8 / HNK1; CD20; CD14 / HLA-DR. Two-color immunofluorescence flow cytometry was carried out using an EPICS™ PROFILE system (Coulter).
Results. Major differences between BAL and peripheral blood could be found with CD8 / HNK1 and CD14 subtyping. The ratio of CD8/HNK1-double-positive cells to CD8-positive cells was higher in the peripheral blood than in BAL leucocytes, particularly in bacterial pneumonias as compared to PCP. The percentage of CD14-positive monocyte/macrophages was much higher in BAL than in peripheral blood, which was in contrast to findings in non-HIV-infected patients with pneumopathies.
Conclusion. The data indicate that in HIV-patients with pneumonia major immunological differences between BAL and peripheral blood are present, which could be relevant for the prognosis.

Th.B.P.82

CUTANEOUS DELAYED HYPERSENSITIVITY IN DRUG ADDICTS.

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Objective. To evaluate the utility of cutaneous delayed hypersensitivity(CDH) tests in drug addicts (DA) and to apply them the Walter Reed Classification(WRC).
Methods. We studied 127 DA (95 male and 32 female), mean age 29 years; 60 HIV+ and 67 HIV-. Clinical examination, T4 and T8 counts and skin test (Multitest CMI, Mérieux) were done. WRC has been used to classified the patients (pts).
Results. There were significative differences between HIV+ and HIV- for T4/mm^3 (777±375 vs 1370±501, $p<0.0005$), T8/mm^3 (1211±456 vs 1013±385, $p\leq0.005$), number of positive reactions to antigens on DCH tests (1.6±1.3 vs 2.5±0.9, $p<0.0005$) and score (6.2±6.1 vs 8.8±4.2, $p<0.005$). Thirty-four pts resulted hypoergic (17 HIV+ and 17 HIV-); 18 pts resulted anergic (16 HIV+ and 2 HIV-). The pts were classified as follows: WR0, 48 (37.8%); WR1, 9 (7.1%); WR2, 11 (8.7%) (including 3 in WR2B); WR3, 5 (3.9%); WR4, 5 (3.9%); WR5, 8 (6.3%) (including 1 in WR5B and 1 in WR5CNS); WR6, none. Thirty-nine pts (30.7%) (20 HIV+ and 19 HIV-) with partial or complete anergy and counts of T4 lymphocytes above 400/mm^3 did not fit into any stages of the WRC. Also 2 pts (1.6%) HIV+ with T4<400/mm^3 and normal skin test were unclassificable.
Conclusions. CDH is diminished in the DA (also HIV-). Skin tests may be an useful test to evaluate DA immunologic state and they worsen significantly in the HIV+ subjects. The WRC does not accommodate all DA subjects, because of their "background" immunologic abnormalities.

Th.B.P.83

INCREASED PRODUCTION OF SOLUBLE IL 2 RECEPTOR IN PATIENTS WITH HIV INFECTION

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Objective. To see whether the production of soluble IL 2 receptor (sIL 2R) in patients with HIV infection increases as the disease advance and correlates with other clinical parameters.
Methods. Two monoclonal antibodies against IL 2R were used for the fluorescence sandwich ELISA. Sera of patients with HIV infection were collected from UCLA Medical Center and INSERM of France and grouped according to the CDC classification of AIDS.
Results. Elevated sIL 2R levels were observed in the sera of patients with HIV infection. Moreover, sIL 2R levels gradually increased as the disese advanced. Statistical analysis showed a negative correlation of those with CD4 cell counts, lymphocyte counts, and CD4-CD8 ratio, but neither WBC counts nor B cell counts correlated. We examined the production of sIL 2R in vitro. Neither PBMC of AIDS patients nor andy of the 19 HIV-1- or HIV-2-infected cell line cells produced sIL 2R in the supernatant, while PBMC of patients with HTLV-1 infection or HTLV-1 positive cell line cells produced sIL 2R.
Conclusion. We observed gradually increased serum level of sIL 2R in patients with HIV infection as the progression of the disease, and this level was negatively correlated well with CD4 cell counts. From in vitro study, it was suggested that these sIL 2R might be produced by non-T cells.

Th.B.P.84

CHANGES IN CD-16 RECEPTOR EXPRESSION ON THE NEUTROPHILS OF HIV INFECTED INDIVIDUALS

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Objective. To examine changes in the expression of CD-16 receptor on the neutrophils from HIV infected individuals.
Methods. Leukocytes from whole blood samples from HIV infected individuals in various clinical stages and normal volunteers were double stained with mAb phycoerythrin-Leu 15 (anti CD11b) and fluorescein-3G8 (anti-CD16 or Fc$_\gamma$RIII). As a control, we used the anti-CDw32 (Fc$_\gamma$RII) mAb FITC-IV.3. Analysis was carried out on FACSTAR II cell sorter.
Results. A significant decrease in the CD16 receptor expression has been found in HIV-infected patients compared to normal individuals. The greatest number of CD16-negative neutrophils was measured in patients with AIDS. No correlations were found with the T4/T8 ratio. CDw32 expression on the neutrophils was not affected.
Conclusion. Neutrophil Fc$_\gamma$RIII (CD16) is a phosphatidyl-inositol glycan-linked membrane receptor that is released following treatment of neutrophils with phorbol esters. The finding of decreased CD16 expression might reflect prior activation of neutrophils and might be a marker of the neutrophil dysfunction leading to common bacterial and fungal infections in advanced HIV infections.

Th.B.P.85

ADENOSINE DEAMINASE ISOENZYME IN RETROVIRUS INFECTED DISEASES

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Objective. ADA isoenzyme levels in sera of patients with adult T-cell leukemia(ATL) and acquired immunodeficiency syndrome(AIDS) were analysed.
Methods. Total ADA activity was determined by an enzyme spectrophotometric assay. ADA isoenzyme activity which was inhibited by erythro-9(2-hydroxy-3 nonyl) adenine was designated as ADA1 and the remaining activity as ADA2.
Results. In the case of ATL subtypes, ADA1 activity was significantly elevated in acute and lymphome types($p<.01$) in comparison to chronic and smoldering types. No significant difference in ADA1 activity was noted in smoldering type as compared with chronic type of ATL. ADA2 activity was elevated in sera of acute, lymphoma and chronic types of ATL patients(p .001) as compared with smoldering ATL and HTLV-I carriers. In the case of human immunodificiency virus-I(HIV-I) infections, ADA isoenzyme activities were higher in sera of patients with AIDS and HIV-I antibody-positive individuals in homexuals($p<.001$) when the results were compared with HIV-I antibody-nagative homosexuals and normal controls. A significant elevation of ADA2 activity was seen in sera of AIDS patients($p<.01$) than that of HIV-1 antibody-positive homosexuals.
Conclusion. ADA isoenzyme activities in sera of patients with retrovirus infection reflact the condition of these diseases. To measure of ADA isoenzyme activities may therefore provides and additional parameter for distinguishing subtypes of ATL and may prove to be considerable prognostic and therapeutic monitors in retrovirus infection.

Th.B.P.86

CD4+/NEOPTERIN RATIO CORRELATES WITH P24 ANTIGENAEMIA IN HIV INFECTED PATIENTS.

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Objective: to verify the possible correlation between CD4/neopterin Ratio (R) and p24 antigenaemia (p24Ag) during HIV infection.
Methods: 72 patients (64 males, 8 females; mean age 24.2, range 18-33 years) were classified according to the WRSS criteria; they were also tested for p24Ag and serum neopterin levels (SNL); R was also calculated for each patient.
Resuts: WR2 group (32 pts): 6/32 were p24Ag pos. (18.75 %)
WR5 group (16 pts): 4/16 were p24Ag pos. (25.00 %)
WR6 group (24 pts): 16/24 were p24Ag pos. (66.0 %)

Ratio means:	WR2	WR5	WR6
p24Ag pos.	9.23	9.3	2.9
p24Ag neg.	36.37	17.9	4.0

Conclusion: confirming literature data, we found a good correlation between p24Ag and clinical stage; a good correlation was also found between R and the WRSS. We point out the high significance of R ($p<0.001$) in differentiating, within the WR 2 class, p24Ag pos from p24Ag neg patients with all the prognostic implications involved. By contrast as far as WR 5 and especially WR 6 classes are concerned lower differentiating significances of R mean values point to disease progression and clinical deterioration reflecting increasingly severe immunological disorder regardless of the patients' p24Ag status.

Th.B.P.87

LYMPHOCYTE REACTIVITY TO ANTI-CD3 AS A PROGNOSTIC MARKER IN HIV-1 INFECTED HOMOSEXUAL MEN

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Objective. In patients with ARC/AIDS, lymphocyte reactivity to antigens declines earlier and more severely compared to nonspecific mitogen responses. Because antigens stimulate T cells via the Ti/T3 complex we studied whether aCD3 reactivity followed the same pattern as antigen reactivity and could be used a a prognostic marker for AIDS.
Methods. Reactivity was measured to aCD3 in Whole Blood Lymphocyte Cultures (WBLC) in a longitudinal study of seropositive homosexual men and expressed as % reactivity per T lymphocyte compared to healthy controls.
Results. In HIV-1 infected asymptomatic men, the response towards ALS and PHA was stable (75%) for 40 months after intake into the study, whereas the response to aCD3 showed a gradual decline (from 70 to 40%) during the same period. In the population that developed AIDS-OI the ALS reactivity remained largely unaffected until 3 months before diagnosis; PHA reactivity started to decline (from 60 to 10%) from about one year before diagnosis. However, the aCD3 reactivity was already very low (10%) one year before diagnosis.
Conclusion. A severely depressed aCD3 reactivity is the first sign to herald progression towards AIDS in HIV-1 infected individuals.

Th.B.P.88

NEUTROPHIL RADICAL RELEASE AND LIPID PEROXIDATION IN HIV INFECTED PATIENTS

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Introduction. Since a transitory increase in Nitroblue tetrazolium (NBT)-reduction of neutrophils, reflecting an increased production of oxygen free radicals of these cells, has earlier been found during acute viral and bacterial infections a long term elevation in NBT-reduction was expected in the chronic HIV infected patient. Oxygen radicals are known to induce peroxidation of fatty acids occurring for example in cell membranes. A product of this process is malondialdehyde (MDA), which has been used extensively as a sign of lipid peroxidation.
Methods. Colourless NBT is reduced within the neutrophils by the superoxide anion to darkblue formazan which was measured spectrophotometrically. MDA was measured by a reversed phase liquid chromatography method.
Results. In 27 patients with the lymphadenophathy syndrom (LAS) the NBT reduction of resting neutrophiles was significantly higher than that of controls ($p <0.01$). Further, the plasma content of malondialdehyde in 22 patients with LAS or AIDS related complex was found to be higher than that in controls ($p <0.001$).
Conclusion. Radical production and resulting lipid peroxidation might contribute to the tissue damage and the premature ageing (Dorian Gray syndrome) seen in patients with HIV-infections.

Th.B.P.89

IMPAIRMENT OF POLYMORPHONUCLEOCYTE (PMN) CHEMOTACTIC AND BACTERICIDAL FUNCTION IN HIV-INFECTED CHILDREN

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Objective: HIV-infected children have an increased incidence of serious bacterial infections, which has been attributed to secondary abnormalities in immunoglobulins. Although PMN are the most important component of host defense against bacteria, PMN function in this group has not been assessed. Accordingly, we evaluated the functional activity of PMN from both asymptomatic [ASX] and symptomatic [SX] HIV-infected children.
Methods: PMN were obtained by standard techniques, from 7 ASX and 8 SX HIV-infected children, ages 6 mos to 11 yrs, prior to any antiretroviral therapy. Functional assays performed were: 1) chemotaxis to 10^{-8} M FMLP, 2) bactericidal activity against *Staphylococcus aureus* [S.A.] using a CFU assay, 3) superoxide [SO] generation following stimulation by 5 X 10^{-7} M FMLP, and 4) phagocytosis of S.A. and *Candida albicans* [C.A.].
Results: Chemotaxis: Chemotaxis of PMN from ASX children was uniformly decreased compared to controls (directed/random migration = 1.19 +/- .04 for ASX children vs 1.74 +/- .07 for controls (P_2=.0005), and increased in SX children (2.04 +/- .08, P_2=.028). Bactericidal activity: Killing of S.A. was defective in 5/7 ASX and 7/8 SX children (% reduction in colonies after 60 min. incubation = 56 +/- 4 for controls vs 42 +/- 6 for ASX children (P_2 = 0.034) and 29 +/- 9 for SX children (P_2 = 0.006). There was no correlation between presence or degree of bactericidal impairment and CD4 number or CD4/CD8 ratio. Serum from HIV-infected children did not inhibit the bactericidal activity of normal PMN. Preliminary data suggests that in vitro treatment with GM-CSF partially corrects the defect. SO generation: No abnormalities in SO production were found (nmol SO per 10^6 cells = 2.2 +/- .2 for controls, vs 2.0 +/- .3 for ASX and 2.4 +/- .5 for SX children). Phagocytosis: There were no abnormalities in phagocytosis of S.A (% of cells phagocytosing at 15 min = 62 +/- 8 for controls vs 57 +/- 5 for ASX and 67 +/- 7 for SX children) or of C.A. (66 +/- 4 for controls vs 66 +/- 9 for ASX and 66 +/- 4 for SX children).
Conclusion. Defects in both bactericidal activity and chemotaxis may contribute to the increased incidence of bacterial infections in HIV-infected children. Further study to define a potential role for GM-CSF in these patients is warranted.

Th.B.P.90

OXIDATIVE BURST ACTIVITY AND CELL SURFACE ANTIGEN EXPRESSION OF MONOCYTES FROM ASYMPTOMATIC HIV INFECTED INDIVIDUALS (AHI)

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Objective. To identify functional and phenotypic alterations of peripheral blood monocytes isolated from AHI.
Methods. Peripheral blood mononuclear cells were isolated on Ficoll Hypaque gradients. For oxidative burst measurements, cells were incubated with dichlorofluorescein-diacetate (DCFH-DA) and stimulated with phorbol myristate acetate (PMA), calcium ionophore (ION) or heat aggregated IgG (HAG). After stimulation, cells were stained with PE labeled anti-CD14 antibody. Shifts in green fluorescence which correspond to relative oxidative burst capacity of monocytes was measured by dual parameter flow cytometry. Expression of cell surface markers CD4, CD33, CD13 & HLA-DR on $CD14^+$ monocytes was also evaluated by dual parameter flow cytometry.
Results. Significantly lower oxidative burst activity was observed with monocytes from AHI compared to HIV negative donors stimulated with PMA (57.1 vs 90.3 relative fluorescence units, p=0.0001) and ION (59.1 vs. 96.7 units, p=0.0001). No significant difference was noted with HAG. The percentage of CD13 and CD33 monocytes was also significantly lower among AHI compared to HIV negative donors (86.6 vs. 95.9 for CD13, p=0.02; 92.1 vs. 99 for CD33, p=0.02).
Conclusions. Monocytes from AHI have significant alterations in function. These alterations may contribute to immunodeficiency and disease progression.

Th.B.P.91 STRATIFICATION OF HLA ALLOANTIGEN PRESENTING CELL FUNCTION IN PATIENTS WITH AIDS.

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Objective. To test the ability of peripheral blood mononuclear cells (PBMC) from patients with AIDS to serve as stimulating cells as well as alloantigen presenting cells (APC) to responding PBMC from HIV seronegative (HIV^-) donors.
Methods. HIV^-, unfractionated PBMC or PBMC depleted of monocytes (PBL) by plastic and nylon wool adherence procedures (<1% CD14+ cells) were stimulated in vitro with allogeneic PBMC from AIDS patients. The mixed lymphocyte reaction (MLR) was assessed by ^{3}H-thymidine incorporation and by interleukin 2 production.
Results. Our data indicate APC function of PBMC from AIDS patients can be stratified into three groups in which: (a) the MLR was normal irrespective of whether the HIV^-PBMC or PBL were used as responders (9/22, 41%); (b) the MLR was normal when HIV^- PBMC were used as responders but were defective when HIV^- PBL were used as responders (7/22, 32%); and (c) the MLR was defective irrespective of whether HIV^- responding PBMC or PBL were used (6/22, 27%).
Conclusions. These results suggest that AIDS patients can be stratified based on allostimulating and alloantigen presenting functions. This provides an approach for assessing monocyte (APC) function in AIDS patients as a potential indicator of drug efficacy in patients enrolled in therapeutic trials.

Th.B.P.93 VARIABILITY IN ISOTYPE-SPECIFIC IMMUNOGLOBULIN (Ig) SECRETING CELLS IN ASYMPTOMATIC HIV INFECTION

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Objective: To compare the relative number of circulating isotype-specific Ig secreting cells in asymptomatic HIV-infected and non-infected adults.
Methods: Peripheral blood mononuclear cells (PBMC) were assayed in 18 asymptomatic HIV infected and 19 negative adults. Isotype-specific Ig-secreting cells were enumerated with a reverse enzyme-linked immunospot assay using anti Ig $(Fab')_2$ as capture antibody, isotype-specific mouse monoclonal antibodies, and enzyme-labeled antimouse Ig. Wilcoxon rank-sum analyses were performed.

	No. Isotype-specific Ig secreting cells/10^6 PBMC (median)							
Results:	IgG_1	IgG_2	IgG_3	IgG_4	IgA_1	IgA_2	IgM.	Total*
Asymptomatic HIV	457	137	120	26	617	174	197	1941
Negative Controls	105	58	25	24	235	85	64	730
p value	<0.001	<0.01	<0.001	0.49	<0.001	<0.05	<0.01	<0.01

*IgD and IgE secreting cells were only detectable in 1 case

Conclusion: Significant differences were observed between asymptomatic HIV infected and non-infected adults for all of the isotype-specific Ig secreting cells (except for IgG_4). Other studies suggest that such increases are likely to be due to non-specific B cell proliferation whose mechanisms remain to be elucidated, as do the diagnostic and prognostic implications of such responses.

Th.B.P.95 Increased Spontaneous Release of CD8 Antigen from $CD8^+$ Cells Reflects the Clinical Progression of HIV-1 Infected Individuals.

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Associations were examined between selected phenotypic parameters, antibody response directed against HIV-1 and spontaneously released CD8 antigen (sCD8) in a cohort of 36 high risk HIV-1 (-) and 164 HIV-1 (+) homosexual males, 43 IVDA, 32 ARC and 36 AIDS patients, and 33 heterosexual controls. Marked increase in percent and absolute number of $CD8^+Ia^+$ (activated Ts) cells, effector Ts and $CD8^+$(Ts) cells was observed prior to detectable antibody directed against HIV-1. While the percentage of CD8 subsets did not decrease with the progression from HIV-1 (+) to AIDS, their absolute numbers did due to the progressive reduction in the absolute number of lymphocytes. The serum level of CD8 antigen was low at 235 U/ml in the heterosexual controls, increased significantly to 532 U/ml in the HIV-1(-) high risk group, further increased to 1069 U/ml in the HIV-1(+) population, to a high of 1374 U/ml in the HIV-1(+) IVDA individuals. This increase in the CD8 antigen level remained elevated as the patients progressed from symptomatic ARC (1555 U/ml) to AIDS (1354 U/ml). Furthermore, significant correlation was established between activated Ts ($CD8^+Ia^+$) cells, effector Ts subsets, $CD8^+$ cells and the increased spontaneous release of CD8 antigen, which is directly related to HIV-1 infection and the disease progression in AIDS.

Th.B.P.92 IN SITU DEMONSTRATION OF IL2 PRODUCTION IN LYMPH NODES OF HIV-1 POSITIVE PATIENTS WITH PGL.

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Objective. Previous in vitro studies have demonstrated that HIV down-regulate the expression of IL2 gene. Using In Situ Hybridization (ISH) we studied in vivo IL2 mRNA expression in lymph nodes of Grade III (CDC) patients. The extent of this production should provide informations on the immunological status of such patients.
Methods. We investigated three HIV-1 positive patients with Persistent Generalized Lymphadenopathies (PGL). Formalin fixed and frozen tissue blocks were obtained immediately after lymph node biopsies. A three-steps immunoperoxidase technique was performed with monoclonal antibodies directed against HIV P24 protein and cellular antigens (CD3,4,8,25 and HLA-DR). The extent of HIV-RNA transcription and IL2 mRNA expression were estimated by ISH using respectively HIV gag RNA and IL2 RNA anti-sens probes.
Results. Histological examination demonstrated a HIV-related follicular hyperplasia. The interfollicular T-lymphocytes expressed CD3, 4 and 8 with a CD4/8 ratio >1. CD8 positive cells were observed in Germinal Centers (GC). A minority of interfollicular lymphocytes expressed HLA-DR and CD25. The presence of P24 and HIV RNA demonstrated active HIV replication in GC. The IL2-RNA probe hybridized with cells preferentially located in interfollicular areas. IL2 RNA expression was similar in HIV or non-HIV lymph nodes with follicular hyperplasia.
Conclusion. Contrasting with previous in vitro results, we show that in vivo IL2 production is not inhibited in hyperplastic lymph nodes replicating HIV.

Th.B.P.94 IMPAIRED IgM PRODUCTION AND MITOGEN-INDUCED SUPPRESSION OF IMMUNOGLOBULINS BY MONONUCLEAR CELLS FROM AIDS PATIENTS

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Purpose. To determine whether the inability of persons with AIDS to produce antibodies to new antigens, despite elevated levels of total immunoglobulins (Ig), is due to selective regulation of Ig classes.
Methods. We measured spontaneous and pokeweed mitogen (PWM) induced Ig production in vitro by peripheral blood mononuclear cells (PBMC) from 7 AIDS patients and 7 seronegative control subjects by ELISA, respectively.
Results. Spontaneous IgG and IgA were significantly higher for AIDS vs control PBMC (IgG:1230±145 vs 187±39; IgA:1444±183 vs 324± ug/ml, P<0.001), whereas IgM was less elevated (218±37 vs 75±21; P<0.02). Although PWM increased Ig production by control PBMC severalfold (P<0.01), it depressed the higher levels of production of all Ig classes by AIDS PBMC (P<0.01). These elevated spontaneous levels of IgG and IgA by AIDS PBMC were as high as PWM-stimulated levels by control PBMC. In contrast, the levels of both spontaneous and inducible IgM by AIDS PBMC were significantly lower than that of control PBMC (218±37 vs 2238±824 ug/ml; P<0.01).
Conclusions. Spontaneous production of IgG and IgA by AIDS PBMC greatly exceeds that of IgM and parallels that of PWM-stimulated control PBMC. The inability of AIDS patients to generate primary antibody responses to new stimuli may be due, in part, to depletion of the resting pool of IgM-producing B cells available to respond. Moreover, inhibition of Ig production by PWM suggests that stimulation in vivo may induce suppression of antibody responses.

Th.B.P.96 HIV AND BONE MARROW PROGENITORS PROLIFERATION

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Objective: 1. To assess the proliferative capacity of granulocyte-macrophages progenitors cells (CFU-GM) from the bone marrow (BM) of AIDS patients and investigate the role of IL-1 and α-gp120 on this function; 2. to evaluate the effects of HIV-inactivated lysate (HIV-Lys) and conditioned medium obtained from culture of AIDS BM (HIV-BMCM) on the normal CFU-GM proliferative assay.
Methods: Bone marrow cells, obtained from 4 AIDS patients and 6 normal donor after informed consent, after depletion of adherent cells and T-lymphocytes, were tested in a proliferative assay using GCT-CM as a source of CSF. 30 U/ml of HIL-1; 1 μg/ml of HIV-Lys; 10% v/v of HIV-BMCM; 1 μg/ml of α-gp120 were used.
Results: The results are expressed as Δcpm (^{3}H TdR incorporation).

Normals	AIDS	AIDS +α-gp120	AIDS +HIL-1	Normals +HIV-Lys	Normals +HIV-Lys +α-gp120	Normals +HIV-BMCM
1201±610	267±135	173±57	227±154	-28±905	-12±169	1228±497

Conclusions: 1. The proliferative capacity of AIDS CFU-GM is depressed compared with normal control; this defect is unlikely due to a decreased IL-1 production; α-gp120 directly and/or indirectly inhibit the proliferation of HIV infected BM cells. 2. The severe impairment of proliferative capacity of normal CFU-GM exposed to HIV-Lys (but not to AIDS-BMCM) could suggest a role of viral proteins; α-gp120 could contribute to impaired CFU-GM proliferation.

Th.B.P.97 STUDIES ON THE IN VITRO SECRETION OF HIV1 SPECIFIC ANTIBODIES BY *PERIPHERAL BLOOD CELLS* FROM HIV1 INFECTED SUBJECTS.

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PBMC from 114 HIV1 seropositive subjects (73 asymptomatic, 15 ARC, 26 AIDS) and from 30 HIV1 negative controls were incubated : a) in the wells of the ELAVIA kit (Pasteur) : the HIV1 antibodies secreted in vitro and fixed on the antigens were revealed by the use of a low noise enzymatic complex, b) in antigen free conditions : the supernatants were tested instead of PBMC by the same amplified ELISA technique or submitted to Western blot analysis on nitrocellulose strips from commercial kits.

RESULTS. a) Positive results were observed in all cases with the PBMC of HIV1 seropositive subjects and in none with the control PBMC, b) Positive results correspond to an active secretion and not to a release of passively adsorbed seric antibodies, c) Active secretion is antigen and mitogen independent and occurs within 18 hours' incubation, d) The capacity for in vitro antibody production is a continuous and not a transitory phenomenon in seropositive subjects as opposed to classical models of immunization, e) Cells corresponding to all HIV1 specificities may be present in the blood stream of HIV1 infected subjects and the env-encoded gp bands are always present in both PBMC supernatant and serum Western blots, f) When supernatant and seric patterns differ the decline of gag-encoded p antibodies is always more profound in the supernatant than in the serum.

CONCLUSIONS. The continuous capacity of in vitro HIV1 antibody production seems to be an important feature of HIV1 infection. The detection of such cells could prove useful for the follow up of subjects at risk and of neonates.

Th.B.P.98 ENHANCED ENDOGENOUS TNFα PRODUCTION IN PERIPHERAL BLOOD MONONUCLEAR CELLS OF HIV-1 INFECTED PATIENTS.

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OBJECTIVE: To study the role of TNF-α in HIV-1 infected patients.

METHODS: Blood samples positive for HIV-1 were obtained from 150 patients at various stages of disease. Peripheral blood mononuclear cells (PBMC) were isolated by Ficoll-Paque and stimulated with various inducers for TNFα production. TNFα was quantified by using a highly sensitive ELISA.

RESULTS: It turned out that corynebacterium parvum was the most potent inducer of TNFα when compared to classical inducers such as various preparations of LPS or Sendai virus. In a group of 56 healthy donors mean level of endogenously produced TNF yielded in 10.2 ng per ml. However patients at stage 2 (CDC) or 3 to 4 were able to produce up to 28 ng of TNF when stimulating their lymphocytes with 140 µg per ml of corynebacterium parvum. In all groups of patients and in healthy donors TNFα production was absent when PBMC were coincubated with PGE_2.

CONCLUSIONS: Our data suggest that PGE_2 plays a major role in regulating TNFα secretion. Enhanced TNF levels in patients with HIV infection may account for patients development of cachexia, fever and show monocyte dysregulation early in HIV-1 infection.

Th.B.P.99 NORMAL AND HIV ASSOCIATED FUNGICIDAL ACTIVITY OF MONOCYTES

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Objective. i) to evaluate the ability of monocytes (M) and monocyte-derived macrophages (m-dM) of AIDS patients to kill *Candida albicans* and the role of rIFN-γ in their activation, and ii) to study the effect of HIV-lysate (HIV-lys) on M and m-dM fungicidal activity in healthy individuals (normals).

Methods. Ten AIDS patients and 9 normals were studied. Cell monolayers (0.25×10^6/well), untreated or treated with 300U/ml of rIFN-γ, 0.4 µg/ml of HIV-lys, 1 µg/ml of anti-gp120) were challenged with 0.1 ml of *C. albicans* (10^3 CFU/ml) for 2 h.. The killing activity was expressed as % reduction of *C. albicans* CFU.

Results. AIDS M killing was impaired (31.6±13.5 vs 48.7±9.8; $p<0.005$) and partially restored by rIFN-γ (35.5±12.7); AIDS m-dM killing was slightly reduced (46.9±12.7 vs 57.8±7.4). HIV-lys resulted in heterogeneous reduction of activity by normal M, but not m-dM; the defect was not overcome by anti-gp120.

Conclusion. i) M, but not m-dM, killing was impaired in AIDS; different killing systems could be operative in M and m-dM; oxidative and non-oxidative mechanisms could be involved; rIFN is one of, but not the only, factor required to induce M effector reactions (IL-2 or GM-CSF as cofactors?). ii) HIV-lys can induce AIDS-like defect in normal M but not in m-dM; a role of envelope proteins (gp41 but not gp120) could be suggested.

Th.B.P.100 AUGMENTATION DE LA PRODUCTION DE RADICAUX LIBRES DE L'OXYGENE PAR LES PHAGOCYTES DU SANG CIRCULANT DES MALADES INFECTES PAR LE VIRUS HIV-1.

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Objectif. Apprécier, par l'étude de la chimioluminescence, la production de radicaux libres de l'oxygène par les phagocytes du sang au cours de l'infection par HIV.

Méthodes. La chimioluminescence (CL) des cellules du sang dilué au 1/10e et au 1/100e a été mesurée en présence de luminol et de lucigénine chez 37 sujets HIV+ avant traitement par zidovudine (23 des groupes II et III, et 14 du groupe IV), à l'état basal et après stimulation par Con A, f-Met-Leu-Phe, phorbol myristate acetate, latex et zymosan, exprimée en intensité lumineuse (IL) par 1000 phagocytes et en IL stimulée/IL basale, et comparée à celle obtenue chez 35 sujets témoins sains appariés pour l'âge.

Resultats. La CL des phagocytes des malades HIV+ était très significativement supérieure à celle observée chez les témoins quel que soit le réactif utilisé et tant à l'état basal qu'à l'état stimulé ($p<10^{-4}$). Cette différence reposait principalement sur une hyperactivation basale des phagocytes, qui n'était pas significativement différente dans le gr.IV comparé aux gr.II et III ; la sensibilité aux différents stimulus utilisés était diminuée. Il n'existait pas de relation entre la CL et l'existence d'une complication clinique particulière ou le nombre de lymphocytes circulants.

Conclusion. L'hyperproduction de radicaux libres de l'oxygène par les phagocytes contraste avec la diminution rapportée d'autres fonctions phagocytaires chez les malades HIV+. La responsabilité des monocytes et des polynucléaires dans ces modifications et l'analyse séquentielle de la CL chez ces malades sont en cours d'étude.

Th.B.P.101 REFRACTORINESS OF B CELLS TO REGULATION BY LGL IN HIV INFECTION.

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$CD3^-$, CD16+ large granular lymphocytes (LGL) behave as helper cells of Immunoglobulin (Igs) synthesis by peripheral blood lymphocytes (PBMC), as measured in culture supernatants by ELISA. We evaluated such capability in 21 HIV+ individuals (11 of group II and 10 with AIDS), 12 HIV negative homosexuals (HM) and 11 heterosexual controls. Spontaneous Igs levels were significantly higher in HIV+ when compared to HM or controls (1812 and 1553 vs. 432 and 425 ngs/ml). PBMC (1.25×10^5), co cultured with increasing amounts of autologous LGL (5 and 7.5×10^4) in the presence or absence of PWM (1/200), caused no further enhancement of Igs synthesis in HIV+, while values in both HM and controls were significantly increased (2000 and 1560 vs 620 and 710). Antibodies to gp120, gp41 and p24 were detected by western blot in culture and cocultured supernatants from HIV+ individuals. We suggest that B cell function in HIV infection is resistant to regulatory signals not only from T cell but also from LGL.

Th.B.P.102 ACTIVATED T-CELLS (TC) AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) PROGRESSION

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Hypothesis: HIV is a retrovirus (RV) trophic for CD4+ cells. Proliferation of RV requires the translation and transcription of the host genome and cellular activation. Activation of TC should correlate with progression of HIV infection. One marker of TC activation is the production of HLA class II (DR) antigens (AG) which are not present on resting TCs, but are elaborated within 24-48 hr after activation.

Methods: OKIa marks class II antigens. When quantitating lymphocytes by flow cytometry the value OKIa minus CD20 (a pan-b-cell marker & all b-cells have class II AG) should represent activated TCs (i.e. a OKIa+/CD20-population).

Results: Examination of available data on the >700 cases of HIV positive patients in the WHMC HIV data base shows: 1)patients with >25% TCs consistently had initial activation values of 10.3 while those who had decreased TCs had values of 12.0 ($P<.001$). 2) Pts with absolute CD4 counts consistently >400 had values of 11.5 while those with <400 had values of15.9($P<.001$) 3) Walter Reed (WR) stages 1 or 2 without progression at 1-2 yrs had values of 11.4 while those progressing to WR3-6 had values of 14.8($P<.001$).

Conclusion: These data suggest that activation of TCs as measured by OKIa+ CD20- cells correlates with HIV disease progression. We are aware that the activated TCs may, in fact, be CD8+ cells (Ziegler-Heitbrock et al.JCI.8(6) 4783,1988) and prospective studies to elucidate which TC subpopulation is activated in our patients are in progress.

Th.B.P.103 DECREASED LYMPHOCYTE PROLIFERATION TOWARDS POKEWEED MITOGEN APPEARS AS A VERY EARLY MARKER IN HIV INFECTION.

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Objective. To assess the immune function among HIV infected patients regarding the clinical stage of disease.
Methods. Using a whole blood assay, we have examined thirty-six HIV+ subjects for their in vitro lymphoproliferation towards Phytohaemagglutinin (PHA) and Pokeweed mitogen (PWM), and for their interferon production following stimulation with Newcastle Disease Virus (IFN-α) and PHA (IFN-γ).
Results. Decreased proliferation and IFN production were observed in a number of patients and this number increases with disease progression :

Patients (#)	IFN-α	IFN-γ	PHA	PWM
Healthy carriers (10)	10 %	20 %	0 %	42 %
Lymphadenopathy (6)	40 %	50 %	0 %	71 %
ARC (17)	40 %	35 %	23 %	76 %
AIDS (3)	33 %	33 %	33 %	100 %

Conclusions. Decreased proliferation to PWM was the earliest and most pronounced immune defect, already observed in 42 % of the HIV+ healthy carriers. Next, decreases in IFN-α and IFN-γ production were observed in about 40 % of the patients with lymphadenopathy. Decreased proliferation to PHA finally was the last parameter to decrease in patients with ARC and with full-blown AIDS. Decreased responses to PWM correlated to low OKT4/OKT8 ratio's (<0,5).

Th.B.P.104 IN VITRO B CELL DIFFERENTIATION IN NORMALS, rGP160 VACCINATED VOLUNTEERS, AND HIV+ SUBJECTS

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Objective. To determine B cell differentiation to HIV.
Methods. Peripheral blood mononuclear cells from asymptomatic HIV+ (SF), normals (HIV-) and rGP160 vaccinee subjects were cultured on days 0, 14, 28, 44, and 194 post-vaccination with rGP160 antigen or HTLV-IIIB virus for 7 days at which time, supernatants were harvested and assayed for IgG by ELISA.
Results. A significant IgG production is defined as that which exceeded the mean + 95% C.I. of normal donors.

Group	No. of Responders (%) for IgG Production to HIV	
	HTLV-IIIB	rGP160
Normal (HIV-)	5/23 (22)	1/15 (7)
rGP160 placebo	2/5 (40)	1/5 (20)
rGP160 vaccinees	3/5 (60)	4/5 (80)
HIV+(SF)	4/4 (100)	3/3 (100)

Conclusion: B cells from rGP160 vacinees and HIV-infected subjects can produce IgG when stimulated with IIIB virus or rGP160 antigen suggesting the existence of a circulating memory B cell.

Th.B.P.105 USEFULLNESS OF LYMPHOBLASTIC TRANSFORMATION TEST (L.T.T.) IN ASYMPTOMATIC PATIENTS (II AND III STATUS OF CDC CLASSIFICATION).

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Objectives : Evaluation of Lymphoblastic Transformation Test (L.T.T.) in asymptomatic HIV positive patients.
Methods : For 74 clinically asymptomatic or with chronical lymphadenopathy patients, having a 18 months follow-up, a LTT (phytohemagglutinin, pokeweed, concavanalin A) was undertaken every 6 months.
Results : This test was disturbed (reactivity less than half of control's values), for 45 patients. 28 had a disturbed test from the first examination, in 17 cases the modification of the LTT appeared during the course of the disease.

LTT	Clinical stability II or III status	Clinical aggravation to IV status
Always normal	27	2
Always abnormal	23	5
Appearance of decrease	11	6

When the LTT decreased, there was a more frequent worsening towards the IV status (χ^2 = 4.78 ; $p < 0.05$). Moreover, the appearance of this abnormality preceded for several months the appearance of clinical signs of severe immunodepression (6 cases/8).
Conclusion : For asymptomatic patients the paraclinical exams should be restricted, nevertheless the LTT seems to be an early predictive test of the worsening to IV status (correlated with usual test like beta2microglobulin, ESR..)

Th.B.P.106 IMPACT OF 3'-AZIDO-3'-DEOXYTHYMIDINE (AZT) ON THE IN VITRO IMMUNOGLOBULIN SECRETION IN A POKEWEED MITOGEN-DRIVEN CELL SYSTEM.

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Objective. To study the impact of AZT on replication and Ig-secretion in in vitro-cultures of HIV-positive and -negative subjects.
Methods. Proliferation and distribution of surface markers was assessed by the ^{3}H-thymidine technique and flow-cytometry. Ig-secretion was monitored with the protein-A plaque-forming cell assay.
Results. In HIV-negative, concentration of 0.2-1.0 ul/ml of AZT severely decreased T- but not B-cell proliferation while distribution of surface markers was unaltered by AZT. A severe decrease in Ig-secretion in AZT-supplemented cultures was found. In HIV-positive, the already decreased responsiveness to mitogen activation was unaltered by AZT.
Conclusion. The AZT-effect on peripheral blood lymphocyte proliferation and Ig-secretion is mediated through T-cells. The AZT-impact on the functions of peripheral T- and B-cells should be taken into consideration when dose-regimens are planned in clinical trials.

Th.B.P.107 INHIBITION OF LYMPHOCYTE PROLIFERATION INDUCED BY MICROBIAL ANTIGENS IN HIV INFECTED INDIVIDUALS

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Patients with HIV infection have depressed cell mediated immune responses to microbial antigens. We did 20 studies in HIV seropositives subjects and in 25 normal individuals to assess lymphocyte responses in vitro to four different Antigens (Tetanus Toxoid-TT, Escherichia Coli-EC, CMV and Toxoplasma Gondi-TG) as part of a study to assess prognostic factors. Lymphocyte responses to the Antigens in vitro were assessed by quantitating ^{3}H Thymidine incorporation in peripheral blood lymphocytes and positive responses were considered when the stimulation index was $\geq$ 2. About two thirds of the normal subjects had significant responses to E.C. and T.T.. This contrasts with HIV infected subjects (50% persistent generalized lymphadenopathy 25% AIDS related complex and 15% AIDS) where a major difference between E.C. and T.T. was found: one third responded to E.C. and none to T.T.. The detailed analysis of the cpm of the in vitro cultures revealed that a significant proportion (40%) of HIV + subjects had levels of lymphocyte proliferation in the presence of the antigens which were at least 50% lower than the ones recorded in the absence of Ag. This phenomenon is compatible with a suppression of lymphocyte proliferation induced by the Antigens and warrants further analysis in prognostic terms and in relation to its immunological and clinical significance.

Th.B.P.108 ESTIMATION OF BEST ABSOLUTE CD4 COUNT FROM MULTIPLE PAIRINGS IN TWO-COLOR FLOW CYTOMETRY

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Objective. To evaluate 2 methods of estimating the absolute CD4 count when different values are obtained due to more than 1 pairing with other monoclonals.
Methods. In a longitudinal observational study of transfusion-associated HIV-1 infection, immunologic phenotyping is performed by two-color flow cytometry using a panel of 11 antibody pairs. CD4 antibody is paired with 3 others [CD8, CDw29 (4B4), and CD45 (2H4)]. In the CD8 pairing CD4 is conjugated with RD-1; in the other 2, with FITC. Each pair gives a significantly different mean absolute CD4 count, such that the best single CD4 is not known. To maximize available information in estimating CD4, 2 algorithms were evaluated: 1) the median of the 3 values (the mean or the single value if 1 or 2 values are missing); 2) the CD4 value closest to the CD2 count minus the median CD8 count, assuming that the sum of CD4 and CD8 staining cells should be close to the total T-cell count.
Results. Relative to the second algorithm, the first provides a CD4 estimate for a larger number of subjects, results in fewer outlying values, and gives more consistent values for the same subject through time.
Conclusion. Although the second algorithm takes into account information regarding other lymphocyte subsets, the algorithm using the median produces more stable trends over time for any given subject.

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Th.B.P.109 IDENTIFICATION OF MULTIPLE HIV-1 CORE PROTEINS ON WESTERN BLOTS BY A MONOCLONAL ANTIBODY

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Objective. To characterize the HIV-1 core proteins on Western blots
Methods. Female BALB/c mice were immunized with partially purified HIV-1 proteins. Hybridomas secreting monoclonal antibodies (mAbs) were produced by fusing P3X63Ag8 653 myelomas with the splenocytes of the immunized mice and screened by enzyme-linked immunosorbent assay. The positive hybridomas were cloned and the mAbs were examined by Western blots.
Results. A novel mAb against HIV-1 core proteins was produced. The mAb, namely CBER-4, was of IgG1 subclass. Unlike our other anti-HIV-1 core protein mAbs which reacted with only one or two proteins in Western blot, this mAb recognized multiple bands. It bound to p13, p15, p21, p24, p28, p29, p32, p39, p49, p55 on the Biotech/Du Pont Western blot strip and p21, p24, p28, p29, p39, p49, p55, p68, p80, p96, p110 on Bio-Rad strip. The binding was specific as the mAb, unlike positive control serum, did not bind to myristylated core protein (p17), or envelope proteins (p41, p120, p160) nor to tat protein (p14) or transcriptase (p51, p66). Moreover, the mAb did not react with HTLV-1 in ELISA nor bind to any proteins in HTLV-1 Western blot.
Conclusion. Besides p24 and p55, multiple protein bands were recognized in Western blot by a mAb directed against HIV-1 core proteins, indicating that these proteins are derived from HIV-1 core proteins and share the same epitope. This mAb will be useful for characterizing and comparing HIV-1 Western blot strips from different manufacturers or sources.

Th.B.P.110 EVALUATION OF SENSITIVITY AND SPECIFICITY OF SYNTHETIC PEPTIDE AND RECOMBINANT BASED ANT-HIV1&2 EIA

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The first generation of anti-HIV screening assays, introduced shortly after the discovery of HIV, were based on virus lysate. They did thus react to all antibodies directed towards various proteins in the HIV1, but cross-reacted also to impurities in the cell line. To overcome problems of cross-reactivity and to enable recovery of lower concentrations of anti-HIV EIA:s based on recombinant produced antigen and synthetic peptides have been developed. It is, however, important that the improved specificity not results in a decreased sensitivity, i.e. antibodies recognized by the assay are produced by all HIV-infected including also the recently discovered HIV2. We have evaluated a new anti-HIV test system (Pharmacia Diagnostics AB, Sweden) based on synthetic peptides, directed towards the transmembran associated anti-HIV1 and -HIV2 respectively and recombinant produced P24. The tests are available as combined, HIV1&2 envelope and HIV1&2 envelope/core assays for screening, and as separate assays for differentiation. In a panel of 150 sera obtained from HIV-infected patients, all were found to produce anti-envelope detectable by the 2 screening and the separate HIV1 assays. Half of the AIDS patients and 2/3 of the ARC and asymptomatic patients produced detectable amounts of anti-P24 for the differential assay. The crossreactivity was evaluated in a panel of 100 sera drawn from patients with SLE, HPV, CMV, RA and Tumors. In the envelope assay 7 sera were repeatedly positive, and 4 borderline. Two sera were found to be confirmed HIV1-positives and their absorbances values were >2.000 while those 5 cross-reacting sera had absorbances markedly lower. In the envelope/core assay 8 sera cross-reacted; 2 of them with single P24-band. The cross-reacting sera were from patients with SLE, HPV, Myeloma and Sklerodermi. It can be concluded that all our HIV-infected patients produced anti-HIV detectable by both screening assays. The differential tests enables a separation of the positive reply. In a selected panel of sera from patients with conditions known to cross-react in these assays 2 correct positives were found and 2 with P24-activity, and the rate of false positives thus 5%.

Th.B.P.111 DEVELOPMENT OF A METHOD FOR CORRELATING THE PRESENCE OF HIV ANTIGEN AND PROVIRUS

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OBJECTIVE: a) To develop a sensitive flow cytometric assay that will allow detection of HIV antigen containing cells. b) To correlate the presence of HIV antigen with provirus in cells.
METHODS: Cell lines were fixed, permeablized, and stained for HIV antigens with a variety of fluorescent antibodies. After staining, fluorescence was quantified by flow cytometry. In some experiments, populations of infected and uninfected cells were mixed and stained, and the positive and negative populations identified using the flow cytometer. The detection of provirus in fixed cells was accomplished by DNA amplification, using the polymerase chain reaction (PCR) and a liquid phase molecular hybridization system.
RESULTS: We compared 3 antibody systems: biotinylated IgG from AIDS patients; affinity purified rabbit anti-p24, and a monoclonal antibody against p24, each with an appropriate secondary reagent. All 3 systems enabled detection of HIV infected cells. The monoclonal antibody had the greatest sensitivity for detection of infection in cells, as shown by increased fluorescence over control antibodies or uninfected cells. Provirus was detectable by PCR in fixed and stained cells. This technique is appropriate for use in flow cytometric separation of cells into positive and negative populations and will allow analysis for provirus by PCR.
CONCLUSIONS: The anti-p24 monoclonal antibody allowed highly sensitive detection of cells containing p24. Analysis by PCR, followed by liquid phase molecular hybridization, confirmed the HIV provirus was detectable after fixation. This method will prove useful in determining the correlation between the presence of p24 and the provirus in cells from HIV infected individuals.

Th.B.P.112 HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXPRESSION AND ANTIGENIC STABILITY OF HIV-INFECTED CELLS FOR USE IN FLOW CYTOMETRIC IMMUNOFLUORESCENCE ASSAY (FIFA).

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The Flow Cytometric Immunofluorescence Assay (FIFA) detects antibodies to Human Immunodeficiency Virus (HIV) with high sensitivity and specificity compared to ELISA and Western blot (WB). The FIFA is an indirect immunofluorescence assay that uses live HIV-infected H9 cells (HIV-H9) and is analysed by flow cytometry. Flow cytometric interpretation is more objective than WB, which makes FIFA an alternate confirmatory assay for the presence of anti-HIV antibodies. Since use of live HIV-H9 cells presents a potential biohazard, a method is presented to eliminate viral infectivity while preserving viral antigenicity on the cell surface. The AMT-treated cells were completely inactivated for viral infectivity as measured by coculture with uninfected target H9 cells using FIFA and reverse transcriptase assays. Viral antigens present on the cell surface of HIV-H9 cells were characterized using monoclonal and polyclonal antibodies to specific subunits of HIV. AMT-inactivated HIV-H9 cells expressed viral antigens at approximately 70% of the level of untreated infected cells. The inactivated cells are stable for up to two days when stored in high serum concentration or in the presence of protease inhibitors. AMT-inactivated HIV-H9 cells are ideal for FIFA since the cell membrane integrity and viral antigenicity are maintained and the biohazard of viral infectivity is eliminated.

Th.B.P.113 IMMUNODOSAGE TYPE ELISA DES ANTIGENES MEMBRANAIRES CD4 ET CD8 DE LYMPHOCYTES PROVENANT DE SUJETS SAINS OU INFECTES PAR LE VIRUS HIV.

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Méthodes. Un dosage de type ELISA simple, sensible et rapide permettant la détermination des molécules CD4 et CD8 des lymphocytes T a été standardisé et les résultats ont été comparés à ceux de la méthode d'analyse par cytométrie en flux. Le dosage est réalisé en plaque de microtitration, en une seule étape (20 min.) permettant : ■ l'immobilisation des cellules par des anticorps monoclonaux pan-T adsorbés sur le plastique, ■ le marquage simultané des antigènes par des anticorps anti-CD4 ou anti-CD8 couplés à la peroxydase.
Résultats. Les résultats sont exprimés en concentration picomolaire (pM) d'antigènes, grâce à des courbes standard déterminées à partir de puits de dosage calibrés en CD4 et CD8 (molarité). Les valeurs du CD4 des échantillons sanguins de sujet HIV$^-$ (séro-négatifs) (n=22), HIV$^+$ (n=44) et SIDA (n=22) sont respectivement 40,5 ± 15,4 pM, 21,7 ± 11,6 pM et 7,9 ± 4,9 pM. Les concentrations du CD8 ne sont pas significativement différentes dans ces trois groupes. La corrélation entre les concentrations du CD4 mesurées par notre méthode et le nombre de cellules CD4$^+$ mesurés par la cytométrie en flux est significative (r=0,92, n=34).

Th.B.P.114 SIMPLE LABORATORY TESTS AS MARKERS FOR THE VARIOUS CLINICAL MANIFESTATIONS OF HIV INFECTION.

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Objective: To study the correlation between laboratory tests and clinical manifestations of HIV infection.
Methods: From February 86 to May 88 we have evaluated 549 individuals who spontaneously came to the clinic due to risky behaviour, with symptoms of HIV infection or anxiety related to the AIDS epidemic. One hundred sixty eight (30.6%) had ELISA repeatedly positive for HIV 1 and 380 were not infected(NI). Among the infected, 60 were asymptomatic(As) and the remaining 105(64.8%): 23 with PGL, 50 ARC and 32 AIDS. Three simple laboratory tests(absolute lymphocyte count, ESR and delayed skin tests: PPD, Candida, SK-SD and trichophyton) were used to evaluate all individuals.

Results: in percentage	NI	As	PGL	ARC	AIDS
Lymphopenia(1,500/mm3)	7.0	7.7	9.5	26.1	60.7
ESR (< 20 mm)	17.0	17.0	16.7	70.0	88.2
(< 100 mm)	1.6	2.1	0	12.5	30.4
Cutaneous anergy	11.0	27.1	38.9	62.8	66.7

Conclusion: These are simple tests , easy to perform, readily available, inexpensive and they have showed a positive correlation with the clinical presentation of HIV infection. We believe that if repeated at fixed intervals they may help in the evaluation of disease progress.

Th.B.P.115 COMPARISON OF THE SIMULTANEOUS ADMINISTRATION OF INTRADERMAL (ID) AND MERIEUX MULTITEST CMI (MM) SKIN TEST METHODS IN HIV1 SEROPOSITIVE PATIENTS.

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Objectives. To compare skin test results using the ID method with results from the MM method using individual patients (pts) as their own controls.
Methods. Skin tests were applied simultaneously to the volar surfaces of both forearms on 60 HIV1 seropositive patients. The ID panel was placed on the right forearm and consisted of tetanus(T) 1:10, candida(C) 1:10, mumps (M) 0.1 ml, trichophyton(Tr) 1:30, and PPD(TB) 5TU. The standard MM panel of T, diphtheria(D), strep(S), tuberculin, control(Ctr), C, Tr, and proteus (P) was placed on the left arm. All results were read at 48 hours. Positive was ≥5 mm for ID and ≥2 mm for MM.
Results. Individual Test Comparisons

Merieux POS NEG	Tetanus		Candida		Trichophyton		Tuberculin	
I POS	36	3	43	21	14	10	1	0
D NEG	1	20	1	3	3	41	5	62

Intradermal Skin Tests and (Merieux Multitest CMI) % Positive Vs T4 Count

T4 Count	N	T	C	Tr	TB	M	Ctr	D	S	P
> 400	36	69(67)	94(72)	33(31)	0(14)	81	(0)	(44)	(25)	(44)
200-400	25	48(48)	96(68)	40(24)	0(0)	44	(0)	(36)	(0)	(20)
< 200	7	29(14)	86(14)	29(0)	14(14)	43	(0)	(14)	(14)	(0)

Conclusions. For T4> 200, MM and ID showed similar results with ID more reactive. All pts with T4< 200 were on AZT. 6/7 of these pts had increased reactions from previous ID results. AZT may modify DHS for ID > MM.

Th.B.P.117 ANTIBODIES TO SULFAMETHOXAZOLE (SMX) IN NORMAL, ALLERGIC, HIV INFECTED, AND AIDS PATIENTS

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Objectives. To establish assays for antibodies to sulfonamides. To determine the prevalence of IgG, IgA, IgM, and IgE antibodies to SMX in the blood of normal control subjects, SMX allergic patients, and randomly selected HIV+ and AIDS patients. To identify univalent haptens capable of inhibiting antibody binding to SMX haptens on carrier molecules.
Methods. SMX was coupled to human serum albumin (HSA) or to histidine (HD) and a variety of other low MW molecules in the N^4-sulfonamidoyl configuration. SMX-HSA was used in RAST assays for IgE and ELISA assays for IgG, IgA, and IgM. Penicillin (penicilloyl) substituted HSA (P-HSA) was used in an IgG ELISA. Specificity was verified by demonstrating inhibition of binding with free SMX-HSA and SMX-HD (univalent hapten), but not with HSA or P-HSA.
Results.

Subjects	No.	Isotype Positive					(%)
		IgG	IgA	IgM	IgE	Any+	
Normal	10	0	0	0	0	0	(0%)
Allergic	38	10	13	3	14	23	(61%)
HIV+	51	47	13	20	4	48	(94%)
AIDS	17	12	6	4	2	15	(88%)

In marked contrast to the high prevalence of Ig to SMX, only 3 (6%) HIV+ and 0 AIDS patients expressed IgG to P-HSA. SMX-HD (1 mM) added at the time of serum addition to ELISA plates inhibited Ig binding to the solid phase 34%-98%. Other univalent haptens studied, and free SMX, also inhibited binding, but less efficiently.
Conclusions. Antibodies to SMX were detected in the majority of AIDS, HIV+, and SMX allergic patients. These data suggest that there may be an immunologic basis for many adverse reactions to SMX in AIDS patients. Hapten inhibition of Ig binding was shown to be feasible in vitro, suggesting the possibility that hapten inhibition could be developed as a strategy to suppress clinical allergic reactions to SMX.

Th.B.P.119 THE EFFECT OF VACCINATION AGAINST HEPATITIS B ON THE CD4+ CELL COUNT IN ANTI-HIV POSITIVE MEN.

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Objective. HBsAg may activate T cells as indicated by gamma interferon production. The effect of vaccination against hepatitis B on the CD4+ cell count in anti-HIV positive individuals was investigated to elucidate whether there might be a detrimental effect on the progression of HIV disease.
Methods. 13 anti-HIV positive homosexual men aged 25-64 years (mean 39.8 years), being asymptomatic and belonging to stages II and III CDC II were vaccinated. The control group consisted of 17 matching homosexual, unvaccinated and HBsAg negative men also being anti-HIV postive, asymptomatic and belonging to stages II and III CDC II. Patients were vaccinated with three doses of recombinant hepatitis B vaccine (Smith Kline Dauelsberg) according to the standard 0, 1 and 6 month schedule. The individual vaccine dose was 20 ug HBsAg. CD4+ cells were analysed before the initial and one month after the final hepatitis B vaccination and at a 7-month interval in the control group, respectively. CD4+ cells were measured using a monoclonal antibody (Ortho Diagnostics) and a fluorescence-activated cell sorter (FACS).
Results. In vaccinated anti-HIV positive homosexuals, one month after the last vaccination a 22,4% decrease in CD4+ cell count was noted, compared to prevaccination results. Unvaccinated homosexual men showed an average decrease in CD4+ cells of 24.9% when analysed after the same period of time.
Conclusion. This study indicates that Hepatitis B vaccination in anti-HIV positive men has no detrimental effect on the CD4+ cell count. Apparently, a multitude of factors, but not hepatitis B vaccination is responsible for the progression of the HIV infection which ultimately leads to immunodeficiency and full-blown aquired immunodeficiency syndrom.

Th.B.P.116 PHENOTYPIC ANALYSIS OF LYMPHOCYTE SUBSETS IN A DIFFUSE INFILTRATIVE LYMPHOCYTOSIS SYNDROME (DILS) ASSOCIATED WITH HIV INFECTION.

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Objective. To characterize a Sjögren's syndrome-like disorder in HIV-infected individuals with circulating and diffuse infiltrative CD8 lymphocytosis associated with HLA-DR5 (DILS) and to determine whether particular lymphocyte subsets are selectively expanded.
Methods. Patients were ascertained by referral for clinical evaluation to the Rheumatology Service at New York University. Analysis of peripheral blood lymphocyte populations was performed in patients with DILS, HIV-positive controls, and normal controls. Cells were stained with anti-CD4 and anti-CD8 antibodies, as well as directly conjugated anti-CDw29 and anti-CD45R antibodies.
Results. DILS is manifested clinically by generalized adenopathy, sicca symptoms, lymphocytic interstitial pneumonitis, and, less frequently, lymphocytic hepatitis and neurologic complications. Among 12 patients studied, only one instance of opportunistic infection has been found in up to 5 years of follow-up. Patients with DILS had significantly higher numbers of $CD4^+$ cells than HIV-positive controls, mean 368 vs. 142/mm^3 ($p<0.05$), a relative preservation of the $CD4^+CDw29^+$ subset when compared to normals, and a marked increase in the ratio of $CD4^+CDw29^+$ to $CD4^+CD45R^+$ cells. Paralleling the massive increase in $CD8^+$ cells, patients with DILS had significantly higher numbers of $CD4^-CDw29^+$ cells, 1089/mm^3 vs. 323 for HIV controls and 371 for healthy controls ($p<0.01$). The degree of glandular and pulmonary lymphocytic infiltration correlated with the absolute numbers of both the circulating $CD8^+$ and $CD4^-CDw29^+$ populations.
Conclusion. Taken together with the HLA-DR5 association in DILS, these data would suggest that MHC-restricted antigen presentation activates the $CD4^+CDw29^+$ helper-inducer lymphocyte subset leading to an expanded population of $CD4^-CDw29^+$ cells. As $CD4^+CDw29^+$ cells are required for the differentiation of cytotoxic CD8 cells, the $CD4^-CDw29^+$ subset, which presumably defines the circulating CD8 population in DILS, is currently the subject of detailed characterization.

Th.B.P.118 HIV-INFECTED SUBJECTS RESPOND TO POLIO VACCINATION BOOSTER ACCORDING TO ABSOLUTE T4 CELL COUNT.

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HIV infection is known to impair both cellular and humoral immunity. We studied the immunity to Polio virus in homosexual HIV-infected patients by measuring the level of antibodies against polio virus before and after i.m. booster vaccination with Salk Poliomyelitis vaccine (Connaught). 16 HIV seropositive homosexuals, average age 30 (25-50), were tested for neutralizing antibodies to poliovirus types I,II and III, using the 24 hour incubation method. In addition, the number of peripheral blood T4 cells and the lymphocyte stimulation following PHA, Con A and PWM were estimated. Prior to booster, all subjects demonstrated neutralizing antibodies to the three types of poliovirus. Following Salk vaccine booster, a rise in antipoliovirus antibody titer to one or more serotypes was noted in 12 subjects (see Table).

Group	No. seropositives	T4/ml	T4/T8	Response to Polio Vaccine		
				I	II	III
A.	5	600-1050	2.08±0.70	4/5	5/5	5/5
B.	6	200-400	0.49±0.08	6/6	5/6	5/6
C.	5	30-80	0.21±0.06	2/5	1/5	0/5

The response to Salk booster immunisation correlates with the number of circulating T4 cells and to the T4/T8 ratio. Further correlation was found with the mitogen-induced lymphocyte stimulation index.

Th.B.P.120 IMMUNOLOGIC ASPECTS OF MULTIPLE SIMULTANEOUS VACCINATION IN HIV SEROPOSITIVE SUBJECTS

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Objective: To identify immunologic factors predictive of response to immunization by HIV seropositive subjects, and to evaluate the effect of vaccination on the activation of T and B cells.
Methods: 21 asymptomatic HIV seropositive subjects who had received multiple vaccines were evaluated for vaccine response and immunologic function, including full blood count with cell phenotype analysis, serum immunoglobulins, DHS, T and B cell proliferation responses and immunoglobulin production. 20 normal subjects were similarly evaluated after vaccination, and also underwent cell phenotype analysis with double staining for CD3, CD4, or CD8 along with activation markers CD25, 4F2, DR, transferrin, VLA-1 on days 0,1,2,3,6,8,10,15, and 30. B cell analysis included CD20 with 4F2. Serum and supernatant assays for IL-2, IL-2R, α-INF, and immunoglobulins were performed.
Results: HIV seropositive vaccine non-responders had significantly higher spontaneous IgG production than HIV seropositive responders, as well as loss of suppression of EBV driven immunoglobulin production. There was no evidence of significant activation of the circulating T and B cell population after vaccination in any of the normal subjects.
Conclusion: There are subsets of asymptomatic HIV seropositive subjects capable of normal vaccine response; they can be distinguished by assays of B and T cell function. In addition, there is no evidence in normals of significant B and T cell activation after intensive immunization.

Th.B.P.121 CORRELATION BETWEEN HISTOLOGICAL CHANGES IN LYMPH NODES AND ALTERATIONS OF CELLULAR IMMUNITY IN DRUG ADDICTS AT RISK FOR AIDS.

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Fifty HIV-positive I.V. drug addicts (IVDA) with palpable lymphadenopathy and 40 healthy individuals were selected for this study. Lymph node biopsies were fixed in formaline or B5-fixative and processed by histological methods. According to the classification of Biberfeld and based on our results and analysis of the statistical relationship between immunological values and histological parameters we have defined two main histologic stages. Stage I is characterized by: presence of follicles, ussually with prominent germinal centers, signs of follicular involution (lymphoid infiltrates, absence of follicular differentiation areas, etc),and paracortical nodules (tertiary nodules). Stage II is characterised by: absence of follicles or presence of follicular remnant scars, architectural generalized effacement with abnormal angiogenesis,and plasmocytosis. A comparison between histologic stage I and II in relation to T-cell subsets and cellular immune function evaluation in HIV-positive IVDA have shown significant differences between both groups. The differences were marked (p<0.001) in relation with number of CD4$^+$ cells, CD4/CD8 ratio, blastogenic response to PHA and percent of anergy. In the group of 50 IVDA we also found that histologic stage II was associated with the more severe clinical manifestations of HIV infection. 89% of patients with AIDS were distributed in histologic stage II. In contrast, 93% of patients in early stages of HIV infection (G.II, G.III and G.IV-E) were in histologic stage I.Lymph node histology is useful for the assessment of the severity of HIV infection.

Immunologie : protéines plasmatiques/Immunité humaine
Immunology: Plasma Proteins/Humoral Immunity

Th.B.P.122 SERUM INTERFERON α IN ANTI HIV-1 POSITIVE PATIENTS IS DIFFERENT FROM IN VITRO PRODUCED INTERFERON α

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OBJECTIVE: Acid labile interferon α (IFNα) has been dedicated to patients positive for antibodies to human immunodefiency virus-1 (HIV-1) who developed AIDS-related complex (ARC) or acquired immunodeficiency syndrome (AIDS). It has been demonstrated in vitro that stimulation of peripheral blood mononuclear cells (PBMC) from healthy donors with HIV-infected cells causes production of acid labile IFNα whereas free infectious virus (HIV) itself leads to conventional IFNα in these cells.
METHODS: 164 HIV positive patients included in a study were tested for IFNα in the serum. For quantification of IFNα a highly specific ELISA was applied.
RESULTS: It turned out that all patients who had serum levels more than 5 - 8 IU/ml IFNα showed progression in the disease. 14 of these patients at stage CDC 3/WR 4 - 5 yielded average IFNα levels of (Mean ± SD) 24 IU/ml ± 19. IFNα levels up to 104 IU/ml were measured in 23 patients with full blown AIDS (stage CDC 4/WR 6, 40 IU/ml ± 27). Serum samples of these patients were treated with HCl at pH 2 for 24 h at 4°C. After retitration using NaOH to pH 7 we failed to detect any IFNα in these probes, indicating that the produced IFNα was acid labile. In contrast acid-stabile IFNα has produced in vitro by PBMC of these patients in turn to stimulation with IFN inducers (vesicular stomatitis virus, 5 x 10^5 PFU/ml). A significantly decrease of this VSV produced IFNα occured with the progress of the disease.
CONCLUSION: Functional properties of acid-labile IFNα in vivo are still ill defined and under present evaluation.

Th.B.P.123 SERUM IMMUNOGLOBULIN PROFILE IN HIV INFECTION

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Objective. To study the correlation between immunoglobulin serum concentration (IgG, IgA and IgM) and the clinical evolution in HIV infection.
Methods. The serum concentration of immunoglobulins were measured by standard biochemical methods in 90 patients with HIV-1 or HIV-2 infection, treated from July.85 to January.89.
Results. An increase of immunoglobulin concentration was recognized in 76 out of the 90 patients (82%). The IgG values in the 36 asymptomatic carriers (AC): normal in 12 (33%) with a mean of 2159.4 mg/100ml, prallels that of IgG in the 38 AIDS patients: normal in 14 (36%), mean- 2115.3 mg/100ml. IgM profile was identical to that of IgG i.e., normal values in 13 AC and in 13 AIDS patients, with intermediate concentrations in patients with PGL and ARC as observed with IgG. The mean IgA serum concentration was within normal range in all stages of infection, but an uniform and significative increase was observed along with disease progression. there were no statistical differences between HIV-1 and HIV-2 infected patients. there were no striking differences among AIDS patients with opportunistic infections, namely tuberculosis and CNS-toxoplasmosis, and a group of patients with these two infections simultaneously.
Conclusions. Although the predictive value of high serum Ig concentration is very poor, a normal but increasing IgA could probably be of value if used in conjunction with other immunological, biochemical and clinical investigations of HIV infected people.

Th.B.P.124 EVALUATION DES ANTIGENES PHENOGLYCOLIPIDIQUE ET SULFOLIPIDIQUES DE MYCOBACTERIUM TUBERCULOSIS POUR LE DIAGNOSTIC SEROLOGIQUE DE TUBERCULOSE CHEZ LES MALADES ARC ET SIDA.

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Objectif : Mise au point d'un immunodiagnostic rapide de la tuberculose chez les malades ARC et SIDA.
Méthode : population = 4 groupes de patients sont étudiés : a) sujets sains b) tuberculeux HIV ⊖ ; c) sujets HIV ⊕ non tuberculeux; d) tuberculeux HIV ⊕
Immunodiagnostic : Elisa utilisant les antigènes PGL Tb1; sulfolipide I et sulfolipide IV de mycobactérium tuberculosis.
Résultats : taux de positivité (%) de l'immunodiagnostic (données provisoires)

Population	Ag PGL TB1	SL I	S IV
Sujets sains	0 %	0 %	0 %
Tuberculeux HIV ⊖	10 %	55 %	79 %
Sujets HIV ⊕ non tuberculeux	10,5 %	10,5 %	21 %
Tuberculeux HIV ⊕	30 %	10 %	40 %

Conclusion : Ces résultats préliminaires soulignent l'intérêt d'un test sérologique pour le diagnostic rapide de la tuberculose chez les malades ARC et SIDA.

Th.B.P.125 THE COMPOSITION OF CIRCULATING IMMUNE COMPLEXES (CIC) IN HIV-INFECTED INDIVIDUALS BY C1Q- AND C3D-BINDING ELISA.

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Objective. The presence of HIV-specific and nonspecific IgG circulating immune complexes (CIC) in HIV-infected persons has been reported, usually measured as C1q-binding complexes by labor-intensive techniques. We measured total C1q-IgG and C3b-IgG CIC in sera obtained from 38 HIV-infected persons.
Methods. A rapid (3h) C1q- and C3d-binding ELISA (Immunomedics, Warren, NJ) was employed. The concentration of CIC was expressed as ug/ml heat-aggregated human globulin (HAG) equivalents from a standard curve.
Results. Significant levels(>35 ug/ml) of C1q-IgG CIC were detected in 7/9 subjects in CDC group II (64±15 ug/ml), 3/5 subjects in CDC group III (39±13) and 14/24 subjects in CDC group IV (51±15 ug/ml). Similarly, C3d-IgG CIC (>9 ug/ml) were present in 7/9 CDC group II (28±10 ug/ml), 4/5 CDC group III (16±2 ug/ml) and 17/24 of those in CDC group IV (25±22 ug/ml). Thus, significant levels of CIC were detected in 32/38 (88%) infected subjects. CIC were not detected in HIV-seronegative controls. Of 32 CIC positive subjects p24 antigenemia was lacking in 5/7 subjects in CDC group II, 3/4 in group III and 15/21 in group IV. Collectively, p24 antigen was absent in 23/32 CIC positive infected subjects (p=<.002, Fischer's Exact Test).
Conclusion. We conclude that the C1q- and C3d-binding ELISA are useful for quantitation of CIC in HIV-infected individuals. The significance and utility of CIC measurements in p24 antigen negative infected subjects warrants further investigation.

Th.B.P.126 AUTOREACTIVITY IN PATIENTS INFECTED WITH HIV

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Objective. To characterize and correlate the occurrence of autoantibodies (autoab) in HIV infected patients with their disease status as defined by the Walter Reed (WR) staging classification.
Methods. Sera from a total of 90 patients were examined using standard laboratory serologic techniques (indirect immunofluorescence) for the presence of autoab to nuclear antigens (ANA), cytoplasmic antigens (ACYA), smooth muscle (ASMA), mitochondria (AMA) and rheumatoid factors (RF). Both human and murine tissues served as substrate in the ANA testing.
Results. Autoreactivity was observed in patients from all WR stages. The percentage of patients positive for ASMA increased with the WR stage (WR1, 63%; WR2, 82%; WR3, 83%, WR4, 100%; WR5, 92%, WR6, 100%). No patients possessed AMA. RF activity varied in each group. Overall ANA positivity using human HEP-2 cells was 48%. WR stage 2 had the highest number of patients positive (82%), with all other WR stages having less than 45% positive. In marked contrast, overall ANA positivity on rodent tissues was less than 10%. Thus, the detection of ANA in HIV infected patients was highly dependent on the substrate used for testing.
Conclusion. These results demonstrate that the occurrence of autoab is a common finding in HIV infection. Further, autoab frequency and specificity vary in patients within different WR stages. The choice of substrate for autoab testing appears important in the detection of certain autoab (e.g. ANA) in HIV infected patients.

Th.B.P.127 COMPLEMENT ACTIVATION IN HIV INFECTION OCCURS THROUGH THE CLASSICAL PATHWAY AND REFLECTS DISEASE SEVERITY.

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Objective. Using a direct and pathway specific approach, to assess whether complement (C) activation occurs in HIV infection and its relationship to circulating immune complexes (CIC) and disease severity.
Methods. We studied 15 healthy controls and 65 subjects attending an outpatient STD clinic comprising 21 HIV negative controls and 44 HIV positive patients (7 asymptomatic/PGL, 22 ARC, 15 AIDS). C4d, Ba and C3d, fragments specific to the classical, alternative and common pathways, were measured by nephelometry after isolation with polyethylene glycol. Intact components C4, Factor B and C3 and CIC were quantified by nephelometry and the fragment to parent molecule ratios (i.e. C4d/C4) calculated to give an index of activation independent of the initial concentration of the intact components.
Results. There was marked activation of C proceeding through the classical pathway in all HIV positive groups as shown by significant elevations of C4d, C4d/C4, C3d, C3d/C3 ($p < 0.001$ for all) compared with controls and this was accompanied by a comparable increase in CIC ($p < 0.001$). Moreover, the increase in these parameters was linear through the subject groups from healthy controls to AIDS. There was no C activation through the alternative pathway in any of the patient groups.
Conclusion. Activation of C in HIV infection proceeds through the classical pathway, consistent with triggering by CIC, and reflects disease severity.

Th.B.P.128 SERUM IgD LEVELS IN THE COURSE OF HIV INFECTION.

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Objective. Polyclonal hyperIgG, IgA or IgM is a common abnormality observed in HIV patients and explained by B cells activation. IgD levels have been much less thoroughly studied. In a cohort of 87 HIV+ patients (HIV+) and 82 HIV- controls (HIV-) we have assayed IgD and attempted to correlate levels with CDC groups, T4 cells, IgG, IgA and IgM, HBV antigenemia.
Methods. T4 cells : cytofluorometry, Ig : nephelometry, HBs antigen : ELISA.
Results. IgD levels did not correlate with IgG, IgA, IgM levels nor with T4 cells number. Since a difference between means is observed (HIV+ $\bar{m}$ = 288.5, sd = 286.5; controls $\bar{m}$ = 130.2, sd = 159.1), noteworthly the incidence of high levels (>400 mg/l) dramatically increased in HIV+ (20/87) compared to HIV- (2/82), more particularly in II and IVc2 groups. In 12/16 AIDS cases, IgD levels were low. The most noteworthly is the levels dispersion in a wider range in HIV+, particularly not yet AIDS, with high levels absent in controls. Furthermore, HBV infection affected IgD values more in HIV+ (HBs+ $\bar{m}$ = 398.7, sd = 279.3; HBs- $\bar{m}$ = 255.6, sd = 283.6) than in controls (HBs+ $\bar{m}$ = 190.6, sd = 80.8; HBs- $\bar{m}$ = 130.2, sd = 159.1). All HIV+ presented stigmata of former EBV infection, so it has not been held as a discriminating criterion.
Conclusion. It's remarkable that HIV infection influences serum IgD levels, this fact having been reported in few diseases. HyperIgD may reflect an unusual type of B-cell activation in HIV infection and perhaps may be used as an early marker of it.

Th.B.P.129 MONOCLONAL GAMMOPATHIES IN HIV INFECTION.

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Objective. Monoclonal gammopathies (MG) recently have been reported in HIV infection. We purpose to evaluate the incidence of MG in a cohort of 210 HIV patients and their clinical and biological characteristics.
Methods. Sera samples were tested by serum proteins electrophoresis, immunofixation, immunoelectrophoresis and nephelometry for Ig assay.
Results. 17 MG (isotypes : 9 IgG, 2 IgA, 5 IgM, 1 IgM/G biclonal) and 2 abnormal light chains (LC) have been observed. The kappa LC prevail (lambda LC 5 times). These 19 patients, followed up from 2 to 12 months, were all T4 lymphopenic, 16 AIDS and 3 asymptomatic. In 4, bone marrow study showed a non specific polyclonal lymphoplasmocytosis. Actually, we observed no development of B-cell lymphoma in all patients tested. Furthermore, monoclonal peaks persist contrary to transitory ones reported in others viral infections e.g. A or B viral hepatitis. Besides T4 lymphopenia, other immune abnormalities (various autoantibodies, immune complexes) often are encountered suggesting that induction of MG may be related to polyclonal activation of B cells and aberrent B-cell immunoregulation after HIV infection.
Conclusion. In our series, the incidence of MG in HIV patients, principally AIDS, was low (9.0%) but yet surprising in such a young population. However, the occurence of B-cell clones in immunosuppressed, "dysimmune" and overstimulated patients is logical.

Th.B.P.130 ADENOSINE DEAMINASE (ADA) LEVELS IN TEARS OF AIDS PATIENTS AND AIDS CARRIERS

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Objective. To determine the activities of purine nucleotide metabolic enzymes in body fluids provide information on retrovirus infection in particular,lin relation with ophthalmologic and neurological disturbances.
Method. Approximatory 30ul tear was collected by cappillary action with use of 10ul glass micropipette. ADA activity was measured based on the conversion of adenosine to hypoxanthine.
Results. The ADA enzyme levels were significantly elevated in AIDS patients as compared with AIDS carriers. The ADA levels were not elevated in AIDS carriers and the levels were found to be similar to normal controls. The AIDS patients with markedly elevated ADA level tend to correlate with an appearance of ophthalmological and neurological disturbances.
Conclusion. The measurement of adenosine deaminase activity in tear provides useful clinical information for monitoring the course of AIDS.

Th.B.P.131 BULLOUS PEMPHIGOID (BP) TYPE ANTIBODIES IN HIV-INFECTED PATIENTS.

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-Objective: to determine if HIV- seropositive patients with pruritus have antibodies against skin antigens.
-Methods: direct immunofluorescence (DIF) test on involved and uninvolved skin, indirect immunofluorescence (IIF) test on normal human skin as substrate and western blot analysis of normal human epidermal extracts.Ten HIV-seropositive patients (9m.,1f.) with pruritus,
8 without pruritus; as controls, a panel of HIV- seronegative patients with inflammatory dermatoses and with the pruritic autoimmune skin disease bullous pemphigoid (BP) were studied similarly.
-Results: an unexpectedly high proportion of HIV-seropositive patients (12/18: 66%) was found by western blot to have circulating antibodies to epidermal antigens in the range of 240-220 and 180-160kD, which is the MW of BP antigen. This compared to 81% of positivity in HIV- seronegative patients with BP and to 0% of patients with other inflammatory dermatoses. One HIV- seropositive patient had a positive BP-like IIF and another one a positive BP-like DIF. Follow-up studies indicated that in HIV- seropositive patients, positive BP-like western blot was not correlated with the presence of pruritus, was detectable early in the course of infection (i.e. shortly following HIV seroconversion). In several cases the BP-like antibodies were no longer detectable during AZT therapy.

-Conclusion: HIV-seropositive patients frequently develop antibodies against human skin antigens of MW identical to the autoantigens of BP. The significance of this phenomenom is under study; so far a cross-reaction with HIV antigens is partially excluded because sera of BP patients do not react with HIV1 antigens on western blot analysis.

Th.B.P.132 COMPARISON OF THE IMMUNOGLOBULINS (IG) PROFILE BETWEEN WHITE PATIENTS (PTS) INFECTED IN AFRICA (WA), WHITE PTS INFECTED IN EUROPE (WW) AND BLACK PTS INFECTED IN AFRICA (AA)

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Aim of the study :
Differences in IG profile between AA group and WW group may be due to variations of infecting HIV or to the host immune response.
Accordingly we have compared white pts HIV-infected in Africa with White pts HIV-infected in Europa.
Population : WW pts : 15, 5 respectively at stage II-III and IVA-IVC$_2$.
AA pts : 18, 9, 5 respectively at stage II-III, IVA-IVC$_2$ and IVC$_1$.
WA pts : 16, 6, 7 respectively at stage II-III, IVA-IVC$_2$ and IVC$_1$.
Results : are summarized as follows : (% of the normal value)

STAGE	IGA(%)			IGM(%)			IGG(%)		
	AA	WA	WW	AA	WA	WW	AA	WA	WW
II - III	115	148	120	170	190	188	281	153	151
IVA-IVC$_2$	142	160	228	209	214	399	287	179	204
IVC$_1$	224	132	-	170	200	-	230	167	-

At stage II-III and IVA-IVC$_2$, IGG levels were significantly higher in AA group than in WA or WW group. At stage IVC$_1$, IGA and IGG levels were significantly higher in AA group.
In conclusion, we found no difference at stage II-III, IVA-IVC$_2$ in IG profiles between White pts infected in Africa and White pts infected in Europa. Accordingly, in our opinion the difference in IG profiles between African pts and White pts infected in Africa or in Europa is probably related to racial factors rather than HIV-variation.

Th.B.P.133 Antibodies to endogeneous interferonα in controls and HIV infected persons in different disease states.

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In serum samples of 180 HIV positive persons (CDC II n=45; CDC IV n=64; CDC IV C,D n=71) 10 quantitative markers were analysed: HIV antigen, antibodies to HIV core, antibodies to HIV envelope, beta-2-microglobulin, serum neopterin, interferon alpha, antibodies to interferon alpha, serum IL-2 receptors, tumor necrosis factor alpha and serum IL-1. The results were compared to the values of 60 healthy blood donors. There is a statistically significant difference between blood donors and every single HIV infection group. But within HIV positives, in all 3 groups certain patients showed extremly high values in the different parameters. These pronounced fluctuations make it impossible to statistically separate the clinically defined disease groups in all but one serum parameter. The exception is: antibodies to endogenous interferon alpha (anti IFNα) . In parametric and nonparametric statistical analysis the titer of antibodies to IFNα significantly differ between the CDC groups. Anti IFNα titers were determined in a highly sensitive, commercially available EIA test kit and confirmed by the neutralization test (1).

Anti IFNα do not correlate with the interferonα level in the individual person. Neither in one of the different groups nor in the whole sample. The biological significance of antibodies to endogenous IFNα is not yet clear. Already Gresser (2) gave a possible explanation why autoantibodies to IFNα are produced. Whether these anti IFNα are enhancing (3) or reducing (4) the IFNα action is a matter of controversy. This issue has to be clarified in the near future. Our results are especially interresting in the light of the proposal of anti IFNα as a therapeutic approach (5).

(1) Bennes U.; Fischer E. et al. J.Biol.Standard. 15 :231,1987; (2) Mogensen K.E., Gresser J. Lancet II:1227,1981; Quesada J.R. et al. J.Clin.Oncol. 4 :1522,1986; (4) von Wussow P. et al. Lancet II:635,1987; (5) Advanced Biother··· Concepts, L.A. U.S.A. IND approved.

Th.B.P.134 COMPLEMENT LEVELS AND CIRCULATING IMMUNE COMPLEXES IN A CONTROLLED, LONGITUDINAL, MULTICENTER STUDY ON EFFECTS OF INTRAVENOUS IMMUNOGLOBULIN (IVIG) IN ADULTS WITH ARC/WRS

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Objective. The complement system, the effector mechanism of the antigen-antibody reaction and the main mediator of inflammation, and the formation of circulating immune complexes were examined to study safety of intravenous immunoglobulin (Sandoglobulin) in adults with ARC/WRS which took part in a randomized, placebo-controlled double blind trial.
Methods. Blood sampling was done on days 1, 85 and 183 of the study. Complement was assessed by radial immunodiffusion, nephelometry, cellular intermediates and monoclonal antibodies to neoantigens of activated complement proteins. Circulating immune complexes were measured as the C1q-binding activity of the serum or the amount of C3-breakdown products bearing IgG captured by solid-phase monoclonal anti-human C3dg.
Results. 13 patients receiving IVIG (0.4 g/kg b.w. every two weeks for 6 months) and 12 patients receiving the same volume of a placebo solution (0.03% human albumin) were analyzed. On day 1 of the study 3/13 (IVIG) and 4/12 patients (placebo) had C4 levels below the normal range. Total complement hemolytic activity (CH50) was below the normal range in 6/13 and 3/12 patients, respectively. C9, a sensitive acute-phase complement protein, was above the normal range in 10/13 and 8/12 patients. Elevated C1q-binding activity (C1q-BA) was found in 7/13 and 9/12 patients, respectively. In contrast, elevated level of C3dg-bearing IgG was observed in only 1/13 and 2/12 patients. In both groups of patients an inverse correlation between CH50 value and C1q-BA (r > -0.867) and CH50 and level of *in vivo* C4 activation (r > -0.765) emerged. At no time did one of the parameters show a significant difference between the two groups of patients. None of the mean levels of parameters tested changed significantly during the observation period.
Conclusion. The infusion of IVIG to immune complex positive or negative adults with ARC/WRS does not induce formation of circulating immune complexes. The complement system in such patients is not disturbed by the IVIG infused. Based on these results infusion of IVIG to patients with ARC/WRS is safe, a fact also observed by clinical parameters (cf: *Schrappe-Bächler et al.*).

Th.B.P.135 SERUM IGE LEVELS VARY WITH ABSOLUTE CD4A LYMPHOCYTE COUNTS IN HIV-POSITIVE PERSONS

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Objective. To determine whether serum IgE levels change with absolute CD4a lymphocyte counts.
Methods. 740 HIV-positive persons had at least one IgE level, including 71 with CD4a counts of 0-200. Serum IgE levels were measured by RIA (Normal range 0-180 IU/ml). An analysis of variance was performed comparing serum IgE levels with CD4a counts.
Results.

CD4a Count	Mean IgE	#Samples	Std.Error	Min.IgE	Max.IgE
0-200	567	80	140	3	6265
200-400	196	144	42	4	3736
400-600	127	280	24	2	5600
600-800	148	290	25	3	4910
800+	105	307	14	2	2389

Conclusion. Serum IgE levels in a large cohort of HIV+ persons are linearly related (F-Ratio 30.3, p less than .01) to the absolute CD4a count, being highest in persons with 0-200 CD4a lymphocytes. This finding may be relevant to the frequent drug reactions seen in HIV-positive persons and to the release of IgE binding factors by T cells of HIV-positive persons. (Proc. Natl. Acad. Sci. 1988;85:9214-9218).

Th.B.P.136 PLASMA FIBRONECTIN (PFN) LEVELS IN PATIENTS WITH HIV INFECTION.

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Objective. Several biological markers have been studied in patients with HIV infection to evaluate their diagnostic value. Fibronectin plays an important role in opsonic functions and it can bind to bacteria,viruses,some protozoan parasites and Candida species. Fibronectin may be an important component in immune complexes during viral infections. Since fibronectin is capable of interacting either directly with viruses or with mononuclear cells, we determined the levels of PFN in patients with HIV infection.
Methods. Plasma samples were obtained from adult patients with HIV infection. Quantitation of PFN levels was performed by a radial immunodiffusion assay.
Results. In our study,we observed a significant diminuition of PFN levels in patients with HIV infection.This reduction was marked in ARC and AIDS patients.Moreover,AIDS-patients with P.carinii pneumoniae had low and persistent levels of PFN.
Conclusion. The low PFN levels observed in AIDS-patients show that PFN may act as a non specific opsonin involved in the clearance of viral particles. It is worthy to note that a specific tetrapeptide of the cell-binding site of fibronectin possesses a strict homology with a putative polypeptide chain encoded by HIV.

Th.B.P.137 SERUM AND SALIVARY IMMUNOGLOBULINS TO CANDIDA IN HIV POSITIVE INDIVIDUALS

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Objective. To determine the prevalence of candidal carriage and infection in a group of HIV positive individuals and to compare the humoral immune responses in serum and saliva in this group with a control group of HIV negative subjects.
Methods. Patients were examined clinically with particular reference to the presence of candidal lesions and oral swabs taken to identify carriers. Venous blood and whole saliva were obtained for estimation of total and anti-Candida antibody levels measured by radial immunodiffusion and ELISA assay respectively. 47 HIV positive individuals and 176 HIV negative controls were included in the study.
Results. Pseudomembranous candidiasis was the commonest clinical variant in HIV positive individuals and there was a 25 fold increase in the incidence of median rhomboid glossitis in this group compared to a normal population. Candida albicans was the commonest species isolated in both groups. Increased levels of anti-Candida IgG were found in both serum and saliva of HIV negative individuals who were either carriers or infected. This was associated with a reciprocal fall in anti-Candida IgA. Similar trends were seen in HIV positive individuals in association with candidal carriage and infection although the changes were more marked.
Conclusion These data demonstrate maintenance of systemic humoral immunity but reduced secretory immunity in HIV infection to Candida albicans.

Th.B.P.138 SERUM PROLACTIN LEVELS IN PATIENTS WITH HUMAN IMMUNODEFICIENCY (HIV) INFECTION

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Objective. To measure serum levels of prolactin (PRL), a regulator of immunologic responses and cellular proliferation, in HIV-infected subjects.
Methods. Serum PRL was measured in 48 HIV-infected males (mean age 34 yr.), 13 HIV-negative male homosexuals (mean age 36 yr.), and 14 male heterosexuals by an immunoradiometric assay with a magnetic solid phase (MAIAclone, Serono Diagnostics). Geometric mean levels were compared between groups by the Wilcoxon two-sample test.
Results.

Group	n	PRL (ng/mL)	p value vs. 1) and 2)
1) Normal heterosexuals	14	3.6 + 0.4	———
2) HIV-negative homosexuals	13	3.1 + 0.7	———
3) HIV-infected	48	7.1 + 1.2	< 0.001
with Kaposis sarcoma	8	15.0 + 5.5	< 0.001*
without Kaposis sarcoma	40	6.1 + 0.8	< 0.02

*Significantly different from group without Kaposis sarcoma p < 0.02
There was no correlation between PRL levels and absolute numbers of CD4 or CD8 lymphocytes or CD4/CD8 ratios in the HIV-infected subjects.
Conclusion. Mean PRL levels are higher in HIV-infected subjects compared to HIV-negative homosexuals and normal heterosexuals. Levels are highest in those with Kaposis sarcoma.

Th.B.P.139 ACTIVATION OF THE ALTERNATIVE COMPLEMENT PATHWAY (AP) IN DIFFERENT STAGES OF HIV INFECTION

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Objectives. Since some recently published data indicate that HIV-infected cells activate the AP, it seemed interesting to measure if C3bBbP complexes are present in the blood of HIV-infected patients. Formation of these complexes is a most sensitive marker of AP activation. Methods. C3bBbP complexes were measured by an ELISA method, plates were coated with properdin (P) antibodies, biotin-anti-C3b and avidin-peroxidase were used for the detection of complexes. Results. Freshly frozen (-70°C) EDTA plasma and serum samples were tested from healthy controls and from patients in different stages of HIV-infection:

Group	C3bBbP complexes in plasma No	plasma U/ml	serum No	serum U/ml
controls	18	41±15	18	240±39
asympt HIV+ haemophiliacs	21	58±46*	21	350±117***
ARC, AIDS	n.t.		17	248±56

* p<0.10
*** p<0.001

Conclusion. Our findings indicate that AP is activated in the asymptomatic stage of HIV-infection, whereas traces of this activation could not be detected in ARC and AIDS patients.

Th.B.P.140 GRANULOCYTE-ASSOCIATED IMMUNOGLOBULINS IN ASYMPTOMATIC HIV-INFECTED SUBJECTS

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Objective. To determine the prevalence of granulocyte-associated immunoglobulins (GA-IgG) during the follow-up of symptomless human immunodeficiency virus (HIV)-infected subjects.
Methods. 32 asymptomatic (stage II or III CDC) HIV seropositive subjects were studied. None received treatment before and during the study period. Quantification of GA-IgG by a granulocyte immunofluorescence test (GIFT) used Fab'2 fragments against total immunoglobulins or immunoglobulins G. Fifteen out of the 32 subjects had a second GIFT 3 months later ; 6 out of these 15 had a third GIFT 3 months after that.
Results. At the first control, 7 (21.8 %) out of the 32 subjects had a positive GIFT.

GIFT at 1st control	GIFT at 2nd control	N° of cases
-	-	3
-	+	6
+	-	0
+	+	6 *

(* GIFT was positive in these 6 subjects at the third control)
At the first control, mean CD4 in subjects with positive GIFT and without were respectively 414 and 350 (N.S. difference) ; mean neutrophil count in these two groups were respectively 3187 and 3349 (N.S. difference). No neutropenia was found.
Conclusion. GA-IgG are not responsible for neutropenia in symptomless seropositive subjects. Their frequency is high in this context and increases with time.

Th.B.P.141 Anticardiolipin Antibody (ACA) in patients with Human Immunodeficiency Virus (HIV) infection,

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The lupus anticoagulant (LA) and ACA are antibodies directed against phospholipid. A syndrome of thrombosis, spontaneous abortions and thrombocytopenia has been associated with these antibodies. ACA, LA and other antibodies have been found in sera of HIV infected patients. The role of these immunological abnormalities in HIV infection remains to be determined.
In this study ACA was measured on 265 HIV patients by Enzyme Linked Immunoabsorbent Assay. Screening for LA was done using a variety of clotting studies PT, PTT, Kaolin clotting time and Russel Viper Venom time. Patients were categorized according to Walter Reed stage. Results were as follows:

WR Stage	1-2	3-5	6	Totals
# of pts.	226	32	7(23%)	265
(+) ACA	85(37%)	13(40%)	2	100
(+) LA	6	1	0	7

Only one patient had a single episode of venous thrombosis. In addition, sera from ten (+) ACA patients were compared with sera of four antiphospholipid antibody syndrome (APL) patients, looking for cross-reactivity with a variety of phospholipid antigens. Both HIV ACA and APL ACA cross-react with negatively charged phospholipid. We conclude that even though ACA in HIV infected patients behaves in a similar way to ACA of APL pts., the presence of ACA in HIV infected patients does not seem to be associated with stage of disease or APL antibody related conditions.

Th.B.P.142 CD4+ LYMPHOCYTE AUTOANTIBODIES AS INDICATORS OF DISEASE PROGRESSION IN HIV INFECTION

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The presence of IgG, IgM, C3d, or gp120 on the surface of T lymphocytes was analyzed by flow cytometry in blood samples from 73 hemophilia patients and 56 healthy controls. 12 patients had AIDS, 3 had AIDS-related complex (ARC), 1 patient had lymphadenopathy syndrome (LAS), 31 were HIV+ without AIDS, ARC or LAS, and 26 were HIV-. IgG and IgM autoantibodies against CD4+ lymphocytes were found in HIV+ hemophilia patients but not in HIV- patients or healthy controls ($p < 0.001$). IgM autoantibodies were more frequent than IgG autoantibodies. Autoantibody formation increased with disease progression ($p < 0.005$). However, within the same disease risk category, patients with autoantibodies were not "more immunologically abnormal" than patients without autoantibodies. HIV+ patients who possessed autoantibodies had similar CD4+ and CD8+ lymphocyte counts as HIV+ patients without autoantibodies. There was no significant difference in the number of patients with abnormal CD4/CD8 ratios, serum neopterin levels, or in-vitro responses to allogeneic stimulator cells or mitogens between autoantibody positive or negative patients of the same risk category. Our data suggest that autoantibodies against CD4+ lymphocytes may be helpful as indicators of disease progression, however, their immunopathogenetic role remains unclear.

Th.B.P.143 PREDICTIVE VALUE OF IgE IN HIV DISEASE.

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In a previous study, we reported that IgE increased significantly along the evolution of HIV infection. In an attempt to assess their predictive value, we compared 2 groups of HIV+ untreated non-atopic patients (pts) defined by their IgE values (group I: <150 UI/ml, group II: > 150, normal laboratory value <150). Both groups were similar with respect to age, sex, risk factors and to well-known predictive markers of AIDS i.e. CD4 cell counts and p24 antigenemia. Characteristics of the 2 groups are given in the table.

	n	CD4/ul (m+SEM)	p24 +	Asympt.	PGL	ARC
Group I	154	610+21	29(19%)	59(38%)	82(53%)	13(8%)
Group II	62	595+44	12(19%)	25(40%)	28(46%)	9(14%)

During the follow-up, AIDS occurred in 13 group I and 11 group II patients. The 30-month actuarial rate of AIDS occurrence are 21% and 41% in group I and II respectively (p=0.015). In conclusion: high levels of IgE in HIV patients, reflecting the early and severe dysfunction of T cells which normally tightly control IgE secretion, appear to be of poor prognosis in HIV infection.

Immunologie : molécules CD4 et autres marqueurs
Immunology: CD4 and Other Markers

Th.B.P.144 THE RELATIONSHIP OF CD-8 LYMPHOCYTE COUNTS TO AIDS PROGRESSION IN HIV SEROPOSITIVE MEN

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Objective. To determine if CD-8 lymphocyte counts change the probability of subsequently developing AIDS in prevalent HIV seropositive men.
Methods. CD-4 and CD-8 lymphocyte counts (cells/ul) were determined on a probability sample from the San Francisco Men's Health Study, on whom AIDS incidence in the subsequent 30 months was ascertained.
Results. Fraction (%) of HIV+ men with AIDS at 30 months

	CD-4	<438	439-686	>687
	<831	17/46 (37.0)	2/31 (6.5)	0/20 (0.0)
CD-8	832-1203	5/30 (16.7)	3/29 (10.3)	0/38 (0.0)
	>1203	10/22 (45.5)	6/36 (16.7)	2/38 (5.7)

CD-8 is not a statistically significant predictor of development of AIDS if constrained to be linear in a Cox proportional hazards model with CD-4 and time to AIDS development. However, CD-8 becomes highly significant if allowed to be non-linear. The contribution of CD-8 to the relative hazard is high around 500 to 600, declines between 600-1000, and then is increasing and linear above 1000.
Conclusion. CD-8 lymphocyte counts modify the risk of developing AIDS. These findings suggest that in contrast to in vitro data, high CD-8 levels may increase the risk of subsequent AIDS development.

Th.B.P.145 A FOLLOW-UP OF IMMUNE PARAMETERS IN HIV INFECTED PATIENTS TREATED WITH LOW DOSE AZIDOTHYMIDINE (AZT).

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°°: CHU Sart Tilman, State University of Liège, Belgium.

Objective. To assess the effect of AZT on immune function of HIV infected patients.

Methods. Seven HIV infected patients were submitted to oral low dose AZT (9.0 ± 0.5 mg/kg/day). Immune function was examined at three-monthly intervals by in vitro lymphoproliferation towards PHA and PWM and for interferon α and γ production. Immune parameters at the onset of the study and the duration of AZT treatment were as follows:

Patients	CDC	Risk	T4/ml	T4/T8	PHA (cpm)	PWM(cpm)	AZT(weeks)
98	2	Africa	650	0.47	16952	2010	14
57	3	iv drugs	596	0.46	23456	5680	40
52	4C2	homo	359	0.82	31134	8685	36
97	4C2	Africa	144	0.15	15146	1877	18
128	4C2	homo	71	0.15	149	77	11
108	4C2	homo	292	0.34	14875	644	37
123	4D	homo	24	0.06	582	167	17

Results. All but one patient (patient N°123) presented an increase of CD4 cells during AZT therapy. However, no significant improvement of the immune function was observed during AZT treatment in any of the patients except in patient 57. Interpretation of this improvement must be made with precaution, as this patient concomitantly with the AZT treatment stopped his drug-abuse.

Conclusions. These preliminary results concerning patients with yet advanced disease suggest that low dose AZT induced an increase of OKT4 cells but couldn't improve the immune function.

Th.B.P.146 AN UPDATE ON THE LYMPHOCYTE IMMUNOPHENOTYPING QUALITY ASSURANCE PROGRAM IN SUPPORT OF THE ARMY HIV STUDIES.

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Objective. To determine the degree of interlaboratory variability among Army Regional Medical Centers (AMC) that evaluate HIV patients.

Methods. Monthly shipments of 3 whole blood specimens are delivered by overnight commercial carrier to seven AMC for leukocyte and lymphocyte evaluations. CD2, CD3, CD4, CD8, CD19/20 and NK cells, were determined by a standard flow cytometric lymphocyte immunophenotyping protocol.

Results. Since June 1987, 382 specimens from 54 normal donors have been analyzed by the participating AMC with an overall standard deviation (SD) of 3.3 and coefficient of variation (CV) of 13.1% for all lymphocyte markers. The SD for CD4 percentages have ranged from 1.0 to 9.7% (mean of 3.3), while the SD for CD4 absolute counts have ranged from 69 to 477 cells/mm³ (mean of 227). The cumulative interlaboratory CV for the absolute CD4 count is 19.2%

Conclusion. In order to provide reliable CD4 determinations for multicenter HIV treatment protocols, a high degree of interlaboratory precision is required and can be achieved through the implementation a comprehensive quality assurance program.

Th.B.P.147 SOUS-POPULATIONS DE LYMPHOCYTES T CD4+CD45R+(2H4+) ET CD4+CDW29+(4B4+), CHEZ 70 PATIENTS AVEC INFECTION VIH.

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Objectif: Evaluer l'intérêt de la numération des lymphocytes CD4+2H4+ et CD4+4B4+ dans la prédiction de l'évolution chez les patients avec infection VIH.

Matériel et méthodes: °70 patients VIH+ répartis en 4 groupes. °Cytométrie en flux sur EPICS C® et double marquage (FITC-PHE) CD4.2H4 et CD4.4B4 (Anticorps monoclonaux Coulter Diagnostics).

Résultats:

Groupes.	Nbre de sujets	CD4+/mm³		CD4+2H4+/mm³		CD4+4B4+/mm³		Stade clinique (selon le CDC)
		m	SD	m	SD	m	SD	
Témoin	20	773	140	214	83	341	82	Sujets sains
1	16	732	149	186	83	181	79	II (Asymptomatiques).
2	14	462	38	122	62	184	71	II et III
3	24	297	75	63	33	136	69	III
4	16	237	94	59	42	123	60	IVc2

Il existe une diminution significative du nombre de cellules CD4+4B4+ dans le groupe 1 (asymptomatique) par rapport aux sujets témoins (P<0,0001, test t de Student) alors que ceux des CD4+ et des CD4+2H4+ ne sont pas significativement abaissés (P=0,44 et P=0,31).

La diminution des lymphocytes CD4+ dans le groupe 3 par rapport au groupe 2 est principalement due à l'atteinte des CD4+2H4+ (P<0,0001) sans différence significative pour les CD4+4B4+ (P=0,08).

Conclusions: Ces résultats préliminaires suggèrent que la sous-population CD4+4B4+ est altérée précocément dans l'infection VIH et pas la sous-population CD4+2H4+ qui décroît surtout à partir du groupe 2, donc à un stade évolutif plus avancé.

Th.B.P.148 CD4 AND TOTAL LYMPHOCYTE COUNT (TLC) IN PATIENTS WITH ANTIBODIES TO HIV.PREDICTING VALUE.CLINICAL SIGNIFICANCE AND LONG TERM FOLLOW-UP VARIATIONS.

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Objective: To assess the value of CD4 and total lymphocyte count follow-up in HIV seropositive patients.

Material: 164 seropositive patients (110 intravenous drug abusers(IDAs);38 homosexuals;16 heterosexuals).No patient had AIDS at entry.CD4 and total lymphocyte count (TLC) were determined each 6 months or before if symptoms developed.Mean follow-up has been 16 months (range 6-48).

Results: Would be shown in tables and figures.

Discussion: There is a trend towards a decline in CD4 and TLC through the follow-up.The decrease in CD4 is more marked in homosexuals than in IDAs.A spontaneous increase in CD4 is ocasionally seen during the first year.Total lymphocyte count should suffice for monitoring the progression of the disease because it mimics the decline in CD4 cell count and is less expensive.IDAs with CD4 cell count at entry below 400 x mm3 subsequently developed AIDS more frequently than patients with CD4> 400 x mm3 at enrollment (p> 0.005). Patients with P.carinii pneumonia (PCP) had in a 95.5% of cases total lymphocyte count below 900 x mm3 and CD4 < 200 x mm3. A total lymphocyte count(TLC) major than 1200 x mm3 rules out PCP.Primary prophylaxis for PCP is required in patients with CD4 < 250 x mm3.

Th.B.P.149 CONSISTENCY OF ROUTINE CD4 +, CD8 + PERIPHERAL LYMPHOCYTE MEASUREMENTS

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OBJECTIVE : To assess the consistency of routine measurements of CD4 and CD8 lymphocytes in whole blood HIV seropositive samples throughout France using a sample of 12 university laboratories.

METHODS : Two groups of 15 and 12 patients each, with CD4 lymphocytes ranging from 20 to 900/mm³ were tested. Each blood sample was fractionnated into duplicate aliquots (2 x 12) in order that each sample could be tested blindly within each lab during the subsequent 4 hours. Each one to the 12 labs used its own routine method for whole blood IF staining and analysis. In total, among the 12 labs, 3 sources of lysing solutions and of reference FITC conjugated anti-CD4 and CD8 moAbs were assessed and the IF was analyzed on 4 distinct types of cytofluorometers. Total lymphocyte counts were evaluated by both automatic and microscopic hematological methods (7 distinct automatic devices).

RESULTS : A 15 % coefficient of variation was found for overall CD4 cell measurements from 300 to 900/mm³. This weak variability might be mainly attributable to the immunological and hematological devices rather than to the operators or to the reagents.

CONCLUSION : The high consistency and reliability in CD4 lymphocyte counts, required for both clinical and research purposes, can be routinely attained in different laboratories provided automatic counting methods (poor statistical validity of microscopic counts) are used by trained operators during each step of the process.

Th.B.P.150 IMMUNOLOGICAL FEATURES IN HIV-1 POSITIVE PATIENTS: CLINICAL CORRELATION

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Objective To describe immunological features during HIV-1 infection.

Methods IL-2 and -IFN production, IgG subclass "in vitro" synthesis as well as routine assays (abs number of T lymphocyte subsets, skin test, WBC count, serum immunoglobulins) have been evaluated in infected patients. 700 subjects belonging to various at risk categories were selected from 2019 individuals: 100 were diagnosed CDC-II and 490 CDC-III.

Lab results Total T cell number was constantly diminished in the terminal stages of AIDS and CD4+ cells were significantly reduced (p<0.01) in 42% of asymptomatic patients, 56% of PGL and 97% of ARC. AIDS patients showed defective "in vitro" response to PWM, production of IL-2 and -IFN induced by specific stimuli. NK from BPMC showed decreased activity in AIDS and ARC.

Clinical results At least two subgroups of seropositive patients may be included in CDC-II and III classified subjects: those showing no immunologic abnormalities and those with one or more immunological alterations.

Conclusions Unknown co-factors may be involved in the clinical evolution of seropositive patients: their relationship with immunological parameters is a central point for a better knowledge of HIV-1 infection.

Th.B.P.151 IMMUNOLOGICAL PARAMETERS OF HIV1 AND HIV2 SEROPOSITIVES

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Objective: To compare immunological consequences of HIV1 and HIV2 infections in a West african population

Methods: Serological screening was done using HIV1and HIV2-specific ELISA and confirmation by specific Western Blotting(Diagnostics Pasteur) . Analysis of lymphocytes sub populations was done on a EPICS flow cytometer using fluorescein labelled monoclonal antibodies.IgG and IgM were quantitated by radial immunodiffusion, IgE by a sandwich ELISA test and the B2 microglobuline using a competitive ELISA test (all reagents from Behring) .Immune Circulating Complexes were also tested by ELISA (Immunomedics)

Results: Comparison of data from seronegatives , asymptomatic seropositives and AIDS cases showed that B2m and absolute count of T4 cells were the more significant markers of evolution. Comparison of HIV1 to HIV2 asymptomatic seropositives and HIV1 to HIV2 clinical cases showed no difference in the studied parameters.

Conclusion: Perturbations of immunological parameters are the same in our HIV1 and HIV2 infected cohorts and cannot explain differences observed in incubation time and evolutivity of the diseases due to these 2 viruses.

Th.B.P.152

Th.B.P.153 RELATIONS BETWEEN DISTRIBUTION PATTERNS OF LEU8± SUBSETS AMONG CD4± AND CD8± T-LYMPHOCYTES IN THE PERIPHERAL BLOOD

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The CD4- and CD8 cell number and the resulting CD4/CD8 ratio is still the most valuable parameter to assess the cellular immune status during HIV-infections. Both lymphocyte populations are heterogenous with respect to functional activity and other surface markers. We analysed the coexpression of either CD4 or CD8 with Leu 8 in the peripheral blood of 45 HIV-infected persons. Lymphocytes were isolated from blood by density-gradient centrifugation, stained with fluoresceinated Leu 3a (anti-CD4) or Leu 2a (anti-CD8) antibodies together with phycoerythrin-labelled Leu 8 antibodies and then measured on a FACScan flow cytometer. Irrespective of the clinical stages of HIV infection Leu8+ subsets behave differently in the $CD4^+$ and the $CD8^+$ populations. The shifts in the $CD4^+$lymphocyte percentages strongly correlate with $Leu8^+CD4^+$ cells (r=0.98) but not with $Leu8^-CD4^+$ cells (r=0.03). On the contrary, the changes in the number of $CD8^+$ lymphocytes are almost exclusively caused by $Leu8^-CD8^+$ cells (r=0.91) but not by $Leu8^+CD8^+$ cells (r=0.1). Furthermore, the serum levels of shedded CD8 molecules correlate well with the $Leu8^-CD8^+$ subset (r=0.77) but not with $Leu8^+CD8^+$ (r=0.1).
The observed relations let us assume that the recruitment of different subsets from lymphatic organs is heavily altered already during early stages of HIV-infection.

Th.B.P.154 PREDICTION OF CD4/CD8 RATIOS FROM SERUM PARAMETERS

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The CD4-and CD8 cell number and the resulting CD4/CD8 ratio still belong to the most valuable parameters for monitoring the cellular immune status of HIV-infected subjects and to assess disease progression. Usually, the CD4/CD8 ratios are obtained from freshly isolated peripheral blood lymphocytes. As an alternative, we tried to predict CD4/CD8 ratios from serum immune parameters. Blood and serum samples were collected from 49 persons, 39 of which were HIV-positive and belonged to the stages asymptomatic, LAS, ARC. In a multiple regression analysis 30 parameters, among them percentages of CD4 and CD8 cells, neopterin, β_2- microglobulin, the immunoglobulins G, A, M, the immune complexes C1q, C3b, IgG, IgA, IgM, autoantibodies against the lymphocyte surface antigen CD5 (aab-CD5), soluble CD8 antigen (sCD8), and soluble interleukin-2 receptor were proved for their usefulness to predict the CD4/CD8 ratio. The best result (r=0.88) was obtained with a linear combination of only two parameters, aab-CD5 and soluble CD8 antigen irrespective of the clinical stage. This method offers the possibility to estimate CD4/CD8-ratios from stored sera retrospectively.

Th.B.P.155 CORRELATION OF IN VIVO CELLULAR IMMUNE WITH CD4 NUMBER AND DISEASE PROGRESSION IN HIV SEROPOSITIVE PATIENTS

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Objective: 1) evaluate in vivo cellular immune function in HIV seropositive patients, 2) determine its correlation with circulatory CD4 (+) cells, and 3) determine its ability to predict HIV disease progression.

Methods: 1555 anergy panels and simultaneous CD4 counts were performed in 1000 patients. The anergy panel consisted of 0.1cc ID injection of tetanus tox. (0.1Lf, 1.0Lf), candida alb. (1:10, 1:100 w/v); mumps 40CFU, and trichophyton (1:30) w/v. 300 of the 1000 patients have been followed serially for 24-54 months and observed for HIV disease progression.

Results: Antigen reactivity	(n)	(%)	CD4 (#/MM3) +SD
0/6 (anergy)	215	14	109+127
1/6	166	11	259+162
2/6	247	16	388+199
3/6	251	16	497+223
4/6	240	15	577+265
5/6	290	19	685+351
6/6	146	9	787+361

Antigen responsiveness significantly correlated with CD4 number R=0.95. Progressive loss of antigen reactivity independently correlated with HIV disease progression to opportunistic infection.

Conclusion: This panel provides a clinical parameter that correlates with absolute CD4 number and is independently predictive of HIV disease progression and development of opportunistic infection.

Th.B.P.156 HIV-2 INFECTION AND IMMUNODEFICIENCY

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Objective. To evaluate the effect of HIV-2 infection on T-Helper cell numbers and T-Helper/T-Suppressor ratio (H/S).

Methods. Forty-seven HIV-2 seropositive adults identified in a cross-sectional community study in Bissau 1987 were re-examined after 10-12 months follow-up, as were 87 controls matched for age, sex and civil status. A physical examination was done. Heparinized capillary blood was collected, and the same day WBC and blood smears were made. One blood smear was fixed in methanol for differential counting; the others were stored at -20°C until labelled by immuno-alkaline phosphatase technique (APAAP), using monoclonal antibodies against T-Helper and T-Suppressor cells.

Results.	HIV-2 seropositives	Controls	p-value
T_4-cells $\leq 0.4 \times 10^9/l$	7/47	2/87	<0.02
H/S ≤ 0.8	16/47	7/87	<0.0005
T_4-cells $\leq 0.4 \times 10^9/l$ and H/S ≤ 0.8	6/47	0/87	<0.005
T_4-cells $\leq 0.4 \times 10^9/l$ or H/S ≤ 0.8	17/47	9/87	<0.00015

Conclusion. HIV-2 is significantly associated with low T-helper cell numbers and inverted T-Helper/T-Suppressor ratios.

Th.B.P.157

Th.B.P.158 EVOLUTION DES DIFFERENTES SOUS-POPULATIONS CD4 et CD8 AU COURS DE L'INFECTION PAR LE VIRUS HIV-1.

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La cytométrie à flux en deux couleurs et l'emploi d'anticorps monoclonaux spécifiques pour les antigènes T3, T4, T8, 2H4, 4B4, Leu18, Leu7, Leu11 et DR, nous permettent de définir un grand nombre de sous-populations lymphocytaires. Ont étés étudiés 20 contrôles adultes sains et 100 individus HIV-1 séropositives, dont 30 séropositives asymptomatiques (SPA), 30 avec lymphoadénopathie généralisé persistente (PGL), 20 avec ARC et 20 avec SIDA.

La diminution progressive des lymphocytes CD4 dans les étapes de SPA, PGL, ARC et SIDA concerne toutes les sous-populations CD4 positives, mais dans les cas de PGL elle est due essentiellement à une chute du subset 4B4, le subset 2H4 étant presque normal, alors que dans les cas de SPA, de ARC et de SIDA les deux subsets 4B4 et 2H4 chutent parallelement. Il faut remarquer la presence d'un pourcentage variable de cellules qui coexpriment 4B4 et 2H4 chez le sujets avec SPA, PGL ou ARC. Ceci peut-être due à l'activation immune des lymphocytes CD4 par le virus. Les lymphocytes CD8 augmentent dans les SPA, les PGL et dans une partie des ARC. L'augmentation est due essentiellement à une sous-population definie par une haute densité de l'antigène CD8 ($CD8^{HD}$) avec phénotype CD3+ Leu11-. La coexpression ou non de l'antigène Leu7 délimite deux subsets $CD8^{HD}$, CD3+ Leu11- Leu7- et $CD8^{HD}$, CD3+ Leu11- Leu7+. Le premier prévaut nettement dans les contrôles. Par contre dans les SPA et le PGL les deux subsets augmentent mais surtout le subset $CD8^{HD}$, CD3+ Leu11- Leu7+, et le rapport entre eux est inversé. Le passage à l'étape de ARC et surtout de SIDA est marqué par une chute progressive des cellules CD8 (avec hausse relative) due essentiellemente a une diminution du subset $CD8^{HD}$, CD3+ Leu11- Leu7+. Il est encore à signaler que des subsets $CD8^{ID}$ (à densité intermediaire) et $CD8^{LD}$ (à basse densité), ont étés observés seulement chez les sujets HIV-1+. La signification des variations observés dans les subsets des cellules CD4 et CD8 est discuté en fonction de l'évolution clinique de l'infection retroviral vers le SIDA.

Th.B.P.159 IMMUNOLOGIC ABNORMALITIES OF SEROPOSITIVE AND NEGATIVE GAY MEN

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Objective To determine the early immunologic effects of HIV infection in healthy gay men and to compare immunologic status of gay men to age and sex matched controls.
Methods Markers of cellular immune function were determined for 56 healthy gay men, 39% anti-HIV-1 positive (+), enrolled in a longitudinal study, and 25 age and sex matched controls.
Results The (+) gay men in this study did not differ from the (-) gay men or the controls in total number of lymphocytes, CD2 cells, CD2+Ta1+ cells, cells of the inducer subset, CD45r+CD4+, or CD20 cells. The number of CD4 cells, as well as the helper subset, CDw29+CD4+, were significantly depressed in (+) men when compared to the controls or to (-) gay men. CD4 cells in these latter two groups did not differ from each other. CD8 cells were elevated in the (+) men as compared to either (-) group, and there was a greater proportional increase in I2+CD8+. CD4/CD8 was 1.3 in the (-) gay males, significantly higher than the (+) group (0.7), but also significantly lower than the controls (1.8). The ratio CDw29+CD4+/ I2+CD8+ cells was 1.9 for the (+) men, 4.8 for the (-) gay men and 5.7 for the controls. There was a significant elevation of NKH.1+ cells in both groups of gay men as compared to controls. The mean response to both T cell and T/B cell mitogens of the (+) men was one-half that of the (-) gay men and one-fourth that of the controls. Natural killer (NK) cytotoxicity was similar for both groups of gay men; both were significantly lower than the (-) control group.
Conclusions Early immunologic changes which may be related to HIV-1 infection were decrease in the helper subset of CD4 cells, elevations in CD8+I2+ cells and NKH.1+ cells and marked depression of lymphocyte response to mitogens. AntiHIV-1 (-) gay males had decreased mitogen responses and NK cell activity compared to controls. (Supported by NIMH 1P50 MH42455)

Th.B.P.160 DEPLETION OF CD16 NK CELLS IN HIV INFECTION DUE TO A SELECTIVE DECLINE IN THE $CD16^+CD8^+$ COMPARTMENT.

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Objective. To analyse the Natural Killer (NK) cells in HIV-infected patients.
Methods. Using monoclonal antibodies and two-color flow cytometric analysis, we analysed the NK cell subsets in 121 HIV-infected patients (53 CDC II, 31 CDC III and 37 CDC IV : 6 IVA, 2 IVB, 15 IVC_1, 5 IVC_2, 2 IVE and 7 IVD) and 50 healthy controls.
Results. The CD16 NK cells showed a depletion in all stages of HIV infection compared to controls. The mean count and the mean percentage in stage II, III, IV and controls were respectively : 191 cells/mm^3, 10%, $p < 0.001$; 167 cells/mm^3, 9%, $p < 0.001$; 123 cells/mm^3, 9%, $p < 0.001$; 276 cells/mm^3, 15%. Using the presence of the CD8 surface antigen on CD16 cells as a discriminating criteria, we analysed two subsets : $CD16^+CD8^-$ and $CD16^+CD8^+$. The $CD16^+CD8^-$ cells showed no statistically significant difference in all HIV infection stages compared to controls, whereas the $CD16^+CD8^+$ cells showed the same profil of depletion as the total CD16 cells (57 cells/mm^3, 3%, $p < 0.001$ in stage II ; 35 cells/mm^3, 2%, $p < 0.001$ in stage III ; 31 cells/mm^3, 2%, $p < 0.001$ in stage IV ; 111 cells/mm^3, 6% in controls).
Conclusion. We observed a depletion of the CD16 NK cells early in HIV infection. It seems that only the $CD16^+CD8^+$ subset accounts for this depletion and not the $CD16^+CD8^-$. The etiology of this selective depletion is still unclear.

Th.B.P.161 AIDS PREDICTORS

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OBJECTIVE. To evaluate and compare serum β2-microglobulin (β 2-micro) levels, IgA and CD4 lymphocytes as predictors of AIDS.
METHODS. 824 patients were studied for HIV-1 infection in Johannesburg by testing for the presence of HIV-1 antibodies and their immunological status. CD4 lymphocytes were counted using a cytotoxicity assay, β 2-micro was measured using the Pharmacia β 2-micro RIA test and IgA by turbidimetric methodology.
RESULTS. Of the 824 patients studied, 504 (61%) were exposed to the HIV and 74 (14.7%) developed AIDS. Sixty seven (90.5%) of the AIDS cases had elevated levels of β 2-micro and 33 (44.6%) had elevated levels of β 2-micro, IgA and decreased numbers of CD4 lymphocytes ($< 400 \times 10^3$ /1). Fifty three (71.6%) had elevated β 2-micro levels and decreased CD4 lymphocyte numbers while 37 (50%) had both elevated levels of β 2-micro and IgA. β 2-micro levels were elevated in 34 (50.7%) of the 67 AIDS cases prior to them developing AIDS. The remainder were assessed when they already had AIDS.
CONCLUSION. 1) elevated levels of β 2-micro were shown to be the most consistent predictors for AIDS and usually indicated a poor prognosis.
2) The possible use of elevated β 2-micro as an indicator for the initiation of prophylactic AZT requires evaluation.

Th.B.P.162 DICHOTOMY OF TWO $CD8^+$ LYMPHOCYTE SUBSETS IN HIV-INFECTED PATIENTS - Depletion of $CD8^+CD3^-$ and expansion of $CD8^+CD3^+$ subsets.

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Objective. To help understanding the expansion of CD8 lymphocytes in HIV infection.
Methods. We analysed two CD8 subsets : $CD8^+CD3^-$ and $CD8^+CD3^+$, using monoclonal antibodies and two-color flow cytometric analysis in 120 HIV-infected patients (52 CDC stage II, 31 stage III, and 37 stage IV) and 50 healthy controls.
Results. In HIV-infected patients, we observed a depletion of the $CD8^+CD3^-$ subset and an expansion of $CD8^+CD3^+$ subset.

	controls(1)	CDCII(2)	CDCIII(3)	CDCIV(4)	Mann Withney U test					
	Mean±SEM				1/2	1/3	1/4	2/3	2/4	3/4
CD8										
%	31±1	55±2	56±2	63±2	*	*	*	NS	**	***
LY/mm^3	578±31	1009±58	945±57	866±78	*	*	**	NS	NS	NS
$CD8^+CD3^-$										
%	8±1	3±1	2±1	2±1	*	*	*	NS	*	*
LY/mm^3	140±14	58±7	42±5	27±3	*	*	*	NS	*	*
$CD8^+CD3^+$										
%	23±1	50±2	52±2	60±2	*	*	*	NS	*	**
LY/mm^3	416±24	928±75	872±58	829±75	*	*	*	NS	NS	NS

LY : lymphocytes; * $p<0.001$; ** $p<0.01$; *** $p<0.05$

Conclusion. The apparent expansion of the total CD8 population in HIV infection is, in fact, the consequence of an increase of the $CD8^+CD3^+$ subset which conceals a severe depletion of the $CD8^+CD3^-$ subset.

Th.B.P.163 COMPARISON OF T4 COUNT, CD4%, AND T4/T8 RATIO WITH CORRELATION TO CLINICAL STAGE OF HIV-1.

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Objective. To compare commonly measured T cell parameters, and to correlate results with clinical (Walter Reed (WR-)) stage.
Methods. We measured T cell subsets(T4 count, CD4%, and T4/T8 ratio) from 584 military HIV-1 seropositive patients for up to three years. A total of 1176 samples were obtained, and 318 patients had multiple T cell subsets drawn.
Results. The percentile ranks of each parameter determined separately from the 1176 samples are:

Percentile:	15	30	45	60	75	90
T4 count(cells/mm3) :	200	320	400	480	578	800
CD4% :	14.5	20.0	23.0	27.0	31.5	38.0
T4/T8 :	0.25	0.4	0.5	0.6	0.85	1.2

Using the 15th percentile of the parameters to detect the presence of Walter Reed stage 5 or 6 disease in the 1176 samples:

Criteria:	sensitivity:	Positive predictive value:	P value(Chi Sq.):
T4 < 200:	67%	63%	<0.001
CD4%< 14.5:	59%	56%	<0.001
T4/T8<0.25:	58%	54%	<0.001

The T4/T8 was slightly more predictive of progression to WR-5-6 disease than the CD4% and T4 count when analyzing 33 patients that were WR-1-4 on presentation and progressed to WR-5-6. Conclusion. All three parameters were independently predictive of clinical stage; the first table serves as a comparative index. Clinical staging and prognosis are assisted by these data.

Th.B.P.164 A LONGITUDE STUDY OF LYMPHOCYTE SURFACE MARKERS IN A POPULATION OF 200 HIV + VE intravenous drug abusers (IVDA)

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Objective . To observe sequential changes in T Lymphocyte subpopulations in a cohort of 200 HIV+ve IVDA-ve controls over a one year period.
Methods. The cohort was representative of the 500 Edinburgh HIV +ve IVDA, the majority of whom were infected 1983-4. Lymphocyte markers were enumerated by flow cytometry on the same patients at a one year interval.
Results

	CD4+ $/mm^3$	CD8+ $/mm^3$	4/8 Ratio	DR+CD3+ $/mm^3$	Leu2+7+ $/mm^3$
HIV-ve IVDA controls (n=50)	1108	839	1.32	226	230
HIV+ve CDC 2/3 (n=138) Jan 88	698	895	0.78	347	237
HIV+ve CDC 4.1(n=13) Jan 88	488	543	0.89	238	260
Jan 89	325	686	0.49	355	275
HIV+ve CDC 4.1/2/3(n[illegible]4)Jan 88	374	623	0.60	249	242
on zi dovudine therapy Jan 89	154	385	0.40	305	250

Conclusions: All HIV +ve IVDA showed markedly reduced CD4+ cells in comparison to HIV-ve controls. All HIV+ve patient groups showed clear evidence of immunological deterioration as assessed by falling CD4 and rising proportions of DR+T cells over a period of 12 months irrespective of clinical stage.
At 1 year zidovudine therapy did not appear to reverse this trend.

Th.B.P.165 BLOOD AND CEREBROSPINAL FLUID(CSF) LYMPHOCYTE PHENOTYPING(LP) AND HIV-1 p24 ANTIGEN(AG) DETECTION IN HIV-1 INFECTED(HIV+) ZAIRIANS WITH(N+) AND WITHOUT(N-) NEUROLOGIC SIGNS

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Objectives. To describe the relationship between BL and CSF AG and lymphocyte subsets in HIV+ N+ and N- patients.
Methods. We determined (Epics Profile) absolute numbers for lymphocytes(LYAB), T4(T4AB), T8(T8AB) and T4/T8 ratio(T4/T8) for BL and CSF samples in HIV+ N+ and N-. Of this population, both had BL and CSF studied. AG was determined by the Dupont kit on both CSF and blood in 69 individuals.
Results. Of 69 patients 6(8%) were BL AG+ and 2(3%) were CSF AG+, however AG was found in the absence of BL AG in both patients.

Status	N+	N-	AIDS+	AIDS-	Dead	Alive
BL AG	5/36(14%)	1/35(3%)	2/22(9%)	4/49(8%)	3/32(9%)	3/39(8%)

Status	BLLYAB	BLT4AB	BLT4/T4	CSFT4/T8
WB	1997	618	2.7	3.2
WB+	1285	147	0.3	0.16
WB+N+	897	78	0.24	0.14
WB+N-	1557	209	0.36	0.19

Conclusion. AG prevalence in BL and CSFd is remarkably low in WB+ patients in Zaire and more common in those with N+. In this sampling, WB+ patients CSF T4AB levels and T4/T8 ratios were markedly depressed regardless of clinical status.

Th.B.P.166 T AND B LYMPHOCYTE SUBSET DISTRIBUTIONS WITHIN CLINICAL STAGES OF HIV-1 INFECTED PATIENTS

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Objective. To determine whether flow cytometric analysis of of lymphocyte subsets can be used in staging HIV-1 infected patients.
Methods. Five groups of CDC classified (I: HIV-1- [n=34], II: HIV1+ asymptomatic [n=27], III: lymphadenopathy syndrome [n=26], IV: ARC [n=25], and V: AIDS [n=29]) patients, none of whom had received treatment specific for their illness, were assessed using two color immunophenotyping of their peripheral blood lymphocytes with a lysed whole blood method and flow cytometric analysis with a FACScan cytometer. Included in a larger panel of antibodies, were Leu 4(CD3)/HLA-DR, Leu 3(CD4)/Leu 8, Leu 18(CD45R)/Leu 3, Leu 16(CD20)/Leu 8, Leu 16/Leu 20, and Leu 21/Leu12(CD19).
Results. An increase in the Leu 4+/DR+% was seen when comparing uninfected to infected cases (I: 9.0% SD=3.6, II: 28.8% SD=13.4, III: 38.0% SD=14.5, IV:41.4% SD=12.8, and V: 40.2% SD=16.4). The fall in %CD4+ cells seen from Group I through V (I: 40.6%, II: 24.3%, III: 21.4%, IV: 11.9% and V: 10.2%) was not disproportionally distributed among the Leu 8 or Leu 18 defined compartments. The % B cells, as defined by CD19+ or 20+ did not vary significantly among the five groups (9.2-11.1%), nor did the subsets defined by Leu 21(%+ of B cells = 44-59%) or CR2 (%+ of B cells = 26-31%). The fraction of B cells expressing Leu 8 fell from 90% in Group I to 57-69% in the infected groups.
Conclusion. The increase in Leu4+DR+ cells was consistent with an increased state of T lymphocyte activation in HIV+ patients, however the broad range precluded a further significant definition of subsets of infected patients. Non-selective depletion of CD4+ cells suggests no subset related increased sensitivity to infection with HIV. The B cell defect in HIV infected patients is not defined by expression of activation markers or by depletion of peripheral blood B cells out of proportion to the total lymphocyte count.

Th.B.P.167 APPEARANCE OF T CELLS OF INTRATHYMIC PHENOTYPE ($CD3^+$ $CD4^+$ $CD8^+$) IN THE PERIPHERAL BLOOD OF A PATIENT WITH AIDS.

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Objective. Characterization of a unique T cell line isolated from a patient with AIDS and Kaposi's sarcoma.
Methods. Phenotypic analysis was performed utilizing standard flow cytometry and lymphocytes were purified by cell sorting. Cell lines were established in IL2-containing media and T cell receptor genes examined by Southern hybridization. Lymphocyte proliferative responses to standard mitogens and antigens were measured. Gene amplification utilizing the polymerase chain reaction was performed.
Results. A patient was identified whose peripheral blood contained a unique population of cells that was $CD3^+$ $CD4^+$ $CD8^+$, suggesting that it was at an early stage of T cell differentiation. Retrospective analysis revealed that this population had expanded from 56% of peripheral blood cells (PBLs) to > 75% of PBLs over 2 years. As this population expanded, the responses of the patient's PBLs to mitogens and antigens decreased. An IL2-dependent cell line was established that was $CD3^+4^+8^+Dr^+TcR^+$ and $IL\text{-}2R^-$. Southern blot analysis of this cell line did not reveal a monoclonal expansion of cells. PCR utilizing a primer pair from the HIV gag region indicated that the cells harbored the HIV genome.
Conclusions. A patient with AIDS has been identified who exhibits a polyclonal expansion of immature T cells which contains the HIV genome. These cells do not express mature T cell function and are not killed by HIV.

Th.B.P.168 KINETICS OF ACTIVATED T LYMPHOCYTES (CD3/DR+), NK CELLS (Leu7+/2-) AND "UNSTAINED CELLS" IN THE COURSE OF HIV INFECTION.

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OBJECTIVE: To determine the lymphocyte subsets of Leu4+/DR+, Leu7+/Leu2- and unstained cells (UNST) (detectable neither by T- nor B-cell markers) in different stages of HIV infection.
METHOD: Peripheral blood from 20 healthy controls and 100 HIV+ patients was prepared and stained with anti LeuM3, -Leu2, -Leu3, -Leu4, -Leu7, B1 and HLA DR. Two colour flow-cytometric analysis was performed on a FACSCAN cytometer. All patients were classified according to WR classification.

RESULTS:		healthy	WR1	WR2	WR3	WR4	WR5	WR6	WR6prefin
n=		20	19	20	11	9	12	21	8
Leu4+/DR+	%PBMC	11.7	21.1	33.8	31.9	35.7	28.4	28.8	21.2
p			<0.01	<0.02	n.s.	n.s.	<0.10	n.s.	n.s
Leu7+/2-	%PBMC	7.0	8.7	7.6	7.5	5.6	6.1	5.6	3.4
p			WR1 vs WR6 prefin p<0.10 (n.s.)						
UNST	%PBMC	15.6	10.7	9.7	13.4	13.9	20.5	21.8	31.0
p							n.s.	n.s.	n.s.

CONCLUSION: Activated T lymphocytes are already significantly expanded in early asymptomatic stages of HIV infection. Activation of T Lymphocytes precedes CD4 depletion. Cytotoxicity against CD4+ cells might be enhanced by Leu7+/DR+, known to be CD8+ cells (Stockholm 2033). In contrast, NK cells show no early change and UNST show a trend to increase in WR5 and 6.

Immunologie : réactions immunitaires
Immunology: Antibody Responses

Th.B.P.169 DENSITOMETRIC ANALYSIS OF HIV1 SEROLOGY ON IMMUNOBLOTTING : PRONOSTIC INTEREST.

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Objective: To quantify the anti-HIV antibody reactivity on immunoblotting in relation to clinical stage.
Methods: We have studied 450 sera between october 1988 and january 1989, with anti P18/P24 antibody assay (recombinant antigen EIA, Abbott), HIV antigenemia (EIA, Abbott) and scanning densitometry on immunoblotting (Biorad). The same pool of sera was used in each immunoblotting assay as external standard. Results are expressed in percentage of external standard reactivity.
Results: Antiglycoprotein antibodies (GP 160 and GP41) and anti POL gene products antibodies (P66 and P32) variations did not correlate with any clinical feature (Stages II, III, IVA and IVC1/IVD from the CDC classification). Anti core protein antibodies exhibit a moderate (P18 and P55) or a high (P24 and P40) correlation with clinical stage.Mean anti P24 reactivity was 22% in AIDS, 31% in ARC and 54% in asymptomatic patients.
conclusion:We confirm the decrease of anti core protein antibodies reactivity with disease progression. A retrospective and prospective study will confirm the pronostic interest of this method compared with other markers: HIV antigenemia, CD4+ lymphocyte numeration.

Th.B.P.171 SECRETORY AND SYSTEMIC IMMUNITY IN HIV-INFECTED INDIVIDUALS

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The secretory immune response to HIV has been proposed to play a role in viral transmission of HIV. We investigated the oral secretory and serum antibody response to HIV and its relationship to clinical status in 20 randomly selected HIV-infected individuals. By CDC clinical criteria, 7 individuals were in group II, 3 in group III, and 10 in group IV. Parotid saliva and serum were collected and assayed for HIV specific antibodies by immunoblotting. Blots were incubated with saliva or serum, then with a biotinylated anti-human antibody and finally with a streptavidin-biotin HRP complex. Antibodies to HIV env antigens gp160 and gp120 were detected in saliva and serum in all individuals of group II, III and IV. Antibodies to viral core antigens p24, p55 and p17 were detected in 6/7 group II patients (6 with CD4+ counts > 200/mm^3) in both saliva and serum. Antibodies to core antigen were not found in the salivas, but were detected in the serums of 3/3 group III and 10/10 group IV patients (all with CD4+ < 200/mm^3). The difference between group II and group III or IV core antibody detection in saliva was significant (p<0.01). The difference between the presence of antibody to core antigens in saliva and serum was also significant (p<0.001) as tested by Chi-square. The antibody titres to HIV in serum were more than 3,000 times greater than those in saliva (1:1,000,000 vs. 1:300). The range of antibody titres in parotid saliva was 1:3 to 1:300. Decreased secretory antibodies to core HIV antigens may correlate with presence of symptoms and a higher CDC clinical status in HIV-infected individuals. Some independence in systemic vs. secretory antibody response is also suggested.

Th.B.P.173 INDETERMINATE HTLV-I IMMUNOBLOT REACTIVITY IN LOW AND HIGH HTLV-I SEROPREVALENCE GROUPS-PROBABILITY OF RESOLUTION OF INDETERMINATE IMMUNOBLOT RESULTS BY RADIOIMMUNOPRECIPITATION ASSAY.

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Objective:Define patterns of indeterminate HTLV-I immunoblot (IB) reactivity in sera from low(e.g.blood donors)and high(e.g.IVDUs) seroprevalence groups, and determine the probability that HTLV-I antibody (Ab) status of sera with these patterns will be resolved by radioimmunoprecipitation assay (RIPA).
Methods: Sera repeatedly reactive by HTLV-I ELISA were tested by IB. Sera with indeterminate (IND) results by IB (those with at least one viral band, but not reactive to both p24 and gp46 or gp61/68) were analyzed by RIPA.
Results: All of the 178 indeterminate IBs studied were gag reactive only: 63 (35.4%) were p19+ p24+, 58 (32.6%) were p19- p24+, and 57 (32.0%) were p19+ p24-. Indeterminate IB reactivity differed in low and high seroprevalence groups: in groups with low HTLV-I seroprevalence (<0.1%), 21/24 (87.5%) were p19+ p24-; in high seroprevalence groups (>2.0%) this pattern was seen in only 3/60 (5.0%) IND sera. Indeterminate IB patterns with p24 represented 3/24 (12.5%) sera in low HTLV-I seroprevalence groups, and 57/60 (95.0%) IND sera from high seroprevalence groups. RIPA detected Ab to any proteins and resolved (confirmed positive) the antibody status of 71/178 (39.9%) of the IB indeterminate sera:44/63 (69.8%) of p19+ p24+ sera, 27/58 (46.6%) of p19-p24+ sera, and 0/57 (0.0%) of p19+p24-sera. Conclusions: Sera reactive only with gag proteins were responsible for all of the indeterminate IB reactivity seen, and the pattern of gag-only reactivity differed with seroprevalence. RIPA detected Ab to any proteins present in low titer in a significant number of IB gag-only reactive sera, and resolved the Ab status of these sera.

Th.B.P.170 CORRELATION OF CLINICAL DIAGNOSIS OF HIV INFECTION WITH THE RESULTS OF ELISA, KARPAS CELL TEST AND WESTERN BLOT FOR ANTI-HIV ANTIBODIES.

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Objective: Correlate the level and type of anti-HIV antibody with the clinical diagnosis of the infection.

Methods: To evaluate 549 individuals examined from February 86 to May 88, we have employed three tests for the detection of anti-HIV antibodies: ELISA, KARPAS CELL TEST and WESTERN BLOT. One hundred sixty two persons(30.6%) were HIV positive. 105 had symptoms: 23 PGL, 50 ARC and 32 had AIDS.

Results: In percentage:

	Asymptomatic	PGL	ARC	AIDS
ELISA(2x cut-off)	76.6	73.9	48.0	34.4
KARPAS(above 1:2560)	21.6	8.7	10.0	6.3
WESTERN BLOT(p24+)	96.7	95.7	82.0	68.7

Conclusion: In our sample the clinical diagnosis of AIDS correlated with low levels of antibodies(Karpas and ELISA) and with the absence of P24 on Western Blot. Routine evaluation of these parameters in the follow up of HIV-positive individuals may be of prognostic value.

Th.B.P.172 IGG SUBCLASS ANTIBODIES AGAINST SYNTHETIC PEPTIDES OF HIV-1 PROTEINS IN HIV-1 INFECTED INDIVIDUALS

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Objective. To evaluate the significance of HIV-specific IgG subclass antibodies against synthetic peptides in monitoring HIV infection.
Methods. IgG subclass antibodies were measured in an ELISA using seven synthetic peptides derived from immunodominant regions of gag and env. Sera from patients with AIDS (8), ARC (10), PGL (21) and without symptoms (10) and follow-up sera drawn in intervals of 6 months (follow-up 1,5 to 2,5 years) from 9 patients in different stages and with different clinical outcome, were investigated.
Results. IgG1 and IgG3 were the principle reactive subclasses. A significant lower frequency of IgG3 to all peptides was seen in patients with AIDS. Exept of the N-terminal peptide of gp41, a steadily declining frequency of IgG1 to all peptides was seen with ongoing disease. In follow-up sera little changes in antibody patterns occured, suggesting that an established pattern was maintained. Most changes appeared in IgG3. Multivariate statistics were performed to correlate these findings with other data as CD4/CD8 ratio, ß-2-microglobuline, soluble interleukin-2-receptor and p24 antigen.
Conclusion. Although IgG3 titers showed a significant difference between AIDS patients and patients without AIDS, the subclass antibody pattern in follow-up sera showed no correlation with clinical outcome.

Th.B.P.174 SALIVARY IgA TO HIV IN PATIENTS WITH OR AT RISK OF AIDS

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Objective To analyze the presence and diagnostic value of HIV specific secretory IgA antibodies in saliva of patients infected with HIV, and to compare it to HIV specific IgG level of the serum of the same patient.
Methods Whole saliva samples were collected by expectoration from 15 haemofiliacs (5 adults, 9 children) and 16 homosexual men. HIV specific sIgA were tested in an Elisa using monoclonal antibodies to sIgA (A-5). Serum samples taken at the same time were tested in two Elisas (Organon and Peptoscreen-2) and in a Western-blot assay.
Results In 4 (80%) of HIV seropositive adult haemofiliacs, saliva samples contained HIV specific sIgA. Out of the 9 haemofiliac children 6 were HIV seropositives and 5 (83%) produced salivary antibodies to HIV. Among the 16 homosexual men in 12 cases (75%) we could detect HIV specific sIgA in the saliva (in 33% of AIDS, 66% of ARC and 90% of asymptomatic patients), while all were seropositive. We could not detect salivary antibodies to HIV in seronegative individuals.
Conclusion Finding antibodies to HIV in saliva of patients infected with HIV indicated that the virus is capable of eliciting a response in the intestinal-associated lymphoid system characterized by sIgA antibodies.
As an alternative, saliva may prove useful for rapid HIV antibody testing, first of all in populations in which venipuncture is difficult or contraindicated.

Th.B.P.175 CLASS-SPECIFIC ANTIBODIES TO HUMAN IMMUNODEFICIENCY VIRUS-1 (HIV) IN SMALL INTESTINAL FLUIDS FROM AIDS PATIENTS.

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Objective. To determine whether HIV elicits antibodies to specific viral antigens in the small intestine.
Methods. Total IgG, IgM, and IgA were measured in serum and duodenal fluids from 10 AIDS patients. Specific IgG and IgA antibodies to HIV were detected using immunoblots of HIV antigens with labeled goat anti-human Ig.
Results. Although appreciable amounts of total IgG, IgM, and IgA were detected in duodenal fluids, only low levels of HIV-specific IgA were found. In contrast, HIV-specific IgG was present in much greater abundance than IgA in duodenal fluids, and the multiple antigens resolved were virtually identical to those detected with serum IgG. By comparison with intestinal antibodies, the predominant HIV-specific antibody in parotid fluids was IgA, not IgG. This IgA recognized multiple antigens.

Unlike specific antibodies, the ratio of total IgA/IgG in duodenal fluids (0.87±.3) was higher than the ratio in serum (0.24±.03; P<0.05), as was IgA/IgM (7.6±1.9 vs 3.7±.6, respectively; P<0.07). In contrast, the ratio of total IgG/IgM in duodenal fluids (15.4±1.7) was similar to that in sera (16.6±8.2).
Conclusions. The predominance of IgG antibodies to HIV in small intestinal fluids, the similar ratio of total IgG and IgM in both intestinal fluids and serum, and the predominance of HIV-specific IgA in parotid fluids suggest that in the proximal small bowel, the exudation of serum and not local antibody production is the major source of antibody to HIV.

Th.B.P.176 *ANTIBODIES TO HUMAN IMMUNODEFICIENCY VIRUS IN SEROCONVERTERS WITH A RAPID TEST.*

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Objective. To compare the performance of a rapid latex agglutination assay, Recombigen®-HIV-1 LA (LA), for antibodies to human immunodeficiency virus (HIV-1) to enzyme immunoassay (EIA) and Western blot (WB). Latex agglutination, unlike EIA and WB, is a direct assay for antibodies.
Methods. In order to evaluate the performance of LA, comparisons were made with EIA and WB on five different sets of samples (Boston Biomedica, Inc.) collected longitudinally from plasmapheresis donors who seroconverted for antibodies to HIV-1. These 5 panels have positive samples by EIA and WB which appear in as little as 2 and as much as 50 days after the last negative sample was collected.
Results. LA detected positive samples earlier than or on the same day as EIA and WB on all five seroconversion panels.
Conclusion. LA appears to be particularly well suited for detecting antibodies to HIV-1 of seroconverters; this may be due to the presence of multivalent IgM antibodies. Since LA is based upon cross-linking antigen attached to microbeads with antibodies to form visible aggregates, immune IgM may enhance this particular type of reaction.

Th.B.P.177 DIFFERING SENSITIVITY OF THREE HIV-1 ANTIGEN-CAPTURE ASSAYS TO THE PRESENCE OF HIV-1 ANTIBODY.

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Objective. To determine the effect of HIV-1 p24 antibody in an HIV-1 antigen-capture ELISA.
Method. Three HIV antigen-capture assays; Abbott (A), Coulter (C) and DuPont (D) were compared to determine their ability to detect known quantities of HIV p24 antigen in the presence of antibody to p24. Four HIV-1 whole virus ELISA positive sera (1,2,3,4) were chosen based on their successively greater p24 western blot (WB) reactivity. Normal human sera (NHS) and PBS 1% BSA (PBS) were used as controls. Purified p24 was added to each sample for a final concentration of 10 ng/ml.
Results. Prior to the addition of p24 antigen, sera #1 (weak p24 WB band) exhibited weak-positive reactivity in all three antigen-capture assays. All other samples were negative. After addition of p24, the NHS and PBS samples gave maximum assay reactivity. Sera #1 exhibited a slight decrease in p24 detection in all assays. Sera #2 showed an even greater reduction in detected p24 with wider variation among the three assays. Sera #3 tested negative for p24 antigen in assay A, but was weakly positive in C and D. Sera #4 was weakly positive in assays A and C and still strongly positive in assay D.
Conclusion. Each HIV-1 antigen capture assay exhibited different sensitivities to purified HIV-1 p24 in the presence of p24 antibodies, with as much as 10 ng/ml of p24 remaining undetectable in antibody-positive serum.

Th.B.P.178 DISTRIBUTION OF ANTI NEF ANTIBODIES IN 26 HIV SERONEGATIVE STABLE SEXUAL PARTNERS OF HIV SEROPOSITIVE PATIENTS : EPIDEMIOLOGICAL CORRELATION.

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Objectives : Search for antiNEF antibodies in HIV seronegative stable sexual partners (SMP) of HIV seropositive patients (HIV+P) and epidemiological correlation.
Methods : Structural HIV antibodies were detected by ELISA and WESTERN BLOT(WB). For SMP antiNEF antibodies were detected by RIA. For the epidemiological correlation we have studied the SMP [age, sex, sexuality, yearly number of partners, clinical and immunological status, duration of following up of SMP (DFSMP)] ; their HIV+P [CDC status, P24/25 seric antigen, known duration of seropositivity and/or of illness (DSHIV+P)] and the couple sexuality (safersex or not).
Results : Seventy-two monogamous couples for more than one year were included [32 heterosexual (HTS) and 40 homosexual(HMS)] 19 couples were not evaluable (secrecy=7, conflict in the couple = 4, refusal = 6, other reasons = 2). The study was assessed for 53 couples. 27 partners (51%) are HIV seropositive (8 HTS, 19HMS). 26 partners are seronegative (HIV Elisa, WB negative and P24/25 seric antigen negative). From 26 SMP antiNEF antibodies were detected in 16/26 (61.5%).

	Not evaluable=19	Partners sero+ = 27	SMP NEF+ = 16	SMP NEF- = 10	Total = 72
HTS	7	8	10	7	32
HMS	12	19	6	3	40

For the correlation, the statistical differencies were noted :

	Safersex		DSHIV+P		DFPSN	
PSN	not always	always	>12 months	<12 months	≥6 months	<6 months
NEF+	11*	5	13**	3	13*	3
NEF-	2	8	2	8	3	7

* p<0.05
** p<0.01

Conclusion : The presence of antiNEF antibodies in SMP appeared correlated with the longer known duration of seropositivity of HIV+P and follow up of SMP and with an absence of safersex.

Th.B.P.179 WESTERN BLOT AND PCR REACTIVITY PATTERNS IN INDIVIDUALS AT HIGH RISK FOR HIV EXPOSURE.

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Objective: To follow high-risk HIV-ELISA negative individuals showing indeterminate Western Blot (WB) patterns for further evidence of HIV infection. Methods: As potential recipients of a candidate AIDS vaccine, 214 homosexual male volunteers between ages 18 and 60 were screened for serologic and virologic evidence of HIV infection. For this study, HIV-ELISA negative individuals with at least a 3 month history of safer sexual practices prior to screening were selected on the basis of a normal medical history, normal immunologic profile, lack of intercurrent illness, and negative HIV culture and serum p24 antigen. Using a WB preparation (Biorad) affording high resolution of HIV envelope proteins, 78 (35.5%) individuals were identified who showed an "indeterminate" pattern of WB reactivity. From this group of 78, a cohort (n=20) was then followed prospectively on a monthly basis using HIV-ELISA, a second WB preparation (Dupont), immunologic profiles, and PCR analysis. Results: Sera from 14/20 (70%) of individuals indeterminate by Biorad WB were also indeterminate by Dupont WB at one or more points in time. Reactivity with the p24 antigen or with the p55 antigen were the 2 most commonly observed WB patterns, each occuring in 7/20 (35 %) individuals. No individual evolved from an indeterminate to a positive WB during a minimum follow-up of one year. By PCR, however, lymphocytes from 7/20 (35%) reacted with at least one primer pair (gag, env, or LTR) at one or more points in time, and 3/20 (15%) showed simultaneous reactivity with at least 2 primer pairs, suggesting the possibility of occult infection. Neither WB nor PCR reactivity necessarily persisted at each longitudinal follow-up. Individual patterns of WB reactivity were not predictive of PCR reactivity.
Conclusions: ELISA-negative, WB-indeterminate individuals at high risk for HIV exposure may show a discordance in serologic and PCR findings over time, with the latter revealing the possibility of HIV infection in some individuals despite failure or delay in WB sero-conversion.

Th.B.P.180 POSITIVE HIV WESTERN-BLOT REACTIONS IN SERUM SAMPLES FROM LED PATIENTS NON INFECTED BY HIV

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Objective. In sera from patients with lupus erythematosus (LED), we have found frequently a partial anti-HIV reaction in western-blot (wb), most often to p24 or p55, more rarely for envelope proteins. The aim of this study is to better characterize this observation and explain its nature.
Methods. 143 serum samples, obtained between 1972 and 1980 (i.e. before first seropositive cases in this area) from 31 patients with LED, were submitted to wb analysis (2 commercial kits) and to different EIAs including one with antigens from noninfected H9 cells. Antilymphocyte antibodies were measured by microlymphocytotoxicity.
Results. A reaction specific for one or more proteins of HIV was found in 51 samples (35%), for p24 (45x), p55 (21x), p18 (9x), gp41 (8x), gp160 (4x), gp120 (3x), p32 (2x). Reactions were shown to be produced by specific IgG and titers were of 1:20 (p24) and 1:4 (p55 and gp41), i.e. about 5x less than in HIV-infected persons. In one patient, the same pattern was present over a 15 y. period. All these samples were negative when tested with recombinant EIAs for HIV gag and env gene products, as well as for HTLV-1. LED samples showing HIV bands in wb reacted in EIA using H9 cells material : x OD 0.345, whereas wb neg LED samples did not : x OD 0.094. Antilymphocytic antibodies were found in 12 of 22 wb pos and in 2 of 13 wb neg samples.
Conclusion : The wb bands "specific" for HIV proteins observed with sera from LED patients noninfected by HIV might be due to antibodies against the H9 cells used to produce HIV material for wb.

Th.B.P.181 HIV-ANTIGEN, VARIOUS ANTIBODIES AND T4 CELL COUNTS AS MARKERS OF CLINICAL PROGRESSION IN HIV-INFECTION

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Objective. Study of serological markers as to their suitability in clinical prognosis of HIV-infection.
Methods. We have analyzed 600 sera, collected from 145 HIV-infected persons during a five year period, for HIV-antigen, the presence and titers of various antibodies (anti-core, anti-env, neutralizing, anti-nef, anti-RT, anti-rev) as well as the T4 cell counts. The results were correlated with the clinical and immunological (Walter Reed) stages of the patients.
Results. Almost all healthy HIV-infected persons exhibited the full spectrum of antibody reactivity. During the clinical progression the mean anti-p24 antibody titers decrease (LAS-sera: 1:350; AIDS-sera: 1:38) while the p24-antigen levels increase(30% of LAS-sera and 63% of AIDS-sera are positiv). The titers of neutralizing antibodies can be correlated to those of the anti-env antibodies. Using selected patients as examples we show that a change in serological markers precedes clinical progression.
Conclusion. Our results indicate that the combined use of a variety of quantitative antibody, HIV-antigen and T4 cell determinations can also be of prognostic value in individual HIV-infected patients.

Th.B.P.182 Correlation Between HIV-1 p24 Antigenemia, Anti-p24 Antibody and Neutralizing Antibody Response in All Stages of HIV-1 Infection.

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The relationship between HIV-1 p24 antigenemia, neutralizing antibody (NA) and anti-viral core protein (p24) Ab was elucidated in the sera of HIV-1 infected individuals during their progression to AIDS. All AIDS patients (N36) and 68% (101/149) of the homosexual males were HIV-1(+). Of these 48 (32%) who were HIV-1(-), 3 sero-converted in 2 years. HIV-1(-) subjects had an early but transient p24 Ag which preceded NA and anti-p24 Ab. After seroconversion, p24 Ag could not be detected. Of the 101 HIV-1(+) subjects 16% rapidly progressed to AIDS and 7 of these 16(44%) died within 2 years. In subjects with poor prognosis, NA and anti-p24 Ab appeared at the onset reaching peak levels just prior to developing AIDS and declined as the clinical course worsened. p24 Ag remained undetectable in sera as long as there was quantifiable NA and anti-p24 Ab. Reappearance of p24 Ag in sera was associated with rapid progression to AIDS. As a result: 12% (11/93) of HIV-1(+) anti-p24 Ab(+), and 63% (5/8) of HIV-1(+)-anti-p24(-) subjects developed AIDS. Of the of HIV-1(+)-p24 Ag(+) subjects 43% (6/14), and 10 of 87 (11%) of the HIV-1(+)-p24 Ag(-) progressed to AIDS. These data suggest (1) an inverse relationship between viral antigenemia and host humoral response, (2) that the presence of both p24 Ab and p24 Ag in sera is of prognostic value, and (3) multifactorial defects in the host's immune surveillance may cause loss of NA leading to increased HIV-1 replication, antigenemia and profound immune dysfunctions in AIDS.

Th.B.P.183 PROSPECTIVE MULTICENTER COHORTSTUDY IN HOMOSEXUAL MEN IN FRG. OBSERVATION OF IMMUNOLOGICAL PARAMETERS IN A 4-YEAR FOLLOW UP

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Objective: To evaluate the correlation between HIV-antibody-patterns (AB), HIV-antigen (AG) and circulating immune complexes (CIC) in the course of HIV-infection.

Methods: In 1984 a prospective multicenter cohortstudy was started in FRG. Of a total of 432 HIV-infected homosexual men 4 groups with typical courses of HIV-infection were selected: Group 1 - 3: individuals without noticeable or slow progression of clinical symptoms in different stages of HIV-infection; Group 4: individuals with rapid progression to AIDS. Cohort members are examined twice a year and specimens are taken for laboratory testing. Antibodies were tested by a peptide-ELISA (5 peptides representing different viral proteins, BIOCHROM) and Western-Blotting. HIV-antigen p24 was measured by capture assays (Dupont and Coulter). CIC were measured after precipitation with PEG.

Results (Selection): Two typical patterns of AG, AB and CIC were seen: individuals with a non progressing stable clinical status (even with ARC) had high titers of AB (slightly decreasing during time of observation), low titers of AG and of CIC. Patients with rapid progression to AIDS had already in the beginning of the observation low titers of AB and CIC, while AG-titers were consistently elevated. These findings may result in additional prognostic markers.

Th.B.P.184 RELATION OF ANTIGENAEMIA,LOSS OF ANTIBODIES TO HUMAN IMMUNODEFICIENCY VIRUS REVERSE TRANSCRIPTASE (RT) AND IMPAIRMENT OF CELLULAR IMMUNITY TO DEVELOPMENT OF AIDS IN DRUG ADDICTS.

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We have studied in a prospective follow-up lasting 1 to 39 months, the evolution of HIV infection in HIV-antibody positive I.V. drug addicts (IVDA). Sequential serum samples from 90 IVDA were analysed for antibodies to viral proteins (Lav-blot I) and HIV antigenaemia (ELAVIA AG I). Results were correlated with cellular immune parameters and clinical outcome. Twenty three drug addicts (37%) who showed at the first follow-up visit: a decreased number of $CD4^+$ lymphocytes ($<350/mm^3$), anergy, loss or low level of antibodies to POL proteins (p52 (RT)/p68) and to GAG proteins (p55) and HIV p24 antigenaemia (545±119 pg/ml), had a clinical progression towards AIDS and opportunistic infections (n=20) or a progressive course to the next stage (n=3). In contrast, 40 IVDA (63%) who showed at the first visit: $>350/mm^3$ $CD4^+$ cells, normal delayed hypersensitivity response, presence of antibodies to the viral proteins (p52, p68 and p55) and absence of antigenaemia, had a non-progressive course. Ther were no significant changes in the above parameters throughout the follow-up study in either group. There was no significant difference between the clinical status of the two groups at first visit. Drug addicts with AIDS at the first visit (n=27), showed a substantial lowering of $CD4^+$ cell levels and no significant changes in the others parameters throughout the follow-up. The loss of RT antibody as well as the other above described predictive markers may be early indicators of the progression of virus infection and may have diagnostic and prognostic values.

Th.B.P.185 NEUTRALIZING ANTIBODIES IN HIV PATIENTS: A 3 YEAR FOLLOW UP.

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Objective. To study the significance of neutralizing antibodies in the course of HIV infection.
Methods. Fifty one sera from 13 HIV 1-infected patients collected during periods of 10 to 36 months (median 31 months) were tested for their capacity to block HIV infection of H9 T lymphoma cell cultures. After 90 minutes of preincubation at 37°C of different serum dilutions with thawed cell-associated HIV, cells were cultured for 10 days, isolated and evaluated for HIV infection by immunofluorescence. During the study period, lymphocyte counts, T4 and T8 subclasses and beta-2-microglobulin levels were also determined and the clinical status recorded.
Results. Titers of HIV-neutralizing antibodies (NT) ranged from 1:10 to 1:160 and varied by more than factor 2 (1:10 to 1:40) in only 2 persons.

NT	1:10	1:20	1:40	1:80	1:160		
T4 0- 400/mcl	3	0	0	5	5	(n= 3 pat.)	
T4 400-2000/mcl	4	4	20	7	3	(n=10 pat.)	(n=51 sera)

Statistical correlations to beta-2-microglobulin concentrations, T4/T8 ratios or clinical status could not be assessed.
Conclusion. Levels of neutralizing antibodies in 11 of 13 patients were unchanged for a median time of 31 months. Whether these neutr. ab. titers parallel the clinical course or are independent of the clinical status has to be determined by longer follow up and larger groups of HIV patients.

Th.B.P.186 PREVALENCE OF HIV-1 P-24 ANTIGEN (AG) IN DIFFERENT POPULATIONS AT RISK FOR HIV-1 INFECTION IN ZAIRE: A COMPARISON OF THREE COMMERCIAL AG ASSAYS.

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Objective. To determine the frequency of HIV-1 Ag reactivity in selected Zairian (ZR) populations.
Methods. 771 patient sera and serial dilutions of 3 HIV-1 viral culture supernates (vcs) (LAV-01, Z84, Z34) were tested for HIV-1 Ag. 447 sera and the vcs were tested on three commercially available kits (Coulter, DuPont, Abbott). Repeatedly positive samples were considered reactive for Ag.
Results:

Samples	Dupont	Coulter	Abbott
ZR Asx HIV-1 Antibody (+) (n=200)	7 (3.5%)	2 (1.0%)	1 (0.5%)
American AIDS Patients (n=47)	23 (48.9%)	26 (55.3%)	19 (40.4%)

DuPont and Coulter Ag assays detected Ag in vcs at dilutions from 10 to 100 times more dilute than those detected by the Abbott assay. Additional patient samples that tested Ag positive with the DuPont assay included 7 (8.0%) of 88 ZR ambulatory AIDS; 15 (16.9%) of 89 ZR hospitalized AIDS; 6 (17.6%) of 34 ZR AIDS postmortem samples; 5 (12.8%) of 35 antibody-negative clinical AIDS patients; 3 (4.1%) of 74 ZR antibody-negative partners from HIV-1 discordant couples.
Conclusion. In our sampling, HIV-1 Ag prevalence in Zairian patients is lower than in North American patients (P<0.0001), but increases with severity of disease (asymptomatic vs. hospitalized; (P<0.0002). Determination of Ag may aid in the evaluation of disease progression and HIV-1 infection status in high-risk individuals, such as seronegative patients with AIDS-like illnesses and HIV-1 discordant couples.

Th.B.P.187 HIV ANTIGENEMIA IN VARIOUS CLINICAL STAGES OF HIV INFECTION IN AFRICAN PATIENTS.

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** Centre Hospitalier de Kigali, Kigali, Rwanda; and
*** Projet San Francisco, Kigali, Rwanda.

Objective: To evaluate the prevalence of HIV antigenemia in various clinical stages of HIV infection in African patients (P.).
Methods: Hundred thirty six consecutive AIDS P. (106 meeting the WHO clinical definition and 30 meeting the CDC definition), 69 asymptomatic HIV carriers and 49 recent (less than 1 month) HIV seroconverters selected among the population of an ongoing cohort study on natural history of HIV infection, were enrolled. They were all tested for HIV IgG by Western blot (WB, Biotech) and for HIV antigen (Ag) by a capture immunoassay (Innogenetics).
Results are summarised in the table:

	HIV WB+	HIV WB p24+	HIV Ag. n (%)
AIDS P.	[illegible]	[illegible]	2 (1.47%)
WHO (n=106)	27	26	0 (0 %)
CDC (n= 30)	116	115	2 (1.5%)
Asymptomatic HIV seropositives (n=69)	69	69	1 (1.4%)
Recent seroconverters (n=49)	49	49	0 (0 %)
TOTAL (n=234)	231	233	3 (1.2%)

Conclusions: HIV antigenemia is unfrequently recovered in African P. with HIV infection, including in those with AIDS and in recent seroconverters. This is probably due to a strong immunological response to HIV gag-encoded proteins. Therefore, HIV antigenemia should not be considered as a useful prognostic marker.
Baillou, A. et al. J Infect Dis 1987; 156: 830-33.

Neurologie : généralités
Neurology: General

Th.B.P.188 THE SPECTRUM OF ALTERED MENTATION IN AIDS AND ARC

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Objective. To assess the prevalence and variety of altered mental status (AMS) among AIDS and ARC patients.
Methods. Neurologic symptoms and signs were prospectively assessed in 190 adult in-patients with AIDS (129) or ARC (61).
Results. 83 (44%) patients had AMS when first seen. 65 were parenteral drug abusers (PDAs), of whom 40 (62%) had dementia and 25 (38%) psychiatric symptoms (PS). Of 18 non-PDAs, 10 (56%) had dementia and 8 (44%) PS. An additional 53 (28%) patients manifested AMS during the course of follow-up. Of these, 28 PDAs had dementia and 11 PS; 4 non-PDAs were demented and 9 had PS. Confusion, memory loss, disorientation, and lethargy were prevalent among the demented. Psychiatric signs included bizarre behavior, depression, suicidal or homicidal behavior, borderline personality, adjustment disorder, mutism, hallucinations (auditory, visual or tactile), paranoia, and conversion symptoms. There was no difference in prevalence of AMS between PDAs and non-PDAs, or between patients with AIDS and ARC. PS however were significantly more common in AIDS than ARC.
Conclusion. Dementia and a wide variety of psychiatric symptoms are frequent among PDAs and non-PDAs with AIDS or ARC.

Th.B.P.189 ACQUIRED IMMUNODEFICIENCY SYNDROME : NEUROLOGIC COMPLICATION IN 44 CASES

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Obj.: To study the neurologic complication in patients seropositives for HIV. We studied the clinical records of 200 patients admitted to our Hospital between 1985 and 1988, with a positive Elisa test for HIV. Fifteen percent of these patients exibited clinical abnormalities related of disease of the Central Nervous System. In six patients the neurological complication was the first manifestation of HIV-infection. Patients were mainly male homosexuals, in 30 - 39 age range. Cerebral Toxoplasmosis was diagnosed in 18 instances and meningeal infections were present in 19 cases. Time from appearence of the various neurological complications to death or clinical resolution was almost always shorter than six months. Death was the most frequent outcome, usually ocurring within six months.

Th.B.P.190 ORTHOSTATIC HYPOTENSION (OH) IN HIV+ PATIENTS MAY REPRESENT GENERALIZED AUTONOMIC NERVOUS SYSTEM (ANS) DYSFUNCTION.

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Objective. To ascertain if OH may be a feature of more generalized ANS dysfunction in HIV+ patients. Methods. 5 HIV+ patients with severe OH unrelated to medications, infection, or dehydration underwent ANS testing. The ANS testing can be divided into those tests which assess primarily sympathetic: orthostatic blood pressure measurements (generalized sympathetic tone) and Quantitative Sudomotor Axon Reflex Test [(QSART) postganglionic sudomotor function] on the arm and foot. Parasympathetic (cardiac, vagal): heart rate (HR) to responses to deep breathing (DB) and the Valsalva maneuver (VM).
Results. 5 males; 5 gay/bisexual, 1 IVDA; median age 38 years (range 34-49 years); CDC stage: 4 group IV, 1 group III

ANS Abnormalities			Total Group Data
BP △ diastolic	- 5	orthostatic	$\bar{x}$= -15.2 ± 3.7 mmHg
HR △ DB	- 4		$\bar{x}$= 6.6 ± 3.1 BPM
Valsalva Ratio (Max/Min HR)	- 4		$\bar{x}$= 1.3 ± .25
QSART	Arm - 3	Foot - 3	

Conclusions. ANS testing demonstrated both parasympathetic and sympathetic involvement. We conclude that OH may represent generalized ANS dysfunction in HIV+ patients. The OH may be effectively treated; individual patient responses to treatment will be discussed.

Th.B.P.191 POSSIBLE PATHOGENETIC ROLE OF IMMUNE COMPLEXES IN HIV-RELATED AUTONOMIC NEUROPATHY.

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Objective. To evaluate in a group of drug addicts (DA) the severity of involvement of the autonomic nervous system (ANS) functional tests with respect to CDC groups, to CD4 and CD8 counts and to circulating immune complexes (CIC).
Methods. We studied 46 DA with the ANS functional tests proposed by Ewing & Clarke; 29 were HIV+ (63%) and 17 HIV- (37%). We classified the HIV+ patients (pts) with CDC classification system. CD4 and CD8 counts, CIC IgG, IgM, IgA, C3c and Clq were assessed in all pts.
Results. Only one HIV- subject showed early involvement. Sixty-five percent of HIV+ cases had ANS involvement: 7 (24%) had severe involvement (3 pts CDC group IV, 3 group III and 1 group II); 12 (42%) had early involvement (2 group IV, 7 group III and 3 group II). 10 pts (34%) were normal (6 group III and 4 group II). CD4, CD8 and CIC values, according to the degree of involvement are reported in the table:

ANS test(score)	cases	CD4	CD8	CIC IgG	CIC IgM	CIC IgA	CIC C3c	CIC Clq
HIV+ ≥ 5	7	726	1436	198.2	136.8	7.7	4.1	110.0
HIV+ 2 - 4	12	575	1357	155.5	99.2	6.9	3.6	95.0
HIV+ 0 - 1	10	806	1323	109.7	79.5	4.6	4.0	65.7
HIV-	17	1326	1102	71.1	46.6	3.4	4.6	54.0

Conclusions. The severity of functional ANS involvement is related to CIC increase(IgG and Clq) and it is not related to clinical severity or immunologic failure. This supports the hypothesis of an immune ethiopathology of ANS involvement.

Th.B.P.192 TWO YEARS NEUROLOGICAL FOLLOW - UP STUDY IN HIV-POSITIVE HEMOPHILIACS : DO ANY PROGNOSTIC DATA EXIST ?

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From October 1986 until Oct. 1988 we examined 28o HIV - seropositive hemophiliacs in WR 1-6. 29.3% = 82 patients attended our clinic thrice or more times . In 1986 38 patients were classified as WR 1 , 35 as WR 2 , 15 as WR 3 -5 , 4 as WR 6 . Two years later the same patients were classified ,too : none as WR 1 , 3o as WR 2 , 28 as WR 3-5 and 14 as WR 6 . Meanwhile 1o WR 6 died . The study covered a neurological status , an EEG and Brain - mapping analysis plus a neuropsychological test : AVLT , CI , Benton , d-2 , MWTB , v. Zerssen , BFS .
We did not observe any specific indicators for the WR 1 patients . In WR 2 - 5 patients we diagnosed the following deficits : isolated nystagmus , gait disturbance , hyperreflexe , cranial nerve lesion , polyneuropathy ; in EEG vigilance oscillations , dysrhythmia , diffuse slowing ; no neuropsychological deficits . Additionally we saw in AIDS - patients sensoric / motoric hemisyndromes , paraspastic syndrome ,subacute encephalitis ; neuropsychological data show a left hemispheric verbal memory deficit .
Our data suppose a progress in history of the HIV - infection by diagnosing a severe vigilance oscillation or a diffuse slowing in EEG ; a gait disturbance or a hemisyndrome / paraspastic in neurological status and a verbal memory deficit in neuropsychological examinations .

Th.B.P.193 INCIDENCE OF THE AIDS DEMENTIA COMPLEX AS THE FIRST MANIFESTATION OF AIDS. A PROSPECTIVE STUDY

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OBJECTIVE. To evaluate the incidence of the AIDS dementia complex (ADC) as the first manifestation of AIDS.
METHODS. From August 1987 to September 1988, 102 patients who satisfied the CDC criteria for AIDS were consecutively diagnosed. The clinical diagnosis of ADC was considered in patients who presented with dementia, no previous neurologic or psychyatric disease and no evidence of opportunistic infections or tumors in the central nervous system.
RESULTS. In six patients (5.9%) the presenting manifestation was ADC. None but one of the patients was know to be seropositive before the diagnosis of ADC. The presenting neurologic syntoms included progressive cognitive impairment and motor dysfunction. At the time of diagnosis, HIV-1 serology was positive in serum and CSF. MRI of the head was normal in four patients, in the other two there was focal or diffuse white matter lesions. All patients were immunossupressed with a mean CD4+ cell count of 133 per cc. (range:38-288). Clinical course was characterized by progressive neurologic deterioration. In the two patients who died, the ADC was confirmed at autopsy.
CONCLUSIONS. 1) ADC is the first manifestation of AIDS in 5.9% of the patients and represents an important cause of dementia among young adults. 2) Laboratory evidence of severe immunossupression is invariably present at the time of diagnosis.

Th.B.P.194 MYELOPATHY AS PRESENTATION OF AIDS:TREATMENT WITH AZT.

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Paraparesis is frequently observed in the end stage of ADC; vacuolar myelopathy is found at autopsy of adult pts with AIDS. We refer here, as rarely reported, on 4 pts in whom paraparesis marked the clinical onset of AIDS.

Since July 1986 to January 1988, 4 males (mean age 27 yrs and drug abuse history) were admitted for myelopathy and HIV infection. They complained of prolonged febrile illness and malaise before appearence of leg weakness in all and urinary retention in 3 pts. The first neurological examination showed hypereflexia, ankle and patellar clonus, Babinski sign and,in 1 pts,also gait ataxia with motor incoordination without sensory levels. All pts had oral candidiasis, mild anaemia,leukopenia, low counts of CD4 cells (mean 34/mm3), expansion of CD8, particularly of CD8+, Leu 7+ subsets. CT scan and/or MRI showed cerebral atrophia in 4/4, periventricular white matter change in 1/4, spinal cord abnormalities in the dorsal tract in 2/4 pts. EEG was altered in all. CSF showed mild elevation of albumin and globulin.Liquor testing for anti-HIV was positive (p 41, p 110,p160 band, Western blot)and negative for anti-CMV,HSV,V-ZV,EBV and toxoplasma.

Two pts developed O.I. (esophageal candidiasis, PCP) and died after 8-12 months whith overt ADC. In 1 of these cases unsuccessful AZT therapy was eventually administered. Gigant cells encephalitis and vacuolar myelopathy were found at autopsy.The 2 other pts are on AZT treatment since admission (12-14 months of follow up): they are free of O.I. but their myelopathy is slowly worsening. Prolonged subclinical illness or different pathogenesis of myelopathy may explain poor response to antiviral treatment.

Th.B.P.195 NEUROPSYCHOLOGICAL FOLLOW-UP OF SUBJECTS ON AZT LICENSING TRIAL: SAN DIEGO COHORT

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Objective: To document occurrence of dementia in the San Diego cohort of the zidovudine (AZT) licensing trial by 24 month follow-up neuropsychological evaluation.
Methods: Thirty-two ambulatory homosexual men with the acquired immunodeficiency syndrome (AIDS) or advanced AIDS-related complex (ARC) were evaluated prior to starting zidovudine treatment with a comprehensive neuropsychological test battery. Survivors were evaluated at 6, 12, 18 and 24 month intervals with the same battery. In order to minimize practice effects, alternate versions of the tests were employed at follow-up sessions. Diagnosis of dementia was determined according to neuropsychological test performance and DSM-III criteria for dementia.
Results: The table shows the cumulative number of subjects who met criteria for dementia at each follow-up evaluation. The cumulative total of 9 subjects represents 28% of the original sample.

Cumulative Number of Subjects with Clinical Dementia

Baseline	6 Months	12 Months	18 Months	24 Months
0	2	3	6	9

Conclusion: These results are consistent with notions that dementia is a frequent, rather than a rare complication of AIDS.

Th.B.P.196 PERIPHERAL NEUROPATHIES AND HIV INFECTION : SPECTRUM AND NATURAL HISTORY.

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Methods : A clinical and electrophysiological study was performed in 29 patients referred for a peripheral neuropathy between November 1984 and June 1988. CSF was examined in 21 cases. A neuromuscular biopsy was made in 12 cases. Follow-up was conducted from 3 months to 4 years.
Results : There were 27 Caucasian and 1 African males (24 homosexual/bisexual), 1 African female, ranging from 27 to 58 years : 1) Six otherwise asymptomatic patients presented an inflammatory demyelinating polyneuropathy (IDP), acute in 1 case and subacute in 5. CSF showed pleocytosis in all cases. In nerve biopsies an infiltration of the endoneurium and/or the epineurium by mononuclear cells, and sometimes microvasculitis, were seen in 3 cases. The 6 patients recovered either spontaneously (4 cases), or with corticosteroids (1 case), or plasmaphereses (1 case). In follow-up from 6 to 48 months, they all have progressed to ARC but none progressed to AIDS. 2) In 5 patients with ARC, we found 1 chronic IDP and 4 distal sensorimotor peripheral neuropathies (DSPN). The neuropathies remained stable, but 2 patients died. 3) Of the 18 patients with AIDS, 2 had a mononeuropathy multiplex and 15 a painful DSPN. EMG studies indicated an axonopathy which was predominant in nerve biopsies in 5/7 cases. Seven patients died within 6 months. The last patient had a polyradiculopathy with lymphocytic meningitis. He died and autopsy found an infiltration of the meninges and the spinal roots by a B-cell immunoblastic lymphoma.

Th.B.P.197 A SYSTEM FOR STAGING THE AIDS DEMENTIA COMPLEX: CORRELATIONS WITH NEUROLOGICAL AND NEUROPSYCHOLOGICAL ASSESSMENTS

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Objective: To assess the utility of a clinical staging system for the AIDS dementia complex (ADC).
Methods: Based on defined criteria of cognitive and motor functional status in daily living, the ADC staging system segregates patients as: 0-normal; 0.5-subclinical or equivocal; 1-mild; 2-moderate; 3-severe; 4-end stage (J. Infect Dis. 158: 1079-1083, 1988). ADC Staging was compared to neurological and neuropsychological assessments in a group of HIV-1-infected individuals at various phases of systemic infection and with various degrees of ADC. Comparisons were made in untreated patients at initial evaluation (n=168), untreated patients including multiple evaluations (n=287), and combined untreated and AZT-treated patients undergoing multiple evaluations (n=473).
Results: ADC Stage was highly correlated ($p<.001$) with salient clinical and neuropsychological assessments in all 3 analyses. For example, at first evaluation, ADC Stage correlated with: clinical cognitive ($r=.77$) and motor ($r=.70$) ratings; clinical ($r=.89$), neuropsychological ($r= .70$) and combined ($r=.84$) impairment scores; ADC-sensitive neuropsychological tests including finger taping ($r=.58$), timed gait ($r=.62$), trail making A ($r=.77$) and B ($r=.70$), grooved pegboard ($r=.71$), digit symbol ($r=.66$), Trial 5 of the Rey verbal learning test (.71) and the Benton visual retention test ($r=.71$).
Conclusion: ADC Staging provides a relatively simple but useful method of patient classification for epidemiological, natural history, pathogenetic, and therapeutic studies as well as for clinical practice.

Th.B.P.198 PHARMACOKINETIC ANALYSIS OF THE ENHANCED DISTRIBUTION OF ZIDOVUDINE INTO RABBIT CEREBROSPINAL FLUID CAUSED BY PROBENECID.

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Objective. The resolution of AIDS-related neurological dysfunction during zidovudine (AZT) therapy provides a clear rational for the importance of antiviral drug therapy in treating AIDS dementia complex. The objective of this work was to study the kinetics of AZT distribution into the rabbit CSF and to examine the effect of probenecid on this distribution process.
Methods. In this study two groups of rabbits (n=3) received a single IV dose of 10 mg/kg AZT in the absence (control) and presence of a continuous IV infusion of 30 mg/kg-hr probenecid. Plasma and CSF samples were obtained frequently over a period of 3.5 hours, and analyzed for AZT and probenecid by HPLC.
Results. Probenecid coadministration caused a 7-fold increase in the AZT AUC_{CSF} in probenecid-treated rabbits when compared with controls. The AUC_{CSF}/AUC_{plasma} ratio increased from 0.152 ± 0.023 in controls, to 0.568 ± 0.222 in probenecid-treated rabbits. The CSF/plasma AZT concentration ratio during the postdistributive phase increased from 0.24±0.05 in controls to 0.65±0.12 in the probenecid-treated rabbits. A linear pharmacokinetic model, which assumes first-order transfer rates between plasma and CSF, was used to describe distribution of AZT between plasma and CSF. Analysis of intercompartmental clearances showed that the CSF exit rate constant decreased from 0.028±0.01 in control to 0.015±0.006 in probenecid-treated rabbits.
Conclusion. The results indicate that probenecid enhances AZT distribution into the CSF by decreasing its CSF to plasma clearance.

Th.B.P.199 TRANSFUSION-RELATED HTLV-I NEUROLOGICAL DISEASE: A PUTATIVE MARKER OF DISEASE ACTIVITY AND RESPONSE TO THERAPY

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Objectives: To report two cases of HTLV-I neurological disease including a putative marker of disease activity, and response to therapy.
Methods and Results: A 65 year old caucasian male, resident in the US, developed HTLV-I associated myelopathy (HAM) 6 months after multiple transfusions for fulminant pancreatitis. Investigations were remarkable for raised concentrations of β_2 microglobulin (β_2M) (Pharmacia, Sweden) greater in CSF than serum. Treatment with azidothymidine and later with plasmapheresis was ineffective, whereas corticosteroids lead to minor improvement. The clinical response to therapy was reflected in a fall in the β_2M concentrations. The second patient, the sexual partner of the first, was transiently positive by ELISA and is now positive only by polymerase chain reaction. Her illness began 3 months after her partner's and consisted of a mild transient peripheral neuropathy.
Conclusions: This is the first documented case of transfusion-related HAM in the US. The changes in CSF β_2M suggest that it may be useful as a marker of therapeutic response. The second case illustrates the difficulties in serological diagnosis and suggests that peripheral neuropathy may be an early manifestation of HTLV-I.

Th.B.P.200 NEUROPSYCHOLOGICAL FOLLOW-UP OF 1787 PARTICIPANTS IN THE MULTICENTER AIDS COHORT STUDY

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Objective: To determine the frequency and severity of neurologic involvement in HIV infection in MACS participants.
Methods: 1787 homosexual/bisexual men were enrolled in the Neuropsychological substudy. 299 were enrolled in Baltimore and 238 in Chicago in 1986, and 209 in Pittsburgh, and 1041 in Los Angeles in 1987. A 25 minute screening battery of neuropsychological (N-P) tests and a 22 item questionnaire on neurologic symptoms were administered at each visit, approximately 6 months apart.
Results:

	% Outliers on N-P Screen				Mean # of Neurologic Symptoms	
Status	N	Visit 1	N	Visit 2	Visit 1	Visit 2
Seronegative	787	2.3	603	1.2	0.6	0.5
Seropositive	616	2.6	439	2.1	1.0	0.7
Seroconverter	122	2.5	77	1.3	1.3	0.65
AIDS	75	8.0	46	10.9	1.9	2.28

Conclusions: Asymptomatic seropositives and seroconverters did not differ from seronegatives on the N-P tests either at Visit 1 or Visit 2. The AIDS group had significantly more failures on the N-P screening tests as well as reporting more neurologic symptoms at each visit.

Th.B.P.201 THE EPIDEMIOLOGY OF AIDS-RELATED NEUROLOGIC DISEASES

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Objective. To describe the epidemiology of diseases of the central nervous system (CNS) in AIDS patients in San Francisco (SF).
Methods. We analyzed the demographics and transmission categories of 5834 AIDS cases reported in SF from 1981 through 1988 with respect to CNS diagnoses of toxoplasmosis, primary lymphoma of the brain, progressive multifocal leukoencephalopathy, cryptococcal meningitis, and HIV encephalopathy. Median survival was calculated using the Kaplan-Meier product-limit method.
Results. 415 (7.1%) AIDS patients were initially diagnosed with a CNS disease. CNS diseases as an initial diagnosis rose significantly from 1.9% of total cases in 1982 to 9.4% in 1988 ($p<.001$). 770 (13.2%) AIDS patients had a CNS disease at some point during their illness. The mean age of AIDS patients aged $\geq$ 20 with CNS disease was 39.2 years compared with 37.5 years for persons without ($p<.001$). Heterosexual intravenous drug users were more likely to have a CNS disease (26.9%) than gay men with (15.5%) or without (12.5%) intravenous drug use ($p<.001$). There were no significant differences in gender or race/ethnicity distribution among patients ever having CNS disease vs. those without. Median survival for AIDS patients with CNS disease (6.8 months) was significantly shorter than that for patients without (12.9 months) ($p<.001$).
Conclusion. CNS diseases are increasingly common among AIDS patients. AIDS patients who develop CNS disease are more likely to be older and be intravenous drug users. Survival is shorter for AIDS patients with CNS disease.

Th.B.P.202 NEUROPSYCHOLOGICAL FOLLOW-UP IN PATIENTS WHO HAVE PROGRESSED TO AIDS: THE MULTICENTER AIDS COHORT STUDY (MACS).

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Objective: To evaluate changes in neuropsychological (NP) performance in participants in the Multicenter AIDS Cohort Study (MACS) who progressed from asymptomatic (CDC group II/III) to AIDS (CDC group IV).
Methods: Standardized NP testing was available for 76 participants in the MACS Neuropsychological Study who had developed AIDS. Of these, 26 had at least one previous NP evaluation prior to developing an AIDS-defining illness. The performance of those participants was compared with that of 26 age and education matched seronegative (SN) controls. NP testing included tests of attention/concentration, memory and new learning and psychomotor speed, previously shown to be sensitive to HIV-related encephalopathy. Individual performance was classified as impaired if scores on two or more tests were below 2 standard deviations based on SN controls. 10 of the participants with AIDS were taking Azidothymidine (AZT).
Results: The average number of months between initial and follow-up testing was 12 months (range 4.7 - 24.5 months). At the initial visit, 3/26 (12%) participants had impaired NP performance, as compared with 4/26 (15%) at the follow-up visit with AIDS. Comparison of group means at initial and follow-up testing revealed slight, non-significant decline in only 1/6 tests (Grooved Pegboard, non-dominant hand). There was no significant difference between the performance of SN controls and participants with AIDS on any of the NP tests at either visit.
Conclusion: These findings demonstrate that progression to AIDS in this self-selected cohort was not associated with significant decline in cognitive functioning as measured by standardized NP testing. Therefore, although severe immunosuppression may be necessary for the development of HIV-related encephalopathy, it may not be a sufficient condition.

Th.B.P.203 NEUROLOGICAL INVOLVEMENT IN GROUP IV HIV+ PATIENTS: NEUROPHISIOLOGICAL AND CLINICAL DATA.

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For purposes of prognosis and therapy, we sought to identify the initial site where HIV begins to exert its deleterion effect. The subjects, all asymptomatic from the neurological point of view, where 8 IVC1 and 20 IVC2 or IVA patients (pts.). The spinal and cortical SEP responsis were recorded during tibial nerve stimulation. The electrophysiological results were compared with clinical assessment and serum and CSF HIV markers. In both groups we observed a slowing of nerve conduction along the entire afferent pathway. While this was not significant at the level of the peripheral nerves, it becames marked and higly significant at the CNS level for about 1/3 of the IVC2 or IVA and for 2/3 of the IVC1 pts.. The major part of the delay occurred in the mid and lower medullary tract. This results agree with neuropathological finding from post-mortem examination of AIDS pts. similar to that described for other lymphotrophic, slow and oncogene viruses. The higher incidence of electrophysiological alterations in the CNS of group IV has already been described in pts. with neurological deficit; however, it has not been satisfactorily documented in neurologically asymtomatic HIV+ pts.. Our findings point to the possibility of using our approach to identify those HIV+ pts. who might best benefit from early treatment.

Th.B.P.204 EFFECT OF MANNITOL IV INFUSION ON DISTRIBUTION OF ZIDOVUDINE BETWEEN PLASMA AND CEREBROSPINAL FLUID IN RABBITS

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Objective. This work was performed to examine the effect of intravenous infusion of mannitol on the penetration of zidovudine (AZT) into the cerebrospinal fluid (CSF) of rabbits, and to study the kinetics of AZT transfer between plasma and CSF.
Methods. Rabbits were assigned either to a control group (n=3), receiving a single IV dose of 10 mg/kg AZT alone, or to a mannitol-treated group (n=4), receiving a single IV dose of 10 mg/kg AZT as well as a continuous IV infusion of 1.5 g/kg-hr mannitol following a bolus of 10 ml/3kg of 25% mannitol. Plasma, CSF and urine samples were obtained frequently over a period of 3.5 hrs, and analyzed for AZT by HPLC.
Results. The results showed that the AUC_{CSF}/AUC_{plasma} ratio increased from 0.152 ± 0.023 in the control rabbits to 0.459 ± 0.089 in the mannitol-treated rabbits. The CSF/plasma AZT concentration ratio during the postdistributive phase increased from 0.24 ± 0.05 in control to 0.68 ± 0.24 in the mannitol treated rabbits. A linear pharmacokinetic model, which assumes first-order transfer between plasma and CSF, was used to analyze the data.
Conclusion. This analysis demonstrates that changes in CSF/plasma AZT concentration ratios caused by mannitol coadminiation can be explained by alterations in intercompartmental clearances of AZT.

Th.B.P.205 CRANIAL NEUROPATHIES IN AIDS PATIENTS

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Objective: To assess the frequency and differential diagnosis of cranial neuropathies in AIDS patients, thereby improving diagnosis and treatment of associated conditions.
Methods: 2370 medical records were reviewed including admissions to UCSF affiliated hospitals from inception of the epidemic through 2/88 (4.3% of all U.S. AIDS cases).
Results: 98 of 2370 patients were diagnosed with cranial neuropathies. The distribution of cranial nerves involved was: 77 seventh, 13 sixth, 13 third, 10 twelfth, 9 fifth, 8 eighth, 3 second, 3 sixth, 2 fourth, 2 ninth and 2 tenth. There was multiple nerve involvement in 33 patients (33.6%).
Probable diagnoses were:

Toxoplasmosis:	34		
AIDS Dementia Complex (ADC):	18	CMV Encephalitis:	4
CNS Lymphoma:	10	Non-Hodgkins Lymphoma:	3
Cryptococcal Meningitis:	10	Bacterial Meningitis:	1
PML:	8	Brain Stem Glioma:	1
Aseptic Meningitis:	4	Cerebrovascular Accident:	1

In addition, 15 had peripheral neuropathies, and 15 had no CNS diagnosis.
Conclusion: 98 patients had cranial neuropathies, 33 of whom had multiple cranial neuropathies. This represents 4.2% of all AIDS patients and 14.4% of neurologically symptomatic patients. Thus, ADC (by far the most common neurological diagnosis) is associated with cranial neuropathy relatively uncommonly, whereas PML and CNS Lymphoma are associated with cranial neuropathy relatively frequently. Although CNS toxoplasmosis is also over-represented, many of these cases occur with upper motor neuron seventh nerve involvement.

Th.B.P.206 NEUROLOGIC ABNORMALITIES AMONG HIV-1 SEROPOSITIVE INTRAVENOUS DRUG USERS

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Objectives: To study HIV-1 related neurologic abnormalities among intravenous drug users.
Methods: All participants are recruited from a natural history study of HIV-1 infection and screened with standardized neurologic questionnaires and neurologic examination. Individuals also receive nerve conduction velocities (NCV) and autonomic function testing (AFT). Evaluations are performed without knowledge of the serostatus of the participants.
Results: Over a 3 month period, 25 HIV seronegative (SN) controls and 21 seropositive (SP) subjects were screened. The mean age for each group was 36 and 33.6 and the male/female ratio 2.5:1 and 2.1:1, respectively. Of SP individuals, 17 were asymptomatic (CDC Groups II/III), 4 had ARC, and none had AIDS. None was taking azidothymidine. 81% of SP and 76% of SN subjects had one or more neurological symptoms or examination abnormalities. This difference was not statistically significant. Minor electrophysiological abnormalities were detected in 3 of 13 SP and 5 of 26 SN subjects. None had autonomic function test abnormalities.
Conclusions: Among these subjects, the rate of neurologic abnormalities was high for both HIV-1 SP and SN individuals. These preliminary results will be expanded by recruitment of additional participants and longitudinal study.

Th.B.P.207 SUBCLINICAL NEUROPSYCHOLOGICAL AND PERIPHERAL ABNORMALITIES IN HIV+ PATIENTS

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Objective. To define the appearance of subclinical neuropsychological and peripheral manifestations in HIV+ neurologically asymptomatic patients(Pt).
Methods. Forty-five Pt(7 AIDS,38 ARC)were examined with brainstem-evoked responses(BAER), endogenous-evoked related potential(P 300 Wave), sensory and motor nerve conduction velocities, neuropsychological tests for verbal and visual memory(Wechsler's scale), associative learning-language(Wais, Western Aphasid Battery), abstract and rational thought, praxias and gnosias, kinetic family test and H.T.P.test.
Results. P 300 Wave and BAER showed anomalies in all AIDS Pt but not in ARC ones. Ten out of 14 ARC Pt without clinical evidence of polyneuropathy had slowed sural sensory nerve conduction velocity.Word fluency, abstract thought, verbal and visual memory were the most frequently and earliest neuropsychological functions affected. Drawings pointed out psychopathic, paranoic and evasive features.
Conclusion. Subclinical abnormalities found in our study support other evidences that HIV is associated with CNS dysfunctions. P 300 Wave and BAER are not suitable to search for early cognitive involvement, while sensory nerve conduction velocity is a useful neurophysiological technique to detect subclinical peripheral involvement. Both neurophysiological and neuropsychological assessment should be included for all HIV+ Pt.

Th.B.P.208 MULTIVARIATE STATISTICAL DETERMINATION OF INCIDENCE AND CHARACTER OF COGNITIVE IMPAIRMENTS IN HIV PATIENTS.

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Studies of cognitive impairments in HIV patients and specifically those with the AIDS Dementia Complex have used deviations from control values and cut-off scores as their criteria for determination of impairment or dementia. The main objective of this study was to develop instead a multivariate statistical approach based on data of patients with actual neurodegenerative disorders to determine the incidence and character of dementia seen in patients with HIV disease. Discriminant analysis on the neuropsychological data of Alzheimer's (AD) and Huntington's (HD) patients as well as Normal Controls (NC) was used to develop a highly accurate (98.5% correct, p< .001) formula by which patients were classified as 'NORMAL' or 'DEMENTED'. If patients were classified as 'demented' the same technique also indicated with a high degree of accuracy (79% correct; p< .001) whether their impairments resembled more a subcortical (HD-like) or cortical (AD-like) dementia.

Using this rule on patients with Parkinson's disease (PD) indicated a high degree of dissimilarity between the AD and PD patients (p< .005) and a high degree of similarity between the HD and PD patients (p> .40) validating the use of the obtained formula since PD may be considered another example of a subcortical dementia.

The thus validated discriminant function was then used to classify our HIV patients, which indicated that 65% were classified as normal while 35% were classified as demented. Of the HIV patients classified as demented 83% showed a subcortical and 17% a cortical pattern. This distribution was significantly different from the AD group (p< .002) but was similar to the HD group (p> .50).

These data suggested that the HIV dementia has a subcortical character. Additional analyses contrasted the identified HIV subgroups (AD, HD, NC-like) on other cognitive, affective, hematologic and immunologic measures.

(This work was supported in part by a grant from AMFAR.)

Th.B.P.209 PERIPHERAL FACIAL PALSY AS A PREDICTIVE INDICATOR OF HIV INFECTION IN CENTRAL AFRICA.

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Objective. To study consecutive cases of peripheral facial palsy (PFP) seen in 1988 in Bangui Hospital, paying special attention to HIV infection.
Methods. 10 male and 15 female (average age: 30) who presented with acute PFP were clinically examined, then investigated for HIV antibodies, tuberculin test, T4/T8 ratio, CSF analysis(when possible).
Results. 17 patients (7 men and 10 women, all African) had HIV1 antibody at the time of the onset of the PFP. 1 woman seroconverted within 3 months after first examination. Eleven were healthy HIV1-carriers, 6 had ARC and 1 met the CDC criteria of AIDS. In 6 cases, an influenza-like syndrome was present, associated in 3 cases with Herpes zoster eruption. The other 10 cases resembled Bell's palsy. In 1 case, the CSF was normal while for 1 other case, immunological pattern of meningitis was noted. In 2 cases, typical albumino-cytologic dissociation of CSF, suggesting unusual polyradiculoneuritis was observed.
Conclusion. PFP is an heterogeneous HIV manifestation, happening at any stage of the HIV infection, with various types of presentation, and several physiopathological mechanisms. Moreover, the positive predictive value of PFP in Central Africa (72%), for HIV infection, is remarkably high.

Th.B.P.210 DECLINING INCIDENCE OF AIDS DEMENTIA COMPLEX AND HIV-1 ANTIGEN DETECTION IN THE CEREBROSPINAL FLUID FOLLOWING SYSTEMATIC ZIDOVUDINE TREATMENT

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Objective. To determine the incidence of AIDS dementia complex (ADC) and HIV-1 antigen detection in the cerebrospinal fluid (CSF), related to the introduction of zidovudine treatment.
Methods. All patients with symptomatic HIV-1 infection and neurological complaints, who were seen at the AIDS-unit of the Academic Medical Center, between October 1982 and December 31th 1988 were examined by a neurologist. Retrospectively the incidence of ADC was determined for each year. HIV-1 antigen detection in the CSF was compared between two groups: 1. CSF-samples obtained between October 1982 and January 1988 and 2. CSF-samples obtained in 1988.
Results. The number of AIDS-patients with neurological complaints (every year almost 70% of all AIDS-patients in our hospital) increased from 1 patient in 1982 to 88 patients in 1988 (total number n=250). Zidovudine was introduced in The Netherlands in May 1987. The number of patients classified as having ADC increased every year till 1986: 1982: 0/1 (0 of 1 patient examined), 1983: 1/7, 1984: 3/6, 1985: 5/19, 1986: 15/60, remained stable in the first half of 1987 (n=10/30), started to decline in the second half of 1987 (n=6/47), and decreased sharply in 1988 (n=2/88). Between October 1982 and January 1988 CSF-samples were collected from 85 AIDS-patients for HIV-1 antigen detection. Twenty were HIV-1 antigen positive (12 patients with ADC, 8 without). In 1988 82 CSF-samples were available: in only six samples HIV-1 antigen was detectable (2 patients with ADC, none of them was using zidovudine).
Conclusion. While the total number of AIDS-patients with neurological complaints is still increasing, the incidence of ADC and HIV-1 antigen detection in the CSF is declining. The decline started after introduction of zidovudine.

Th.B.P.211

A CASE DEFINITION OF AIDS DEMENTIA COMPLEX FOR USE IN AFRICAN PATIENTS

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Objectives. To develop and evaluate a clinical case definition for AIDS dementia complex (ADC) for use in African patients.
Methods. We evaluated 233 patients, hospitalised in 2 Internal Medicine wards of Mama Yemo Hospital, Kinshasa, Zaire, with a comprehensive clinical and neurological exam, elementary neuropsychological tests, and HIV serology.
Results. One hundred twenty five (54%) patients were HIV(+). Neurologic manifestations associated with HIV seropositivity (p<0.02) were:

Sign/Symptom	% HIV(-)	% HIV(+)	Spec(%)*	PPV(%)**
Personality changes	33	52	67	65
Social withdrawal	21	41	79	70
Difficulty concentrating	9	26	91	77
Slowing of mentation	10	24	90	72
Insomnia	21	39	79	70
Difficulty walking	26	42	74	66
Difficulty dressing	16	33	84	71
Palmomental reflex	13	26	87	70
Tremor of hands/fingers	6	24	94	52
Generalized hyperreflexia	3	16	97	87

* specificity and ** positive predictive value for HIV seropositivity.
A clinical definition of ADC requiring at least 5 of these signs/symptoms had a sensitivity of 23%, a specificity of 94% and a PPV of 83% for HIV seropositivity.
Conclusion. Neurologic manifestations occur frequently among African HIV(+) hospitalized patients. A clinical case definition of ADC had a high specificity and PPV for HIV seropositivity in hospitalized Zairian patients.

Th.B.P.212

NEUROPSYCHOLOGICAL MANIFESTATIONS OF HIV INFECTION: A PROSPECTIVE STUDY.

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Objective. HIV encephalopathy is clinically characterized by cognitive, motor and behavioral signs, and is classically observed in full-blown AIDS. However, it has been suggested that cognitive defects might already be present in earlier stages of HIV infection. The objective of this study was to assess the prevalence of cognitive signs in various stages of HIV infection.
Methods. Since 1.4.1986, a neuropsychological evaluation was proposed every 6-12 months to HIV-positive persons cared for at our institution, regardless of the stage of their HIV infection. In addition, all participants underwent general and neurological examinations. Patients with CNS opportunistic, neoplastic or metabolic pathologies were excluded.
Results. Sixty-eight neuropsychological examinations have been performed in 55 persons (23 homosexuals, 26 drug addicts, 5 heterosexuals and 1 recipient of blood products). Moderate to severe cognitive defects have been demonstrated in 23 cases, and were associated with motor and/or behavioral signs in 5/23. The table describes the distribution of cognitive defects recorded during the 68 examinations, according to the stages of HIV infection (in stage IV, a patient may have ≥ 1 disease stage):

HIV clinical staging (CDC classification) :	II	III	IVA+IVC2(ARC)	IVB+C1+D(AIDS)
Number of examinations :	10	17	20	21
Cognitive defects (%) :	3(30)	4(24)	5(25)	11(52)

Conclusion. Neuropsychological signs of HIV encephalopathy could be detected in a significant proportion of the first stages of the infection. Cognitive signs can be easily missed during general medical examination, but could have important socio-professional consequences and could respond to zidovudine therapy. The occurence of such defects in the first stages of HIV infection should be searched for when performing a medical evaluation in HIV-infected patients.

Th.B.P.213

CNS LESIONS IN AIDS:ANALYSIS OF 44 PATIENTS

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Objective.Central nervous system (CNS) is frequently involved in AIDS.We investigate type and prevalence of CNS involvement in our AIDS patients observed during the period 1984-1988.
Methods.Fourtyfour patients were studied.Diagnosis was mostly based on imaging techniques (CAT,NMR) and on microbiological investigations on CSF.
Results.Of 44 patients,28 (63.6%) had CNS disease.The following conditions were recognized(the cases identified intravitam are indicated in brackets): toxoplasmosis 11(10),HIV encephalitis 10(10),criptococcosis 4(4),lymphoma 3(1), HIV myelitis 2(2),CMV encephalitis 1(0),HSV encephalitis 1(0),tuberculosis 1 (1),PML 1(1),KS 1(0),H.capsulatum encephalitis 1(0).Various associations were observed in 5 patients (3 cases died).Twelve patients with CNS involvement are surviving (42.8%),whereas 11 of the patients without CNS lesions are still alive (68.7%).
Conclusion.We observe high prevalence of CNS conditions and toxoplasmosis,HIV encephalitis,criptococcosis particularly,in our AIDS patients.CNS involvement appears often asymptomatic and the earlier recognition of some curable diseases emerges as target for clinical research.

Th.B.P.214

GUILLAIN-BARRE SYNDROME IN HIV INFECTION: EXPERIENCE FROM AN AFRICAN CENTER

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Objective.To determine the clinical features of HIV-related Guillain-Barre Syndrome (GBS) in this region.Methods.We prospectively examined 23 consecutive adult patients admitted to the teaching hospitals with inflammatory demyelinating polyneuropathy for serum reactivity against HIV by ELISA. All patients were seen by a neurologist, and had CSF examined. 22 of 23 patients had electromyography/nerve conduction studies.Results.20 patients had GBS, 3 had chronic inflammatory polyneuropathy (CIP). None of the CIP patients were HIV positive. Clinical features of GBS were similar in HIV positive and negative patients, except as shown in table.

GBS patients	HIV neg(n=10)	HIV pos (n=10, all were strong pos)
generalized lymphadenopathy	0	10 (p< .05)
STD in previous 5 years	1	8 (p< .05)
CSF pleocytosis > 5 WBC	1	5
coexistent neurologic diagnosis	0	4(e.g. myelopathy,neurosyphilis)
mechanically ventilated	4	0

Of the 10 HIV positive GBS patients, 8 were previously asymptomatic, none had AIDS. During the period of maximal disability, all GBS patients were unable to walk independently. The only fatality was in a HIV negative GBS patient, 18/19 other GBS patients were followed well into the recovery phase. Conclusion.HIV-related GBS accounts for a significant proportion of GBS in this area, tends to occurs early in the HIV infection, and carries a good prognosis for recovery from the neuropathy.

Th.B.P.215

Long term effects of treatment with zidovudine on neuropsychological function in patients with ADC.

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Objective: To evaluate effect of zidovudine treatment on neuropsychological and immunological parameters during 10 months of follow-up in patients with ADC.
Subjects: 8 patients with AIDS were studied. According to neuropsychological test results before start of treatment, 6 had ADC and 2 had no manifestation of ADC.
Tests: A psychometric battery was repeated at 5 and 10 months after start of treatment. In addition a special battery of computerized tests was performed at 6-8 week intervals in some of the patients.
Results: A stable level of performance was found in the two initially normal patients throughout the study period. All the ADC-patients showed initial improvement of performance, but a variable clinical course was then seen, with decline of performance to baseline, death before the second follow-up, or continued improvement. The CD4 cell count in blood did not predict neuropsychological response to treatment.
Conclusion: Zidovudine-treatment leads to improved neuropsychological performance in ADC-patients, but the long term benefit is variable with therapeutic failure after 4-6 months in some patients.

Th.B.P.216

PREVALENCE, TREATMENT, AND COSTS OF MENTAL DISORDERS AMONG PERSONS WITH AIDS

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Objective. The prevalence of mental, neuropsychiatric, and addictive disorders among persons with AIDS has been estimated to be high. It is unclear, however, what impact presence of these disorders has upon therapeutic regime and costs of persons with AIDS. This paper applies a model automated AIDS information system to measure use and direct costs of AIDS-related treatment across providers and payers. Methods. Institution and community-based services used by 1,300 Maryland residents with AIDS during the period between 1981-1987 were retrospectively studied. An automated information system made up of longitudinal, person-based files serves as the basis of this study. The system links HIV registry, vital statistics, hospital, long term and chronic care, community-based service, and health insurance claims records to measure the nature, volume, and costs of service use associated with AIDS treatment during the period between diagnosis and death. Results. Incidence of mental, neuropsychiatric, and addictive disorders and co-morbidities are reported and course of treatment is described. Direct costs, charges, source of payment, and mix of general and mental health services are assessed. Factors contributing to use of mental health services such as socio-demographic characteristics, transmission group, severity of illness, and survival time. Conclusion. Findings of this study are useful to policy makers at the local, State, and Federal levels in planning service and financing required to meet the needs of persons with HIV disease.

Th.B.P.217 NEUROLOGICAL DISTURBANCES ASSOCIATED WITH HIV INFECTION: EXPERIENCE AT AN AFRICAN CENTER

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Objective.To determine the neurologic disturbances associated with HIV in this region.Methods.Over 14 months, we prospectively examined 74 adults with major neurologic disturbance and HIV infection. HIV serologic testing was by ElISA and, where appropriate, WB. Patients were seen by a neurologist, and brain CT scans obtained when needed. Cases with non-disabling polyneuropathy, uncomplicated zoster, and mild cognitive impairment were excluded.Results.Neurologic disturbance was the presenting feature of HIV in 62 patients, 14 had AIDS at presentation. Diagnoses were:
MENINGITIS(17):cryptococcal 9, aseptic 5, tuberculous 2, pneumococcal 1
MYELOPATHY - ACUTE(5):zoster myelitis 2, bilharzial 1, CU(cause unknown) 2
- CHRONIC(8):coexistent HTLV-I 2, compressive(lymphoma) 1, CU 5
PSYCHIATRIC/DEMENTING(10):Psychosis with organic features 5, presumed HIV encephalopathy 4, parenchymal neurosyphilis (dementia paralytica) 1
FOCAL BRAIN LESION - VASCULAR(5):meningovascular syphilis 2, following zoster opthalmicus 1, intracerebral hemorrhage 1, ischemic stroke CU 1
- OTHER(8):cysticercosis 2, toxoplasma 1, tuberculoma 1, CU 4
PERIPHERAL/OCULAR(19):Guillain-Barre syndrome 10, CMV retinitis 1, retinal vein occlusion 1, cranial neuropathy 7
OTHER(3):Juvenile onset parkinsonism 1, severe postural tremor 1, relapsing-remitting disease of optic nerves and central white matter 1
Conclusion.Neurologic disturbance was a common presenting manifestation of HIV. 3 patients had parasitic disease of the CNS, 3 had neurosyphilis.

Th.B.P.218 EFFECTS OF AZIDOTHYMIDINE ON NEUROPSYCHOLOGICAL PERFORMANCE IN ASYMPTOMATIC AND SYMPTOMATIC HIV-1 INFECTION: THE MULTICENTER AIDS COHORT STUDY (MACS)

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Objective: To examine the effects of azidothymidine (AZT) on neurological status and neuropsychological performance of homosexual/bisexual men in the Multicenter AIDS Cohort Study.
Methods: Standardized measures including a neurological questionnaire, neurological examination and neuropsychological tests (NP) were administered twice at 6-12 month intervals to 543 seronegatives, 463 HIV-1 seropositives (SP) in CDC Groups II or III and 46 individuals with ARC or AIDS. None was taking AZT at baseline; clinical status, CD4% and AZT use were assessed at follow-up (F-up).
Results:

		Neuropsychological Testing				
		Abnormal Baseline	Abnormal Follow-up	Abnl baseline, Normal F-up	Normal baseline, Abnormal F-up	Change CD4%
Asymptomatic SP						
No AZT	n=437	11%	13%	6%	9%	-0.66
AZT	n= 26	11%	8%	4%	0%	+0.35
Symptomatic SP						
No AZT	n= 26	12%	35%	4%	27%	-0.77
AZT	n= 20	20%	25%	10%	15%	-2.36

Among asymptomatic SP's, 9% of AZT non-users had worsening of NP performance at follow-up compared to 0% in AZT users. Among symptomatic SP's, NP performance normalized at follow-up in 2/20 AZT users compared to 1/26 AZT non-users, and 15% vs 27% showed worsening. No differences were observed in subsequent neurological symptoms, examination findings or CD4%.
Conclusion: These data suggest that NP performance can stabilize or improve after initiation of AZT. These preliminary observations will be expanded by analysis of subsequent data collection.

Th.B.P.219 NATURAL HISTORY OF CENTRAL NERVOUS SYSTEM (CNS) IMPAIRMENT IN HIV INFECTION

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Objective. To ascertain the early neurological changes and progression of HIV invasion of CNS.
Methods. Cohort study of HIV infected patients with clinical and neurological examination, biological (CSF study/CD4 cell counts), virological (HIV antibody synthesis, culture and PCR in CSF), neuropsychological testing (NP), electrophysiological testing (EP) and MRI examinations every 6 months. Partial and preliminary results are shown here.
Results. 62 patients have been enrolled since 03/87 : they were (group 1 n=31 : CDC stage II (n=18) or stage IV C2 (n=13) and group 2 n=31 : CDC stage IV C1/D). CSF abnormalities were present in 34/36 (71%) with no difference between group 1 and 2 NP testing was impaired more frequently in group 2 (10/20) than in group I (11/30) although difference is not significative. EP defects were seen in 7/26 in group 1 and 9/19 in group 2. HIV was detected in culture of 4/20 CSF. Intrathecal synthesis and detection of DNA by PCR are under evaluation.
Follow up. 10 patients died with neurological dysfonction in 3 cases ; histological studies are on going ; 10 patients were evaluated at 6e month : stable NP testing (6/10), improvement (3/10) deterioration 1/10.
Conclusion. Evidence of early virological invasion of CNS by HIV is frequent ; mild abnormalities of neuropsychological testing can be transitory ; long term evaluation is required to evaluate the pathogenesis of potential HIV brain damage.

Th.B.P.220 NEUROLOGIC MANIFESTATIONS IN HIV INFECTION. ANALYSIS OF 217 PATIENTS.

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OBJECTIVE. To estimate prevalence of the nervous system involvement both in different risk groups and as initial manifestation of AIDS.
METHODS.217 patients (pt) with HIV infection at different stages, all presenting neurological symptoms or signs were evaluated through some of the following diagnostic procedures:CSF examination, EEG, CT scans, MRI, EMG, Visual Evoked Potential (VEP), Brainstem Auditory Evoked Potential (BAEP),Somatosensory Evoked Potential (SEP), Single Photon Emission Compiuted Tomography (SPECT).
RESULTS

	Prevalence in risk groups				
	drug addicts	homosexuals	others	total	p
Opportunistic Infections	37 (22%)	11 (32%)	3 (18%)	51 (23,5%)	NS
"HIV related diseases"	69 (41%)	19 (56%)	12 (70%)	100 (46%)	NS
Tumors	11 (6,5%)	3 (9%)	1 (6%)	15 (7%)	NS
Others	49 (30,5%)	1 (3%)	1 (6%)	51 (23,5%)	<0.001

Neurological complication were the first manifestation of AIDS in 61 (29%) of all our AIDS pt with neurological symptoms (212); among them O.I. was the cause in 33 pt (16%), HIV-encephalopathy in 19 (9%) and primary lymphoma in 9 (4%). Other neurological complications (dismetabolic encephalopathy, seizures, etc) were more frequently found in drug addicts (p<0.001). Among "HIV related diseases", peripheral neuropathies were more frequently in drug addicts than in homosexuals and others (p<0.05) but encephalopathy was more common in the non addicts (p<0.05).

Th.B.P.221 NEUROPSYCHIATRIC FINDINGS IN HIV INFECTED PATIENTS AT AN INFECTIOUS DISEASE CLINIC IN KINSHASA, ZAIRE

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Objective. To describe HIV related neuropshchiatric disorders in everyday outpatient consultation in Kinshasa.
Methods. A team of neuropsychiatrists examined all HIV+ patients attending an outpatient consultation for infectious diseases at the Kinshasa University Clinics.
Results. Among 42 outpatients seen in one day with various infectious disorders, 16 (38%) were HIV+ (9 males, 7 females, ages 21-54 years). They had the following complaints: vertigo, loss of libido, headache, sleep disturbance, tinnitus, post zoster pain, hearing impairment, gait disturbances, irritability, seizures, paresthesia, urinary sphincter disturbances. Nine (58%) of these had abnormal neuropsychiatric signs such as frontal release signs (5), hyperreflexia (5), memory disturbances (2), bilateral grasping reflex (1), hyperpathia (1), hypoacusia (1), coma (1), neck stiffness (1) and tremor (1).
Conclusions. Neuropsychiatric signs are common in HIV+ outpatients in Kinshasa. Considering the small number of neurologists and psychiatrists in Zaire, detection and early proper management of HIV+ patients with neuropsychiatric disorders is already a major health problem.

Neurologie : études sur le LCR
Neurology: CSF Studies

Th.B.P.222 MARKERS OF HIV INFECTION IN THE CNS

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Objective:Paired serum and CSF samples of HIV infected persons(ARC or AIDS) with neurological signs(23) and without NS(10) have been tested.
Methods:ELISA for HIV Ab and Ag,ELISA for beta-2 microglobuline,RID for albumin,globulin(IgG,IgM and IgA),Tibbling-Link index for intratechal synthesis of immunoglobulin,co-culture of Ly-Mo for isolation of HIV.
Results:

		IgG%	Alb/	Alb%	beta-2m/	HIV isol.	ITS IgG
Patiens with NS(23)	S	56%	13%	39%	76%	84%	
	CSF	4%	13%	13%	46%	22%	65%
Patients with-ot NS(1o)	S	60%	10%	60%	80%	60%	
	CSF	0%	20%	0%	20%	0%	0%

Conclusion:
The most Important differences between this groups of HIV infected patients with N S and without NSare in elevated IgG in CSF,reduced albumin,elevated beta-2 microglobuline,more percent of HIV isolation from CSF and proof of intratechal synthesis of IgG in the group with NS.

Th.B.P.223 CYTOKINES AND IMMUNOGLOBULINS (Ig) IN CEREBROSPINAL FLUID (CSF) OF ANTI-HIV-1 POSITIVE, ANTI-HTLV-I NEGATIVE ASYMPTOMATIC MEN.

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Objective To determine the presence and amount of IgG and abnormal Ig bands as well as cytokines, interferon gamma (IFNG), interferon alpha (IFNA) interleukin-2 (IL-2) and tumor necrosis factor (TNF), in the CSF of anti-HIV-1 positive asymptomatic men, obtained at baseline for a longitudinal study of the neurological effects of HIV-1 infection.
Methods CFS was obtained from 53 anti-HIV-1 (+), anti-HTLV-I (-) asymptomatic men. IgG was measured by nephelometry, oligoclonal bands by agarose gel electrophoresis and immunofixation, IFNG by RIA and by bioassay, IFNA by bioassay, TNF by bioassay, IL-2 by ELISA.
Results Eighteen (34%) of the samples had elevated IgG (>6.4mg/dl). Thirteen % had abnormalities of CFS Ig protein patterns; 6 had oligoclonal bands and one had an IgG, kappa monoclonal protein. Only 1 sample had measurable IL-2 (2.5 ng/ml); the remainder were < 0.3ng/ml. None of the samples had measurable amounts of IFNG, IFNA or TNF.
Conclusions In these asymptomatic men, prior to any HIV-1 associated neurologic complications, elevations of immunoglobulin G and abnormal Ig bands were frequently present, suggesting either infection within the central nervous system (CNS) or B cell dysregulation. The absence of appreciable amounts of IFNs in the CSF suggests either impaired ability to produce IFN, or lack of appropriate stimulation, such as an infection within the CNS. The absence IL-2 (except in 1 sample) and TNF also suggest either lack of stimulation, or inability to produce these cytokines. (supported by 1 PO1-NS-25569)

Th.B.P.224 SEROTONIN METABOLITE DEFICIENCY IN HIV INFECTION AND AIDS.

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Objective: To determine if cerebrospinal fluid biogenic amine metabolites are altered in patients with HIV infection or AIDS.
Methods: Biogenic amine metabolites were analyzed in seventeen cerebrospinal fluid specimens from fifteen patients with HIV infection or AIDS using high performance liquid chromatography.
Results: Levels of the serotonin metabolite, 5-hydroxyindoleacetic acid (5-HIAA), were profoundly reduced in 13 samples from 11 patients: range 3.8-17.1 ng/ml; mean 10.1 ng/ml; normal ≥30 ng/ml = 33% normal level. Homovanillic acid levels (HVA, a metabolite of dopamine) were variably affected: range 9.4-59 ng/ml; mean 22.9 ng/ml; normal ≥30 ng/ml = 76% normal level. In four patients, both 5-HIAA and HVA levels were borderline or normal. Four of the eleven patients with reduced 5-HIAA levels had only presumed HIV-related dementia and/or myelopathy and the others: other cerebral infections-3; thoracic zoster-1; stroke-1; cauda equina syndrome-1; syncope-1. One of the four patients with borderline or normal results was treated with phenytoin, a drug reported to increase serotonin synthesis in brain, while one each had toxoplasmosis, pulmonary TBC, unknown HIV status with risk.
Conclusions: The data suggest an early, possibly selective, inhibitory effect of HIV infection on serotonin synthesis. Although HIV is not detected in neuronal cell populations, the presence of the virus in brain may cause alterations in neuronal cellular metabolism and neurotransmitter synthesis that result in the cerebral and spinal cord syndromes attributed to the virus.

Th.B.P.225 INTRATHECAL SYNTHESIS OF FREE LIGHT CHAINS IN HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 INFECTED PATIENTS.

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University of PADOVA, ITALY.

INTRODUCTION. In order to further characterize the humoral immune response within the central nervous system (CNS) in HIV-1 infected patients, we studied the presence of kappa and lambda free light chains (FLC) of immunoglobulins (Ig) in cerebrospinal fluid (CSF).
MATERIALS and METHODS. CSF was obtained from 25 patients, ranging WR1-WR6, with or without neurological complications. FLC patterns were analysed by isoelectric focusing and SDS-electrophoresis followed by protein transfer analysis. Albumin CSF/serum ratio, IgG index, IgG Hyp Funct, HIV-1 Ab,HIV-1 Ag, and clonal distribution of IgG,IgA and IgM, were routinely assessed.
RESULTS. FLC with restricted heterogeneity, in terms of isoelectric point or molecular weight, were the most frequent CSF immunologic abnormality, and were detected in 80% of the samples, even in the absence of oligoclonal IgG. Lambda FLC were more frequently found than kappa FLC. Moreover, FLC dimers showed more heterogeneous and prominent patterns than FLC monomers.
DISCUSSION. The presence of oligoclonal FLC in the absence of oligoclonal Ig might be the expression of a deregulation in Ig production by intrathecally segregated B lymphocytes in HIV-1 infected patients.

Th.B.P.226 ACTIVATION OF THE CELLULAR IMMUNE SYSTEM IN THE CNS OF HIV-1 INFECTED INDIVIDUALS

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Objective. To study the activation of the cellular immune system in the CNS of HIV-1 infected persons.
Methods. Neopterin and beta-2-microglobulin (B2M) concentrations I CSF and plasma were measured in 56 individuals in various stages of HIV-1 infection by RIA or ELISA. Cultivation attempts of HIV-1 from CSF and plasma were performed.
Results. Elevated levels of neopterin as well as B2M were found in the CSF of three patients with primary HIV-1 infection of whom two were neurologically asymptomatic. The levels of the two substances were significantly higher in the early stages in patients with positive CSF or plasma isolation compared with those of the culture-negative patients or the controls. The concentrations in both CSF and plasma seemed to follow a biphasic curve and increased in parallell with progress of infection with the highest levels in patients with AIDS. There was a strong correlation between the neopterin or B2M concentrations in CSF and plasma.
Conclusion. HIV-1 may elicit a cell-mediated immune response in CNS during the earlier stages of infection without concomitant neurological symptoms. The pathological processes in CNS and blood seem to develop in parallell rather then being restricted to one compartment.

Th.B.P.227 LACK OF RELATIONSHIP BETWEEN TRYPTOPHAN AND NEUROLOGICAL DISEASE IN HIV-1-INFECTED INDIVIDUALS

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Objectives: 1) To confirm previous reports of lowered tryptophan levels in the plasma and cerebrospinal fluid (CSF) of HIV-infected patients. 2) To determine any relationship between tryptophan concentrations and AIDS Dementia Complex (ADC) or peripheral neuropathy (PN).
Methods: 46 patients with ADC in the absence of other confounding illnesses, 22 of whom had HIV-related (PN), were assessed by a neurologist and staged as to the functional severity of ADC and PN. A clinical scale of motor impairment was also assigned. Cerebrospinal fluid (CSF) was available in all patients while plasma was available in 42. Tryptophan was measured in these samples by high performance liquid chromatography.
Results: 86% had reduced CSF tryptophan concentrations while 92% had lowered plasma concentrations. There was no significant correlation between the stage of ADC and either plasma or CSF tryptophan. Similarly, there was no relationship with the degree of motor impairment or the presence/severity of PN. As most patients had depressed levels of tryptophan, further analysis was carried out with the upper and lower quartiles of tryptophan concentrations. Again there was no relationship.
Conclusions: Despite the high prevalence and theoretical implications of depressed tryptophan concentrations in both CSF and plasma, it is unlikely that tryptophan is involved in the pathogenesis of ADC or HIV-related PN.

Th.B.P.228 CEREBROSPINAL FLUID FINDINGS IN TWO PATIENTS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS

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Objective. The study was to determine cerebrospinal fluid changes in two homosexuals infected with HIV. The first one. M. P., got infected in 1983 in San Francisco, U.S.A., and he was the source of infection of his partner, R. F., in 1987, when they were in prison in La Paz. The partner became seroreactive for HIV in May, 1988 (both patients confirmed by Western Blot). The neurological examination revealed that they were lucid, conscious, well-oriented in time and space, and had normal fundoscopic examinations. They did not show any neurological symptomatology. M. P. had a cervical lymphadenopathy.
Methods. The studies were performed in serum and cerebrospinal fluid by the ELISA test (confirmed by Western Blot) and the Delayed Hypersensitivity Skin Test with the following antigens: PPD (tuberculin), SK/SD (strepkinase and streptodornase), tetanic toxoid and candidin and test of lymphocyte subsets T4/T8 (monoclonal antibodies, Coulter) with immunofluorescence microscope.
Results. The Delayed Hypersensitivity Skin Test was negative, the lymphocyte subsets showed the following results:

	Lymphocytes	T_3	T_4	T_8	Index
M. P.	1.800 (29%)	1.110 (61%)	460 (41%)	630 (39%)	0.7
R.F.	2.672 (32%)	1/736 (65%)	1106 (58%)	729 (42%)	1.4

Conclusion. Both patients were infected with the human immunodeficiency virus, both were neurologically asymptomatic and CSF were within normal limits. The first patient (M. P.) even had anti-HIV antibodies in his CSF.

Th.B.P.229 LONGITUDINAL CSF CELL COUNTS AND PROTEIN LEVELS IN 258 HIV-INFECTED US AIR FORCE PERSONNEL

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Objective. To describe CSF cell counts and protein level changes observed over time in a cohort of 258 individuals infected with HIV-1. Methods. Changes in CSF cells and protein in 258 HIV-infected USAF personnel with sequential CSF studies a minimum of nine months apart were evaluated. Patients with CNS opportunistic infections were excluded. Patients were grouped according to T-helper cell (CD4) counts.
Results.

		Abn (Time 1)	Abn (Time 2)
CD4 > 400	Nuc Cells	86/232 (37.1%)	122/214 (57%)
	Protein	61/232 (26.3%)	37/214 (17.3%)
CD4 < 400	Nuc Cells	10/26 (38.5%)	20/44 (45.5%)
	Protein	6/26 (23.1%)	8/44 (18.2%)

Conclusion. Over time, the percentage of individuals with > 5 cells/cmm increased and the percentage with protein > 45 mg/100 ml decreased regardless of T-helper cell count. No CSF change correlated with neurological function.

Th.B.P.230 INTRATHECAL PRODUCTION OF IgG IN A LONGITUDINAL STUDY OF 258 HIV-INFECTED US AIR FORCE PERSONNEL

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Objective. To study changes in CNS immune response and peripheral immune status in HIV-infected USAF personnel over time.
Methods. A cohort of 258 HIV-1 infected USAF personnel with a minimum of 9 months follow-up were evaluated for changes in CSF IgG, IgG synthesis rate (IgG-S), IgG index (IgG-I), oligoclonal bands (OCB), and blood T-helper (CD4) lymphocyte counts. Patients with CNS opportunistic infections were excluded.
Results.

		Abn (Time 1)	Abn (Time 2)
CD4 > 400	CSF IgG	60/222 (27%)	69/213 (32.4%)
	IgG-I	85/221 (38.5%)	115/213 (54.0%)
	IgG-S	67/218 (30.7%)	76/205 (37%)
	OCB	30/216 (13.9%)	45/207 (21.7%)
CD4 < 400	CSF IgG	11/26 (42.3%)	20/44 (45.5%)
	IgG-I	13/25 (52%)	31/44 (70.5%)
	IgG-S	12/25 (48%)	21/43 (48.8%)
	OCB	3/26 (11.5%)	12/39 (30.8%)

Quantitatively, mean increases in IgG, IgG-I, IgG-S were most significant ($p < .005$) in those with CD4 counts > 400 cells/cmm.
Conclusion. Elevated IgG intrathecal production over time is present in the entire cohort. The most significant longitudinal quantitative change (not shown above) was seen in those with CD4 counts > 400 cells/cmm. Cross-sectional data over various CD4 counts show similar trend.

Th.B.P.231 Intrathekal antibody production assayed by recombinant antigens, purified gp120 and RIPA

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Referring to identical IgG concentrations of a reference serum, antibody production within the CNS can be reliably and reproducibly quantitated (reproducibility ± 8%). By a combination of 5 recombinant antigens intrathekal antibody production could be found in 20% of asymptomatic and LAS/ARC patients who did not show a CSF/serum quotient >1.5 as evidence for intrathekal antibody production by conventional ELISA. The prevalence of antibodies declined by about the same percentage in cerebrospinal fluid and serum from 88% (p17), 95.6% (p24), 84.6% (endonuklease) and 100% (reverse transcriptase) in asymptomatic carriers to 56% (p17), 44.1% (p24), 47.1% (endonuklease) and 83% (reverse transcriptase) for AIDS patients. In all cases antibodies to ENV-80 and gp120 could be demonstrated. The intrathekal immune response decreases faster than the systemic immune response. These findings provide evidence for a faster random loss and /or inactivation of B cell clones in the CNS as compared to the immune system.

Th.B.P.232 QUINOLINIC ACID CONCENTRATIONS ARE INCREASED IN PLASMA AND CEREBROSPINAL FLUID IN AIDS AND CORRLEATES WITH AIDS DEMENTIA COMPLEX

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AIDS patients may develop dementia, motor and psychiatric disturbances and at post mortem exhibit brain atrophy, white matter pallor and infiltrates of multinucleated giant cells. We have found increased concentrations of he endogenous neurotoxin and convulsant quinolinic acid (QUIN, an intermediary tryptophan metabolite) in plasma and brain of mice treated with pokeweed mitogen (J. Neurochem. (1988) 51, 1946). Conceivably, if QUIN increases in the brains of AIDS patients, QUIN could contribute to neurologic abnormalities in AIDS.
Objective: To investigate whether brain and plasma QUIN content is increased in AIDS.
Methods: QUIN was measured by gas chromatography/mass spectrometry using [^{18}O]-QUIN as internal standard in cerebrospinal fluid (CSF) and plasma of nine normal volunteers, 23 patients in the early stages of HIV infection (Walter Reed scale 1-2) and 114 AIDS patients.
Results: In controls, CSF QUIN was 18.4±3.4 nmol/L and plasma QUIN was 437±66 nmol/L, values typical for our laboratory. In AIDS, CSF QUIN was 644.6±150.7 nmol/L; $p<0.00001$ as logarithm): 4% of patients had CSF QUIN values > 1μmol/L, concentrations toxic to neurons *in vitro*. Plasma QUIN increased to 1465±150 nmol/L ($p<0.001$). CSF QUIN concentrations were above 50 nmol/L in 30% of patients in earlier stages of AIDS. In demented patients without compounding illness, significant correlations were found between log CSFQUIN and: AIDS dementia complex stage ($p<0.001$), CSF Beta 2 ($p<0.005$), serum beta 2 ($p<0.005$) and log plasma QUIN ($p<0.00001$). Log CSF QUIN was not correlated with albumin CSF/plasma ratio indicating increased CSF QUIN probably did not originate in blood.
Conclusions: Increased CSF and plasma QUIN are consistent with increased L-tryptophan catabolism through the kynurenine pathway. Increased QUIN may contribute to the neurologic abnormalities of AIDS.

Th.B.P.233 CSF β_2MICROGLOBULIN AS A MARKER OF THE PRESENCE AND SEVERITY OF AIDS DEMENTIA COMPLEX

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Objectives: 1) To assess the utility of cerebrospinal fluid (CSF) β_2 microglobulin (β_2M) as a marker of the presence and severity of AIDS Dementia Complex (ADC), 2) To compare β_2M to other CSF markers and 3) To determine its concentration in response to azidothymidine (AZT) therapy.
Methods: Of 155 paired samples of CSF and serum, 69 were from patients who had ADC without any confounding illness. 8 patients had samples taken before starting AZT and later while on AZT. All patients had been assessed by a neurologist and staged according to the severity of ADC. β_2M was measured in both CSF and serum by radioimmunoassay (Pharmacia, Sweden). Other CSF markers of ADC that were measured included HIV-1 p24, and neopterin. The ratio of CSF-to-serum albumin was used as an index of the integrity of the blood-brain barrier.
Results: In those patients with only ADC, there was a strong correlation between the concentration of CSF β_2M and ADC stage ($p<0.001$). The elevation was independent of blood-brain barrier damage and unrelated to CSF white cell count and serum β_2M. Compared to the other CSF markers, β_2M was the most useful, while HIV p24 was the least sensitive. In 7 of the 8 AZT-treated patients with serial samples, CSF β_2M concentration fell, sometimes to normal.
Conclusions: CSF β_2M is a sensitive but non-specific surrogate marker of the presence and severity of ADC. Additionally, it may be useful in monitoring therapeutic response.

Th.B.P.234 ADENOSINE DEAMINASE (ADA) VALUES IN CEREBROSPINAL FLUID OF ASYMPTOMATIC HIV INFECTED PATIENTS

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Objective:To determine the normal values for ADA in CSF of HIV seropositive patients.Material:30 asymptomatic patients(20 males and 10 females);27 were intravenous drug abusers(IDAs);2 homosexuals and 1 had frequent contacts with prostitutes.Patients belonged to stage III and IV-C2.Antibodies to HIV were measured by two different ELISA methods.The CSF absorbance reading was scored positive if it was more than $\bar{X}$+2 S.D.($\bar{X}$ is the average absorption of 12 normal HIV negative CSF controls).ADA activity was evaluated as described previously (J Infect Dis 1987;155:603-7).Results:All CSF examined had normal protein and cell count.All patients had ADA values below 4 U/L.A table showing all results would be presented.Discussion:ADA activity is increased in meningeal tuberculosis (MT).Since MT in patients at risk for AIDS may be frequent in some areas of the world it is of interest to determine the normal values in such patients. It is also important to avoid false negative or false positive results in the diagnosis of MT.The presence of HIV antibodies in CSF does not alter the ADA determination.Silent CNS infection (as suggested by the presence in CSF of HIV antibodies) does not imply a change in base-line values for ADA.When MT is suspected, ADA assessment if elevated may give a rapid clue for initiating specific treatment.

Th.B.P.235 DETECTION OF HIV MARKERS IN CEREBROSPINAL FLUID

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Objective. To analyse the contribution of virological study of CSF to the diagnosis and monitoring of neurological HIV infections.
Methods. HIV markers were studied in CSF specimens and paired blood samples from patients involved in a prospective cohort study. Many of these patients were treated with zidovudine. HIV antigen and specific antibodies were tested by conventional enzyme-linked immunoassays (EIA). Virus culture was performed with PHA-stimulated peripheral blood mononuclear cells; HIV was detected in culture by reverse transcriptase assay, HIV antigen EIA and specific proviral DNA amplification using PCR.
Results. In a preliminary analysis of 40 CSF specimens, HIV was recovered from only 8 samples (20%) whereas it was recovered from 24 out of 33 paired blood samples (72%). HIV antigen was detected in 8 CSF specimens of which 4 were culture-positive. HIV recovery in CSF was more frequent in the case of AIDS patients (41%) then in other stages of HIV infection (5%); virus recovery was observed in patients without neurological symptoms or in association with opportunistic infections and neoplasms of the CNS as well as in putative HIV encephalitis. In a partial study (23 CSF specimens), all samples were found to have HIV antibodies, most of them exhibiting high titers with evidence of intense intrathecal synthesis and no apparent correlation with HIV recovery. The characterization of HIV antibodies in CSF is in progress.
Conclusion. The specificity of CSF HIV markers seems to be poor for the diagnosis of HIV-related diseases of CNS, specially during zidovudine treatment, but this point deserves further investigations.

Th.B.P.236

Cerebrospinal Fluid and Blood markers in HIV seropositive individuals with and without Neurologic Complications. E. J. Singer, M.D*., K. Syndulko, Ph.D*., P. Rosen, M.D., R. Mitsuyasu, M.D**., B. Chandra, B.S., L. Resnick, M.D.***, P. Shapshak, Ph.D.***, Wallace W. Tourtellotte, M.D., Ph.D* Neurology Service, VAMC W. Los Angeles, CA 90073, Depts. of **Medicine and *Neurology, UCLA School of Medicine. 213 824-4307, and the ***Depts of Dermatology and Pathology, University of Miami, Miami, FL, U.S.A.
Objective:: See title. Method: 137 HIV seropositive individuals without central nervous system (CNS) opportunistic infections or neoplasms were entered into a longitudinal study; 67 were classified as systemically (with or without neurologic dysfunction) asymptomatic (ASP), 60 as ARC, and 10 as AIDS. 102 of the subjects had one or more CSF exams. Results: 25% of ASPs, 71% of ARCs and 100% of AIDS were found to have HIV related neurologic disease. 14% of ASPs, 56% of ARC, and 38% of AIDS had clinically evaluated cognitive disorders (dementia - p ≤ 0.0001), whereas 6 % of ASPs, 21% of ARC and 75% of AIDS had CNS motor signs (p ≤ 0.0001). Intra-blood-brain-barrier (I-BBB) IgG synthesis rate was abnormal in 88% of ASPs, 91% of ARCs and 66% of AIDS. I-BBB IgG synthesis rate significantly elevated (p ≤ 0.003) in neuropositives versus neuronegatives, 29 mg/day vs. 11 respectively. However, there were no significant differences in other CSF values (mean CSF IgG bands compared to serum, white blood cell counts, I-BBB albumin leakage, HIV isolation and p24 antigen levels) between neuropositives and neuronegatives. In contrast, blood markers of immune deficiency (T4 cell counts, T4:T8 ratio, and p24 antigen levels) were significantly worse in neuropositives versus neuronegatives. Significantly higher CSF p24 antigen levels were found in subjects with CNS motor signs (p<0.01) versus those without motor signs and a similar trend was found in demented versus non-demented subjects (p = 0.08). A subset of the most demented patients (n=8) showed a significant (p<.0.0001) elevation of p24 antigen compared to those with no or mild dementia (49pg/ml versus 5pg/ml, respectively). Subjects with CNS motor signs also had significantly more pleocytosis (p ≤ 0.003) than those without (8 WBC/cmm vs. 2, respectively). Warranted Conclusions: HIV seropositive individuals with HIV related neurologic problems, especially CNS motor signs and/or moderate to severe dementia, tended to have lower systemic immune competence (T4) and higher p24 in the serum than subjects who did not; on the other hand, we found individuals who had low immune competence and were neurologically normal. Additionally, those individuals with neuroproblems especially due to CNS motor dysfunction and/or moderate to severe dementia, also had more pleocytosis and higher intra-BBB IgG synthesis rate, evidence that there was a more intense inflammatory reaction in the CNS nervous system. This is concordant with increased viral expression.as manifested by the higher p24 concentration in the CNS.

Th.B.P.237 SEROTONIN METABOLITE DEFICIENCY IN HIV INFECTION AND AIDS

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Objective: To determine if cerebrospinal fluid biogenic amine metabolites are altered in patients with HIV infection or AIDS.
Methods: Biogenic amine metabolites were analyzed in seventeen cerebrospinal fluid specimens from fifteen patients with HIV infection or AIDS using high performance liquid chromatography.
Results: Levels of the serotonin metabolite, 5-hydroxyindoleacetic acid (5-HIAA), were profoundly reduced in 13 samples from 11 patients: range 3.8-17.1 ng/ml; mean 10.1 ng/ml; normal ≥30ng/ml = 33% normal level. Homovanillic acid levels (HVA, a metabolite of dopamine) were variably affected: range 9.4-59 ng/ml; mean 22.9 ng/ml; normal ≥30 ng/ml = 76% normal. In four patients, both 5-HIAA and HVA levels were borderline or normal. Four of the eleven patients with reduced 5-HIAA levels had only presumed HIV-related dementia and/or myelopathy and the others: other cerebral infections-3; thoracic zoster-1; stroke-1; cauda equina syndrome-1; syncope-1. One of the four patients with borderline or normal results was treated with phenytoin, a drug reported to increase serotonin synthesis in brain, while one each had toxoplasmosis, pulmonary TBC, unknown HIV status with risk.
Conclusions: The data suggest an early, possibly selective, inhibitory effect of HIV infection on serotonin synthesis. Although HIV is not detected in neuronal cell populations, the presence of the virus in brain may cause alterations in neuronal cellular metabolism and neurotransmitter synthesis that result in the cerebral and spinal cord syndromes attributed to the virus.

Th.B.P.238 INCREASING CSF ABNORMALITIES IN HIV-1 INFECTED INDIVIDUALS WITH DECLINING SYSTEMIC IMMUNE STATUS

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Objective: To correlate changes in cerebrospinal fluid (CSF) profiles with neurological status and peripheral blood CD4 lymphocyte count within a prospective neurological study (Multicenter AIDS Cohort Study).
Methods: 25 homosexual/bisexual men underwent at least 2 lumbar punctures (LP) at annual intervals, along with standardized neurological and neuropsychological testing, and flow cytometric measurement of CD4 counts. CSF analysis included cell count (WBC), total protein, oligoclonal bands (OCB), immunoglobulin concentration (IgG%), blood-brain-barrier integrity (BBB), and HIV-1 isolation. At the time of the first LP, all subjects were in CDC Groups II or III and none was taking azidothymidine. None had CNS opportunistic infections, neurosyphilis or HIV-1 related neurological disorders at either of the LP's. Subjects were stratified into those with declining blood CD4 counts (≥ 15% decrement) and those with stable CD4 counts (<15% decrement). Changes in the CSF parameters for each individual were summed to provide a net increase or decrease in CNS abnormalities.
Results:

		Change in CSF parameters from LP #1 to LP #2					
	Change in CD4 count	WBC $\geq +2\ mm^3$	Protein ≥ +5 mg/dl	OCB ≥ +1	IgG% ≥0.6	BBB ≥0.6	Culture →+
Decline CD4 (n=20)	$-302/mm^3$	9/20	8/20	7/20	10/20	5/20	1/12
Stable CD4 (n=5)	$+220/mm^3$	3/5	2/5	1/5	1/5	0/5	0/4

Eleven of 20 (55%) with declining CD4 counts showed a net increase in CSF abnormalities compared to 1/5 (20%) with stable CD4 counts. Rising IgG and increasing pleocytosis were the most common changes observed.
Conclusion: Declining systemic immune status was associated with increasing CSF abnormalities, possibly reflecting increased HIV-1 activation within the CNS. Longitudinal study in a larger group will determine whether any of these CSF changes are predictive of overt neurological involvement.

Th.B.P.239 ANTIBODY DEPENDENT CELLULAR CYTOTOXICITY (ADCC) IN BLOOD AND CEREBROSPINAL FLUID (CSF) OF HIV-1 INFECTED ZAIRIAN PATIENTS.

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Objective. To determine whether HIV-1 specific ADCC is found in the CSF of HIV-1 infected patients, and, if so, to examine its relationship to early (N+), late (N++) or absence (N-) of neurologic (CNS) symptoms.
Methods. We collected blood and CSF from 41 hospitalized HIV-1 infected individuals. ADCC activity was determined in a 4 hour chromium 51 release assay, using HIV-1 infected (A5) and uninfected (SUP-T1) tumor cell lines as targets.
Results. In 25 patients studied to date, ADCC activity (expressed as percent CR release) was seen in 92% of blood and 84% of CSF samples. No significant difference was seen between blood and CSF ADCC release (Pearson's correlation coefficient 0.4291 P<O.38). However, one patient had a 27% ADCC reaction in the blood and no detectable CSF ADCC. Another had 29% ADCC release in the CSF and no detectable blood ADCC. Mean ADCC levels (percent chromium release) in clinical groups were as follows:

Group	AIDS +	AIDS-	DEAD	ALIVE	N-	N+	N++
BLD ADCC	21%	31%	28%	27%	29%	26%	28%
CSF ADCC	20%	30%	25%	27%	31%	21%	17%

Conclusion. A decrease in CSF but not blood ADCC was seen in patients with progressive neurologic disease suggesting that CSF ADCC may play an important role in the HIV-1 specific immune response in the central nervous system.

Th.B.P.240 IMMUNOPHENOTYPING IN ASYMPTOMATIC AND NEUROLOGICALLY SYMPTOMATIC ANTI-HIV-1 POSITIVE, ANTI-HTLV-1 NEGATIVE MEN

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Objective To compare distribution of lymphocyte subsets in asymptomatic and neurologically symptomatic men with HIV-1 infection, with each other and with matched controls.
Methods As part of a study of the neurologic aspects of HIV-1 infection, 81 asymptomatic anti-HIV-1 (+) men, 18 anti-HIV-1 (+) men with neurologic symptoms and 18 anti-HIV-1 (-) male risk factor and age matched controls were enrolled in a longitudinal study. All were anti-HTLV-1 negative. Baseline assessments were obtained for lymphocyte subsets by 2 color flow cytometric analysis using 7 pairs of monoclonal antibodies.
Results Significant differences, either between the anti-HIV (+) groups and controls* or between the symptomatic and asymptomatic groups**, were detected in all pairs, except for total T (T1) and total B (B1).

	T4+●	2H4+T4+●	4B4+T4+●	T8+●	I2+T8+●	Ta1+T11+●	NKH.1+●
controls	913	428	595	642	114	546	354
asympt.	533*	235*	311*	939*	341*	331*	257*
sympt.	431* **	155* **	332*	864*	322*	325*	222*

Conclusions Compared to controls, anti-HIV-1 (+) men had significantly lower numbers of T4 cells and 2 subsets of T4, T11 cells expressing the Ta1 activation marker, and cells with the natural killer cell marker, NKH.1. Compared to asymptomatics, subjects with neurologic symptoms had significantly lower numbers of T4 cells, apparently due to a selective loss of 2H4+T4+ lymphocytes, the inducer subset responsible for activating suppressor/cytotoxic T cells. This abnormality may predispose the HIV-1 infected individual to neurologic abnormalities. (Supp. by 1 PO1-NS-25569)

Th.B.P.241 CRF, β-ENDORPHIN AND ACTH ARE SIGNIFICANTLY DECREASED IN CEREBROSPINAL FLUID OF AIDS PATIENTS

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Neurologic disorders are often associated with alterations of the immune system in the acquired immunodeficiency syndrome (AIDS). As there is a two-way communication between the neuroendocrine and immune systems, it appears important to evaluate the level of neuropeptide secretions in AIDS patients. Cerebrospinal fluid (CSF) was preferred to peripheral blood, because neuropeptides from CSF provide a more representative picture of cerebral metabolism. CSF from 16 AIDS patients and 10 healthy subjects were radioimmunoassayed for up to 7 peptides after acidic extraction. The results were expressed as mean ± sem (pg/ml) and showed AIDS patients to have : 1 - a significant decrease in corticotropin releasing factor (CRF) 31±7, n=17, (control 76±19, n=10) p<0.05, for β-endorphin 52±5, n=20, (control 79±7, n=11) p<0.05 and for ACTH 16±5, n=13, (control 10±4, n=11) p<0.05. 2 - no significant difference for somatostatin 12±5, n=13, vs 10±4, n=11, p>0.05 and no difference in vasoactive intestinal peptide, substance P and growth releasing factor. The small number of samples (2-7) precluded statistical analysis of the last 3 peptides. 3 - CSF samples were obtained from 3 patients, first at the seropositive stage, and later when AIDS was fully developed ; there was a significant decrease in CRF : 94±16 to 33±12 (p<0.05). In conclusion, a dramatic decline in CRF (60%) and discrete but significant decreases in β-endorphin (44%) and ACTH (39%) were found in the CSF of AIDS patients. Further studies are required to correlate these abnormalities with the HIV infestation.

Th.B.P.242 BRAIN RADIOLOGICAL, NEUROLOGICAL AND NEUROPSYCHOLOGICAL FOLLOW-UP IN RELATION TO INTRATHECAL IMMUNE RESPONSE IN HIV INFECTION

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Objective. To evaluate brain CT and/or MRI findings in relation to neurological and cognitive dysfunctions and to intrathecal humoral immune response. Methods. 35 HIV-infected patients (21 at early infection, 14 at late infection) were followed up mostly for 3 years with repeated brain radiological, neurological, neuropsychological examinations and CSF and sera immunological analyses. Results. 49% of the patients had atrophic changes at an initial examination. Patients with cognitive dysfunction, late infection, increased intrathecal HIV-antibody synthesis, and decreased B-cell response had the most severe and most frequent atrophic changes including ventricular enlargement, cerebellar atrophy, cortical atrophy, brain stem atrophy and parenchymal lesions. At he final examination the radiological abnormalities were seen in 75% of the patients. 26% of them developed atrophic changes during the follow-up; further increase in severity of the changes was found in 29% of the cases, while in 20% of the subjects initial abnormality remained unchanged. In most cases the appearance/progression of radiological changes was associated with further deterioration of cognitive functions. When re-examined, of CSF changes only intrathecal HIV-antibody synthesis persisted in most patients, while local CNS IgG synthesis along with CSF pleocytosis were found less frequently. Conclusion. Our results show that with the progression of HIV infection, as intrathecal B-cell response decreases, brain MRI and CT abnormalities together with cognitive dysfunction and CNS HIV-antibody synthesis increase.

Th.B.P.243 CSF CHANGES IN DIFFERENT STAGES OF HIV INFECTION

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To study CSF changes in different stages of HIV infection we evaluated CSFs and sera from 54 consecutive pts., either in asymptomatic, PGL/ARC or full-blown AIDS conditions. AIDS pts. were furtherly subdivided in subjects with: (A) CNS opportunistic infections -OI-; (B) extra-CNS OI and/or neoplasms; (C) CNS changes currently related to a direct HIV action. Specimens were examined for chemistry and microbiological findings, blood-brain barrier damage (BBBD) and intrathecal antibody syntesis (IAS) indexes and for the presence of oligoclonal bands and anti-HIV specific antibodies in the CSF. Results are displayed here below:

stage / test	asymptomatic	PGL/ARC	AIDS (A)	AIDS (B)	AIDS (C)
BBBD	none	1/12	6/16	3/14	2/9
IAS	3/3	4/12	4/16	4/14	2/9
BBBD + IAS	none	none	4/16	1/14	3/9
CSF anti-p24	1/1	6/12	3/13	4/13	4/6

In our series IAS was detected in the 100% of asymtomatic individual and in 22.2 to 33.3% in other groups, indicating an early retroviral infection even in neurologically silent pts. No statistically significant difference was present in AIDS subgroups for CNS indexes that could have been considered useful in differentiating HIV related injuries from CNS HIV-caused OI.

Th.B.P.244 NEOPTERIN AND β_2-MICROGLOBULIN IN CEREBROSPINAL FLUID IN HIV-INFECTION

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OBJECTIVE: To assess the value of Neopterin (Npt) and β_2-Microglobulin (β_2-MG) in cerebrospinal fluid (CSF) as parameters of pathological processes in the central nervous system (CNS).
METHODS: Npt, β_2-MG, cell count, protein, albumin and IgG were determined in paired samples of blood and CSF in 95 HIV infected patients (WR1-WR6) and 17 controls.
RESULTS: Taking into account elevated serum values and blood-brain-barrier dysfunction (BBBD) (ratio albumin CSF/serum) a significant correlation was found in the CSF between Npt - protein (p<0.05), Npt - cell count (WR1-4: p<0.001 in contrast to WR5+6: p>0.10) and β_2-MG - protein (p<0.01). BBBD correlated with CSF Npt (p<0.05), but with β_2-MG only in early stages (p<0.001). In 17/19 patients with a ratio Npt CSF/serum >1.0 and in 8/9 patients with a ratio β_2-MG CSF/serum >1.0 severe HIV-encephalopathy, opportunistic infection or lymphoma in the CNS was diagnosed.
CONCLUSION: Npt and β_2-MG in CSF appear to be valuable parameters for the diagnosis of HIV infection or secondary complications in the brain.

Th.B.P.245 THE CSF-HIV MARKERS IN THE DIFFERNT STAGES OF INFECTION

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Objective. To compare the pattern of CSF-HIV markers with the serological ones.
Methods. 65 serum and CSF samples were collected simultaneously in 50 patients with HIV-infecttion and HIV-Ab,Ag (EIA), Env.-core recomb.(EIA), Western Blot, IEF assays were carried out.
Results. The following table summarizes the pattern of serum and CSF-HIV markers.

Months from inf. and pathology	number of samples	H.I.V.-Ag serum	H.I.V.-Ag CSF	Ab anti-core serum	Ab anti-core CSF	Ab anti-env. serum	Ab anti-env. CSF
<6	2	-	-	+	-	+	+
7-24	14	-	-	+	-/±	+	+
>25	19	-	-	+	+	+	+
A.I.D.S.	15	+/-	-	±/-	-	+	+
A.D./CNS-d.	15	+/-	+	-	-	+	+

legend:
A.D.: AIDS Dementia,
CNS-d.: CNS-disease others than AIDS.
+ : positive,
± : weak positive,
- : negative.

Conclusions. 1) The CSF-anticore Ab in acute infection are detectable later as compared with the serological ones; in intermediate stage the two patterns are analogous; in later stages of disease their disappearance from CSF anticipates the serological fall. 2) The CSF-antienvelope Ab are detectable precociously and persist. 3) The CSF HIV-Ag have been found only in patients with A.D. or CNS-diseases (this suggest that CNS-diseases may stimulate the viral replication in the CNS-cells infected by HIV).
The determination of these markers assume diagnostic and prognostic importance in all stages of HIV infection.

Th.B.P.246 Cerebrospinal fluid analysis in opportunistic brain infections.

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Objective. To differentiate HIV encephalitis from opportunistic brain infections by CSF analysis.
Methods. Fifty-nine patients with AIDS were analysed, 29 patients had opportunistic brain infections (toxoplasmic encephalitis, cryptococcal meningitis, PML, viral and bacterial infection). Immunoglobulins G, A and M, intrathecal production of HIV antibodies and intrathecal production of Toxoplasma gondii antibodies were quantified by ELISA.
Results. Evidence for chronic HIV encephalitis was found in 52/59 patients by local HIV antibody production. Intrathecal IgG-production was found in 28% in HIV encephalitis, but no IgA-and/or IgM-synthesis. Opportunistic brain infections show local IgG-production (36%) as well as IgA (42%) and IgM (48%). Intrathecal produced T. gondii antibodies were found in 9/14 patients with toxoplasmic encephalitis, but not in other opportunistic infections.
Conclusion. Quantitation of immunoglobulins G, A and M is of high significance to detect opportunistic brain infections, intrathecal IgA and/or IgM production points to an opportunistic infection and was not seen in HIV encephalitis. Intrathecal T. gondii antibody production was found in 64% in toxoplasmic encephalitis and may be considered in diagnostic procedures.

Neurologie : visualisation et aspects pathologiques
Neurology: Imaging and Pathological Studies

Th.B.P.247 MODIFICATIONS BIOLOGIQUES DU L.C.R. AU COURS DE L'INFECTION PAR LE V.I.H.

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Objectif: Définir le profil biologique d'évolution du LCR au cours de l'infection par le VIH.
Méthodes: Etude chez 45 patients VIH+ (20 patients avec complications neurologiques et 25 sans complications) des modifications cellulaires et protéiques du LCR par la recherche des synthèses intrathécales,d'IgG totales(index d'IgG) associées à la présence de bandes oligoclonales (BO), d'anticorps anti VIH confirmés par Western-blot et de l'antigène P 24.
Résultats: Les perturbations cellulaires (lymphocytose et/ou cytologie inflammatoire), l'augmentation de la protéinorachie avec modification de la perméabilité de la barrière sang-LCR et une synthèse intrathécale d'IgG en présence de BO,objectivent les complications neurologiques associées au VIH ou à une co-infection.
En l'absence de toute manifestation neurologique et dès le stade asymptomatique, nous observons des synthèses intrathécales d'IgG et d'anticorps anti VIH à des taux très élevés. L'évolution de la maladie vers le stade SIDA se traduit par une diminution significative de ces synthèses.

	AS	ARC	SIDA	témoins
Index d'IgG (x±SD)	1,07±0,53	0,73±0,16	0,67±0,14	N≤0,7
Index Ac anti VIH (x±SD)	6,3 ±3,1	5,1±4,8	2,1±2,1	N≤2
Présence de BO (%)	80	40	31	

L'antigène P 24 est présent chez 35% des patients au stade SIDA
Conclusion: Au tout début de l'infection,les perturbations biologiques du LCR sont plus fréquentes et plus marquées;ces résultats montrent que l'invasion du SNC par le VIH est très précoce.

Th.B.P.248 PRODUCTIVE INFECTION BY HIV OF HUMAN CENTRAL NERVOUS SYSTEM (CNS) TISSUES

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Objective. To clarify frequency, cellular tropism, and relation to tissue pathology, of productive HIV infection in human CNS. Methods. Immunocytochemistry for HIV p17, p24, and gp41, for specific cellular markers, and for opportunistic pathogens, on serial sections of formol-fixed, paraffin-embedded CNS autopsy tissue of 57 patients (56 with AIDS) with various pathologies. Results. HIV antigens detectable in 37 cases (65%). In 26 cases large amounts of HIV in lesions histopathologically diagnosed as HIV-induced (Budka,Acta neuropathol 77:225,1989),including vacuolar myelopathy and leukoencephalopathy. In 7 cases isolated immunoreactive cells unassociated with pathology. In lesions of opportunistic infections HIV⁺ cells absent (24 cases) or rare (6 cases); only in 3 cases massive HIV coinfection. Immunoreactivity limited to cells with phenotype of microglia or macrophage. Conclusion. Productive HIV infection of the CNS is frequent in AIDS, with the microglia/macrophage as target. Early HIV production without associated pathology involves isolated microglia. Massive production of HIV is invariably associated with prominent and specific histopathology. HIV pathogenicity in the CNS appears as microglia/macrophage-mediated, possibly via secretion by productively infected cells of myelinotoxic factor(s). (Supported by the Lord Mayor's Medical-Scientific Fund, Vienna)

Th.B.P.249 CLINICAL-PATHOLOGICAL FEATURES OF HTLV-I ASSOCIATED MYELOPATHY (HAM) IN AIDS

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Objectives: To delineate the clinical and pathological features of two patients coinfected with HIV-1 and HTLV-I, both of whom had HAM.
Methods and Results: Two black US residents, both with AIDS, were found to have HTLV-1 antibodies in the serum. The first patient had had symptoms of a myelopathy in 1973, 9 years before developing AIDS. His leg weakness was clinically stable until the last few months of life. The spinal cord pathology consisted of marked atrophy, meningeal fibrosis and small vessel proliferation without perivascular infiltrates or vacuolar myelopathy. The brain showed a multinucleated-cell encephalitis with detectable HIV-1 p24 antigen. The second patient had a myelopathy that developed in the terminal phase of AIDS and disseminated prostatic cancer. The spinal cord pathology was notable for meningeal fibrosis, proliferation of small vessels and minimal parenchymal perivascular infiltrates but again without vacuolar myelopathy. The brain showed white matter pallor and astrocytosis without detectable HIV-1 p24 antigen.
Conclusions: HAM may occur and progress in AIDS patients despite the concomitant immunodeficiency. Its clinical features are indistinguishable from vacuolar myelopathy but the pathological changes are separate. The relative lack of inflammation may pertain to 'burnt out' disease or the effects of immunodeficiency. Whether HAM pursues a different clinical course in HIV-1 infected patients awaits larger studies.

Th.B.P.250 CAN HIV-1 ALONE INDUCE A SUBACUTE ENCEPHALITIS? A MORPHOMETRIC AND IMMUNOCYTOCHEMICAL STUDY

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Objectives. 1)To study the relationship between the topography of microglial nodules and multinucleated giant cells in a series of 30 patients with HIV-subacute encephalitis and their higher cortical function and 2)to determine by immunocytochemical methods how often HIV is associated with other pathogens (infections/tumors).
Methods. We studied 20 paraffin and 8 celloidin sections (250 cm2) in 30 cases and in 20 of them we reviewed numerous frozen sections (100 cm2) for immunodetection of HIV-1 antigens, toxoplasma, CMV and papova viruses.
Results. Sixty per cent had less than 10 microglial nodules. Multinucleated giant cells were observed in only 22/30 cases and 73% had less than 5 giant cells. Giant cells and microglial nodule densities were not statistically linked and neither was their number linked to other lesions. Microglial nodules were significantly more frequent in the basal ganglia and brain stem. Giant cells predominated in the pallidum and white matter. The presence of HIV-1 antigens did not depend on the density of microglial nodules or giant cells. in all cases, HIV-1 was detected in subacute encephalitis associated with opportunistic infections or lymphoma. There were no instances of subacute encephalitis associated exclusively with HIV-1.
Conclusion. 1) The topography of subacute encephalitis is mainly basilar. It predominates in structures known to be involved in subcortical dementias. 2) Opportunistic infections or lymphomas may either facilitate the entry of HIV-infected cells or trigger the replication of HIV-1 in latently infected reservoir cells of the brain and thereby lead to subacute encephalitis.

Th.B.P.251 INTERET DE L'ETUDE ULTRASTRUCTURALE LORS DES NEUROPATHIES PERIPHERIQUES ASSOCIEES A L'HIV.

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Objectif : L'atteinte neurologique périphérique possède un pronostic incertain. Nous avons étudié la relation entre la fréquence de survenue des inclusions tubuloréticulaires (ITR) en microscopie électronique, et la gravité de l'infection.
Méthode : 9 patients séropositifs atteints de neuropathie périphérique ont été étudiés : 5 SIDA, 2 ARC, 2 asymptomatiques. Dans tous les cas, l'électromyographie a confirmé la neuropathie et une biopsie neuromusculaire réalisée. L'examen a compris une étude en microscopie optique et électronique.
Résultats : Chez chaque patient, il a été noté une atrophie musculaire de type neurogène associée à une axonopathie avec ou sans démyélinisation. L'examen ultrastructural a révélé des ITR dans les vaisseaux endomysiaux dans 7 cas sur 9. Le pourcentage de vaisseaux contenant des ITR a été corrélé de façon significative avec l'intensité de l'atteinte neurologique, le stade clinique, et le rapport T4/T8.
Conclusion : Cette étude confirme l'intérêt de la mise en évidence et de la quantification des ITR chez les patients HIV + atteints de neuropathie. Leur fréquence de survenue paraît associé au stade évolutif de la maladie.

Th.B.P.252 EARLY ASTROCYTE INVOLVEMENT IN NEUROAIDS

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In the studies on the neuropathology of AIDS, astrocyte involvement has generally received little attention. The frequency and diffusion of astrocyte hyperplasia in cerebral tissue, however, better correlates with the frequency and seriousness of CNS involvement in AIDS, especially when compared with the incidence of other lesions, such as microglial nodules and multinucleated giant cells, which are considered the hallmarks of neuroAIDS. Here, we studied the patterns of astrocyte involvement on paraffin sections from the cortical tissue of 9 subjects, who had shown signs of diffuse CNS involvement before the exitus, by the immunohistochemical demonstration of GFAP. The most frequent modification was an increase in number and size of astrocytic foot processes around blood vessels, which was present in 8 out of 9 cases, was often associated with clustering of astrocytes around the vessels and was sometimes the only histological abnormality present in the grey matter. A diffuse increase in astrocytes was less frequent, especially in the grey matter. Microglial nodules, which were present in 2 cases, did not appear to be composed of astrocytes, although around them an increase in number and thickness of astrocytic cell processes was often evident. In 5 cases, hypertrophy as well as hyperplasia of astrocytes was observed. The finding of astrocytic foot processes hyperplasia, in absence of histopathological signs of other neural cell type involvement, suggests that astrocytes may be involved early in the neuropathology of AIDS.

Th.B.P.253 ETUDE PAR RESONANCE MAGNETIQUE DES ATTEINTES CEREBRALES AU COURS DU SIDA DE L'ADULTE: CONFRONTATIONS AUTOPSIQUES.

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Objectifs: comparaison entre le diagnostic évoqué sur l'image de Résonance Magnétique (IRM) et l'analyse du cerveau post-mortem.

Méthode: à partir de 200 cerveaux examinés analyse des cas comportant IRM, anatomopathologie traditionnelle et étude après congélation par hybridation in situ et immuno-marquage.

Résultats: dans certains cas la corrélation est nette (abcès toxoplasmiques, LEMP à Papova virus), dans d'autres elle est plus difficile (lymphomes, cryptococcoses). Cependant le problème le plus délicat reste celui des encéphalites diffuses: signification des augmentations diffuses de signal des centres ovales? de la dilatation ventriculaire? des bordures ventriculaires renforcées d'un hypersignal? des zones de haut signal(ZHS) ponctiformes isolées ou disséminées? analyse des atteintes de la fosse postérieure?

Conclusion: la confrontation anatomo-imagerie permet d'avancer dans la compréhension de ces divers tableaux. Bien souvent les atteintes ne sont pas univoques et l'on retrouve 2, 3, voire 4 agents infectieux simultanés.

Th.B.P.254 APPORT DE L'IRM AU DIAGNOSTIC PRECOCE DES COMPLICATIONS ENCEPHALIQUES DU SIDA

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Objectifs: déterminer l'apport de l'Imagerie par Resonance Magnétique (IRM) au diagnostic des complications encéphaliques: encéphalites subaiguës ou lésions focales, infectieuses ou tumorales.
Méthode: A partir des dossiers des 300 derniers patients hospitalisés comparaison IRM/Tomodensitométrie(TDM). Confrontation avec les résultats des épreuves thérapeutiques, des biopsies stéréotaxiques et des autopsies.
Résultats: deux tableaux cliniques peuvent être opposés:
-apparition brutale de fièvre et de troubles neuro-psychiques
-détérioration progressive de début insidieux.
Dans le premier cas la TDM est souvent suffisante pour reconnaître l'existance d'une ou plusieurs lésions focales, cependant la détection précoce des lésions toxoplasmiques est le fait de l'IRM avec ou sans Gadolinium..
Dans le second l'IRM permet de différencier lésions focales et diffuses, parmi lesquelles plusieurs types sont identifiés: plages discontinues sous-corticales (Leuco encéphalites à papova virus), lésions ponctuées plus ou moins dispersées, hypersignal diffus des centres ovales, avec ou sans dilatation ventriculaire.
Conclusion: essai de mise en place d'un algorythme de décision.

Th.B.P.255 SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT) FINDINGS IN HIV INFECTION, PRELIMINARY RESULTS.

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OBJECTIVE. To evaluate the sensitivity of SPECT cerebral blood flow studies to disclose brain involvement in HIV infection in comparison to CT scan and NMR findings.
METHODS. This study includes 25 patients. 17 AIDS, 4 ARC and 4 HIV seropositive all with neurological signs or symptoms. Local cerebral blood flow was evaluated by 99mTC-HM-PAO SPECT and related to clinical, CT and NMR findings.
RESULTS. SPECT showed pathological findings consisting in cortical thinning, cortical focal hypoperfusion and basal ganglia hypoperfusion in 25/25 cases. Cortical hypoperfusion was more frequently observed in frontal cortex (16/25). CT was positive in 14/18.
CONCLUSIONS. Our preliminary data on SPECT cerebral blood flow studies in HIV related cerebral diseases are encouraging. Nuclear results are of course not specific, but they may be very sensitive in showing pathophysiological dysfunction at an earlier stage than CT or even NMR, even if the possibility of "false negatives" has to be taken into account. There is, thus, the concrete hope to disclose neurological involvement in asymptomatic HIV seropositive patients.

Th.B.P.256 BRAIN MAGNETIC RESONANCE IMAGING (MRI) FINDINGS IN HIV INFECTION.

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OBJECTIVE. To define MRI patterns of brain involvement in HIV infection and to correlate these findings to the clinical, pathological and TC brain data.
METHODS. MRI and TC of the brain were performed in 107 HIV Ab+ ve patients with neurological signs or symptoms. MRI findings were compared to the clinical picture in all patients and, in 20 of them, also with the pathological diagnosis.
RESULTS. The following MRI patterns on T2 weighted images were observed:
A) an enlargment of the cortical sulci and ventricles was detected in most patients indipendently to the clinical and pathological diagnosis; B) hyperintense signal areas ranging from patchy to confluent lesions within the white matter were observed in HIV encephalopathy only; C)solitary or multiple hyperintense areas localized in the cortical and subcortical regions were present in primary CNS lymphoma and in neurotoxoplasmosis; D) multiple, focal hyperintense areas in the deep white matter of front-parieto-occipital lobes were noticed in multifocal progressive leukoencephalopathy; E) small solitary or multiple subcortical hyperintense lesions were detected in different conditions but any specific correlation was found in our patients.
CONCLUSION. MRI patterns abnormalities, although being largely useful in suggesting differential diagnosis in HIV patients with neurological symptoms, cannot be considered as pathognomonic. MRI seems to be a highly sensitive method for diagnosis of brain involvement, particularly for the early detection of HIV encephalopathy.

Th.B.P.257 CEREBRAL ATROPHY IN HIV-1-INFECTED PATIENTS: RELATIONSHIP TO NEUROLOGICAL AND NEUROPSYCHOLOGICAL MEASURES

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Objective: To evaluate the relationship between cerebral atrophy, assessed by computerized tomographic (CT) head scans, and neurological and neuropsychological impairment in HIV-1-infected patients.
Methods: 34 patients (age <50) received a total of 42 CT scans in the context of clinical evaluation. Patients were examined neurologically, staged with respect to the severity of the AIDS dementia complex (ADC), and received neuropsychological tests. Using a set of predefined "standards", scans were assigned numerical ratings corresponding to normal, mild, moderate, or severe with regard to sulcal, ventricular, and Sylvian fissure enlargement. Ratings were summed to derive an overall index of atrophy.
Results: Cerebral atrophy increased significantly with increasing ADC ($p<.05$); moderate to severely demented patients had significantly greater atrophy than equivocally or mildly demented patients ($p<.05$). Atrophy correlated with the following neuropsychological tests: Trail Making A ($p=.03$) and B ($p<.01$), Digit Symbol ($p<.01$), Verbal Learning ($p<.01$), and Timed Gait ($p=.02$).
Conclusions: Mild cerebral atrophy may be seen in patients without clear functional neurological impairment, while more severe atrophy correlates with progressive ADC and worsening neuropsychological performance.

Th.B.P.258 AUTORADIOGRAPHIC ANALYSIS OF AIDS BRAIN LESIONS WITH AN ω3 (PERIPHERAL TYPE BENZODIAZEPINE) BINDING SITE RADIOLIGAND

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Objective. To describe the brain localization of ω3 sites in AIDS encephalopathy.
Methods. Postmortem brain samples from 5 cases of AIDS subacute encephalitis and from 3 control brains were frozen in isopentane and processed for ω_3 autoradiography as previously described (1,2, 3). An irreversible (^{3}H PK 14105) ω_3 radioligand was used to determine the microscopic localization of these binding sites on H-E stained sections. In addition, the following stains were performed on serial sections : acid phosphatase, Leu-M3, Leu- M5, Ki M6, Ki M7, anti GFAP and anti HIV (p18 and p25) antibodies.
Results. In AIDS subacute encephalitis, the emulsion autoradiography of irreversibly bound ^{3}H PK 14105 could label either single cells or cell clusters grouped to form microglial nodules or perivascular cuffs. Other techniques suggested a predominant macrophage localization of these sites. ω_3 sites were seen as well in HIV+ as in HIV- brains.
Conclusion. ω3 sites label macrophages in AIDS encephalitis as they do in other neurologic diseases (3), and not the presence of HIV-1. The available positron (^{11}C-PK 11195) and γ ray (^{125}I-PK 11195) emitting ligands of ω_3 sites (4,5) may render possible their in vivo detection and help to the diagnosis and study of AIDS subacute encephalitis.

1. Benavides et al J. Pharmacol. Exp. 1989 in press. 2. Dubois et al Brain Res 445,77-90 (1988). 3. Benavides et al Annals Neurol. 24, 708-712(1988). 4. Charbonneau et al Circulation 73. 476-483 (1986).5. Cilliax et al Soc Neurosc. Abstr XIII, 263.5 (1987).

Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

Th.B.P.259 CEREBRAL METABOLIC (PET), NEUROPSYCHOLOGIC AND NEUROLOGIC ABNORMALITIES IN PATIENTS WITH AIDS

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Objective. To determine the relationship between cerebral metabolic function and neuropsychologic/neurologic status in persons with AIDS.
Methods. Seventeen consecutively referred persons with AIDS were studied using Positron Emission Tomography (PET) with 2-Fluro-2-Deoxy-D-Glucose as a tracer and comprehensive neuropsychologic examinations. Subjects were also rated for severity of dementia using Sloan-Kettering staging criteria (S-K) for AIDS Dementia Complex using a neurologist's rating. All ratings were performed independently.
Results. Seven of the 17 (41%) subjects demonstrated both PET abnormalities and neuropsychological dysfunction while 3/17 (18%) demonstrated both normal PET and neuropsychologic studies. Neuropsychologic testing classified 12 of the 17 subjects as abnormal (1 1/2 s.d. below the mean on 3 or more measures), while clinically identified PET abnormalities occurred in only 6 of the 17. Of these 6, five were also outliers on the neuropsychologic test battery and 4 were rated as 1 (mild) or higher on the Sloan Kettering scale. Two of the 6 subjects who demonstrated abnormal PET scans did not achieve neuropsychological outlier status using the criterion listed above.
Conclusion. Neuropsychologic abnormalities were more prevalent in our AIDS sample than clinically identified cerebral metabolic dysfunction using PET. Neuropsychologic and neurologic abnormalities may occur in the absence of clear cerebral metabolic dysfunction using clinical interpretation in persons with AIDS. Statistical examination using regions of interest on PET may reveal greater findings of cerebral metabolic dysfunction than did clinical interpretation used in this study.

Neurologie : atteintes neurologiques du VIH asymptomatique
Neurology: Neurological Involvement in Asymptomatic HIV

Th.B.P.261 ABSENCE OF NEUROLOGICAL DISEASE EARLY IN HIV INFECTION

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Objective: To document overt neurological disease after seroconversion in a large cohort of gay men in N.Y.C.
Methods: A structured neurologic exam, including a functional disability rating scale, was developed and validated. Examiners were blind to the HIV status of subjects. Medical staging was independent of the neurologic exam and a standard psychiatric interview.
Results: 160 gay men, 118 HIV+ and 42 HIV-, were evaluated. 55 men were asymptomatic, 31 were mildly symptomatic, 32 had ARC, and none had AIDS. Age, race, handedness and education were similar in the HIV+ and HIV- groups. Complaints of mildly decreased concentration and memory impairment were noted more often in the HIV+ group, but cranial nerve abnormalities, pyramidal tract signs, extrapyramdical features, frontal release signs, evidence of peripheral neuropathy, and abnormalities on a 19 item mental status test were equally prevalent in HIV+ and HIV- men.
Conclusion: Historically, neurologic signs may be present transiently at the time of seroconversion. Overt, non-cognitive, neurological manifestations are not more prevalent in HIV+ men. Prior studies documenting frequent neurological findings in seropositive men may not have included appropriate comparison groups. Seronegative "at risk" individuals must be included in studies.

Th.B.P.263 T4 LYMPHOCYTE COUNTS AND THE PRESENCE OF ABNORMALITIES ON NEUROLOGICAL EXAMINATION IN ASYMPTOMATIC HIV SEROPOSITIVE SUBJECTS

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The presence of abnormal neurological findings on entry examination in 91 asymptomatic HIV seropositive subjects was correlated with T4 lymphocyte count. Performance on a mini mental status examination was more often impaired in subjects with T4 <600 cells/cu mm (62.5% v. 32.3%). Four of 35 (11.4%) subjects with T4 <400 had abnormal ocular smooth pursuit compared to 0 of 56 with higher counts. Postural instability to threat was also twice as common (19% v. 9%) in the former group and tended to be of greater magnitude. Neither frontal release signs (snout, grasp, glabellar, palmomental) nor a brisk jaw jerk correlated with T4 levels.

Elevated serum p24 Ag (>20 pcg/ml) was detected in 13% of subjects with T4 <400, but in none of the subjects with T4 $\geq$400. p24 antigen was negative in the CSF of all asymptomatics. Serum p24 Ag was more highly predictive, though not as sensitive, as T4 counts for the appearance of neurological abnormalities.

The appearance of abnormalities of mental status, ocular smooth pursuit, and postural stability correlated with the T4 level and presence of serum p24 Ag in asymptomatic HIV seropositive subjects.

Supported by National Institute of Neurological Diseases and Strokes Program Project P01-NS25569.

Th.B.P.260 HM-PAO SPECT AND GD-DTPA ENHANCED MR IMAGING IN CNS-MANIFESTATIONS OF AIDS

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Although CT and MR imaging have demonstrated a high sensitivity in detecting brain lesions, determination of the etiology causing the lesion is still poor. However, specificity is crucial for prognosis and therapy.

Objective: To determine the diagnostic value of HM-PAO SPECT in patients with intracranial AIDS manifestations, which had been confirmed by MR. In aridition, the incidence, the localisation as well as the degree of altered brain perfusion in AIDS-patients with clinical symptoms of CNS disease and a normal MR examination was investigated.

Methods: Eleven male patients (age median: 37 years) with proved HIV-1 infection, CDC IV, were examined. Clinical and/or histologic diagnoses were toxoplasmosis (6 patients), lymphoma (2 patients), meningitis (1 patient), and HIV-encephalitis (2 patients). SPECT examinations were performed using a rotating gamma camera after i.v. application of 555 MBq 99mTc-HM-PAO. Axial, coronal and sagittal slices were generated. MR studies (0.5 T Magnetom) were performed using T2-weighted images (SE 1600/30,70) and unenhanced as well as Gd-DTPA enhanced T1-weighted sequences (FLASH 315/14, α=90°).

Results: MR imaging demonstrated 20 lesions in 6 patients with cerebral manifestation of toxoplasmosis. SPECT demonstrated focally altered brain perfusion in all patients. Twelve of the 20 lesions showed hypoperfusion, 5 lesions were hyperperfused, one patient of this group had multiple perfusion deficits. In one patient with 3 cerebral lymphomas, all lesions were hypoperfused. In one patient with meningitis - as demonstrated by MR - perfusion was reduced in the adjacent brain tissue. In 2 patients with HIV-encephalitis and negative MR, SPECT detected multiple perfusion deficits.

Conclusion: The sensitivity of SPECT in detecting focal lesions is inferior to MR. At present, HM-PAO SPECT does not provide differentiation between toxoplasmosis and lymphoma. However, SPECT demonstrates altered brain perfusion in areas larger than the corresponding focal lesion detected by MR imaging. SPECT appears thus potentially useful in AIDS-patients with symptomatic brain disease and a negative MR who may have altered brain perfusion. HM-PAO SPECT is a helpful diagnostic method complementary to CT and MR imaging in patients with AIDS-related brain disease evaluating the brain perfusion pattern.

Th.B.P.262 NEUROPSYCHOLOGICAL CHANGE IN CDC II, III AND IV PERSONS AFTER 6 TO 12 MONTHS: EVIDENCE FOR DECLINE

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Objective: Neuropsychological (NP) deficit has been reported in 30% to 87% of patients with AIDS and in 5% to 44% of persons in CDC II and III. However, few longitudinal NP studies are available. We report on patients in CDC classes II, III and IV re-examined after 6 to 12 months as a part of a longitudinal study.
Methods: Gay men in the following groups were re-examined at 6 to 12 months: CDC IV - N=6; CDC II/III - N=18; HIV- controls - N=5. NP testing included extended Halstead-Reitan battery. Ratings of "change" were performed by clinicials blinded to group status. MRI brain scans, using a 1.5T GE Signa system were also obtained.
Results: At followup 3 of 6 AIDS patients (50%), 4 of 18 CDC II/III (22%), and 0 of 5 controls (0%) were rated as worse. Worsening was not associated with initial neuropsychological rating, nor interim drug use/mood disorder or CD4+ count. Computer assisted analysis of baseline MRI indicated that those who subsequently worsened on NP had increased cortical fluid and subcortical hyperintensities.
Conclusion: This limited series suggests that neuropsychological decline can occur in AIDS patients even after 6 months and in some CDC II/III persons after 12 months. It is possible that subtle structural brain changes may presage neuropsychological decline, as indicated by computer assisted analysis of MR images.

Th.B.P.264 NEUROLOGIC FINDINGS IN EARLY HIV INFECTION

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Objective. To investigate possible neurologic abnormalities in early HIV infection.
Methods. A standardized neurologic examination, lumbar puncture, MRI, EEG, and evoked potentials were done on 54 patients referred with early HIV infection (14% Walter Reed [WR] Stage 1; 54% WR-2; 15% WR-3; 5% WR-4; 8% WR-5).
Results. Subtle neurologic and electrophysiologic anomalies were noted in only 12% of cases, but CSF cells, protein, IgG, and/or oligoclonal bands (OCB) were abnormal in at least 82% (including 6/8 in WR-1); and CSF HIV cultures were positive in 8/22 (36%). Positive CSF HIV cultures were related to abnormal CSF IgG (rho=.55, p<.02) and to CSF cell count >10 (rho=.45, p<.05). However, there was no significant correlation between positive CSF HIV cultures and other neurologic findings. Similarly, there was no significant correlation between WR Stage and CSF cells, protein, IgG, OCB, or HIV cultures. Sulcal widening on MRI (reported clinically in 17/54 patients vs. 2/12 matched controls) did not correlate with other clinical or CSF parameters.
Conclusions. A large percentage of neurologically asymptomatic patients with HIV infection showed laboratory abnormalities consistent with CNS involvement by the virus. However, there is no clear correlation at this time between these findings and clinical stage of illness.

Th.B.P.265 MOTOR DYSFUNCTION AND COGNITIVE DISTURBANCES IN 5o CLINICALLY ASYMPTOMATIC HIV-INFECTED PATIENTS WITH NORMAL MRT-SCANS

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Objective: In an open, prospective study, motor and cognitive function was examined in 5o HIV-infected patients without evident neurologic or psychic deficit in comparison to an age- and sex-matched control group. Methods: Patients were excluded from the study in the case of alcohol or drug abuse, fever and/or opportunistic cerebral infection. Patients underwent detailed psychometric testing, EEG- and ERP-recordings and MRT-scanning. In the motor tests, hand tremor, most rapid voluntary alternating index finger movements (AFM) and most rapid isometric index finger extensions (IFE) were analysed. Results: Motor abnormalities were detected in 8o% of the patients. The frequency of AFM and rise time of IFE showed statistically significant slowing in the patient group in comparison to the controls, whereas tremor peak frequencies were nearly the same in both groups. Cognitive testing of the acoustically evoked event related potential (P 3oo) revealed abnormalities in 48%. According to the clinical examination (no deficit), psychometric testing revealed an intelligence deficit in six cases only. 17 of our 5o patients showed EEG-abnormalities in a routine recording according to the 1o/2o-system. Surprisingly, none of the MRT-scans showed structural deficits. Conclusions: It is concluded, that electrophysiological methods are more sensitive in detecting subclinical CNS-affection in HIV-infected patients than neuro-imaging procedures.

Th.B.P.266 CHOICE-REACTION TIME MEASURES AND COGNITIVE DYSFUNCTION IN PERSONS WITH HIV INFECTION.

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Objective: To examine the relationship between choice-reaction time latencies (CRL) and performance on other neuropsychologic (NP) measures in persons with HIV infection. Background: We reported earlier that complex processing speed is impaired in ARC and AIDS patients, but not those with HIV- asymptomatic infection. In this study we examined whether CRL was associated with specific NP abnormalities on these subjects. Methods: A battery of 26 tests covering a wide range of cognitive functions, was administered to 79 subjects (AIDS=18, ARC=18, HIV-Ab+ asymptomatic=20, seronegative controls= 23). Results: A significant diagnostic group effect (1-way ANOVA) was found on 8 tests (immediate verbal recall and storage capacity, multiple visuomotor tracking, complex sustained attention, motor coordination). CRL had a negative significant correlation with scores on 3 of these tests, and with 10 of the tests for which there was no significant group effect. Discriminant function analysis (using the 8 tests with a significant group effect and CRL as criteria) correctly classified subjects as follows:

	PERCENT CORRECT CLASSIFIED			
DISCRIMINANT CRITERIA	CONTROL	HIV-Ab+	ARC	AIDS
CRL & 8 test scores	66.7%	55.0%	50.0%	44.4%
CRL score only	78.3%	10.0%	5.6%	61.1%

Conclusion: CRL are significantly correlated with abnormal performances on some NP tests, but not others. By itself, CRL is a less sensitive criteria than when used in conjunction with other NP tests for discriminating asymptomatic and ARC patients, but more sensitive for discriminating AIDS patients and controls.

Th.B.P.267 INCIDENCE OF MILD NEUROPSYCHIATRIC ABNORMALITIES IN HIV INFECTED PATIENTS IN KINSHASA, ZAIRE

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Objective: To describe mild neuropsychiatric abnormalities in HIV-infected patients in Zaire.
Methods: For one week all inpatients of the Dept of Internal Medicine were examined by a team of neuropsychiatrists.
Results: Twenty-one patients (10 males, 11 females) were examined (age range: 15-49 years). Fifteen (71%) had symtoms and signs of neuropsychiatric impairment, including: forgetfulness, poor concentration, behavioral changes, sleep disorders, seizures, headache, vertigo, gait disturbances, tremor, myalgia, urinary sphincter disturbance. Neuropsychiatric findings were: frontal release signs (9), generalized hyper-reflexia (4), valleix signs (4), mental slowness (2), memory disturbances (2), dejection (2), neck stiffness (2), hypotonia (2), hyperpathia (2) and tremor (1).
Conclusions: Careful neuropsychiatric examiniation reveals a high incidence of isolated or poorly grouped neuropsychiatric signs which should allow the general practitioner to orient the patient for an early and better management. This study will be continued, and further studies are necessary to understand the significance of these signs.

Th.B.P.268 UNCOMMON NEUROLOGIC MANIFESTATIONS IN HIV-1 INFECTED PATIENTS WITHOUT AIDS

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Objective. To describe uncommon neurologic manifestations in 3 HIV-1 infected patients (Pt) without AIDS.
Methods. Three Pt with HIV-1 infection demonstrated by positive ELISA and Western-blot presented clinically with acute neurologic dysfunction. Pt1 was homosexual; Pt2 and Pt3 were IV drug abusers. Pt1 and Pt2 had an acute cerebellar syndrome (ataxia, dysarthria, hypotonia, nystagmus and kinetic tremors). Pt3 presented with acute meningitis.
Results. CT scans of the brain were normal in all cases. CSF analysis showed slightly elevated protein levels in all Pt; in Pt3 there was lymphocytic pleocytosis and depressed CSF sugar levels. Exhaustive microbiologic and cytologic studies of CSF samples were negative in all Pt. Opportunistic infections or other etiologic entities were not demonstrated. Pt1 died 3 weeks after admission of an aspiration pneumonia. Pt2 has been followed 4 months and improved on oral zidovudine therapy (ZDV Rx). Pt3 remains stable after 15 months of follow up (6 on oral ZDV Rx) with chronic meningitis and low CSF glucose.
Conclusion. Atypical neurologic syndromes could be the first clinical expression of HIV-1 infection. These syndromes are probably due to HIV-1 infection of the central nervous system. ZDV Rx therapy could be beneficial in these situations.

Th.B.P.269 NEUROPSYCHOMETRIC FUNCTION IN EARLY HIV POSITIVE PATIENTS COMPARED WITH A MATCHED HIV NEGATIVE POPULATION

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Objective: Compare the neuropsychologic performance of uncomplicated CDC Stage II/III patients with similar uninfected subjects to suggest the earliest area of neurologic deterioration due to the HIV virus.
Methods: Trained psychometricians evaluated 29 HIV positive patients without history of alcohol or CNS active drug ingestion to compare with a volunteer population of high risk individuals seeking anonymous serum HIV test. Evaluations included the Folstein Minimental Status exam, word fluency for the letters S and P, grooved pegboard, an abbreviated Boston naming test, fingertapping speed, mental control, digit span, block design, digit symbol test, and paced auditory serial addition test (PASAT). In addition, patients were tested for depressive symptoms with the Beck Depression scale.
Results: A well matched population of 34 HIV negative subjects is compared to 29 HIV positive subjects. The positive subjects denied any current CNS active drug use including more than one drink of alcohol per day. Beck depression scales were not different between the groups, and the differences in age (32.53 vs 35.08 yrs) and education(15.0 vs 16.07 yrs.)were co-varied due to slight statistical differences between the groups. Digit span(17.0 vs 15.0, p=.009), block design(40.9 vs 34.7, p=.003) and PASAT-2,3,4 (37.3,32.1,25.8 vs 32.8,28.1,21.1 p=.03,.03,.05) all showed statistically significant declines in performance in the HIV infected group.(results compare least square means for negatives vs positives and significance) The PASAT at the slowest repetition rate showed no difference indicating a similar ability to perform the test, but all three faster repetition rates showed decline in performance in the infected groups. Analysis of 18 measures showed significance or trend toward declining performance in HIV positives, while one measure showed identical performance. (mental control)
Conclusion: HIV infection is associated with measurable decline in performance on several tests, which may be most useful in monitoring the earliest neurological manifestations of the infection. Serial testing over time will be necessary to confirm the clinical significance of these findings. They suggest that evaluation of early treatment of HIV neurologic disease may be possible before clinical manifestations of dementia are noted.

Th.B.P.270 CENTRAL NERVOUS SYSTEM FINDINGS AND NEUROLOGIC(N) CORRELATES OF HIV INFECTION IN MEN WITH CDC GROUP II/III HIV DISEASE

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Objective. To describe N and neuropsychologic(NP) findings in the absence of overt N disease in CDC group II/III HIV+ compared to HIV- homosexual subjects, and to characterize results of magnetic resonance imaging(MRI) and cerebrospinal fluid(CSF) studies in the HIV+'s.
Methods. Standardized history(HX), T cell subsets, blinded N exams and blinded 4 hour NP test battery on all subjects; MRI and lumbar punctures (LP) in HIV+'s.
Results. The 55 HIV+'s differed from the 39 HIV-'s in age(mean 38.3 vs 33.8, P=0.001), lifetime sex partners(median 200 vs 80, P=0.001), HX of fatigue(33% vs 8%, P=0.005), and CD4 counts (mean/mm^3, 480 vs 776, P=0.0001). Subjective N symptoms were present in 46(84%) of HIV+'s vs 29(74%) of HIV-'s(P=NS). Cranial nerve abnormalities were more common in HIV+'s than HIV-'s(27% vs 7%, P=0.019), although sensory, motor, cerebellar, and reflex findings were no different. Mini-mental status scores were identical(mean 29.1 and 29.2). NP test results were similar for the areas of language, motor, and emotional functioning, but tended to be more impaired in HIV+'s than HIV-'s in selected tests of visual memory, attention and abstract concept formation. Among the 41 HIV+'s undergoing LP, CSF WBC's were >5/mm^3 in 26(63%) and protein >45mg/dl in 17(41%). Of these 41, 21(51%) were culture positive for HIV in CSF. CSF HIV+'s tended to have lower CD4 counts than CSF HIV-'s (mean/mm^3, 631 vs 489, P=0.08). Routine CSF parameters (cell count, protein, glucose) were not different among those with and without detectable CSF HIV. Diffuse white matter abnormalities on MRI were present in 5/21 HIV CSF+'s vs 0/20 HIV CSF-'s(P<0.045); other intracranial MRI findings were present in 10/21 vs 8/20, respectively (P=NS). Routine CSF parameters did not correlate with MRI findings.
Conclusions. Cranial nerve findings and selected NP test results differed in HIV-'s vs HIV+'s with asymptomatic or clinically mild HIV infection. CSF HIV infection, elevated cell counts and protein, and MRI lesions were common in HIV+'s. Diffuse white matter abnormalities on MRI correlated with detection of CSF HIV by culture, but the clinical significance remains to be determined during follow-up.

Th.B.P.271 NEUROPSYCHOLOGICAL ABNORMALITIES AMONG ASYMPTOMATIC IV DRUG USERS: NO RELATIONSHIP WITH HIV-1 SEROSTATUS.

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Objective: To determine if neuropsychological (NP) test performance among asymptomatic IV drug users (CDC Groups II/III) differs as a function of HIV-1 serostatus.
Methods: A neuropsychological (NP) test battery was administered to 42 unselected participants in a prospective study of the natural history of HIV infection in IV drug users. The NP testing was done without knowledge of serostatus, and included the Symbol Digit, Digit Span, Trail Making Test, Grooved Pegboard, Finger Tapping, Rey Complex Figure and the Brief Symptom Inventory.
Results: At baseline, 41% of the participants enrolled were HIV-1 seropositive. All were classified as CDC stage II or III, and none were taking azidothymidine (AZT). There was no significant difference in age, education, self-reported learning disability or drug use between HIV-1 seropositive and seronegative controls. Comparison of group means revealed no differences in NP performance between serostatus groups on any of the measures. The number of participants classified as having abnormal NP performance was equally high among both seropositive (50%) and seronegative (48%) participants (chi square= 0.014, p >.90).
Conclusions: Our results to date show that NP abnormalities are common among IV drug users, but there is no increase in such abnormalities among asymptomatic HIV-1 seropositives in CDC Groups II/III compared with seronegative controls. These findings are consistent with those from other HIV-1 infected populations showing no evidence of increased NP abnormalities during the asymptomatic stages of the infection.

Neurologie : divers (dépistage, psychologie, physiologie, électrophorèse)
Neurology: Miscellaneous (i.e., Testing: Psychology, Physiology, Electrophoresis)

Th.B.P.272 NEUROPHYSIOLOGICAL DIAGNOSIS OF AIDS DEMENTIA COMPLEX: ELECTROENCEPHALOGRAPHIC STUDY ON 271 HIV-POSITIVE SUBJECTS

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Summary
The Authors report the results obtained by an electroencephalographic screening of 271 HIV-seropositive patients, belonging to different stages of infection.
The major bioelectrical changes of cerebral activity were recorded in patients with AIDS (90.6%) and ARC (60%), whereas mild abnormalities were present in the LAS patients (30.8%) and those carrying an asymptomatic infection (20.7%), often without any evidence of neuro-psycological impairment. Therefore, we emphasize the usefulness and sensitivity of the electroencephalography, in particular when coupled with Computerized Spectral Analysis (EEG-CSA) and Mapping, with the aim of identifying the subclinical stages of HIV-related subacute encephalitis.

Th.B.P.273 EEG BACKGROUND SLOWING APPEARS IN HIV-INFECTED PATIENTS IN THE ABSENCE OF METABOLIC DERANGEMENTS OR OTHER CEREBRAL INVOLVEMENT.

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Objective. To describe electroencephalographic (EEG) background changes that occur in association with HIV infection and that cannot be attributed to other known metabolic or cerebral abnormalities.
Methods. Patients with concomitant, known CNS disease (infection, tumor, CVA), drug intoxication, or metabolic derangements were excluded from the analysis. 179 HIV-infected patients had at least one EEG and 46 patients had subsequent EEGs at intervals of not less than one month.
Results. Patients with serial EEGs demonstrated decreasing background frequency ($p < 0.001$). Patients in CDC group II had normal alpha rhythms as did more than half of patients in group III. Patients in groups IVA, IVC1, IVC2, and IVD (without primary CNS lymphoma) had abnormal slowing of the alpha rhythm (8.69Hz, SD=0.26, N=102), and patients thought to have HIV-encephalopathy had even slower rhythms (6.64, SD=0.55, N=7) when compared to age-matched and sex-matched controls. Background slowing increased with advances in disease stage and with decreases in the log of absolute CD4+ counts.
Conclusion. Abnormally slow alpha rhythms were present in the absence of alternate metabolic or focal CNS disease that could have adversely affected the EEG background rhythm and may be a manifestation of infection with HIV.

Th.B.P.274 THE NEUROPHYSIOLOGY OF SLEEP DESTRUCTION IN PATIENTS WITH CNS-MANIFESTATIONS OF AIDS

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Objective. To investigate the electroencephalographic phenomena of sleep in AIDS patients with proved CNS manifestation..

Methods: 19 patients with various cerebral manifestations of AIDS were examined. Diagnoses ranged from mild mental disturbances to severe brain damage caused by opportunistic infections. All patients underwent a whole night sleep-EEG recording (21- channel Mingograph, 21 gold electrodes in the positions of the international 10:20-system, reference montage to Cb). Visual as well as computer-assisted evaluation was performed. Sleep stages were determined according to the rules of Rechtschaffen and Kales, sleep spindles and K-complexes were determined and spectral analysis was performed. In addition, we used flurazepame as a tool to modify the sleep of the patients in a second night.

Results: On visual evaluation, occurence of sleep spindles and - to a lower extent - generation of K-complexes was markedly reduced in patients with opportunistic intracranial infections as well as in those with subacute HIV encephalitis. These alterations are indicative for sleep instability. Deep sleep (stage 3 and 4) and REM sleep were markedly shortend. Vegetative phenomena (e.g. heart rate) in sleep did not show the physiological patterns. Among others, these results allow an objective and quantitative description of the AIDS-related destruction of sleep architecture. Following the application of flurazepame, a sixfold increase of sleep spindle density was observed. This finding seems to support the concept of a functional deficit in contrast to the model of circumscript destruction.

Conclusion: AIDS-patients frequently present with complains of poor sleep. Various electrophysiological correlates of this disturbance can be observed. The altered sleep of AIDS patients seems to be due to HIV encephalitis. It might be seen in patients with AIDS-related dementia with or without opportunistic or neoplastic mass lesions.

Th.B.P.275 COMPARISON OF EEG- FINDINGS IN HIV- INFECTED AND NON-INFECTED PATIENTS IN OUT- PATIENT AND IN- PATIENT FOLLOW-UPS

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Objective. The EEG- study evaluates differences in prevalence of cerebral dysfunction between HIV- infected patients and HIV- seronegative volunteers.
Methods.We investigated 541 EEG- recordings of 229 volunteers and patients (48 seroneg.,66 seropos.,58 LAS/ARC, 57 AIDS). Background- activity, hyperventilation- index, occurence of diffuse or focal cerebral dysfunction, vigilance disturbances and paroxysmal patterns were determined.
Results. In age- paired comparisons the decrease in background- activity was significantly higher with in- patients.Out- patient/ in- patient comparisons showed a significant increase in the appearence of diffuse cerebral dysfunction and vigilance disturbances with in- patients. Significant differences in focal cerebral dysfunction and paroxysmal patterns could only be demonstrated in the age- paired comparisons of seroneg./AIDS and LAS/AIDS patients.
Conclusion. The results confirm the dependence of the developing diffuse CNS- dysfunction not only from the clinical stage but also from the severity of the HIV- infection.

Th.B.P.276 QUANTITATIVE VIBRATION THRESHOLD TESTING (QVTT) AND COMPUTER-BASED NEUROBEHAVIORAL TESTING (NES) OF PERSONS INFECTED WITH HIV

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OBJECTIVES: To compare neurobehavioral performance (NES) and vibrotactile thresholds (QVTT) among homosexual men at various stages of HIV infection (N=HIV(-), n=13; P=Asymptomatic HIV(+), n=29; A=ARC/AIDS, n=16); to assess change in neurologic performance over time; to learn how QVTT and NES can be applied to study persons with HIV infection. METHODS: Standardized questionnaire; QVTT applied to index fingers and great toes; NES, including mood scales and 8 performance tests; total lymphocytes, CD4+ lymphocytes (helper T-cells), and serologic markers of HIV. RESULTS: Fifty-eight persons have entered this study for multiple testing. At this time we report only results of the first cycle. The three groups did not differ in mean age (N=40.1; P=41.9; A=38.5), number of years of education (N=15.9; P=15.5; A=15.2), or vocabulary scores (N=19.8; P=20.1; A=20.0; maximum possible=25). Mean absolute numbers of helper T-cells were N=821, P=424, A=112 (N>P>A, $p<.001$ paired analyses). Employment status at time of testing: N=12/13; P=27/29; A=13/16. History of AZT use: N=0/13; P=6/29; A=14/16. Group scores did not differ significantly on any mood scale. Scores of asymptomatic HIV(+) and HIV(-) men did not differ significantly. On the other hand, vibratory thresholds of ARC/AIDS patients were significantly elevated compared to the combined asymptomatic HIV(+)/HIV(-) group (two-tailed t-test, $p<.02$ each digit). Although ARC/AIDS patients were significantly worse on grooved pegboard (non-preferred hand) compared to the combined asymptomatic HIV(+)/HIV(-) group, group means did not differ significantly on any other neurobehavioral test. The frequency of abnormal individual neurobehavioral test scores (at least 1.65 standard deviations below mean) in this sample was low with a slight (nonsignificant) trend toward being greater among asymptomatic HIV(+) and ARC/AIDS patients compared to HIV(-) homosexual men. There were no significant correlations between absolute lymphocyte count or absolute number of helper T-cells and vibrotactile thresholds or neurobehavioral test results. CONCLUSIONS: Within this homogeneous cohort of very functional homosexual men, there were no differences between group means of HIV(-) and asymptomatic HIV(+) men; ARC/AIDS patients performed somewhat more poorly, particularly on vibrotactile thresholds. Absolute number of lymphocytes and helper T-cells had no relationship to measures of neurologic function. The test systems employed in this pilot study are quantitative, rapid, non-invasive, and non-aversive, and therefore appear useful for prospective study of neurologic/neuropsychologic function among persons infected with HIV.

Th.B.P.277 NEUROTOXICITY BATTERY FOR PHASE I HIV DRUG ASSESSMENT: INITIAL APPLICATIONS

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Objective. To evaluate the ability of a battery of standard neuropsychologic tests with multiple forms and population norms to detect neurotoxicity in Phase I anti-HIV studies.
Methods. Administration of this battery of tests is made every two weeks following baseline assessment and training to optimal performance. Up to 8 repeat administrations of this battery are possible. Domains assessed are those shown to be affected by HIV infection including memory, attention, mood, motor speed, and cognitive processing efficiency.
Results. This battery for Phase I studies of anti-HIV drugs for HIV patients and matched controls is sensitive to neurotoxicity (3 S.D. decrement on 1/10 tests or 1.5 S.D. decrement on 3/10 tests) or drug effects (up to 3 S.D. increments). Results are presented by standardized norms and by individual and group variation from baseline scores.
Conclusion. Repeat neurotoxicity testing with standard neuropsychologic tests in combination with clinical evaluation demonstrates sensitivity to HIV infection and drug effects without being burdensome to patients or research resources.

Th.B.P.278 COGNITIVE ABNORMALITIES AS A FUNCTION OF HIV-1 CLINICAL STATUS AND USE OF AZIDOTHYMIDINE (AZT): THE MULTICENTER AIDS COHORT STUDY (MACS)

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Objectives: To characterize early HIV-1 related cognitive abnormalities and to identify neuropsychological measures sensitive to these cognitive changes.
Methods: A sample of 86 HIV-1 seropositive homosexual/bisexual men with diagnoses of AIDS as of December 1988 were matched on age, education and MACS center with subsamples of 86 asymptomatic seropositive men (ASP) and 86 seronegative men (SN). All subjects had completed a brief battery of neuropsychological (NP) tests including WAIS-R Digit Span, Symbol Digit Substitution, Rey Auditory Verbal Learning Test, Grooved Pegboard Test, and Verbal Fluency. Of the 86 subjects with current diagnoses of AIDS, 54 had not yet been diagnosed with AIDS at the time of their initial NP assessment (pre-AIDS group). Of the 32 subjects with AIDS at the time of their NP assessment, 19 were taking AZT.
Results: The five subject groups (SN, ASP, pre-AIDS, AIDS with AZT, AIDS without AZT) were compared using multivariate analysis of variance. There were significant group differences on the Symbol Digit Test ($p < .02$) with subjects in the AIDS subgroups performing more poorly than SN subjects. Post-hoc ANOVA comparing SN controls with each of the four seropositive subgroups revealed significantly poorer performance for subjects with diagnoses of AIDS (with AZT, $p < .02$; without AZT, $p < .02$) relative to the SN group on the Symbol Digit Test. No significant differences were found between the SN group and either the ASP or pre-AIDS groups on the Symbol Digit Test. AIDS patients taking AZT performed slightly better on this task than AIDS patients not taking AZT. We are currently analyzing for effects of self-reported depression.

	Seronegative	Asymp Seropos	Pre-AIDS	AIDS with AZT	AIDS without AZT
Symbol Digit	57.65 (n=86)	55.45 (n=86)	54.99 (n=54)	52.29 (n=19)	49.54 (n=13)

Conclusions: These data suggest that the Symbol Digit test, a measure of psychomotor functioning, is particularly sensitive to cognitive changes associated with HIV infection, although significantly poorer performance on this measure was found only following diagnosis of AIDS.

Th.B.P.279 DECISION-MAKING SPEED IN EARLY HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION

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Objective. To investigate signs of cognitive slowing in early-stage HIV infection by measuring decision-making speed in AIDS-Related Complex (ARC) and HIV-positive asymptomatic (Asx) patients.
Methods. In an ongoing study, 12 patients with early HIV infection (4 Asx and 8 ARC) and 9 controls performed computerized simple and choice reaction time tasks. They were also given a measure of rate of encoding as a control task.
Results. Analysis of obtained reaction times indicated that, as predicted, groups did not differ in speed of simple reaction time. However, ARC patients were significantly slower than controls in speed of choice reaction time. Mean choice reaction times for Asx patients were in the predicted direction (e.g., slower than controls) but this difference fell short of statistical significance. There were no significant group differences on the control task.
Conclusions. Cognitive slowing is a prominent clinical characteristic of AIDS dementia. In the current study, subtle cognitive slowing (increased decision-making time) was demonstrated in individuals with less advanced disease. Cognitive abnormalities in patients with early HIV infection have not been demonstrated reliably on standard clinical neuropsychologic tests in previous studies. Our data indicate that reaction time-based procedures may provide a more reliable and sensitive measure of cognitive dysfunction than other standard clinical tests in this population.

Th.B.P.280 ABNORMALITIES OF EEG AND OTONEUROLOGIC TESTS IN ASYMPTOMATIC HIV INFECTED HOMOSEXUALS : A PROSPECTIVE CONTROLLED STUDY.

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Objective : To study the earliest neurologic manifestations in HIV1 infected individuals (CDC group 2 and 3).
Methods : After exclusion of any use of i.-v. or psychotropic drugs, and of prior neuropsychiatric illness, 25 HIV seropositive asymptomatic homosexuals and 30 seronegative homosexuals volunteered to participate in this study. It included neurologic and neuropsychologic evaluation, MRI, EEG, multimodal evoked potentials (pattern visual(P-VEP), somatosensory (SEP) and brainstem auditory (BAEP)), and otoneurologic tests (audiogram, impedance measurement, binaural lateralization test, electronystagmogram). The investigators were blinded to the serologic results.
Results : Seropositives (Ps) and controls (Cs) were closely matched with regard to age and education. As expected, Ps were more likely to have serologic evidence for syphilis (60%) than Cs (33%),($p = .026$). Likewise, the mean CD4 count was 628 for Ps and 1059 for Cs. ($p = .002$). Neurologic and neuropsychologic examinations and MRI failed to show any significant differences between the 2 groups. Increased P-VEP and SEP latencies were found in two different HIV positive individuals. The otoneurologic evaluation was pathologic in 8 (32%) Ps and in 1 (3%) C ($p = .017$). EEG was abnormal in 11 (44%) Ps and 3 (10%) Cs ($p = .028$), showing diffuse theta waves and reactivity abnormalities. Altogether, electrophysiologic abormalities were found in 60% of P and only 13% of C ($p = .012$).
Conclusion : This study suggests that electrophysiologic tests may be the most sensitive indicators of subclinical neurologic manifestations in HIV infected individuals. Results from the first follow-up examination will be presented.

Th.B.P.281 EEG FINDINGS AND COGNITIVE PERFORMANCE IN 82 HIV- INFECTED PATIENTS.

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Aims.To detect subclinical/clinical changes in the mental performance of HIV-infected patients; to correlate eventual neuropsycological damage with the EEG findings; to evaluate the occurrence of the above alterations in the same subjects.
Methods.N.82 patients (CDC group II: n. 23; II: 30; IV A: 10;IV B: 6; IV D-E: 13) were selected based on the absence (neuroimmaging and laboratory exams) of focal/diffuse CNS pathology due to tumors, opportunistic infections and/or other conditions complicating AIDS. A set of n. 14 neuropsychological test exploring short/long-term memory (verbal and non-verbal), language and visuoperceptive functions were administered, together with standard EEG recordings.
Results.Neuropsychological and EEG abnormalities were found with increasing degrees of frequency/severity from group II to groups IV: long-term memory, attention, logic abilities, were the mostly affected functions. Correlation coefficients were calculated for the total population and each diagnostic group: significant values ($p<0.05$) were obtained, particularly for groups III and IV. For these patients, the concomitant evidence of EEG and neuropsicholpgical abnormalities, in absence other demonstrable CNS disease, may indicate "early-possible" AIDS-dementia complex.

Th.B.P.282 ETUDE EN IMAGERIE PAR RESONNANCE MAGNETIQUE NUCLEAIRE (IRM) ET CORRELATION ANATOMOCLINIQUE, LORS D'ATTEINTES NEUROLOGIQUES DU SIDA.

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Objectif : Il s'agit d'une corrélation anatomoclinique entre Tomodensitométrie* IRM** et IRM sur cerveaux fixés par le formol, chez 12 patients décédés de SIDA et présentant des signes neurologiques.
Méthode : Pour chaque malade, a été réalisé un examen neurologique complet et répété, associé à une évaluation biologique et immunologique. Une TDM avec injection iodée a été pratiquée dans tous les cas, et dans 4 cas une IRM réalisée du vivant du malade. L'encéphale a été prélevé et fixé dans le formol à 10 %. L'étude en IRM a été effectuée en coupes axiales jointives de 9 mm. L'examen neuropathologique a été effectué selon les plans de coupes de l'IRM et l'étude histologique en microscopie photonique.
Résultats : - 3 patients présentaient une encéphalite à cellules géantes avec TDM non significative et hyposignal de la substance blanche en IRM., - L'IRM a décelé un cryptococome bilatéral des noyaux gris dans 1 cas, - 2 patients ont présenté un accident vasculaire cérébral, - Dans 3 cas, seule l'histologie a permis un diagnostic (toxoplasmose, granulome à mycobactérie et leucoencéphalite débutante), - Chez 3 patients, atteints de Sarcome de Kaposi disséminé, il n'y avait pas d'atteinte encéphalique.
Conclusion : Dans 5 cas sur 9, le TDM n'a pas décelé de lésion alors que dans 8 cas sur 9, l'IRM a mis en évidence des anomalies évocatrices. Par ailleurs, l'IRM représente un examen de choix pour l'exploration de la substance blanche et le diagnostic des atteintes encéphaliques du SIDA.
* TDM ND8000 Thomson CGR - ** IRM : Magniscan 500 Thomson CGR

Th.B.P.283 PROSPECTIVE EVALUATION OF AN ALGORITHM FOR THE DIAGNOSIS OF AIDS-RELATED NEUROLOGIC ILLNESS: EXPERIENCE WITH OVER 200 PATIENTS

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Algorithms for the diagnosis of neurologically symptomatic HIV infected patients have been based upon retrospective experience. To prospectively evaluate one such algorithm, we have applied it to all HIV infected patients at our institution. From September 1987 to December 1988, 205 such patients were evaluated; 58 (28%) were neurologically symptomatic. These patients underwent cranial MRI or double dose contrast enhanced cranial CT scans. Patients with multiple intracranial lesions, if neurologically stable and alert or only mildly lethargic, were treated empirically for toxoplasmosis. If either the followup MRI or the clinical examination were not improved by this therapy, or if patients deteriorated during the empiric trial, CT guided stereotactic brain biopsy was performed. In patients with solitary MRI lesions or in those who were stuporous or comatose, emergent biopsy was performed without an empiric trial of therapy. Ten patients underwent 11 CT-guided stereotactic brain biopsies. Thus, 4.9% of our overall population underwent biopsy; this agrees well with the projected rate of 6.8%. There was one hemorrhagic complication which resulted in unilateral facial weakness (11% morbidity; 0% mortality). Of the 10 patients undergoing biopsy, 3 had toxoplasmosis, 3 had PML, 2 had primary CNS lymphoma, and 2 had HIV encephalitis. The 3 patients with PML are dead (mean survival 2.3 months). Both patients with lymphoma died prior to completing radiation therapy. One patient with refractory toxoplasmosis died, the other 2 are alive and well, following changes in their medical regimens, 13 and 16 months after biopsy. One patient with HIV-1 encephalitis is stable 2 months after biopsy, the other died 4 months after biopsy. Based upon this early prospective experience, this then appears to be a logistically feasible and effective algorithm for the diagnosis of AIDS patients with neurological illness.

Th.B.P.284 PATTERNS OF NEUROPSYCHOLOGICAL DYSFUNCTION IN A SELECT GROUP OF HIV+ INDIVIDUALS IN COMPARISON TO PSYCHIATRIC CONTROLS

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Objective. To investigate the nature of cognitive impairment in HIV+ individuals, either complaining of, or suspected of cognitive dysfunction.
Methods. Fifty (50) HIV+ and 15 seronegative patients with adjustment disorders (ADJ DIS) were tested on a battery of 40 standard and experimental tasks assessing different types of attention, motor, memory, language, perceptual, and problem solving abilities. Patients were classified in Walter Reed Stages 1-5; the majority had persistent lymphadenopathy (WR-2, 52%); 84% were in WR Stages 1-3. The ADJ DIS patients were matched with the HIV+ group on education, depression, anxiety, types of cognitive complaint, and number of recent stressful life events. Results. Based on predetermined cut-off scores, 48% of the HIV+, but only 7% of the ADJ DIS, patients were impaired on >10 of 51 measures derived from the battery. Twenty-four percent (24%) of HIV+, but none of the ADJ DIS were impaired on >20 measures. Although heterogeneous with regard to type of cognitive impairment, the most common difficulties were on tasks of attention span, visuomotor dexterity, spatial functions, word knowledge, and new learning. No group differences were observed on measures of visual perception, fluency, or concept formation and problem solving. Overall, neither extent nor type of deficit was significantly related to history of risk factors, anxiety, depression, total T_4, T_8, or T_4:T_8 ratio.
Conclusions. Although not addressing the prevalence of cognitive dysfunction, these data do indicate that a variety of deficits can occur in relatively asymptomatic HIV+ individuals that cannot be attributed to current mood state. These findings highlight the need for longitudinal study of an unselected sample.

Th.B.P.285 CURRENT PERCEPTION THRESHOLD IN HIV-POSITIVE PATIENTS

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Objective. To evaluate perception of nerve stimuli in neurologically asymptomatic HIV-positive individuals.
Methods. Using a sine-wave transcutaneous stimulator, current perception thresholds and habituation at various frequencies were determined from 17 asymptomatic HIV-positive individuals, 12 patients with ARC and 10 with AIDS, all free of sensory symptoms (ages 29-62, median = 36). HIV status was unknown to the examiner. Following previously described painless, non-invasive procedures *(Katims J et al., Arch Phys Med Rehab 1987;68:210; Appl Neurophysiol 1986; 49:86)*, peroneal, median and trigeminal nerves were tested bilaterally, in a double-blind forced-choice paradigm of 20 minutes duration.
Results. Eighty-two percent of all subjects had measures that differed ($p<0.05$) from age-matched controls. Trigeminal perception impairment correlated with severity as determined by CDC classification ($r=.56$, $p< 0.001$) which correlated with total T4 cell count ($r=.54$, $p< 0.001$). Inability to maintain trigeminal perception was only observed in the ARC (33%) and AIDS (60%) subgroups.
Conclusion. Perception abnormalities were detected in a high percentage of neurologically asymptomatic HIV-positive individuals. The inability to maintain sensory perception of trigeminal stimuli was characteristic of the more advanced stages and may reflect a deficit of attentional mechanisms. Current perception determination is a sensitive test for the evaluation of the sensory system in HIV-positive individuals.

Th.B.P.286 NEUROPSYCHOLOGICAL EVIDENCE FOR EARLY INVOLVEMENT OF THE BASAL GANGLIA REGION IN A SUBGROUP OF HIV+ INDIVIDUALS

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Objective. To investigate the performance of HIV+ individuals on procedural or skill learning (SL) and egocentric spatial (ES) tasks. Previous findings suggest that performance on these types of tasks is disrupted by involvement of basal ganglia region. For example, both Huntington's (HD) & Parkinson's (PD) patients show impaired skill learning, while amnestic patients do not. Similarly, HD & PD patients show impaired egocentric spatial ability, while patients with parietal lesions or early Alzheimer's disease do not. Methods. Fifty HIV+ individuals referred for neuropsychological testing and 15 seronegative patients with adjustment disorders (ADJ DIS) were tested on an SL task requiring solving the same visual maze presented three times at 20 minute intervals. Egocentric spatial ability was tested using Money's Road-Map Test of Direction Sense, and a newly devised experimental procedure; the Room Test. Patients were classified in Walter Reed Stages 1-5; the majority had persistent lymphadenopathy (WR-2, 52%); 84% were in WR Stages 1-3. The ADJ DIS patients were matched with the HIV+ group on education, depression, anxiety, and number of recent stressful life events. Results. The HIV+ patients were significantly slower, but not less accurate, than controls on all Maze trials. A subgroup of patients (N=28) performed as fast as controls on the initial trial, but exhibited significantly less learning than controls over the remaining trials ($p<.01$). The patients also performed worse than controls on both measures of ES ability ($p=.01$, $p<.05$, for the Road-Map & Room tests, respectively). Performance on these measures was highly correlated($p<.001$). Conclusions. At least some relatively asymptomatic HIV+ individuals exhibit a pattern of cognitive difficulties suggestive of early involvement of the basal ganglia or nigrostriatal system.

Th.B.P.287 PROSPECTIVE NEUROLOGICAL AND NEUROPHYSIOLOGICAL ASSESSMENT IN A COHORT OF HOMOSEXUAL MEN.

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Objective: To evaluate neurophysiological abnormalities as markers of sub-clinical neurological disease in HIV infection.
Methods: 117 gay men participating in the Medical Research Council Cohort Study of the natural history of HIV infection underwent standard neurological history & examination, lower limb nerve conduction studies & somatosensory evoked potentials (SEPs). Those with pre-existing neurological disease or CDC Group IV HIV disease were excluded. 74 HIV seropositive (SP) and 32 seronegative (SN) men were eligible. Neurophysiological results were compared using analysis of variance with age & height as covariates.
Results: SP men were significantly more likely to complain of problems with memory (chi-square, $p = 0.04$) and concentration ($p = 0.08$) but did not otherwise differ from SN men on history, examination, mean sensory or motor action potential amplitudes or conduction velocities, 'f' wave latencies, or vibration perception thresholds in the lower limb. Lower limb SEP latencies were consistently and, on the left, significantly longer in the SP group (ANOVA, $p = 0.01 - p = 0.05$). Differences observed between left and right may have been due to order effects.
Conclusion: Asymptomatic SP men appear to have prolonged lower limb SEP latencies compared with a well - matched SN group. Slowing of peripheral nerve conduction does not account for the difference.

Th.B.P.288 CHANGES IN PERFORMANCE ON THE TRAIL-MAKING TEST BEFORE AND AFTER HIV-1 SEROCONVERSION AND DIAGNOSIS OF AIDS: THE MULTICENTER AIDS COHORT STUDY (MACS)

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Objectives. To examine longitudinal performance on the Trail-Making Test for HIV-1 seronegative, asymptomatic prevalent and incident seropositive, and symptomatic seropositive (AIDS) homosexual/bisexual men in the Multicenter AIDS Cohort Study (MACS).
Methods. A cohort of 551 HIV-1 seronegative, 441 asymptomatic prevalent seropositive (seropositive since 1984), 73 asymptomatic incident seropositive (seroconversion between 1984 and 1988), and 113 symptomatic seropositive (confirmed diagnoses of AIDS) homosexual/bisexual men from the Los Angeles and Baltimore cohorts of the MACS were administered Part B of the Trail-Making Test semi-annually from 1986 to 1988. This task correlates highly with other neuropsychological measures including Verbal Fluency, Symbol Digit, and Digit Span, and is considered one of the most sensitive for detecting HIV-related cognitive decline.
Results. Performance on the Trail-Making Test was adjusted for the effects of age, education and repeated administration using multivariate analysis of covariance. We found no differences between the seronegative and asymptomatic seropositive groups on this task across any of the 6 semi-annual testing intervals. Similar results were obtained comparing HIV-1 seroconverters with age- and education-matched seronegative controls, with no significant differences found between these groups for up to 1 year prior to seroconversion through 2 years following seroconversion. Longitudinal comparison of subjects with diagnoses of AIDS and age- and education-matched seronegative controls showed a trend toward steadily declining performance on the Trail-Making Test from 6-months prior to a diagnosis of AIDS through 1.5 years following an AIDS diagnosis, although this difference was statistically significant only 1.5 years following initial diagnosis. We are currently analyzing these data for effects of AZT use.
Conclusions. These findings suggest that HIV-related abnormalities on the Trail-Making Test become evident only following initial AIDS diagnosis. We observed no evidence of gradual decline on this measure among otherwise asymptomatic seropositive subjects. These data support previous cross-sectional data from the MACS suggesting no increased risk for cognitive abnormalities among asymptomatic seropositive individuals.

Th.B.P.289 NEUROPSYCHOLOGICAL PERFORMANCE IN HIV-1 IMMUNOCOMPROMISED PATIENTS

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Objective. To examine the pattern of neuropsychologic performance in 3 subject groups: AIDS, ARC and seronegative gay males.
Methods. Twenty patients with AIDS, 14 with ARC and 13 seronegative gay male controls were administered a comprehensive neuropsychologic test battery. Subjects with a past history of chronic substance abuse, neurologic disease or focal findings on CT or MRI were excluded.
Results. The AIDS group performed significantly more poorly (p.<.002) or showed a trend (p.<.01) toward poorer performance than the ARC and seronegative groups on one speeded and one non-speeded measure of visuoconstructional skills (Block Design; Picture Completion), all measures of motor speed and cognitive flexibility (Digit Symbol, Trailmaking Test A/B), and all measures of nonverbal memory (Visual Reproductions, Rey Osterrieth delayed recall). The groups did not differ on any measure of attention, language, verbal memory or Mini-Mental State Examination (MMSE) scores.
Conclusion. Tests involving psychomotor speed, cognitive flexibility and nonverbal memory appear most sensitive to early disruption in progressive stages of HIV-1 related immunocompromise, presumably related to central nervous system involvement. The MMSE scores were uniformly high and in the non-impaired range (>23) for our immunocompromised subjects. This is consistent with observations that the MMSE is not sensitive to mental status abnormalities in this population until later or end stage dementia is present.

Th.B.P.290 ANTISACCADIC EYE MOVEMENT ABNORMALITIES IN ASYMPTOMATIC HIV SEROPOSITIVE INDIVIDUALS

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Objectives: to determine whether antisaccadic eye movements are of clinical use in detecting the early onset of neurological dysfunction in asymptomatic HIV seropositive (HIV+) subjects.
Methods: we used high resolution infrared oculography and an eye movement test battery that included an antisaccadic paradigm. Subject groups included homosexual HIV seronegative (HIV-) and heterosexual HIV- controls, asymptomatic HIV+ subjects, neurologically intact AIDS patients and patients with cortical or subcortical dementia.
Results: In asymptomatic HIV+ subjects, pro-saccades, smooth pursuit and antisaccadic accuracy did not differ significantly from controls. However, antisaccadic latencies were significantly prolonged in 38% of asymptomatic HIV+ subjects (p<0.01), suggesting a subtle impairment of frontal lobe ocularmotor programming.
Conclusions: The antisaccadic eye movement paradigm is a valuable, rapid and non-invasive technique for the early detection of neurologic dysfunction in non-demented AIDS patients and in asymptomatic HIV+ subjects. In particular, it may be of use in selecting high risk patients requiring antiviral therapy, in quantitatively monitoring neurologic disease or response to therapy and in providing reassurance to well subjects by helping to differentiate affective disturbance from early dementia.

Th.B.P.291 SEQUENTIAL AUTONOMIC FUNCTION TESTS IN HIV INFECTION

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Objective. To determine whether progressive abnormality of autonomic function on sequential testing might act as a prognostic indicator in HIV infection.
Methods. 20 men with varying stages of HIV infection were studied (13 CDC group II/III, 7 CDC group IV). Standard haematological and immunological indices were recorded. The following standard autonomic function tests were carried out:- heart rate response during the Valsalva manoeuvre, lying to standing, and deep breathing; and the blood pressure responses to standing up and sustained handgrip. 14 of these patients also underwent 24 hour monitoring for measurement of heart rate variation.
Results. The mean T4 lymphocyte count of the group was 545, and the mean serum IgA was 3.25g/l. Only one patient showed significant abnormality of autonomic function. In those in whom the tests were repeated one year later, although there was evidence of progression of HIV-associated disease in that the mean T4 count had fallen to 370 and the mean IgA level had risen to 4.9, there was no significant alteration in autonomic function.
Conclusion. Significant changes in autonomic function that might act as a prognostic indicator in HIV infection do not seem to develop during this time span.

Th.B.P.292 Neuro-Performance Measurement and Memory Profiles of Disability in HIV Seropositive Individuals

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Objective:: To examine HIV related central nervous system (CNS) changes as a function of systemic indices of HIV disease progression.
Method: 93 HIV infected individuals without CNS opportunistic infections/tumors were categorized as systemically Asymptomatic Seropositive (ASP, n=53), ARC (n=34) or AIDS (n=6), and were tested on a battery of 43 computerized memory and motor neuro-performance (NP) tests (including right and left limbs separately).
Results: Decreased memory for name/face associations and first/last names, decreased upper extremity (speed, simple and 2-choice reaction time [RT], tracking, and dexterity) and lower extremity performance (speed, simple RT and standing balance) were significantly (p<0.01) associated HIV disease category (ASP vs. ARC/AIDS). In addition, for patients with HIV related neurologic signs/symptoms, tests of memory for spatial position of objects, telephone numbers, and facts showed concordant statistically significant (p<0.01) worsening compared to those without neurologic signs and symptoms Subgroups showing performance deficits also showed increased anxiety, depression and other indices of psychological distress.
Conclusions: In support of previous studies, there is an objective profile of neuro-behavioral changes in HIV seropositive individuals that includes increased anxiety and depression, motor slowing, decreased dexterity, impaired balance and memory deficits and that is modestly related to clinically defined decreasing immune competence even in the absence of AIDS and CNS opportunistic infections.

Th.B.P.293 Latency of P300 and Pattern Visual Evoked Potential Are Not Sensitive to Early HIV Related Neurologic Disease.

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Objective: To use patterned visual evoked potentials (PVEP) and P300 for the evaluation of neurophysiological changes associated with HIV infection
Method: 70 HIV sero-positive individuals without CNS opportunistic infections or tumors were categorized clinically as systemically asymptomatic (ASP, n=32), ARC (n=32) or AIDS (n=6) at the baseline of a longitudinal study to examine CNS changes as a function of several systemic indices of HIV disease progression (HIV medical classification, blood T-cell subsets, blood HIV cultures and HIV antigens) All individuals were also categorized as Neuropositive and Neuronegative (with and without HIV related neurologic signs and symptoms, respectively). Two classes of ERPs were obtained using standard recording procedures: 1) PVEP for each eye separately using video generated 30' checks reversed at 2/sec; and 2) the P300 component of the auditory ERP in a standard tone-pip target detection task.
Results: PVEP showed no significant changes with HIV disease category or with neurologic status. P300 latency was not related to decreasing immunological status (T4 helper cell numbers or HIV disease category) nor to the presence of HIV related neurologic signs and symptoms. In contrast to previous results for Alzheimer Disease and cognitive declines in Parkinson disease, HIV seropositive individuals who were clinically classified as moderately to severely cognitively impaired (n=5), i.e. "AIDS Dementia Complex", did not show significantly longer P300 latencies than normal controls.
Warranted Conclusions: The data suggest that the CNS changes in HIV neuro-disease are qualitatively different than those seen in Alzheimer disease and the dementia associated with Parkinson Disease. In addition, there was no evidence for conduction deficits along the optic pathways in HIV related neurologic disease.

Th.B.P.294 COMPUTERIZED SCREENING FOR HIV-RELATED COGNITIVE DECLINE: CROSS-SECTIONAL ANALYSES AND ONE-YEAR FOLLOW-UP

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Objectives. To standardize and validate a computerized neuropsychological (NP) screening battery for early detection of cognitive decline in HIV-infected individuals.
Methods. A cohort of 171 HIV-1 seronegative (SN), 128 asymptomatic seropositive (ASP), and 28 symptomatic seropositive (ARC or AIDS) gay men from the Los Angeles cohort of the Multicenter AIDS Cohort Study were administered a computerized reaction time battery together with a conventional neuropsychological screening battery on three occasions over the course of 1 1/2 years. Both of the screening batteries were designed to assess cognitive domains representative of NP deficits found in HIV-related encephalopathy, including motor speed and divided attentional skills. Subjects were designated as 'outliers' on both sets of measures if they scored 2 or more SDs below the mean for SN's on 2 or more measures at any one visit, or if they showed significant decline (1 SD or greater) on 3 or more measures between visits.
Results. There was considerable agreement between the computerized and conventional tasks, with the two sets of measures agreeing on outlier status from 84-87% of the time across the three visits. Both the computerized and conventional screening measures identified approximately the same numbers of SN and ASP men as being outliers at each visit on cross-sectional analyses. A significantly higher proportion of asymptomatic (X^2 = 6.45, p < .02) and symptomatic (X^2 = 6.92, p < .01) SP subjects showed decline on the computerized measures from Visit 1 to Visit 2 than did SN subjects, although this finding was not replicated at one-year follow-up. No such finding was obtained for the conventional NP screening battery either at six-month or one-year follow-up. Discrimination of the SN and SP groups was significantly improved when results from both the computerized and conventional screening measures were taken into consideration.
Conclusions. These findings suggest that computerized techniques may prove practical as a rapid, efficient and inexpensive screening tool for detecting early cognitive decline in HIV-infected individuals, although these measures work best in conjunction with traditional neuropsychological measures. When used longitudinally, this type of measure appears to have slightly greater sensitivity for identifying individuals at risk for HIV-encephalopathy than do conventional neuropsychological screening procedures.

Th.B.P.295 EVENT-RELATED POTENTIAL MEASURES OF DEMENTIA IN HIV DISEASE

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Objectives It is estimated that 40-70% of HIV-infected patients will develop AIDS dementia complex (ADC). Early cognitive changes in ADC include decreased concentration and cognitive and motor slowing. Event-related potential (ERP) components such as P3 provide a physiological measure of cognitive processing. P3 latency reflects brain changes associated with normal aging and dementia, while amplitude varies with stimulus characteristics and processing demands. ERP assessment of HIV-infected patients may reveal early encephalopathic changes that are not apparent using other techniques.
Methods To date, six control and 13 HIV+ males (4 asymptomatic, 4 ARC, 5 AIDS) without current clinical signs of physical illness or neurological involvement have been tested. A brief neuropsychological battery was given to assess cognition and mood. After audiometric screening, EEG was recorded using gold cup electrodes at FPz, Fz, Cz, Pz and Oz with a sterno-vertebral reference and amplified at a HF cut-off of 60 Hz and a TC of 10 sec. ERPs were recorded for 1150 msec with a 50 msec prestimulus baseline at a sampling rate of 200 Hz. Auditory (50 msec binaural tone pips of 1000 and 1500 Hz) and visual (the letters 'X' and 'O') ERPs were recorded in separate choice reaction time tasks at two levels of probability, 20:80 and 50:50. Only correct response trials free of eye-movement artifact were included in the averages. Peak latencies and baseline-to-peak amplitudes were measured for the early and late ERP components including N200 and P300 in the averaged waveforms.
Results Preliminary data analysis indicates that P300 amplitude was greatly reduced in HIV+ patients including some asymptomatic patients. The amplitude decrement was greatest in response to the rare auditory stimulus at Cz (F=5.14; df 3,17; p<.02). Component latencies were prolonged also; 25-50% of HIV+ patients had latencies exceeding the upper limit of the control subject range in each task.
Discussion The results of this ongoing study show both ERP latency prolongation, more typical in organic disorders, and amplitude reduction which may reflect faulty processing of sensory information and also can occur in psychiatric disorders including depression. The relationship between the ERP variables and cognitive status and mood will be evaluated in the larger sample. The data suggest that ERPs may be useful in clarifying diagnosis by identifying patients with cognitive changes due to degenerative processes from those with depression and provide a tool for assessing disease progression and evaluating treatment outcome.

Th.B.P.296 CLINICAL VALIDATION OF A BEDSIDE ANTISACCADIC TEST FOR THE ASSESSMENT OF AIDS DEMENTIA

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Objectives: High resolution eye movement recordings are of value in the early diagnosis and management of the AIDS dementia complex (ADC). However, the equipment used is expensive and requires a laboratory setting. We describe and clinically validate a bedside antisaccadic eye movement test that can be administered by a single examiner and requires no equipment.
Methods: We tested 350 subjects, including both homosexual and heterosexual controls and patients with cortical or subcortical dementias, including ADC. The antisaccadic test was administered over five minutes using a standardised protocol. The % antisaccadic error score and antisaccadic latencies were correlated with Mini-mental status (MMS) and color-form sort (CFS) scores.
Results: 95% of the control population made fewer than 25% errors. Most subjects with clinical dementia made >25% errors. Error scores correlated linearly with MMS and CFS scores, but not with tests of sustained attention or more general arousal.
Conclusion: The bedside antisaccadic test is simple, robust and inexpensive, and correlates with frontal lobe dysfunction. It may be useful in the assessment of ADC, particularly in field studies or population surveys in Third World countries.

Th.B.P.297 MULTIMODALITY EVOKED POTENTIALS IN HIV INFECTED SUBJECTS: A LONGITUDINAL STUDY

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Objective: evaluation of cortical function impairment in the early course of HIV infection, by means of multimodality evoked potentials (MEPs).
Methods: 20 HIV infected subjects were studied (16 homosexual males, 2 heterosexual males, two heterosexual females). They were seropositive for at least 6 months before entering the protocol. All subjects underwent a session of MEP recording that included brainstem acoustic evoked potentials (BAEPs), somatosensory evoked potentials (SEPs), pattern reversal visual evoked potentials (PR-VEPs). The same session was repeated between 6 and 8 months after the first one, in the same subjects.
Results: electrophysiological data referring to the first session demonstrated a significant change of cortical responses in more than 50% of subjects. The data of the second recording did not show an increase of the percentage of abnormal results in the same group of subjects, but in 3 patients, whose response were already pathological, a definite worsening was observed.
Conclusion: our results suggest that the involvement of the cerebral cortex takes place early in the course of the HIV infection.

Nutrition
Nutrition

Th.B.P.298 BODY COMPOSITION IN ASYMPTOMATIC HIV-POSITIVE MEN

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Objective. To assess effect of HIV virus on the body composition of Group II or III males.

Methods. Body protein and water compartments are determined from measurements of total body nitrogen, total and extracellular water, and anthropometric data taken at 6 monthly intervals. Prompt neutron activation and tritium, NaBr and 35SO4 dilution techniques are used. The immunocompetence and nutritional status of each subject is obtained from immunological, haematological, biochemical and dietary tests. Subjects are classified according to their staging and any drugs used to control the disease. No effort has been made to control drug intake or lifestyle because of problems relating to compliance.

Results. Intitial relationships between staging and body composition parameters will be presented for the target cohort of 100 subjects.

Key Words. body composition, cachexia, nutrition, neutron activation analysis, diet.

Th.B.P.299 NUTRITIONAL STATUS IN AIDS PATIENTS.

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Objective. To assess the nutritional status of AIDS patients in relation to evolution of disease, incidence rates and type of opportunistic infections.
Methods. We studied nutritional status of a group of HIV infected patients affering to Institute of Infectious Diseases, University of Pavia, Italy, using classic anthropometric methods, immunologic and biochemical parameters. Estimation of body composition (FFM, FAT, TBW) and body mass index was performed by means of a computerized bioelectrical impedance method. Incidence, type and severity of infections were considered in relation to nutritional indices.
Results. We found a clear relationship between physical condition and incidence rate of opportunistic infections in the majority of AIDS patients. The more important nutritional deficits are significantly related to a greater incidence of severe infections.
Conclusion. The nutritional status of the AIDS patients also in western countries appears to be one of the more important determinant for incidence of opportunistic infections and evolution of disease. The supply of sufficient nutrients capable to restore a normal weight is mandatory in this condition and may contribute to enhance host defence against different types of pathogens and prolong the survival of AIDS patients.

Th.B.P.300 LESS DIARRHEA SEEN IN HIV-POSITIVE (HIV+) PATIENTS ON A LOW-FAT, ELEMENTAL DIET (ED)

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Objective. Describe effects of a low-fat, low-residue ED (Vivonex T.E.N.) on body weight (WT), bowel movements (BM), and GI symptoms (pain, vomiting, bloating, nausea, and appetite) (GIS) in HIV+ adults who have chronic or intermittent diarrhea.
Methods. In this 2-week prospective, non-randomized, multicenter study, subjects consumed their usual diet during a 2-day (d) baseline period (B), then ED for 10 d, and usual diet again during a 2-d follow-up (FU). WT was measured pre-study, during ED, and post-study. Subjects completed daily diaries recording food, beverage, and ED intake; BM; GIS; medications; and activities. Data on 7 subjects are presented here. This protocol will be extended through at least 40 subjects.
Results. Subjects showed a 65% reduction in mean #BM from 2.6/d during B to 0.9/d during ED. Mean #BM increased to 1.6/d during FU. Five of the 7 subjects maintained or increased WT during the study. One subject developed acute symptoms of influenza and lost 3 kg; another subject did not advance the diet according to protocol and lost 1 kg. ED appeared to be well tolerated by study subjects, although adjustments in diet strength was needed occasionally. No clear trends were seen in pain, vomiting, bloating, nausea, and appetite.
Conclusion. Dietary management with a low-fat, low-residue, elemental diet may be a useful adjunctive therapy to help maintain body weight and reduce diarrhea in some HIV+ patients. Controlled studies should be conducted.

Th.B.P.301 IDENTIFICATION DES BESOINS D'INFORMATION EN NUTRITION AVEC L'INFECTION PAR LE VIH

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Objectif. Déterminer les besoins d'information en nutrition des personnes atteintes et des intervenant-e-s lors d'une infection par le VIH.
Méthodes. L'analyse des besoins s'applique aux adultes francophones de la région de Montréal affectés par le VIH. Une approche basée sur la recherche du consensus a été utilisée pour l'identification des besoins auprès des personnes atteintes et des intervenant-e-s. Dans l'ensemble, une centaine de personnes ont été consultées. Une combinaison de différentes techniques comme l'approche par informateurs-clés et la technique du groupe nominal a été utilisée pour faire ressortir les préoccupations en matière de nutrition et d'infection par le VIH.
Résultats. Les préoccupations majeures des personnes affectées par le VIH sont le maintien du poids, la stimulation du système immunitaire par l'alimentation, le potentiel de guérison des thérapies nutritionnelles alternatives ainsi que les solutions aux problèmes reliés à l'ingestion et à l'absorption de la nourriture tels que la diarrhée, la perte d'appétit, etc... Ces problèmes ainsi que le maintien du poids préoccupent aussi les intervenant-e-s. Ils-elles s'interrogent de plus sur les répercussions possibles de certaines pratiques nutritionnelles alternatives et de l'ingestion de suppléments alimentaires naturels ou de vitamines et minéraux sur l'état de santé de leurs clients.
Conclusion. En réponse aux divers besoins d'information exprimés, nous avons conçu 2 documents et 3 modèles alimentaires. La formation des intervenant-e-s en matière de nutrition figure également parmi les priorités d'action.

Th.B.P.302 AIDS NUTRITION NETWORK (ANN)

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Purpose. To create a national/international information support system for dietitians/nutritionists responding to the nutritional needs of persons with HIV/AIDS.
Accomplishments. Increased professional membership (over 300 members) and awareness. Provided quarterly updates on nutrition issues to selected professionals based in community health centers, hospitals, state health departments and clinics, medical centers, universities and the private sector. Facilitated workshops/conferences and other training sessions via referral of human resources and print materials. Stimulated interest and cooperation of other professional groups, i.e., American Dietetic Association, Society for Nutrition Education, Association of State and Territorial Nutrition Directors, American Public Health Association and ASPEN Publishers.
Projections. 1. Develop regional resource referral stations.
2. Collect and catalog nutrition and AIDS curricula.
3. Stimulate the infusion of AIDS and nutrition curriculum into dietetic internship program course work and graduate nutrition courses in schools of public health.
4. Create a resource lending library.
5. Edit a nutrition and AIDS textbook.

Th.B.P.303 EVALUATION OF THE ZINC TASTE TEST (ZTT) IN AIDS PATIENTS

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Objective. To compare the ZTT in AIDS patients with normal controls.
Methods. Malabsorption or dietary insufficiencies in AIDS patients may lead to nutritional defects. Some, such as zinc deficiency, may further compromise immune function. There is no accepted, reliable test for nutritional zinc status. Zinc is a component of gustin, a polypeptide involved in the sense of taste and patients with severe zinc deficiency have impaired taste. The ZTT (Bryce-Smith et al) has been suggested as a simple and sensitive means of detecting zinc deficiency. A colourless 0.1% solution of zinc sulphate is tasted, responses recorded on a taste scale of 1-4 (1=negative, 2=slight, 3=strong, 4=powerful/unpleasant). We conducted double blind tests using distilled water as comparison in 24 AIDS patients and 10 HIV negative controls. 4/24 AIDS patients had chronic diarrhoea and possible malabsorption. Serum zinc was measured in both groups; diet and nutritional status were assessed.
Results.

ZTT Result	AIDS Patients (24)	Controls (10)
Abnormal: 1,2	16	1
Normal: 3,4	8	9
Mean Serum Zinc umol/1	12.7	13.9
Standard Deviation of mean	2.7	1.86

Abnormal ZTT responses were seen in AIDS patients compared to HIV negative controls (Fisher exact test, $p<0.025$). Diet was comparable in both groups although nutritional status was much poorer in the AIDS patients.
Conclusion. If the ZTT can be confirmed as a marker of zinc deficiency it would provide a simple clinical means of assessing the need for zinc supplements in AIDS patients.

Th.B.P.304 GARLIC AS AN ANTIMICROBIAL AND IMMUNE MODULATOR IN AIDS

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Objective. To ascertain in a small preliminary trial the potential of garlic as an immune modulator and antimicrobial in AIDS.
Methods. Ten patients with documented HIV antigen and antibody positive infections began a 12 week experimental study taking 5 grams daily of an aged garlic extract called SGP (Special Garlic Preparation) for 6 weeks as a food supplement followed by 10 grams daily for another 6 weeks.
Results. Seven of 10 patients were able to complete the garlic regimen with significant improvement of immune parameters analyzed and of several opportunistic infections.

Immune Modulation Noted in AIDS with Garlic Extract

Patient ID	% NK Cell Activity - Helper:Suppressor Ratios* Baseline	6 Weeks	12 Weeks
1	4% - 0.5	53% - 0.4	28% - 0.2
2	5% - 0.8	26% - 0.8	38% - 0.8
3	12% - 0.2	33% - 0.3	68% - 0.3
4	2% - 0.7	14% - 1.0	28% - 1.9
5	3% - 0.2	38% - 0.3	30% - 1.0
6	10% - 0.2	28% - 0.4	35% - 0.5
7	2% - 0.5	-0-	25% - 1.1

*Normal range for NK activity is 22 - 85%. Normal range for Helper:Suppressor ratio is 0.8 - 1.8.

Conclusion. The above data suggest further studies are warranted to elucidate the therapeutic role of garlic in AIDS.

Th.B.P.305 PROTEIN TURNOVER AND SUBSTRATE CYCLING IN AIDS PATIENTS.

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Objective. Weight loss is a frequent finding in AIDS patients. The objectives were to determine whether this occured via a simple starvation type response or a 'hypermetabolic' response.
Methods. We compared (i) protein synthesis and breakdown, (ii) glucose cycling (G-CYL) through glucose 1,6 P and fructose-P and (iii) triacyl glycerol - free fatty acid cycling (TGFFA-CYL) in asymptomatic AIDS patients (I), septic AIDS patients (II) against healthy controls (III) and controls given a 40% calorie deficient diet for 4 weeks (IV). The PSR and PBR were measured with ^{15}N glycine, G-CYL with 6,6 D and 2-d glucose, TGFFA-CYL with 1-^{13}C palmitate and 5-d glycerol.
Results. Data is mean ± SEM, statistics by ANOVA or paired t-test. $p<0.05$ I vs II = a, I vs III = b, I vs IV = c and d = $p<0.05$ for III vs IV by one way paired t-test.

GROUP	I	II	III	IV	stats
n	9	3	6	6	
PSR (g prot/kg/d)	1.9(0.3)	2.9(0.3)	1.3(0.2)	0.9(0.1)	abcd
G-CYL (mg/kg/hr)	77(13)	194(109)	97(5)	89(4)	abd

Conclusion. (1) Asymptomatic AIDS have increased PSR as is found with other stress related protein wasting states (e.g. trauma, sepsis, CA). (2) Glucose substrate cycling is reduced more than is to be expected from reduced intake alone.

Th.B.P.306 EARLY PREDICTORS OF NUTRITIONAL STATUS IN HIV-INFECTION.

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Objectives. To determine nutritional parameters that may predict malnutrition early in the HIV continuum.
Methods. Subjects were 30 homosexual males seropositive for HIV who were asymptomatic except for lymphadenopathy (CDC Stage III). Anthropometric measurements (height, weight, left arm triceps skinfold thickness), serum albumin and total protein, retinol binding protein (RBP),and immunoglobulins were measured using standard techniques.
Results. Anthropometric determinations revealed 7% of the participants had significantly low body weight, triceps skinfold thickness and body mass index ($p<0.05$). In contrast, 25% of the subjects had RBP level below normal of 3.0-5.0 mg/dl, and additional 12% had RBP level in the marginal range of 3.0 - 3.5 mg/dl. Only 9% had serum albumin levels below the normal 3.5 - 5.5 mg/dl. Total serum protein was normal or high in all subjects, reflecting the increased levels of immunoglobulins.
Conclusion. RBP was shown in the past to be a more sensitive indicator of early malnutrition than more global measures, e.g. anthropometric measurements. The 25% of subjects with RBP below normal may indicate early signs of nutritional deficiency and may serve as an early prognostic indicator of those who will develop malnutrition.

Th.B.P.307 DIETARY INTAKE IN HIV INFECTION: RELATIVE CALORIC DEFICIENCY IN PATIENTS WITH AIDS.

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The relentless weight loss in AIDS adversely influences patient survival (Proc ASCO 7:271), but has received only limited prior attention. To evaluate potential etiologic influences on nutritional status, dietary intakes of HIV infected pts with or without an AIDS diagnosis were determined using 7 day food records (to accurately estimate caloric and macro- and micronutrients). Caloric intake was correlated with clinical, nutritional, and immunological status. Most pts were receiving (50%) or had received (18%) therapy with AZT. Demographics were similar in the 14 HIV positive, non-AIDS pts [HIV] compared to 14 AIDS pts [AIDS], but nutritional and immunological status differed. Albumin, 4.1 gm/dl ±0.3 vs 3.5±0.4; no weight loss vs 8.7± 4.0% weight loss and CD4 of 436±67 vs 132±74 for HIV vs AIDS, respectively (all $p<0.05$). The significant weight loss experienced by AIDS pts was associated with a decreased current caloric intake compared to HIV pts without weight loss (2048±193 vs 2314±117 kcal/d, mean ±SEM). Protein and carbohydrate intakes were maintained in AIDS patients with caloric loss seen largely in fat. If maintained, the 266 kcal/d deficit seen in AIDS pts would result in an 8.7% decrease in weight in 4 months. We conclude that despite AZT therapy, a relative caloric deficiency in AIDS pts may represent a major contributing factor to the malnutrition.

Th.B.P.308 DIETARY INTERVENTION IN ARC PATIENTS.

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Objective. To determine the role of dietary intervention in ARC patients.
Methods. A six month double blind placebo controlled study was conducted to determine the benefits of essential fatty acid supplementation on the clinicial status of 18 ARC patients. 10 patients were concurrently on AZT and were split between the active and placebo groups, thus intergroup comparisons could be made.
Results. Statistical analysis was conducted on the physician's assessment of the patient's clinical improvement using CDC criteria established for ARC patients. Ranking of the individual responses was based upon a subjective scale ranging from significantly improved (+2) to no change (0) to significantly worse (-2). Upon this basis using a t-test analysis the following conclusions were reached. The total active group (n=9) who had an average score of +1.00±0.24 did significantly better ($p\leq 0.005$) than the total placebo group (n=9) who had an average score of -0.56±0.34. Among the patients using AZT, similar results were obtained. Those using AZT and active (n=5) had an average score of +1.00±0.45 whereas those on the placebo and AZT (n=5) had an average score of -0.80±0.37. These results were also statistically significant ($p\leq0.01$). Patients using the active without AZT (n=4) had an average score of +1.00±0.00 which was statisically significant compared to patients on the placebo and AZT ($p\leq0.005$) and also to patients on placebo without AZT (n=4) who had an average score of -0.25±0.63 ($p\leq0.01$). There was no correlation between the clinical improvement and T_h or T_s counts which were taken every two months.
Conclusion. Dietary intervention with activated essential fatty acids improves the quality of life of an ARC patient. It remains unknown as to whether the course of the disease is altered.

Th.B.P.309 MEGESTROL ACETATE IN THE TREATMENT OF HIV-RELATED CACHEXIA.

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Cachexia is a frequent problem in persons infected with the Human Immunodeficiency Virus (HIV). Megestrol acetate (MA) an agent used for the treatment of metastatic breast cancer has, as a side effect, appetite stimulation and weight gain. We have treated 22 HIV positive patients (14 previously reported) with MA beginning at a dose of 80 mg orally 4 times daily. All patients had lost at least 10% of their pre-illness weight. The median weight loss was 25 lbs with a range of 12 to 59 lbs. Patients (pts.) have been followed on therapy from 2 to 72 weeks. Twenty-one of the twenty-two pts. have gained weight. The average weight gain is 16 lbs (range - 9 to 38 lbs). Three pts. failed to gain weight on 320 mg per day of MA; 460 mg/day of MA in one and 640 mg/day in another pt., led to appetite stimulation and weight gain. One pt. continues to lose weight in spite of 480 mg/day of MA. The median time to peak weight on MA is 14 weeks. Seven pts. have returned to within a few pounds of their normal body weight. In 3 of the 22 pts. treated, MA and zidovudine were started simultaneously. For these 3 patietns weight gain was potentially due to the recognized weight gain associated with the initiation of zidovudine therapy. For the remaining 19 pts., appetite stimulation and weight gain were a result of megestrol acetate. All pts. have tolerated the drug well and report improvement in appetite while on therapy. No pt. has developed peripheral edema or drug related impotence. The appetite improvement and weight gain seen in this initial series is encouraging. The true effectiveness of MA for HIV related cachexia and its effects on quality of life is currently being passed in a national prospective randomized double blind placebo-controlled trial, the results of which may well be available by June.

Th.B.P.310 NUTRITIONAL ABNORMALITIES IN EARLY HIV-1 INFECTION. II. TRACE ELEMENTS

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Objective. To determine nutritional status in HIV-1 positive participants by measuring plasma trace elements by standard methodology.
Methods. We have examined fifty HIV-1 seropositive homosexual males who were asymptomatic other than lymphadenopathy (CDC stage III).
Results. Mean plasma zinc (Zn) was 0.81±0.07 (mean + SEM), considered within normal limits for adult males. While no subjects had Zn levels which were overtly deficient, 23% were marginal (0.70-0.85μg/ml), therefore at increased risk of developing Zn deficiency. In contrast, mean erythrocyte (RBC) Zn levels were sharply elevated with mean levels of 14.8 μg/ml ± 0.9, significantly higher than those of controls ($p<0.005$). Furthermore, 53% of study subjects had RBC Zn values above the range considered normal (>12.5μg/ml). Mean plasma copper (Cu) levels were significantly lower than those of controls ($p<0.001$) and 55% of subjects displayed deficient plasma Cu status (Cu<0.085μg/ml). Marginal Cu deficiency (0.85-1.00μg/ml) was found in 22% of subjects. Finally, mean selenium plasma levels were also significantly lower in participants than in controls ($p<0.005$). Forty two percent of subjects were below normal levels (<0.90μg/ml) and 27% were marginally deficient (90-120 μg/ml).
Conclusion. Trace mineral abnormalities early in the HIV infection may have important prognostic implications for disease progression, immune dysregulation and may provide an important adjunct for treatment of HIV-1 infected individuals.

Th.B.P.311 PLASMA NUTRITIONAL CHANGES ANTEDATE AIDS IN HEMOPHILIACS.

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Fourteen patients with hemophilia developed AIDS during a 29-month period. Seroconversion occurred after the use of nontreated coagulation factor concentrates from 23-75 (mean 53±16 S.D.) months before the diagnosis of AIDS. Their ages ranged from 7 to 74 and plasma and blood counts were taken at various times throughout their clinical courses. Five patients are still alive but 8 have died of complications of AIDS. Most patients developed clinical evidence of protein energy malnutrition before AIDS. In comparing values while patients were still seronegative with those values antedating AIDS by cholesterol fell 11, 28, and 13% respectively while retinol-binding protein (Rbp) actually rose 7%. T-helper lymphocytes (CD4) numbers were generally not tested before HIV exposure but fell after seropositivity. Their numbers did not allow prediction of the onset of AIDS.
Such measures of nutritional status may allow a better understanding of the evolution of AIDS in hemophiliacs and thereby prognostication. Mechanisms of the onset of disease may also be better understood which then offers the hope of better nutritional support and therapy of HIV infections.

Th.B.P.312 EFFECT OF ENTERAL NUTRITIONAL THERAPY ON BODY CELL MASS IN AIDS.

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Objectives. To determine if enteral nutritional therapy can successfully *replete body cell mass in* malnourished AIDS patients; to determine if body mass repletion is associated with improvement in tests of immune function.
Methods. Six AIDS patients who had lost more than 10% of weight, ate less than 80% of estimated needs, had adequate xylose absorption, and no severe active complications were chosen for study. Nutritional therapy was provided using an percutaneous endoscopic gastrostomy tube (PEG), and consisted of a hydrolyzed protein solution (Reabilan HN, O'Brien Pharm). Nutritional assessments were performed 3 times over 2 months and included determinations of total body potassium (TBK), a measure of body cell mass, in a whole body counter, total body and extracellular water volumes by isotope dilution, and body fat content by anthropometry. In addition, selected immune studies were performed before and after nutritional therapy.
Results. The values for TBK increased significantly in all patients. There was a more variable effect upon body weight and body fat content. No significant changes were seen in total or CD4+ lymphocyte counts or serum immunoglobulin concentrations.
Conclusions. Enteral nutritional therapy can promote body mass repletion in AIDS. Successful nutritional therapy is not associated with obvious benefit in immune function.

Th.B.P.314 NUTRITIONAL KNOWLEDGE, HEALTH BELIEFS AND PRACTICES IN THE HIV-1 INFECTED PATIENT.

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Center for the Biopsychosocial Study of AIDS, University of Miami School of Medicine, Miami, Florida, USA.

Objective. To assess nutritional beliefs and knowledge in HIV-1 positive gay males.
Methods. Seventy-five HIV-infected homosexual males, asymptomatic other than generalised lymphadenopathy, were interviewed to determine the nutritional health beliefs and knowledge using a standard questionnaire.
Results. 90% of the participants changed their diet at the time of, or subsequent to diagnosis of HIV-infection. The most common alternatives were decreased intake of red meat (37%), whole milk (31%), butter (21%) and alcohol (33%). Increased intake of vegetables (33%), fruits (32%), seafood (20%) and whole wheat bread/whole grains (21%); 87% of the participants felt that vitamin and mineral supplements could favorably influence their immune function with 59% reporting an increase in their consumption of such supplements since diagnosis; 90% did not know the daily requirements of essential vitamins and 50% consuming supplements did not know the amount they were consuming. The most frequently reported sources ofnutritional infor-mation and counseling were friends (75%),. newspapers and magazines (48%). Asymptomatic HIV-infected patients view nutritional and dietary issues of key importance in maintaining their immune function and asymptomatic status.
Conclusion. Subjects adapt strategies based upon a poor information base and these strategies may, at times, be ill-advised. Practitioners must provide the HIV-infected patient with basic nutritional information.

Th.B.P.316 FUNCTIONAL CORRELATES OF DECREASED SERUM ZINC IN HUMAN IMMUNODEFICIENCY VIRUS (HIV) DISEASE

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Objective:To determine the functional significance of the decreased serum zinc (Zn) that we have previously shown occurs in HIV disease, we studied the mitogenic effect of Zn on lymphocytes from patients and controls.
Methods:14 HIV+ men and 16 HIV- controls were studied. Proliferative responses of mononuclear cells (PBMC) to exogenous Zn, in concentrations from 0.01 mM to 2.00 mM, either in the absence or presence of PHA, were determined. The percent increase in the stimulation index (SI) at each Zn concentration relative to a saline control was determined. Statistical analysis of the mitogenic effect of each Zn dose was determined using t-tests for paired comparisons.
Results:Mean serum Zn of the HIV- & HIV+ groups were 17.0±2.5 & 14.1±2.8 mmol/L respectively (p<.05). Zn had a significant mitogenic effect on PBMC from controls only at the highest doses [Zn 1.00 & 2.00 mM:SI increase of 193±170% (p<.01) and 125±143% (p<.01)], whereas on HIV+ PBMC's, a greater range of added Zn produced a significant response [Zn .20,.50,1.00, & 2.00 mM:SI increase of 42+71% (p<.05), 52±78% (p<.05), 66±67% (p<.01), and 58±100% (p<.05) respectively]. In controls, no concentration of Zn augmented the SI achieved with PHA alone, whereas in HIV+ subjects, Zn at both 0.50 & 1.00 mM increased the SI due to PHA[22±27% (p<.01), and 34±43% (p<.01) respectively].
Conclusions:PBMC's from HIV+ subjects, with lower serum Zn, may be more sensitive to the mitogenic effects of Zn. Zn in HIV+ subjects only, may augment PHA induced proliferative responses. The decreased serum Zn found in advanced HIV disease may be a cofactor in HIV-induced immunosuppression.

Th.B.P.313 LOW VITAMIN B_6 LEVELS AND IMMUNE DYSREGULATION IN HIV-1 INFECTION.

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Objective: To determine vitamin B_6 status and its relationship with immune indices in HIV-1 infection.
Methods: Subjects were 50 homosexual males aged 20-50 years who tested HIV-1 seropositive by Western blot and who remained asymptomatic other than lymphadenopathy. Pyridoxine status was evaluated by assessing stimulation of red cell aspartate aminotransferase. CD4 cell number and phytohemagglutinin (PHA) stimulation was performed by standard techniques.
Results: Thirty-five percent of study participants showed overt pyridoxine deficiency and an additional 18% marginal deficiency in spite of adequate B_6 dietary intake. A variable degree of depression of immune function was also noted; when correlated with pyridoxine status, individuals with vitamin B_6 deficiency had uniformly lower CD4 cell counts than did participants with normal vitamin B_6 levels. Moreover, the response of peripheral blood lymphocytes to mitogens such as PHA demonstrated significant correlation over the entire continuum of vitamin B_6 levels; subjects with the most deficient vitamin B_6 status had the poorest response to PHA (r=-0.42, P<0.004).
Conclusion: Pyridoxine deficiency occurs relatively frequently in HIV-infected individuals and may play a significant role in immune dysfunction and disease progression in the HIV-1 continuum.

Th.B.P.315 THE ROLE OF ZINC IN HIV-INDUCED IMMUNOSUPPRESSION.

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Objective:HIV infection causes a progressive but variable rate of CD4+ cell depletion. Cofactors may thus be important in disease progression. Zinc (Zn) deficiency causes reversible cell-mediated immune (CMI) abnormalities similar to those observed in HIV disease. We determined serum Zn levels and studied its functional role in HIV-infected subjects.
Methods:Serum Zn was measured in 200 subjects and controls (CDC HIV classification) by atomic absorption spectrophotometry. T cell subsets and serum albumin were measured. Proliferative responses of isolated mononuclear cells (PBMC) to phytohemagglutinin (PHA) were determined in 36 HIV positive subjects. Statistical analysis was based on Student's t-test between groups and regression analysis between variables.
Results:Groups IV-A, IV-D, and IV-C1 had serum Zn levels significantly less than in HIV negative controls (x̄=15.1±2.8, 14.4±2.0, and 12.9±2.4 mmol/L vs 17.1±2.8 mmol/L; p<0.05,p<0.01, and p<0.001 respectively). A significant correlation was found between the serum Zn (range 9.2-19.3 mmol/L) and the proliferative response of PBMC to PHA (p<0.01) but not between the number of CD4 cells (range 16-765/microL) and the proliferative response to PHA. There was no correlation between serum albumin (range 32-52 g/L) and PHA response.
Conclusion:Serum Zn decreases significantly in advanced HIV disease, and is correlated with the proliferative response to PHA. The absent correlation between albumin and PHA response suggests that the decreased serum Zn is of multifactorial origin. The lack of correlation between PHA response and CD4 concentration requires further investigation. Zn may be an important cofactor in the progressive immunosuppression occurring in HIV infection.

Th.B.P.317 EXOCRINE PANCREATIC FUNCTION IN HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN LONDON AND KAMPALA PATIENTS

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Objective. To assess exocrine pancreatic function (EPF) in HIV infection.
Background. Chronic diarrhoea and weight loss are common features of HIV infection and have been associated with jejunal villous atrophy in the absence of enteropathogens or intestinal Kaposi sarcoma. Such symptoms may however be seen in exocrine pancreatic insufficiency (EPI). This study tested the hypothesis that EPI is present in HIV infection.
Methods. EPF was measured using the PABA test in 25 London homosexual and 26 Kampala heterosexual HIV antibody positive subjects presenting at different clinical stages of infection (CDC groups II, III and IV). Control values were obtained in 25 London and 9 Kampala healthy volunteers. The recovery of Para-Amino Benzoic Acid (PABA) in urine (expressed as % oral dose) following oral administration of N-Benzoyl-Tyrosyl-para-Aminobenzoic Acid correlates well with direct measurements of luminal chymotryptic activity and is a validated index of EPI. Para-Amino Salicylic Acid (PAS) administered concurrently serves as a marker of PABA absorption and metabolism. Reduced PABA with normal PAS recovery results in low PABA excretion index (PEI) and is characteristic of EPI.
Results.

		%PABA#(normal>40%)	%PAS#(normal>40%)	PEI#(normal>0.70)
London	controls(25)	58.9±2.2	56.4± 1.7	1.05±0.04
	EPI(3/25)	**34.3±1.0	63.6±10.1	*0.57±0.08
Kampala	controls(9)	57.1±4.2	57.9± 5.1	1.04±0.09
	EPI(4/26)	Δ28.0±6.5	54.6± 5.4	Δ0.50±0.10

*p<0.01; **p<0.0001; Δp<0.05 compared to controls. #mean±SEM.

Conclusion. EPI was present in 3 (12%) London and 4 (15%) Kampala subjects and is therefore not a common feature of HIV infection.

SIDA buccal
Oral AIDS

Th.B.P.318 NUTRITIONAL STATUS PARAMETERS ASSOCIATED WITH PSYCHOSOCIAL WELL BEING SEEN IN AIDS/ARC CLIENTS AT AN OUTPATIENT CLINIC IN SAN FRANCISCO.

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The purpose of this study was to (1) document changes in nutritional status from baseline measurements, (2) determine the efficacy of nutritional counseling, (3) define appropriate nutrition interventions, and (4) determine if nutritional status parameters correlated with psychsocial indices.

Patients underwent comprehensive nutritional assessment at both the initial outpatient clinic visit and after three months of routine nutritional counseling. Assessments consisted of anthropometric and biochemical measurements, three-day food records, nutritional histories, Hopkins Symptoms checklist, and Personal Orientation Inventory (POI), self-esteem and hassles questionaires. Education was provided on general nutrition and strategies for management of symptoms associated with opportunistic infections and other HIV disease-related conditions that may impact nutritional status. Additionally, a positive correlation between nutritional status and quality of life parameters were found.

Th.B.P.319 SINGLE-DOSE THERAPY FOR ESOPHAGEAL CANDIDIASIS WITH FLUCONAZOLE : A PILOT STUDY.

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Objective. Oesophageal candidiasis is a frequent complication of symptomatic HIV infection. In this setting, topicals are ineffective, clinical resistance to ketoconazole is common, and amphotericin is poorly tolerated. Moreover, zidovudine has to be stopped (or can not be initiated) because of side-effects potentiation. In this context, the pharmacokinetic properties of fluconazole (a novel bis-triazole antifungal agent), such as a good oral absorption and a long plasma half-life, are of special interest.
Methods. Eleven adults with a biopsy-documented candidal esophagitis have received a single oral 400 mg fluconazole dose as sole treatment and have been seen again on days 3 and 7. The therapeutic response was ascertained in all cases by a second esophagoscopy on day 7, with cultures and biopsy of any lesion.
Results. On day 3, dysphagia was still present in 1/11 patient, who received a second 400 mg dose. Symptoms had disappeared in all patients on day 7, and endoscopic examination was normal in 10/11 cases. One patient presented persisting endoscopic inflammatory signs, but with no evidence of fungi on biopsy and culture. One other patient relapsed 41 days later (follow-up: 9-259 days, median 119 days). Transitory headache and nausea have been observed in one patient 6 hours after fluconazole ingestion. No other subjective side effect and no hepatic, renal or hematologic signs have been recorded.
Conclusion. These preliminary results suggest that a single oral dose of fluconazole may cure esophageal candidiasis and is well tolerated. This treatment ensures optimal drug compliance and could avoid hospitalisation and/or zidovudine interruption in patients with AIDS.

Th.B.P.320 SITES AND RELATIVE PREVALENCE OF HAIRY LEUKOPLAKIA, PSEUDOMEMBRANOUS CANDIDIASIS, AND ERYTHEMATOUS CANDIDIASIS.

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Objective: To describe the locations in the mouth where hairy leukoplakia (HL), and the various forms of candidiasis with their relative prevalence in a referral population to an Oral AIDS Clinic.
Methods: The Oral AIDS Epidemiology project initiated a uniform prospective set of data collection procedures for the oral complications of HIV in both community cohorts, AIDS clinics and the Oral AIDS Clinic. This analysis is based on the findings in the referral patients to the Oral AIDS Clinic. HL is biopsy proven in the majority of cases. Candidiasis is confirmed by KOH exam or cultures. The location of each lesion is sketched on a m.p of the mouth.
Results: Hairy leukoplakia was the most common lesion observed in 226 individuals. 87% of patients had involvement of the lateral (including extension to the ventral surfaces), and 29% the dorsum of the tongue. The buccal mucosa was less frequently involved , 3%, as was the soft palate (.4 %). (No lesions were seen on the hard palate). Pseudomembranous candidiasis (thrush) was observed throughout the mouth in 106 patients, most commonly involving the tongue, 42% lateral 48% dorsum. The hard palate 20% and soft palate (19%) were also frequently observed, as was the buccal mucosa (15%). Erythematous candidiasis (n=66), easily overlooked with a flat red appearance, was most frequently seen on the hard palate (60%), soft palate (17%), and dorsum of the tongue (57%) where depappilation was a common finding. Angular cheilitis due to candida was observed in another 14 patients.
Conclusions: Hairy leukoplakia although almost universally found on the lateral surface of the tongue also appears in the buccal mucosa. Pseudomembranous candidiasis occurs almost twice as often as the other manifestations of candidiasis and can affect almost any surface in the mouth. Erythematous candida is much more characteristic of the tongue and hard palate. Concurrent HL and candida was a common finding.

Th.B.P.321 ORAL FINDINGS IN PATIENTS WITH ASYMPTOMATIC HIV DISEASE

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Objective. To determine the prevalence of oral mucosal lesions in patients with asymptomatic HIV disease (CDC-II/III), and to compare the results with findings in patients with symptomatic HIV disease (CDC-IV).

Methods. Oral examination was performed in 70 HIV-positive patients (65 men, 5 women; mean age 36 yr; range: 18-65). Fifty-six patients (80%) were homo/bisexual men. Physical examination, including laboratory evaluation, was completed in all patients. Twenty-two, 11, and 37 patients were classified in group CDC-II, III, and IV, respectively. Of the latter group, 34 patients were diagnosed as having AIDS (CDC, 1987).

Results. In 52 patients (74%) one or more oral mucosal lesions were detected (CDC-II/III: 23 (70%); CDC-IV: 29 (78%)). Oral candidiasis, hairy leukoplakia, and periodontal disease were present in all groups.

Conclusion. Our data show, that oral mucosal lesions frequently occur both in asymptomatic and symptomatic HIV disease.

Th.B.P.322 SINGLE DOSE THERAPY FOR ORAL CANDIDIASIS WITH FLUCONAZOLE IN HIV-INFECTED ADULTS.

The Swiss Group for Clinical Studies on AIDS (Cajot, Angela; Division of Infectious Diseases, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland).

Objective. To assess the efficacy and tolerance of a single dose of fluconazole for the treatment of oral candidiasis (OC). Fluconazole (FCA) is a new antifungal agent with a good oral absorption and a prolonged half-life.
Methods. From 1.10.1987 to 1.11.1988, all patients presenting with OC were proposed a single 150 mg dose of FCA. Diagnostic criteria for OC included mouth symptoms (burning, pain, dryness) and signs (white patches on a hyperemic base) with a positive swab culture. Patients were asked to attend weekly visits for two months. Clinical response was defined by the total disappearance of signs and symptoms. Relapses were treated with another single dose.
Results. Forty-five patients were included: 26 of them had presented ≥ 1 prior episode of OC within the last 12 months, and AIDS was present in 28. A response was noted in 39/45 patients (87%) on day 7 and in 16/43 (37%) on day 21 after the first 150 mg dose. The median follow-up observation period was 55 days (95% CI: 17 to 84), with a cumulative total of 2308 patient-days. During this follow-up period, 27 patients (including 22 with AIDS) presented 59 relapses, all of which responded to a single dose FCA. Median interval before relapses was 14 days (95% CI: 6-45). Analysis of variance showed that patients with AIDS and previous OC history were more likely to relapse. Altogether, of the 111 clinical OC episodes during this study, 93 (84%) responded to a single 150 mg dose. Two patients had minor side effects (nausea).
Conclusion. FCA single dose therapy for OC was easy to administer, effective and well tolerated in this pilot study. Relapses were more frequent in patients with a history of OC and with a symptomatic HIV infection. These episodes responded again to another FCA single dose, suggesting the absence of clinical resistance. The single dose approach could avoid continuous treatment in patients already receiving multiple therapies.

Th.B.P.323 THE IDENTIFICATION AND TRACKING OF CANDIDA ALBICANS ISOLATES FROM ORAL LESIONS IN HIV-SEROPOSITIVE INDIVIDUALS

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Objective. Candida albicans is recognized as the most frequent cause of oral candidiasis in HIV infection, however, very little else is known regarding these C. albicans biotypes.
Methods. Clinical isolates were obtained from 26 HIV-seropositive individuals with and without oral lesions, plus 8 HIV-seronegative controls. The isolates were hybridized with a number of C. albicans specific DNA probes to assess strain relatedness between isolates obtained over time. The DNA probes yield a "fingerprint" that can be used to follow individual C. albicans strains for long periods and through repeated re-isolations.
Results. C. albicans has been isolated from all individuals with oral lesions. We have determined that each individual in the study carries a distinct C. albicans strain identifiable by its DNA fingerprint. Furthermore, C. albicans was isolated from a significant fraction of asymptomatic individuals both HIV-seropositive and HIV-seronegative. In the two cases so far observed where new lesions developed following "successful" antifungal treatment, the same strain was found, indicating that the same yeast is harbored by the individual during the asymptomatic phase.
Conclusions. The finding of the same strain of C. albicans both before and after standard antifungal therapy raises questions as to the effectiveness and aims of current accepted therapeutic regimens. If in fact C. albicans organisms are altered under selection pressure from the host environment or can adapt to each host uniquely, than it is not surprising that they are such successful opportunistic pathogens. The present finding of a unique C. albicans strain in each individual harboring C. albicans suggests a mechanism for this yeast's continued presence in a population of immunocompromised and nonimmunocompromised individuals.

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Session d'affichage
Poster Session

Aspects cliniques
Clinical Aspects of AIDS

Th.B.P.324

ORAL MUCOSAL LESIONS AND LYMPHADENOPATHY IN HIVI SEROPOSITIVE PATIENTS.

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Findings of an examination of oral mucosal lesions related to HIVI, and palpation for enlarged lymphnodes done on a cohort of 334 women prostitutes by September 1988 are presented.

In the seropositive patients (80% of the women), oral mucosal lesions were found in 13.2% (mainly oral candidiasis) whereas persistent generalized lymphaderopathy (PGL) was found in 42.2% individuals.

	WITH LESIONS		WITH NO LESIONS	
	No.	%	No.	%
PGL	24	55.1	94	32.2
No PGL	20	44.9	196	67.8

(Chisquare = 8.16 p-value = 0.004)

The epitrochlear lymphnodes were most affected in both groups, and in addition with the supraclavicular and the submandibular, statistical significant difference in occurence was found between the two groups.

The data suggests that these two clinical parameters may be useful indicators of early progression of HIVI infection in these women.

Th.B.P.325

ORAL MUCOSAL LESIONS IN INFANTS OF HIV+ve AND HIV -ve MOTHERS.

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OBJECTIVE :- The aim of the study was to determine the prevalance of oral mucosal lesions in infants of seropositive and seronegative mothers.
METHOD :- Infants of HIV +ve and HIV -ve mothers enrolled in a vertical HIV transmission study in Nairobi, Kenya were followed. prospectively and were examined for occurrence of oral mucosal lesions. Smears were obtained for microscopic examination.
RESULTS :-

	Maternal HIV status		
	Seroneg.(n = 106).	Seropos (n=58).	
A.Mean age of infants at examination.(weeks).	19.5	31.9	
B.Lesions in infants.	n(%)	n(%)	p-value
1.Pseudomembranous cand.	7(6.6)	4(6.9)	.92
2.Erythematous candid.	7(6.6)	5(8.6)	.72
3.Hyperplastic Candid.	1(0.9)	1(1.7)	.71

(Mantel-Haenszel test,odds ratio = 1.22, with age statified).
CONCLUSION :- The results indicate that the occurrence of oral lesions (mainly oral candidiasis)is not HIV-specific forinfants.

Th.B.P.326

ERYTHEMATOUS CANDIDIASIS: EARLY CLINICAL MANIFESTATION IN HIV-REACTIVE PATIENTS

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Objective. To evaluate Erythematous Candidiasis (EC)in asymptomatic HIV-reactive patients (aHIV Pt).
Methods. Clinical follow-up and stomatological control of 105 aHIV Pt was made during 8 months. Dental-eye photograph was taken and culture performed for those lesions suspected of EC. Nystatin and/or gentian violet were administered locally to confirmed cases, while severe ones were treated orally with Ketoconazol.
Results. EC shows as a diamond-like reddish spot(72%) or as "patches"(28%) in the median and back raphe before the *papillae vellate*, causing disappearance of filiform papillae(58% of the cases), in the hard palate(49%), in the soft palate(42%) and in the jugal mucosa(12%). More than 1 site was found in 65 Pt. Only 3 Pt showed evolution towards pseudomembranous candidiasis 8 months later.
Conclusion. EC was the only clinical manifestation found in the 105 aHIV Pt studied. Early diagnosis may be useful as an early clinical marker; likewise, early treatment may delay evolution towards pseudomembranous candidiasis, which involves greater severity.

Th.B.P.327

HAIRY LEUKOPLAKIA IN SPANISH HIV-INFECTED PATIENTS:AN EARLY MARKER OF HIV-DISEASE PROGRESSION.

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Objective. To study the incidence of hairy leukoplakia (HL) and its value as a clinical sign of progression of HIV-infection.
Patients and methods. Three hundred seventy two HIV-infected pts were observed during a 4-year-period: 299 drug addicts (DA), 38 homosexuals (HMS), 8 both groups (DH), 21 heterosexuals (HTS) and 6 other risk groups. The diagnosis of HL was made using clinical and/or histological criteria.
Results. Fifty five (15%) pts presented HL: 39/239 DA (13%), 11/38 HMS (29%) 2/8 DH (25%) and 3/21 HTS (14%). HL was diagnosed in 27% of 78 AIDS pts (HL-AIDS), and in 12% of 306 pts in earlier stages of HIV-infection (HL-preAIDS) Other mucocutaneous lesions (MCL) were observed in 90% of HL-AIDS pts and in 37% of HL-preAIDS pts ($p < 0.0001$). In HL-preAIDS pts, HL was the first clinical sign of HIV-disease progression to CDC-IV group in 59%, while in the remainder 41% it was associated to constitutional symptoms or other infections of CDC-IV-C2 group. Serum CD4+ values of pts with HL was 0.25 x 10/L, range 0.02-0.59. HL was observed earlier than oral candidiasis (64% in preAIDS and 36% in AIDS vs. 29% in preAIDS and 71% in AIDS respectively)$p < 0.001$
Conclusions. 1) HL is a frequent event in spanish HIV-infected pts and may appear in different risk groups. 2) In our population HL presents earlier than other CDC-IV-C2 group infections such as oral thrush. 3) In more than half of our preAIDS cases HL was the only MCL observed and the first clinical sign of HIV-disease progression. 4) HL may be an early indication for antiretroviral therapy.

Th.B.P.328

ITRACONAZOLE VS KETOCONAZOLE IN THE TREATMENT OF MUCOCUTANEOUS CANDIDOSIS.

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OBJECTIVE: To determine the efficacy of Itraconazole or Ketoconazole in the treatment of buccal or buccal and oesophageal candidosis in ARC and AIDS patients.
METHOD: 100 HIV positive patients with mucocutaneous candidosis were randomised to a 4 week course of either Itraconazole or Ketoconazole in a double blinded study. Clinical and mycological assessments were made at entry,one week and four weeks. All patients with dysphagia were endoscoped at entry and again at end of treatment. Patients were followed up for three months after completeing the treatment course to determine time to relapse.

RESULTS:	RESPONSE (buccal) CLINICAL/	MYCOLOGICAL	RESPONSE (oesophageal) CLINICAL	RELAPSE WITHIN THREE MONTHS
ITRACONAZOLE:	39 (98%)	30 (77%)	11 (92%)	27 (82%)
KETOCONAZOLE:	38 (100%)	34 (92%)	10 (100%)	28 (80%)

Adverse reactions; There were statistically more episodes of hepatotoxicity with Ketoconazole 2/48 (4%) vs Itraconazole 0/52 (0 %).
CONCLUSION: Itraconazole appears equally as effective as Ketoconazole in acheiving clinical responses (98% vs 100%) but has a lesser effect on mycological responses (77% vs 92%). However Itraconazole has a much lower incidence of hepatotoxicity and therefore is justfiable as a first line therapy for mucocutaneous candidosis in ARC and AIDS patients.

Th.B.P.329

Oral candidiasis (o.C.) determined by a quantitative method - correlation to marker of the immunologic system

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Objectives:1) To study the advantage of quantitative determination of yeasts in throat washing 2) To determine the correlation between o. C., neopterin- level, CD4-cell counts, Zolla-Pasner- classification (Z.P.C.) and progression to Aids
Methods: 29 patients (pat) in WR- stage II- IV were investigated at the beginning of the study and after 6, 12, 18 and 24 weeks. The parameters included a clinical check up of the oral mucosa, yeast counts of throat washing (pathologic > 10^3), neopterin levels (normal: < 11 nmol/l) and counts of CD4- and CD8- lymphocytes.
Results: 11 of the 29 pat developed o.C. 6 pat had a progression to Aids, 5 out of these 6 pat developed o.C. prior to progression to Aids. The median time between first diagnosis of o.C. and Aids was 10 weeks. In pat with CD4- counts < 400 at the beginning of the study o.C. occured in 70 %. Pat with neopterin levels > 20 nmol/l showed o.C. in 63 %. Pat with Z.P.C. II or III at the start of the study, showed o.C. in 73 % (s. tab.). In the throat washing of one pat, who later developed a Candida-Oesophagitis, we found pathologic yeast counts several times, but we never observed clinical signs of o.C.

	Nr.of pat	at start of study			during the study
		CD4- cells	neopterin	Z.P.C.IIorIII	progression to Aids
o.C.	11	417	23.6	8 (73 %)	5 (45 %)
no o.C.	18	763	14.3	4 (40 %)	1 (6 %)

Conclusion: There is a statistically significant correlation between alteration of immunologic markers and the manifestation of Aids. The progression to Aids in 5 of 11 pat with o.C. after a median time of 10 weeks demonstrates the prognostic value of o.C. The determination of yeast counts in throat washing is a useful method to evaluate the manifestation of Candida in oral mucosa.

Th.B.P.330 ORAL MELANOTIC MACULES IN PATIENTS INFECTED WITH HIV-1

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Objective. To describe the features of 9 cases of oral melanotic macules (OMM) in patients (pts) infected with HIV-1.
Methods. Between Dec.87 and March 88, 9 pts developed OMM. Plasma cortisol level was measured. Electron microscopy was done in 5 specimens. In situ hybridization to Epstein-Barr virus (EBV) was done under stringent condition.
Results. The mean age was 31.6 years. Five pts were men and 4 women. Six pts were IVDA. One pt had asymptomatic infection, 3 LAS and 5 ARC. In 3 pts the OMM were single and in 6 multiple. None of the pts developed clinical or laboratory evidence of adrenal damage. Six pts received treatment courses of topical nystatine or systemic ketoconazole. Six pts also had hairy leukoplakia. Increased melanin deposition in the basal-cell layer and upper lamina propria was observed. In 6 cases koilocytes were present. No ultrastructural alterations were observed. DNA of EBV was found in 2 OMM tissues and in 1 specimen of normal mucosa. In some pts the OMM enlarged or recurred after excision.
Conclusion.The etiology of OMM is not know, although several causes should be considered. Subtle adrenal damage, latent viral infection and drug therapy can be involved. OMM might represent a new manifestation of HIV-1 infection.

Th.B.P.332 IMMUNOHISTOCHEMICAL STUDIES OF ORAL SCRATCHES IN HIV INFECTED PATIENTS.

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Objective: To examine keratinocytes gained from oral scratches for viral antigens and cytokeratin differentiation markers.
Material and methods: Scratch material (lat. border of the tongue) (HIV+ patients n=30, HIV- n=20) was filtered, centrifugated onto slides and examined by means of immunohistochemistry (APAAP) and in situ hybridisation (ISH). Applied antibodies: anti cytokeratin (K) 8.60, K 8.12 and K 4.62 and Kl1; EBV, CMV, HSV 1/2.
Results: Compared to HIV- in scratches of HIV+ the number of K 8.60 ("cornification marker") positive cells was 2.6 times increased, of K 8.12 ("fast cell turnover") 2.5 times and of K 4.62 ("basal cell marker") 7 times. In scratches of HIV+ patients the number of Kl1 positive cells was 3 times higher than in HIV-. Viral antigens of EBV were not detected in HIV-, but in 15/30 HIV+ patients (APAAP, ISH); 10/15 showed oral hairy leukoplakia (HL), while 3 further patients developed HL during an observation time of 8 months. CMV was observed in 8/30 (ISH) and in 6/30 HIV+ patients (APAAP). In 9/30 (HIV+) patients HSV1/2 + cells were found (ISH). Detection of viral antigens and of immature keratinocytes was highly correlated with AIDS manifestations.
Conclusion: 1. The presented non-invasive technique ("scratch") is a sensitive aid for regular monitoring of HIV associated oral lesions, such as HL. 2. Proliferation and differentiation of cytokeratin in oral epithelium is altered during HIV infection.
3. Detection of EBV in oral scratches seems to be a valuable marker for the later development of HL.

Th.B.P.334 FLUCONAZOLE IN THE TREATMENT OF OROPHARYNGEAL CANDIDIASIS IN HIV-POSITIVE PATIENTS.

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Objective: To describe efficacy and restrictions of Fluconazole in the treatment of oral candidiasis in AIDS-patients.
Methods: 104 HIV-positive patients with clinical and cultural signs of oropharyngeal candidiasis were treated in 112 treatment courses. Initial dosage was 200 mg/die, followed by a daily dosage of 100 mg. Duration of therapy was approximately 3 weeks in approximately 60% of cases. For quantification of colonisation, the oral wash-out method was used.
Results: At the end of treatment with Fluconazole, clinical symptoms and complaints completely disappeared in approximately 90% of patients, although the oral wash-out still showed a remarkable number of candida spp. in the culture. The group of "non-responders" consisted of patients in an advanced stage of disease, patients under cytostatic therapy, or of patients with a selection of C. glabrata (12 patients) or C. tropicalis (2 patients). Fluconazole was well tolerated with only a small number of adverse effects even after long term therapy.
Conclusion: Fluconazole is effective in the treatment of oropharyngeal candidiasis. Elimination of clinical symptoms and complaints is not always accompanied by elimination in the culture. The selection of C. glabrata might become a therapeutic problem.

Th.B.P.331 LOCAL DESTRUCTION OF LABIAL SURFACE OF MANDIBULAR TEETH BY DIRECT APPLICATION OF COCAINE IN DRUG USERS WITH AIDS

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Objective. To describe a newly recognized oral lesion in drug users with AIDS.
Methods. 92 consecutive drug users with AIDS underwent periodontal and oral examination by a periodontist. Destructive lesions not explicable on the basis of periodontal disease or other recognized oral pathology were noted and photographed. Patients were questioned about direct mucosal application of cocaine.
Results. Five patients had focal destruction of the soft and hard tissue of the labial surface of mandibular anterior teeth. Affected areas could not be attributed to adjacent periodontitis. Subjects included 3 male and 1 female intravenous drug users (IVDU) and 1 female who denied parenteral drug use and whose risk behavior for AIDS was sexual contact with an IVDU. All 5 reported at least several weeks of cocaine use by direct application to the affected areas, described as the "freeze" method of cocaine use.
Conclusion. Drug users with AIDS who take cocaine by the "freeze" method are at risk for focal destruction of oral tissue at the site of drug application. Individuals involved in the oral care of drug users with AIDS should recognize this entity.

Th.B.P.333 RECURRENT ORAL APHTHAE IN HIV-INFECTED HOMOSEXUAL MALES.

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Objective. To develop a profile and assess cofactors in HIV positive homosexual males afflicted with progressive oral aphthae.
Methods: 12 homosexual males; 9 with AIDS and 3 patients with ARC were evaluated and treated. Mean age was 37 (range 27 to 56). Followup mean 10 months. Patients were divided into 2 groups — those with lesions <6 mm (minor), >6 mm (major). History of recurrent aphthous ulcerations, frequency, and disease severity prior to 1988 and after HIV test, time of diagnosis of ARC or AIDS and medications were recorded. Tests included HSV by monoclonal Ab, culture (bacterial and fungal) and complete blood counts.
Results. 9/12 patients had a previous history of recurrent aphthous prior to HIV infection; 8 patients presented with major ulcers and 4 with minor ulcers; severity and frequency of their oral disease has worsened in 9 patients prior to the onset of ARC or AIDS and in 3 patients after the diagnosis of AIDS; 9/12 tested patients were negative to HSV; 6/8 patients with major ulcers were anemic and neutropenic: RBC (mean 2.6), Hb (mean 9.5), WBC (mean 2.5); all patients responded to therapy whether systemic (Prednisone) or topical (Clobetasol propionate).
Conclusion. Increased severity and frequency of RAU is a complication of HIV infection; anemia and neutropenia appear to be cofactors; RAU in HIV positive patients is not HSV related; patients with the major type are likely to be anemic and neutropenic.

Th.B.P.335 CARRIAGE OF ORAL CANDIDA ALBICANS : CORRELATIONS WITH HIV INFECTION AND CELLULAR IMMUNITY IN HEROIN ABUSERS.

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Objective. To study the carriage of oral candida albicans in intravenous drugs abusers (IDAs) and their relationship with HIV infection and underlying immunodeficiency.
Methods. 196 IDAs (130 M ,39 F) were studied from 1/86 to 12/87. HIV test (ELISA),CD4-CD8 lymphocyte counts and CD4/CD8 ratio were practised.Oral samples were included in Stuart medium and cultivated in Sabouraud medium. Results were lectured the 7th day after Gram stain.
Results. 73% of IDAs were carriers of 1 or more candida albicans colonies vs 29.6% of controls (p<0.001).HIV prevalence was 77.9% (127/163) without difference in the number of colonies for seropositives (40.9±57.8 col) and seronegatives (32.6±56 col)(p=0.44).Oral thrush (35.6% of patients) was related to a greater number of colonies (64.8±59.4) comparing with cases without oral lesions (22.6±44.2 col;p=0.009). Association between oral thrush and HIV seropositivity (p<0.04) was also demonstrated.However, being asymptomatic carrier of 1 or more colonies could not be associated for HIV serostatus (p<0.44).
73 out of 96 (76%) patients with CD4/CD8 had a ratio lower than 1.2 with a mean of 39.3±53 col. and 23 cases with CD4/CD8 >1.2<2.1 showed 26.3±36.7 col. (p=0.718).
Conclusion. There is a high incidence of candida albicans carriers in IDAs, but this finding not appear related to HIV infection or underlying immunodeficiency in asymptomatic heroin abusers.

Th.B.P.336 TUMEURS LYMPHOIDES DU CAVUM AU COURS DE L'INFECTION PAR LE V.I.H.

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Objectif. Décrire les 3 premiers cas de tumeur lymphoïde polyclonale du cavum chez des patients séropositifs, et préciser leur nature.
Méthodes. Examens endoscopique et tomodensitométrique. Histologie et immuno-marquage pour étudier la composition cellulaire. Etude du réarrangement des gènes du récepteur T et du gène des immunoglobulines pour affirmer le caractère mono ou polyclonal. Recherche du génome viral en hybridation moléculaire pour apprécier le rôle pathogénique éventuel de l'EBV.
Résultats. Une otalgie et un encombrement nasal chroniques font découvrir une volumineuse tumeur du cavum n'envahissant pas les structures osseuses, chez 3 hommes (28, 30, 33 ans) porteurs d'anticorps anti-VIH1 (2 toxicomanes, 2 originaires des Caraïbes). Dans 2 cas il existe un syndrôme sec, associé à une parotidite chez 1 patient, à un syndrôme lymphadénopathique et une hypertrophie amygdalienne chez l'autre. Dans les 3 cas on note : une lymphopénie T4 (588, 497, 280/mm^3) : une hypergammaglobulinémie polyclonale (21.3, 22, 29 g/l). La biopsie révèle une prolifération lymphoïde intense composée de lymphocytes polyclonaux B et T (à prédominance de T4 : 60 %). Il n'y a pas de réarrangement du gène des immunoglobulines ni du récepteur T (3 patients). La recherche d'EBV en hybridation moléculaire est négative dans les biopsies (2 patients).
Conclusion. Nos 3 observations élargissent le spectre des tumeurs lymphoïdes polyclonales observées au cours de l'infection VIH. Ces tumeurs du cavum symptomatiques ont une composition histologique identique à celle observée dans les ganglions du syndrôme lymphadénopathique. Le rôle de l'EBV souvent évoqué dans les proliférations lymphoïdes des immunodéprimés ne semble pas pouvoir être retenu ici.

Th.B.P.337 ORAL PATHOLOGY IN HIV INFECTED PACIENTS

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Objective:Diagnostic and early treatment of oral manifestations in HIV infected patients.
Method:HIV positive test pacients (E/WB) listed in the CCII were examined by the Center's Dental Dept. Pacients without symptoms are reexamined each two months, and patients presenting symptoms are examined whenever necessary.
Results:Of 66 pacients examined,34 did not show symptoms in the first exam, and throughout the program, only 6 developed some oral pathology. The first and most frequent pathology found was candidiasis. Gengivitis was also observed in 4 pacients. In patients presenting symptoms in the first consultation (32) the most frequent oral pathology was gengivitis following candidiasis SK was observed in 2 patients.
Conclusions:a)The majority of the pacients which did not present symptoms in the first exam follow the initial exam, remain without symptoms;b)The concern with oral health maintenance reflects in the search of a better quality of life the positive test pacients;c)The dental dept. has shown a very important part in keeping the patient within the CCII's program.

Th.B.P.338 CORRELATION OF HIV IN GINGIVAL CREVICULAR FLUID WITH HIV IN SERUM

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Objective: To determine the presence of HIV in gingival crevicular fluid (GCF) and to correlate the presence of HIV in GCF to HIV in the serum.
Methods: Samples were taken from 3 tooth sites in 35 HIV-positive men and 47 HIV-negative men. GCF and associated subgingival plaque (2 µl) was collected by paper points placed to the base of the periodontal pocket. The fluid and associated cells were solubilized and prepared by standard procedures and hybridized with a commercially available HIV-DNA probe.
Results: In all cases, all three sites were either negative or positive. As seen in the table, the sensitivity of the DNA probe assay was 91.4% and the specificity was 91.5%.

	Western Blot		
DNA Probe	HIV+	HIV-	Total
HIV+	32	4	36
HIV-	3	43	46
Total	35	47	82

Conclusion: These results suggest detection of HIV in blood and in GCF is approximately equal, and that the DNA probe is specific for the detection of HIV. In addition, these data suggest GCF as a potential site of HIV in oral fluids. Furthermore, the ease of sample collection and sample stability, may make examination of GCF an additional tool for epidemiologic surveys in large patient populations or in third world nations.

Th.B.P.339 AN IMMUNOHISTOCHEMICAL AND ULTRASTRUCTURAL STUDY OF ORAL HAIRY LEUKOPLAKIA IN HIV-POSITIVE PATIENTS

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Objective.The aim of our study was to describe the ultrastructural features of hairy leukoplakia (HL) and to confirm the presence of Epstein-Barr virus (EBV) by immunohistochemistry and transmission electron microscopy (TEM).
Methods.Biopsy specimens of HL were taken from the lateral border of the tongue of 3 HIV-seropositive male patients belonging to stage IV C2 of the CDC classification and processed for routine histopathology,immunohistochemistry and TEM.
Results.The common histological features were a mild hyperkeratosis,parakeratosis and acanthosis of the epithelium,with characteristic koilocytotic prickle cells.In the upper epithelial layers the presence of EBV antigens was detected using an anti-EBV policlonal Ab in a three step immunofluorescence technique on frozen sections.At the ultrastructural level,ballooned keratinocytes were observed within the spinous layer.The infected cells were increased in size,with few cytoplasmic organelles and degenerated mitochondria; their pycnotic nuclei showed areas of condensed chromatin.The nuclei contained varying amounts of viral nucleocapsids.Some showed the central electrondense portion typical of herpes viruses.In our investigation the papilloma virus was not detected at the EM level.

Th.B.P.340 ORAL KAPOSI'S SARCOMA: THE SEQUENCE OF APPEARANCE WITH RESPECT TO OTHER AIDS COMPLICATIONS

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Objective: To describe the natural history of mucosal Kaposi's sarcoma (KS) in the sequence of the development of other AIDS complications.
Methods: Since 1985 a prospective registry of all new patients to the AIDS clinics at UCSF, including 774 men and 16 women at the AIC and 59 men who presented at the clinic of the UCSF Oral AIDS Center (OAC) was kept. Kaposi's sarcoma lesions on the skin and the oral mucosa are described in detail.
Results: In the AIC, 173 patients had Kaposi's sarcoma on physical exam: trunk 52%, leg 45%, arm 38%, face 33%, and oral cavity 40%. Of the 69 with oral KS at the AIC the other locations were: trunk 54%, leg 47%, arm 44%, face 42%, a similar proportion and distribution to those without oral KS. 15% with oral KS already had an episode of Pneumocystis carinii pneumonia (PCP) while 18% of those without oral KS had prior PCP. KS occurred initially in the mouths of 25/59 (42%) of the patients studied at the OAC. Oral KS was the first AIDS diagnosis in 13/59 (22%) of these patients. The palate was involved in 97% of the cases. Hairy leukoplakia, candidiasis, or both were seen in 74% of these patients and periodontal disease in 26% of these patients.
Conclusion Visceral KS, involving bowel and lung is associated with more rapidly progressive disease. In 42% of the patients at the OAC, oral lesions were their first presentation of KS and in 22%, it gave the first diagnosis of AIDS. Oral KS seems to fit the timing of skin involvement, both in terms of prior AIDS complications and severity of concomitant lesions. Supported by NIH DE PO1-07946.

Th.B.P.341 CLINICAL ASPECTS AND TREATMENT OF ORAL/OROPHARYNGEAL KAPOSI'S SARCOMA

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Objectives. To describe clinical characteristics and treatment of patients with oral Kaposi's Sarcoma (KS).
Methods. Between 1982 and 1987 134 homosexual/bisexual men with oral/oropharyngeal KS were evaluated at the University of California Medical Center, San Francisco.
Results. Median age was 34 and 3 were intravenous drug abusers. Palate and gingiva were the most common sites. Thirty-six had sufficient signs/symptoms (pain, growth, bleeding) associated with their oral KS to require treatment. In 29 oral KS was the first sign of AIDS. Sixty-one had concomitant skin and/or visceral lesions that at this time did not demand therapy. Thirty-four were treated by external radiation using 150 cGy fractions to a total dose of 1500 to the oral lesion(s). All 34 had regression of signs and resolution of symptoms. Two were controlled by CO_2 laser and intralesional vinblastine injections.
Conclusion. Oral KS is a common site of occurrence and may be the first sign of AIDS. Because of significant symptoms and disruption of function, treatment is often indicated. External radiation therapy is an effective form of palliative management in which beneficial effects far exceed adverse reactions.

Th.B.P.342 ORAL HYPERPIGMENTATION ASSOCIATED WITH HIV INFECTION.

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Objective: To characterize the clinical and morphological features of hyperpigmentations (h.p.) observed on the oral mucosa of 15 non-smoking HIV-infected patients, biopsies of h.p. (HIV+ n=10; HIV- n=5) and of normal oral mucosa (o.m.) (HIV+ n=5; HIV- n=5) were examined.
Methods: Light microscopy (LM): H&E, Fe2 and Fe3, silverimpregnation. Electron microscopy (EM). Immunohistochemistry (IMHAPAAP): antibodies against CD1, CD4, CD8, CD25, IgA2, TAC and transferrin receptor (ATR).
Results: Localisation of h.p. in HIV+: pl. buccale, palate, gingiva, tongue, extraoral (face, hands, finger/toe nails). During observation time (avge. 8.2 mths.) the size of h.p. in HIV+ increased in 3 pat., 2 of them (AIDS) died, 1 pat. developed AIDS. LM/EM of h.p. (HIV-/HIV+): accumulation of melanosomes within keratinocytes/melanocytes of the basal/superficial cell layers, in fibroblasts/phagocytes of the connective tissue (c.t.). IM: comparison h.p. HIV-/HIV+: the number of CD4+ (3 times), HLA DR+ (4 times) and CD8+ (5 times) cells was increased within c.t.(HIV+). Within c.t. of h.p. (HIV+) only single cells stained + for CD25, TAC receptor, ATR and IgA2. Compared with h.p. (HIV-) and with o.m. (HIV+) the number of CD1+ cells within c.t. of h.p. (HIV+) was markedly increased, while their number within the epithelium was comparable.
Conclusion: The high imbalance of distribution and status of local immunocytes in h.p. (HIV+) may reflect the functional impairment of the oral mucosa. The sudden onset of melanin deposition might be caused by inflammatory/postinflammatory reactions and seems to be correlated with the progression of AIDS manifestation.

Th.B.P.343 ORAL HAIRY LEUKOPLAKIA: CLINICAL BEHAVIOR AND TREATMENT RESULTS

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Objective. To report on the clinical behavior and treatment results of oral hairy leukoplakia (OHL).
Methods. Appearance of OHL and its clinical behavior were correlated to the T4-cell count in 64 HIV-1 infected patients (pts). In 20 pts treatment response to oral acyclovir was also evaluated. Median follow-up was of 12 months (3-24).
Results. In 64 pts the median T4-cell count, at the appearance of OHL, was of 390 cells/mm^3 (16-1626). In several pts, OHL appeared after a progressive declining of T4-cell count. 25 pts received no specific treatment. Of these, 6/25 showed spontaneous remission of OHL, 6/25 ciclic size variation, 7/25 progression and 11/25 no change. Remission and size variation were associated with incisional biopsy and fluctuation of T4-cell count. Oral acyclovir (1600 mg/d for 14 days) in a open trial determined an objective response (CR=6;PR=8) in 14/20 pts. Median duration of response was 6.5 months (2-11).
Conclusion. Declining level of T4-cells influences the appearance and clinical behavior of OHL. Depletion of T4-cells may facilitate the replication of Epstein-Barr virus (EBV) within the lingual epithelium. Oral acyclovir is an effective therapy of OHL. This favors the pathogenetic role of EBV.
This study is supported by a grant from the Regione Toscana-Progetto HIV.

Th.B.P.344 SALIVARY SIgA AND HIV INFECTION

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Objective. To determine the salivary SIgA levels during the HIV infection and evaluate their possible role in the control of oral HIV-related lesions (OHRL).
Methods. 93 subjects were studied: 72 AbHIV+ and 21 healthy controls (H.C.). 32 AbHIV+ didn't show OHRL, 25 were affected by oral candidiasis and 15 by hairy leukoplakia (H.L.). SIgA RID-plates, containing a monospecific anti-secretory component antiserum, were used to evaluate SIgA. IgM and IgA immunoprecipitation allowed to exclude that free secretory component and /or SIgM presence could distort our results. Total salivary proteins (T.P.) and albumine were also tested to exclude the phlogosis influence. Mean value for every patient group are reported in the table.

Results. GROUPS	SIgA (mg%)	T.P. (mg%)	SIgA/IgA
H.C.	30.8±13.2	162.0±43.3	2.8±0.4
AbHIV+ without lesions	45.4±22.4	266.7±88.9	3.6±2.3
AbHIV+ with oral cand.	48.9±17.5	252.4±78.0	3.9±2.3
AbHIV+ with H.L.	64.5±27.2	279.0±57.1	3.1±1.4

Conclusion. A significant SIgA increase appeared in AbHIV+ compared with H.C.. No difference resulted between patients with or without OHRL. The lack of significant difference in the SIgA synthesis shows the minor role of the local humoral response in the control of these lesions. On the contrary, the strict relation ship between circulating CD4+ decrease and OHRL emphatized the cell-mediated immune response importance also in the oral cavity.

Th.B.P.345 OCCURENCE OF ORAL PATHOLOGY AMONG DIFFERENT RISK GROUPS OF HIV INFECTED PATIENTS

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During a 6-year period, 700 HIV patients (P) were examinated; 73% male and 27% female. Risk factors of acquisition of HIV infection were: homosexual or bisexual (homo): 38.8%, African (Afr): 35%, IV drug abusers (IVDA): 14.4%, heterosexual (hetero): 9.7%, unknown (unk): 1.4%, blood transfusion (blood): 0.7%. Clinical stage and immunological status were comparable in all risk groups. Among those 700 P, 300 (43%) presented at least one oral lesion (1 OL). The most frequent findings were: candidiasis (Cand), hairy leukoplakia (HL), periodontal diseases (PD), Kaposi's sarcoma (KS) and recurrent aphtous ulcerations (RAU). Occurence of oral lesions:

Risk factor	P Nb	1 OL	Cand	HL	PD	KS	RAU
Homo	271 P	144 P	59 P	34 P	30 P	13 P	8 P
Afr	245 P	84 P	54 P	6 P	2 P	8 P	7 P
IVDA	101 P	44 P	21 P	7 P	8 P	-	-
Hetero	68 P	28 P	18 P	3 P	1 P	-	-
Unk	10 P	-	-	-	-	-	-
Blood	5 P	-	-	-	-	-	-

In conclusion : 1) Prevalence of all oral lesions is significantly greater in the homosexual group (p 0.001). 2) Hairy leukoplakia and periodontal diseases are two oral lesions which appear preferentially in the homosexual group (p 0.001).

Th.B.P.346 ORAL MANIFESTATIONS OF HIV INFECTION IN ABIDJAN, COTE D'IVOIRE

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Objective: To describe oral manifestations associated with HIV infection in hospitalized patients in Abidjan, Cote D'Ivoire.
Methods. Two hundred and fifty-six hospitalized patients (Internal Medicine, Pulmonary Medicine, Infectious Diseases, Dermatology, Gynecology) had a medical, including oral, examination, and were tested for HIV-1 and HIV-2 infection. Clinically significant oral lesions were biopsied for histologic examination.
Results. Fifty-two percent of sera were repeatedly reactive on HIV-1 and/or HIV-2 ELISA. The seroprevalence for HIV-1 and/or HIV-2 infection was higher in males (63%) than females (36%). Oral candidiasis was more frequent in HIV+ve (64/130) than in HIV-ve (21/121) patients (OR - 4.62; p<10-7). For diagnosing HIV infection, oral candidiasis was 49% sensitive, 83% specific, and had a positive predictive value of 75%. No association was found between oral candidiasis and the taking of antibiotics or corticosteroids. Hairy leukoplakia (HL) was suspected clinically in 18/130 HIV/ELISA+ and in 11/121 HIV/ELISA-ve patients (NS). In 17/19 (90%) biopsies taken HL was histologically confirmed. Twelve (63%) of the confirmed HL cases were HIV/ELISA+ve. The predictive value of HL was increased to 71% by histological confirmation.
Conclusions. (1) Oral candidiasis is highly predictive for HIV infection in African patients; (2) HL occurs in African patients with HIV infection.

Th.B.P.347 NATURAL HISTORY OF HIV-ASSOCIATED SALIVARY GLAND DISEASE.

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Objective. To describe the natural history of HIV-associated salivary gland disease (HIV-SGD), i.e., presence of salivary gland enlargement and/or xerostomia in HIV infection.
Methods. In 12 patients with HIV-SGD (1 child, 11 adults) followed for a median of 13 months we assessed symptoms, stage of HIV disease, resting whole salivary (RWS) flow rate (FR), stimulated parotid (SP) FR, and immune status (T4, T4/T8). The salivary FRs of the 9 with parotid gland enlargement (PGE) were compared with those of a control group of HIV infected adults without HIV-SGD but with a similar degree of immune deficiency.
Results. The symptoms of dry mouth and the parotid gland enlargement (PGE) were generally unchanged without treatment. PGE disappeared in 3 patients taking various medications (steroids, zidovudine). Acyclovir did not change the PGE in 2 patients. Patients with PGE had significantly lower salivary flow than the control group (P<0.01).

HIV-SGD patients	1st exam.	Follow-up.
No with AIDS	2/12 (17%)	5/12 (44%)
No with PGE	9	6
Mean T4 cells/mm3,T4/T8	283, 0.41	222, 0.28
Mean RWS FR, ml/min	0.46	0.47 (P>0.05)
SP FR, ml/min/gland	0.17	0.27 (P<0.03)

Conclusion. HIV-SGD is associated with low T4 counts and a high risk of development of AIDS. Patients with PGE have reduced parotid flows compared to HIV+ with similar immune deficiency. Unexpectedly, the salivary flow did not decrease with time in spite of further impaired immune status. This effect may partly be due to the given medications. The pathogenesis of this Sjogren's syndrome-like disease is unknown. Supported by NIH PO1-DE07946,the Danish Med. Res. Council (#12-7499,12-8465), and AIDS Fondet,(DK).

Th.B.P.348 TREATMENT OF HIV+ PATIENTS WITH OROPHARYNGEAL AND/OR OESOPHAGEAL CANDIDIASIS: THE RESULTS OF A D.B. STUDY.

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Objective. To compare in a double blind randomized trial fluconazole and ketoconazole in the treatment of oropharyngeal and/or oesophageal candidiasis in patients with HIV infection.
Methods. Fifty patients with clinical and microbiologically documented candidiasis and HIV infection received either fluconazole 50 mg once a day and 1 placebo capsule once a day for 28 days or ketoconazole 200 mg capsule twice a day for 28 days. Clinical and microbiological responses were evaluated at 7, 14, 21 and 28 days together with analysis of safety and tolerance.
Results. At the end of treatment, clinical cure was recorded in 91,7% of patients treated with fluconazole and in 58,3% of patients treated with ketoconazole. A further 4,2% of patients treated with fluconazole and 33,3% of patients treated with ketoconazole was considered clinically improved. The mycological eradication rate was 44% for fluconazole and 41,7% for ketoconazole. The incidence of clinical side effects was similar in both groups (8%). The incidence of treatment-related laboratory test abnormalities was higher for the patients treated with ketoconazole (elevated values for SGOT in 4 cases and for SGPT in 3 cases vs. 2 cases of elevation of SGOT and 2 cases of elevation of SGPT).
Conclusion. In oropharyngeal and/or oesophageal candidiasis associated with HIV infection, fluconazole appears to be clinically more effective than ketoconazole. In the study no significative mycological differences are observed between the two drugs. Fluconazole seems better tolerated than ketoconazole.

Th.B.P.349 CARBON DIOXIDE LASER TREATMENT OF ORAL KAPOSI'S SARCOMA.

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Objective. The use of the CO_2 laser in the local treatment of oral Kaposi's sarcomas to reduce the morbidity as seen after treatment with radiotherapy and with the same therapeutic results.
Methods. To avoid the severe mucositis as we have seen after radiotherapy of oral Kaposi's sarcomas we have used the CO_2 laser to remove the tumor of the hard and soft palate as well as from the pharynx and larynx. Uptil now we treated 9 patients. Five of them had sarcomas on the hard palate, one on the soft palate, two in the pharynx and one in the larynx. The surgery was done under general anastesia.
Results. Macroscopically we could remove all tumors but pathological examination made clear that in four cases there was a tumor residue. The period of patients stay in our clinic was from 2 till 7 days. The patients could drink immediately after the surgery and their diet could be extended in the following days. The postoperative pain was controlled with small doses of minor analgetics during a maximum of four days. The follow up has been just four months but we haven't seen local tumor recurrences.
Conclusion. The CO_2 laser surgery of oral Kaposi's sarcomas is effective and gives less morbidity, a shorter stay in hospital and less discomfort to the patients than radiotherapy.

Th.B.P.350 PREDOMINANT MICROFLORA OF HIV-RELATED PERIODONTITIS

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Objective. To document the predominant microflora of a rapidly destructive form of periodontitis that has been associated with HIV-infection.
Methods. The subgingival microbiota in 12 HIV-infected males with severe periodontitis and no history of recent systemic antibiotic therapy were examined. Also studied were 5 HIV-related periodontitis patients with a history of recent antibiotic therapy. Subgingival plaque specimens were collected with paper points from diseased and normal sites and transported in VMGA III. The microbial samples were plated on selective and enriched brucella blood agar and incubated in 85% N_2-10% H_2-5% CO_2, and in 10% CO_2.
Results. Actinomyces viscosus was the most frequent subgingival isolate in normal periodontal sites. Periodontitis sites revealed higher mean CFUs and % gram-negative anaerobic rods. Predominant species included Actinobacillus actinomycetemcomitans (mean % of flora in culture-positive patients = 10.6%), Wolinella spp. (8.1%), Peptostreptococcus micros (21.4%), Bacteroides intermedius (15.5%), Fusobacterium spp. (9.3%), and spirochetes (15.2% of microscopic count). Low levels of Candida spp. and enteric gram-negative rods were detected in the subgingival flora of approximately 50% of the patients studied. Patients with recent antibiotic therapy generally had significantly lower proportions of suspected periodontopathic species.
Conclusion. These findings may facilitate clinical management of HIV-related periodontitis and demonstrate that the subgingival flora in HIV-infected persons may serve as a reservoir for pathogenic organisms.

Th.B.P.351 IN SITU CHARACTERIZATION OF THE INFLAMMATORY INFILTRATE IN HIV ASSOCIATED PERIODONTITIS

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Objective. The clinical features of HIV associated periodontitis (HIV-P) have been well documented. However, little is known about the immunopathology of this lesion. The purpose of this study is to characterize the mononuclear cell infiltrates in this lesion.
Methods. Thirteen gingival biopsies were obtained from patients with HIV-P. Similarly oriented, serial cryostat sections were stained for MNC subsets using monoclonal antibodies and the indirect immunoperoxidase technique. Antibodies used were specific for pan T-Cells (Leu 4+5b), T-helper (Leu 3a+b), T-suppressor (Leu 2a), B-cells (Leu 14), monocyte/macrophages (Leu M5), Langerhans cells (Leu 6) and cells expressing HLA-Dr. Positive and negative staining cells were counted in corresponding areas of each section for each antibody. The mean percent of each cell subset was then established for all 13 biopsies.
Results. The mean percentage of cells reacting with antibody specific for T-cells was 31.6%. 23.7% and 15.1% of the cells were identified as T-helper and T-suppressor cells respectively. The mean helper:suppressor ratio was 2.0. Analysis of B-cell infiltration revealed that 11/13 specimens contained only a few (<10) B-cells within the entire section. A mean of 23% of the cells bore markers for the monocyte/macrophage family. 62% of the cells bore HLA-Dr. Uniformly distributed dendritic cells were detected within the epithelium using antibody against both HLA-Dr and Langerhans cell markers.
Conclusion. HIV-P is dominated by T-cells, particularly T helper cells. The majority of the cells express HLA-Dr, thus activated T-cells must represent a substantial proportion of the total T-cells. Monocyte/macrophages are also present in large numbers. There does not appear to be a gross reduction in Langerhans cells. Finally, B-cell infiltration is not a prominent feature of this lesion. Supported by NIH/NIDR PO1 DE-07946

Th.B.P.352 PERIODONTAL DISEASE IN HETEROSEXUAL PATIENTS WITH AIDS

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Objective. To determine the prevalence and severity of periodontal disease (PD) in heterosexual patients (pts) with AIDS.
Methods. Consecutive pts with AIDS underwent periodontal and oral examination by a periodontist. Homosexual and bisexual men were excluded from analysis. Abnormal findings were photographed.
Results. 101 AIDS pts were studied. Periodontal findings by risk group and gender are shown: (IVDU = intravenous drug user).

	Number of subjects (percent)			
Extent of PD	IVDU(N=91)	Non-IVDU(N=10)	Male(N=60)	*Female(N=41)
No abnormality	23(25)	1(10)	22(37)	2(5)
Gingivitis only	15(16)	0(0)	11(18)	4(10)
Early PD	19(21)	2(20)	13(22)	8(20)
Moderate PD	15(16)	4(40)	6(10)	13(32)
Advanced PD	19(21)	3(30)	8(13)	14(34)

*PD was significantly more severe in females (odds ratio = 6.1, p<.001)
Periodontal lesions were more severe than those generally seen in non-AIDS pts. 13 pts with PD had severe ulcerative gingival lesions. Additionally 94 pts had candidiasis, 18 had lesions consistent with hairy leukoplakia, 5 lesions suggestive of Kaposi's sarcoma, and 9 oral ulcers.
Conclusion. Periodontal disease is common and severe in heterosexual pts with AIDS. Females have significantly more severe disease. Other oral pathology, especially candidiasis, frequently occurs concurrently.

Th.B.P.353 SALIVARY INHIBITION OF HIV-1 INFECTIVITY IN SERONEGATIVE MEN, WOMEN, AND CHILDREN AND SEROPOSITIVE MEN.

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Objective. Inhibition of HIV-1 infectivity by saliva from healthy individuals and HIV-1 infected men was assayed in vitro.
Methods. Unstimulated whole saliva was collected from 25 seronegative persons: 9 men (ages 21-42), 9 women (ages 24-42) and 7 children (4 males, ages 4-11 and 3 females, ages 4-9). Samples were obtained also from 9 seropositive males, ages 33-54. Inhibitory activity was assayed on 2 occasions by measurement of infection of stimulated human peripheral blood lymphocytes by HIV-1 which had been incubated first for 60 minutes with saliva samples or control fluids. Preliminary experiments showed that saliva was not toxic to target lymphocytes.
Results. Inhibition of infectivity was observed in all saliva samples tested. HIV-1 infection was completely inhibited by all salivas from the women and children. Salivas from 6 of the healthy males (66%) completely inhibited infectivity and partial inhibition was found in the remaining 3 samples. The seropositive males salivas had a similar distribution: 7 of 9 (78%) complete and 2 partial inhibition. Dilution of a sample of saliva from a single healthy male showed a dilution-dependent decrease of inhibitory activity, with substantial (~50%) inhibition remaining at a 1:20 dilution.
Conclusion. Salivary HIV-1 inhibitory activity is commonly found in human oral secretions and may play a role in the low risk of HIV-1 transmission by the oral route.

Th.B.P.354 DISINFECTION/STERILIZATION PROTOCOLS RECOMMENDED BY IMPRESSION MANUFACTURERS

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Objective. To determine the validity of disinfection/sterilization protocols recommended by impression material manufacturers particularly regarding their virucidal activity.
Methods. A mail survey of 6 companies manufacturing 12 commonly used impression materials was conducted. Follow-up questioning by telephone was used to correct incomplete responses. The protocols supplied were reviewed for completeness of documented testing and compliance with basic infection control principles.
Results. Company 1 recommended use of only one chemical disinfectant, which is marketed by another division of the same company. Company 2 recommended any "standard" chemical disinfectant. Companies 3-5 suggested protocols from the published literature. Company 6 provided a protocol based on their studies of their own products, however, only two chemical disinfectants were evaluated with little information provided on methods and materials.
Conclusion. None of the 6 manufacturers recommended a valid infection control protocol for disinfection or sterilization of impressions that did not conflict with basic infection control principles or was adequately documented particularly regarding virucidal efficacy.

Th.B.P.355 FLUCONAZOLE FOR OROPHARYNGEAL CANDIDIASIS IN ANTI-HIV POSITIVE HAEMOPHILIACS

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Objective To assess the efficacy of fluconazole in oropharyngeal candidiasis in symptomatic anti-HIV positive haemophiliacs
Methods All anti-HIV positive haemophiliacs (total 15 currently) who developed oropharyngeal candidiasis on clinical and microbiological criteria were entered into this multicentre study. Those who had predisposing factors to the development of oropharyngeal candidiasis other than HIV disease were excluded from this study. The ages ranged from 25-69yrs (median 32). Initially, all patients entered the treatment phase of the study, where fluconazole was given therapeutically for 14-28 days(median 14) at a dose of 50 mg/d(1 tab). Thereafter, the study was double-blinded to 150 mg fluconazole/placebo weekly for prophylaxis. This phase lasted 6 months unless clinical or microbiological relapse occured, in which case, the patient was exited from the study. This ongoing phase includes regular clinical assessments, mouth swabs, and mouth washings for candida
Results All patients cleared oropharyngeal candidiasis clinically. However, 2 patients showed small residual evidence of candida microbiologically. The prophylactic phase of the study is ongoing and the code has not been broken
Conclusion Fluconazole, a new triazole anti-fungal antibiotic with a long half-life requiring infrequent dosing, has proven to be efficacious in the therapy of oropharyngeal candidiasis and may yet be of considerable benefit in the prophylaxis of oropharyngeal candidiasis (trial ongoing)

Th.B.P.356 ORAL BACTERIAL FLORA: ROLE IN THE INFECTIVITY OF HIV.

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Background. The presence of HIV in saliva of infected individuals has been demonstrated before. Although a transmission of HIV by saliva is difficult to prove the transmission of HIV by oral route has recently been reported. Body fluids (saliva or others) which contain infectious AIDS virus, when in contact with activated lymphocytes or other susceptible cells bearing CD4+ receptor (monocytes, macrophages) may affect the transmission of the virus to the susceptible host. Antigenic or mitogenic activation of those cells is the essential prerequisite for such infection to occur.
Objective. To demonstrate activation potential of oral flora of individuals with AIDS as well as of normal individuals.
Methods. Antigenic extracts of bacteria from oral cavity of normal and HIV-infected individuals were used to elicit blastic transformation of normal peripheral blood lymphocytes which were then infected with HIV. The virus multiplication was measured by detection of the reverse transcriptase activity and the expression of viral core protein p24.
Results. The levels of lymphocyte activation and subsequent virus expression was pronounced in HIV-infected individuals to various extent depending upon the evolution of the disease. In normal individuals, blastic transformation was generally suppressed. The study is in progress to evaluate the effects of oral flora of normal individuals who have pathogenic oral flora.

Th.B.P.357

Immunologie
Immunology

Th.B.P.358 SERUM BETA-2 MICROGLOBULIN AND CD4 LYMPHOCYTE COUNT IN HIV INFECTION

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Objective The objective of this study was to investigate the temporal association between serum beta-2 microglobulin (β2-M) and HIV disease progression.
Method Serial serum β2-M concentration and T-lymphocyte counts were determined for 73 HIV infected homosexual men over a three year period. Clinical indicators of disease progression are also being obtained.
Results Evidence of deterioration in immune function, as indicated by CD4 counts falling below $400x10^6$/L, has been observed in 54 patients (74%). In 51 of these patients a rise in β2-M above 2.6 mg/L was also observed. In most cases (46/51) a rise in β2-M level either preceded (23/51) or was detected at the same time (23/51) as the fall in CD4 count. A rise in β2-M was observed after a fall in CD4 count in only 5 patients. Of the 19 patients (26%) whose CD4 counts have remained above $400x10^6$/L, 11 had elevated β2-M levels while 8 did not. Progress data on these patients will be presented on completion of the study.
Conclusion The results obtained so far confirm the value of β2-M as an indicator of disease progression in HIV infection and suggest its use as a management tool in early intervention antiviral therapy. Its value as an independent predictor of disease progression will become more evident when changes in CD4 count over time are considered together with data obtained from the patients' clinical records.

Th.B.P.359 EVOLUTION OF THE CD4 4B4 AND CD4 2H4 LYMPHOCYTE SUBSETS DURING HIV-INFECTION.

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The CD4 T-cell subset may be divided into subpopulations either defined by monoclonal antibodies (Mab) 4B4 or defined by Mab 2H4. CD44B4 T-cells include cells able to help in a humoral immune response and to respond to recall antigens. B-cell dysfunctions have been reported in HIV-patients (pts).
Methods : 49 and 23 pts respectively at stage II-III and IV were included into the study. Mab were supplied by Coulter. Dual color immunofluorescence was performed with EPICS C.
Results (mean) :

	CD4	CD4/CD8	CD4 2H4	CD4 4B4	4B4/CD4	2H4/CD4
Stage II-III	544	0,71	221	258	0,46	0,36
Stage IV	215	0,34	124	158	0,47	0,40

In conclusion, during the progression of HIV-infection, we noticed a progressive destruction of the CD4 cells both CD4 4B4 and CD4 2H4. There was no modifications in 4B4/CD4 or 2H4/CD4 ratios whatever the clinical stages of HIV-infection or the CD4 cells level. So, we found no evidence for the theory that a CD4 subpopulation may be a preferential target of HIV.

Th.B.P.360 INTRA LABORATORY EVALUATION OF A CRYOPROTECTED DOUBLE LABELED PREPARATION FOR FLOW CYTOMETRY

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Objective. To establish whether cryoprotected blood preparations with dual fluorescent labeled monoclonal antibodies against surface antigens (CD4 and CD8) could be useful as an intra laboratory calibration and/or a quality control product. Methods. Cryoprotected preparations were shipped frozen to 19 flow cytometry laboratories (FCL) though continental North America. Each package contained two 0.5 mL cell suspension, instructions and data report sheets. Results. Twelve institutions returned seventeen laboratory reports. The results were from 16 instruments (8 different models) made by two different manufacturers. All reported values fell within 3 standard deviation (SD). 97% of the results were within 2 SD. Over 62% of the results were within 1 SD. The 3% of data over 2 SD were from one instrument model. Conclusion. Cryoprotected human lymphocyte preparations can be utilized as calibration or quality control material for FCL. For universal applications the cooperation of instrument users and manufacturers is essential.

Th.B.P.361 A RAPID VERIFICATION OF MONOCYTE ENRICHMENT/ DEPLETION TECHNIQUE UTILIZING FLOW CYTOMETRY

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Objective. The adherence-to-plastic techniques have been developed to separate monocytes from peripheral blood mononuclear cells (PBMC). Various solid-phase surface depletion methods have been utilized to either deplete or enrich monocytes from PBMC. A rapid verification of the enriching and depleting methods is possible with flow cytometry. Method. The cell suspension containing monocytes was incubated in plastic dishes of various kinds with and without fetal calf serum coating. Recovered cells were incubated with fluorescent labeled monoclonal antibodies specific to monocytes (LeuM3). The monocyte population was determined by flow cytometry. Result. Bacteriological grade plates (BGP) without coating were compared to tissue culture plates (TCP) for efficiency for monocyte enrichment, 75.8% and 41.9% were obtained respectively. For depletion utilizing BGP and TCP the monocyte values were 5% and 9.8% respectively. Conclusion. To enrich monocytes the less expensive method yielded better results. To remove monocytes the more costly plates with fetal calf serum coating is recommended.

Th.B.P.362 LEUKOAGGLUTINATION IN PATIENTS WITH HEMOPHILIA

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Objective: a) To evaluate the capability of hemophiliacs'(He) sera to agglutinate normal polymorphonuclear (PMN) leukocytes,since antilymphotic antibodies prevalence is greater in He HIV+ than in He HIV-. b) To look for a correlation of leukoagglutination (LA) to circulating immune complexes (CIC) and fibronectin (Fn).
Methods: One hundred ul of 5x10^{6} PMN/ml were incubated with 100 ul of inactivated serum (56°C), diluted 1/10 for 2 hs at 37°C and 18 hs at 4°C, and the percentage of agglutinated PMN was determined. CIC were measured by precipitation with polyethylene glycol 3.5% final concentration. Fn was evaluated by radial immunodiffusion.
Results: LA mean values were significantly higher in He HIV+ than in either He HIV- or normal controls (N) ($p<10^{-7}$). LA % ($\bar{x}\pm$SE): He HIV+: 39±4,n=28; He HIV-: 8± 4,n=21;N:4±1,n=14. LA was observed in 94% He HIV+,in 36% HeHIV- and in 7%N. High values were confirmed for CIC in He HIV+ (OD$_{280}$($\bar{x}\pm$SE): 0.41± 0.03,n=28) when compared with He HIV- and N(OD$_{280}$($\bar{x}\pm$SE)He HIV-:0.26± 0.03,n=21;N:0.20±0.01,n=14), but there was no statistic correlation between LA and CIC values. Seric Fn concentration was not different in these groups ug Fn/ml ($\bar{x}\pm$ SE):He HIV+: 208± 17,n=19;He HIV-:206± 35,n=14;N:222±25,n=10).
Conclusions: The presence of LA in He is independent of treatment-provoked antigenic stimulation, of CIC and Fn levels. However, LA could be associated with HIV-infection.

Th.B.P.363 INTRA BLOOD-BRAIN-BARRIER TOTAL IgG SYNTHESIS IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS INFECTION.

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Cerebrospinal fluid (CSF) protein profile was studied in 15 patients with human immunodeficiency virus (HIV) infection and clinical evidence of central nervous system (CNS) disorder. Total CSF and serum protein and IgG concentrations were determined and the CSF/serum albumin quotient was measured as an index of blood-brain-barrier function. Results were plotted into a diagram (1) and intra blodd-brain-barrier total IgG synthesis was quantified according to three formulas (2, 3, 4). Reiber's diagram detected an abnormal protein profile in 14 of 15 (93%) patients and total IgG synthesis within the CNS was present in 11 of 15 (73%) patients. No correlations were found between those CSF abnormalities and the clinical and CT scanning findings. It is concluded that the study of CSF protein profile is a clinically useful and very sensitive way of testing the development of CNS disorder in patients with HIV infection, the acquired immunodeficiency syndrome (AIDS) or AIDS-related complex.

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Th.B.P.364 INCIDENCE OF AUTOANTIBODIES IN HIV INFECTION.

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Objective. Dysimmune state (e.g. T4 lymphopenia and hyperimmunoglobulinemia) in seropositive HIV patients (HIV+) now are well known. We here reported the incidence of autoantibodies (AAb) in a series of 87 patients.
Methods. AAb were detected by indirect immunofluorescence, excepted for anti-HLA Ab (microlymphocytotoxicity), rheumatoid factor (ELISA), circulating immune complexes (CIC) (latex immunonephelometry).
Results. Anti-smooth muscle AAb were observed in 34/76 cases (45%). 37/50 sera react with lymphocytes without anti-HLA specificity (from 3 to 90% of the panel, mean = 41.3% with sd = 27.6). Anti-nuclear AAb and anti-thyroid microsomal AAb were always absent (0/87). Rheumatoid factor was only found in 3/59 cases (5%). Anti-epidermal AAb were present in 2/26 cases (7%), anti-keratin in 13/35 (37.1%) and anti-actin in one out of 35 cases (2.8%). CIC have been detected in a large percentage of HIV+ patients : 47/66 (71%).
Conclusion. The polyclonal B-cell activation and diffuse hyperimmunoglobulinemia, well-known features of HIV infection, account for the presence of these autoantibodies and an aberrant B-cell immunoregulation after HIV infection.

Th.B.P.365 LYMPHOCYTES CD4+,BETA 2 MICROGLOBULINE ET NEOPTERINE DANS LE L.C.R. ET LE SANG AU COURS DE L'INFECTION PAR V.I.H.

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Objectif: Préciser l'intérêt des dosages , dans le LCR et le sang , pour apprécier une éventuelle atteinte neurologique chez les patients avec ARC et SIDA.

Méthodes: Etude chez 45 malades VIH+ (30 SIDA,10 ARC et 5 asymptomatiques) dont 20 présentaient des manifestations neurologiques.Numération des lymphocytes CD4+ et CD8+ (Cytométrie en flux sur EPICS C®) et dosages de la Bêta 2 microglobuline et de la néoptérine (RIA).

Résultats: Nous observons une destruction des lymphocytes CD4+ , une augmentation progressive de la Bêta 2 microglobuline dans le LCR et le sang , quel que soit l'état neurologique. Les taux de néoptérine sont significativement augmentés quand il y a atteinte neurologique au stade SIDA.

Conclusion: Chez les malades avec ARC et SIDA , le marqueur le plus performant pour apprécier l'atteinte neurologique est le taux de néoptérine; les 2 autres paramètres , CD4+ et B2M , sont des marqueurs d'évolutivité de la maladie.

Th.B.P.366 STUDY OF PREDISPOSING FACTORS ON THE SUSCEPTIBILITY OF INDIVIDUALS TO INFECTION BY HIV.

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Background. Numerous publications suggest an association of tuberculosis (TB) and AIDS. Individuals with active or latent TB may be more susceptible to the infection with HIV. Macrophages (MO) of TB patients even when "cured" have always been found to harbor TB bacilli and may serve as their latent reservoirs. Recent studies indicate that mononuclear phagocytes such as monocytes and macrophages (MNPC) may be subject to a similar strategy to hide HIV from body's immunological mechanism particularly in the early stages of HIV infection and/or in HIV carriers.
Objective. In vitro study of the susceptibility of MNPC of tuberculin positive (TB+) and tuberculin negative (TB-) individuals as well as patients with active TB to the infection by HIV.
Methods. MNPC were isolated and purified from blood of TB+ and TB- individuals as well as from TB-infected patients were infected with HIV, incubated for 7 days, then HIV production amplified in a co-culture with H9 cells for 5 days. The virus was determined by p24 antigen capture assay in the supernatants of broken and unbroken MNPC.
Results. Although the in vitro system employed may not represent a situation in vivo, the MNPC from TB+ individuals showed a higher resistance to infection by and/or production of HIV. Significance of this will be discussed.

Th.B.P.367 RAISED β-2-MICROGLOBULIN LEVELS IN ASYMPTOMATIC PHASE OF THE HIV-1 INFECTION.

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Objective. To define more precisely the individual differences in the course of HIV infection in asymptomatic persons.
Methods. In seropositive(n=19) persons were studied for two years at 6 month intervals absolute CD4+ and CD8+ lymphocyte counts,serum β-2-microglobulin(β2M, RIA),levels of the anti-core, anti-env and neutralizing antibodies(Ab),the HIV core p24 antigenemia.Comparatively also normal healthy persons(n=57),HIV-seronegative homosexual men(n=42) and 27 sera initially reactive in EIA,not confirmed as positive by immunoblot(DuPont).Data were processed by Kruskal-Wallis and Neményi tests.
Results. β2M were higher ($p<0.001$) in seropositive than in seronegative persons and in EIA initially reactive sera than in normal healthy subjects($p<0.05$).β2M levels correlated in the early phase of infection with CD8+ counts,later with the decrease of anti-core Ab and with the antigenemia presence,following closely the p24 concentrations(studied consecutively for 8 months).
Conclusion. β2M quantification,with other markers considered also,appears as valuable forthe HIV infection process monitoring in order to decide about antiviral treatment.

Th.B.P.368 HIV-1 IgG ANTIBODIES IN BREAST MILK: DETECTION METHODS AND CORRELATION WITH SERUM MARKERS

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Objective. To determine the utility of breast milk analysis in the diagnosis of HIV-1 infection.
Methods. Blood and breast milk specimens were collected from 12 HIV-1 seropositive and 7 seronegative women residing in a periurban Haitian slum. Specimens were tested by Western blot (WB- Biotech, Biorad and Chiron) and p24 antigen capture.
Results. Breast milk specimens from 11 of 12 seropositive women were positive by WB analysis; breast milk and blood WB band concordance was observed in 10 of 11 women. One previously seronegative woman appeared by WB to have seroconverted recently; no WB bands were present in her breast milk. None of the 7 HIV-1 seronegative women had WB bands in their sera or breast milk specimens.
Conclusions. HIV-1 IgG antibodies are present in breast milk of seropositive women. Although WB analysis of breast milk appears to provide a specific method of screening for HIV-1 infections, recent seroconverters may not excrete detectable quantities of IgG HIV-1 antibodies in breast milk.

Th.B.P.369 COMPARISON OF 8ANTI-HIV ENZYMEIMMUNOASSAYS,3HIV ANTIGEN ASSAYS AND 2 WESTERN BLOTS ON A SEROCONVERTER PANEL

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Objective.To compare limits of detection of 8 commercial Anti-HIV EIAs which employ either recombinant or whole virus antigens,and 2 WBs on a seroconverter panel;to compare the performance of 3 antigen assays on these sera
Methods.36 serial serum samples from 3 homosexual males with symptoms of 1° HIV infection collected over a period of 7-90 days after onset of symptoms were tested for Anti-HIV by 8 EIAs,3 Antigen EIAs and 2WBs.A mean of 12 samples were drawn from each subject(range 9-14).The mean time between the last sample negative by all tests and the first sample to be positive by at least one test was 4 days.
Results.Anti-HIV was not detected in any sample collected within one week of onset of symptoms.In the second week(days 8-14)one assay detected anti-HIV in 75% of samples compare with 25% detected by 4 other assays.7 out of 8 assays detected anti-HIV in 100% of samples by day 90.One WB produced a positive result during week 3 while the other assay did not show a clearly positive result until day 49.Indeterminate band profiles(anti-gag,then anti-env and anti-pol)suggestive of early S/C appeared in both assays by the second week following onset of symptoms.No viral specific bands were detected in sera collected within one week following onset of symptoms.
Conclusion.This seroconverter panel allows ranking of 8Anti-HIV assays and 2 WBs according to sensitivity.There is a wide range of detection limits between assays which does not seem to be related to the kind of assay used

Th.B.P.370 DETECTION OF HIV ANTIGEN AND HIV CORE ANTIBODY DURING SEROCONVERSION

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Objective.To assess the incidence of HIV antigen during seroconversion and to investigate the relationship between HIV antigen and anti-Core antibody
Methods.903 serum samples from 124 seroconverting subjects were tested for HIV antigen,antibody and core antibody.A mean of 7.2 sera were drawn from each subject(range 2-36).
Results.18 out of 115subjects had detectable antigen prior to seroconversion. Of the 18 subjects,12(67%)had a time interval between last negative and first positive anti-HIV of less than 40 days.The remaining 6 subjects(33%) had a window period greater than 40 days.In no subject with a window period greater than 320 days was antigen detected prior to seroconversion.The majority of subjects((96%) with core antibody at or prior to S/C were not antigenaemic at this time;33% of subjects in whom appearance of core antibody delayed post seroconversion were antigenaemic at the time of seroconversion and all patients who demonstrate a persistent antigenaemia post seroconversion do not develop a detectable core antibody.
Conclusion. HIV antigen is detectable more frequently in seronegative subjects who susequently seroconvert when the window period between the last antibody negative and the first antibody positive sample is narrow.In no subject with a window period greater than 320 days was antigen detected prior to seroconversion.Antigenaemia at or post seroconversion is linked to a delayed core antibody response at this time.

Th.B.P.371 SENSITIVE DETECTION OF HIV-1 ANTIBODY WITH A PEPTIDE-BASED ELISA IN TWO SEROCONVERSION PANELS

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Objective: Compare the ability of a new peptide-based ELISA with RIPA for the detection of early antibodies to HIV-1.
Methods: Serum samples are from two seroconversion panels. Each specimen was carefully characterised for the presence or absence of antibodies to HIV by the FDA licensed ELISA test kits then available as well as by IFA and WB. IAF BioChem's combined HIV-1/HIV-2 antibody detection kit is a peptide-based ELISA whose characteristics and performance are described elsewhere at this meeting. RIPA procedures are as described (Ozanne and Fauvel, J. Clin. Microbiol. 26: 1496, 1988).
Results:

Serum id.	BioChem ELISA	RIPA	Remarks
BBI-A01	NEG	NEG	
BBI-A02	NEG	NEG	
BBI-A03	POS	VERY WEAK POS	gp only (W.B. neg.)
BBI-C22	IND	VERY WEAK POS	gp only (W.B. neg.)
BBI-C23	POS	WEAK POS	gp only (W.B. neg.)
BBI-C24	POS	WEAK POS	gp only (W.B. neg.)

Conclusion: IAF BioChem's ELISA is more sensitive than WB and viral lysate ELISA and is comparable to RIPA in the early detection of antibodies to viral glycoproteins.

Th.B.P.372 IMMUNOCOMPETENT CELLS IN LIVERS OF CHILDREN WITH AIDS.

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Objective. To define the inflammatory cells, especially macrophages and antigen presenting cells (APCs) in livers of children dying of AIDS. Method. Seventeen livers from autopsies of AIDS children aged 2.5 mos to 7 yrs and sections from 11 non-AIDS controls were studied by immunohistochemistry. All had hepatomegaly and 4 had clinically evident liver disease. Results. Mild portal inflammation = 9(53%);moderate = 5(29%);severe = 3 (18%, 1 with lymphoid aggregate). Two cases, 1 mild/1 severe, had MAI granulomas. Lobular involvement was seen in 3 (18%, 1 with lymphoid nodules, 2 with granulomas). Antigen expression was as follows (# of cases):

	LCA	B cell	T cell	S-100	HLA DR	MS	LYSO	A1ACT
Lymphocytes	+(15)	+(1)	+(17)	-	-	-	-	-
Macrophages	-	-	-	*	-	+(17)	+(17)	+(15)
APCs	-	-	-	+(1)†	+(3)	+(3)	+(3)	+(3)
Kupffer cells	-	-	-	*	*	+(17)	+(17)	+(17)

* MAI organisms show weak S-100 (+); rare Kupffer cells (+) for S-100 and HLA-DR. † Lymphoid aggregates mimicked mature follicles (i.e., distribution of B,T, and APCs). MS=macrophage specifib; A1ACT=alpha-1-antichymotrypsin. Conclusion. T cells are the predominant lymphocytes in hepatic infiltrates. APCs are present in lymphoid nodules and granulomas; HLA-DR is more sensitive in detecting them. When lymphoid aggregates are seen, mature follicles are recapitulated.

Neurologie
Neurology

Th.B.P.374 NEUROLOGICAL MANIFESTATIONS IN PATIENTS WITH HUMAN IMMUNO DEFICIENCY VIRUS INFECTION

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Objective: To determine the prevalence of neurological manifestations in patients infected with HIV.
Methods: 111 patients infected with HIV were analysed retrospectively with respect to age, sex, risk factors, stage of HIV infection, type and cause of neurological manifestations. Follow-up was from 6 - 29 months.
Results: 18 neurological episodes were identified in 17 (15%) of 111 patients: 10 of 29 patients with AIDS, two of 19 with AIDS-related complex, one of 28 with persistent generalised lymphadenopathy and four of 35 who were otherwise asymptomatic. Central nervous system involvement included three with HIV-related encephalopathy, three with CMV retinitis, one with grand mal fits associated with toxoplasmosis, one with oculomotor neuropathy, left hemiplegia and Parkinsonism associated with toxoplasmosis, five with Bell's palsy (two in association with herpes zoster) and one with blindness from necrosis of the optic chiasma in assocation with progressive multifocal leukoencephalopathy. Three patients had peripheral neuropathy.
Conclusion: Neurological manifestations occurred in 15% of patients; cranial neuropathies were common and rare complications such as Parkinsonism and optic chiasmal necrosis were seen.

Th.B.P.376 IMPAIRED MOTOR PERFORMANCE OF HIV-1 INFECTED PATIENTS IS NOT DUE TO SIMPLE FATIGUE

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Objective: To determine if impaired motor performance (finger tapping)in HIV-1 infected patients is related to the effects of fatigue.
Methods: 129 untreated HIV-1 infected patients at varying AIDS Dementia Complex (ADC) stages were evaluated with the Neuro-AIDS Study Group neurological history, exam, and neuropsychological battery. Subjects were staged as normal, mild, or moderate with respect to severity of ADC-related motor impairments. In order to assess susceptibility to fatigue, subjects were administered a modified finger tapping task: five 10-second trials spaced with no more than a 10-second pause between them.
Results: Finger tapping performance with both dominant [F(2,127)=31.80, p<.001] and non-dominant hands [F(2,127)=30.00,p<.001] declined with increasing severity of ADC-related motor dysfunction, with marked differences among the groups apparent on both hands from the first trial [F(2,129)=43.82, p<.001]. Only the normal and mild patients'performance declined on later trials; patients with moderate motor dysfunction showed no change in performance ("fatigue effect") over the five trials [F(4,24)=0.50, p=.735].
Conclusions: With increasing motor dysfunction due to ADC, poor motor performance appears to be related to deterioration of the capacity of the motor system, not simply to susceptibility to fatigue effects.

Th.B.P.373 SERIAL IMMUNOLOGIC STUDIES AS AN INDICATOR OF PROGRESSION TO AIDS IN A COHORT OF MALE SEXUAL PARTNERS OF MEN WITH HIV DISEASE

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Objective: To compare serial immune parameters in men who have developed AIDS.with those of men who are seropositive and seronegative controls.
Methods: At recruitment, 143/249 men were seropositive and 16 subsequently seroconverted. At the time of this analysis, 24 had developed AIDS. Serial routine hematology, T-lymphocyte subsets, blastogenic responses and quantitative immunoglobulins were done on all members of the cohort. Data was analysed based on comparison of values at intervals from estimated time of infection.
Results: There were significant differences in absolute T4 counts, T4/T8 ratios, response to PHA, IgM and IgA levels between seronegatives and seropositives who went on to develop AIDS. Most of these differences did not increase with time but were significant at the time of entry into the study. Only IgA levels showed a significant increase in the last 4 months in the group developing AIDS.
Conclusions: Differences in immune parameters between groups of uninfected, infected and progression to AIDS generally are unchanged on serial determinations. Also, variability in serial test results in an individual makes the use of a single test of limited value in prognosis.

Th.B.P.375 AIDS-RELATED NEUROLOGICAL ILLNESS IN TWO U.S. CITIES: A COMPARISON OF SIMILAR POPULATIONS

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**University of California, San Francisco, CA USA

To address the question of regional and risk group related variations in the incidence of AIDS-related neurological illness, we retrospectively evaluated the nature and frequency of neurological illness in two similar patient populations treated in University hospitals in San Francisco, California (SF) and Chicago, Illinois (CHI). In both SF and CHI, the predominant risk group for the acquisition of HIV infection was homosexual or bisexual exposure (99% and 79%, respectively), other major risk factors included IV drug abuse (2% SF, 7% CHI) and transfusion (>1% SF, 1% CHI). Signs or symptoms of neurologic illness were observed in 482 of 1286 (37%) of patients in SF and in 58 of 205 (28%) of patients in CHI. Peripheral nervous system symptoms were noted in 79 patients in SF (6.1%) and in 20 patients in CHI (9.8%), while CNS dysfunction was observed in 474 patients in SF (37%) and in 41 patients in CHI (20%). Major specific pathologic diagnoses included (SF;CHI): HIV encephalopathy (100, 28%; 20, 34%), cryptococcal meningitis (68, 14%; 4, 7%), toxoplasmosis (53, 11%; 7, 12%), primary CNS lymphoma (25, 5%; 2, 3%) and PML (8, 2%; 3, 5%). Less common diagnoses included HSV, CMV or HVZ encephalitis (28, 5.8%; 1, 1.7%) and rare cases of CNS tuberculoma, and intracerebral hemorrhage secondary to thrombocytopenia.

The data reflects a trend toward increasing neurologic illness with decreased T4 cell count. The mean T4 cell count in non-neurologically symptomatic patients was 143.5 + 14.4 while in neurologically symptomatic patients, the mean T4 count was 96.1 + 14.0. This trend may suggest that immunosuppression is a significant factor in the development of AIDS-related neurologic illness. The data further suggests that populations that are similar with respect to risk group, despite geographical location, may well have similar rates of neurologic disease.

Th.B.P.377 "EXPRESSION NEUROPSYCHIATRIQUES DU SIDA AU SENEGAL"

D'ALMEIDA L. DIOP A.G., A POVO C.
C.H.U. DE FANN- DAKAR (SENEGAL)

OBJECTIFS: Les divers effets dévastateurs du SIDA impose la nécessité délargir son approche biomédicale à des données sociales, culturelles par l'étude des problèmes psychiatriques et neurologiques, jusqu'ici absents des recherches sur le SIDA au Sénégal.
METHODES: les 6 cas de l'étude ont été analysés à partir:
- d'un guide d'observation neuropsychiatrique inspiré de L'A.M.D.P. et de la B.P.R.S.;
- d'un examen clinique neurologique;
- d'un examen clinique psychiatrique.
RESULTATS: Il a été noté un polymorhisme du tableau neurologique avec diverses topographies. Il n'existe pas de manifestations psychiatriques propres au SIDA.
CONCLUSIONS: Ces conclusions ne concernent que la population observée. Elles doivent être comparées, dans un an, à une population sidéenne plus large.

Nutrition
Nutrition

Th.B.P.378 NUTRITIONAL FACTORS ASSOCIATED WITH AIDS

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Objective. To evaluate the nutritional status of patients with ARC and AIDS. Methods. Nutritional status, laboratory values for serum albumin, serum total protein and serum cholesterol, height and weight, medical history, and use of prescribed medications, vitamins, minerals and alternative therapies were evaluated in 20 ARC and 20 AIDS male patients. Twenty healthy males from the Health Watch program, a longitudinal prospective study of healthy aging, were used as a control group. Participants completed the Health Watch Questionnaire which provides quantitative scores of health status and lifestyle habits in 7 areas: nutrition, medical events, general well-being, psychological well-being, physical activity, alcohol use and smoking. ARC and AIDS patients were followed at 3 month intervals for a period of 6 months.
Results. Mean weight loss, deficiency in calories in comparison to the mean total energy expenditure (TEE), and serum albumin and cholesterol levels were significantly decreased in patients with ARC and AIDS. Health Watch Questionnaire scores were significantly lower for ARC patients than controls in all areas except alcohol use. AIDS patients achieved better scores than ARC patients, but had significantly lower scores in medical events, nutrition, psychological well-being and general well-being when compared to controls.
Conclusion. Malnutrition was shown to be associated with the laboratory values of serum albumin and cholesterol in patients with ARC or AIDS, these laboratory tests can be used as markers of progression of HIV infection. We recommend that nutrition, health behavior, serum albumin and serum cholesterol assessments be incorporated into current longitudinal studies on AIDS

Th.B.P.380 NUTRITIONAL ASPECTS OF AIDS PATIENTS IN AN INNER CITY CLINIC.

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Objective: Assessment of nurtition (Nut) practices and identification of patients at high risk for potential hypervitaminosis syndromes.
Methods: During a one week period in August 1988, clients (C) attending an inner city HIV clinic, participated in an anonymous survey of Nut practices.
Results: 25 C participated, demographics reflected clinic make-up: 60% I.V.D.U., 12% homosexual, 20% sex partners of I.V.D.U. 40% were using liquid nutritional supplement (NS). 76% were using vitamins (Vit) regularly, only half of these were ordered and monitored by M.D.s. 48% were using 2 or more Vit/day. 16% were using herbal teas, roots and Vit from Health Food Stores. 40% C had lost more than 5 kg in the last six months, 90% of these were using Vit, 70% were using 2 or more Vit/day. 72% of C were dissatisfied with Nut information provided by clinic. Only 12% reported that Nut had been discussed during either of the last 2 clinic visits. C used NS and Vit rather than dietary manipulation as a means of improving Nut.
Conclusion: C. with significant weight loss may be using multiple Vit and may represent a group at risk of Vit toxicity.

Th.B.P.382

Th.B.P.379 THE CHALLENGE OF NUTRITIONAL CARE OF PATIENTS WITH AIDS

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Objective. To identify different nutritional complications present at different stages of HIV infection.
Results. Nutritional complications can be best described according to the following patient groups:

- Asymptomatic: only a few nutritional problems occur, the individual needs extensive nutrition education to prevent the development of malnutrition.
- Constitutional disease: the individual experiences fever, weight loss and diarrhea. A high protein high calorie diet, and for some individuals, one that is lactose free, restricted fibre and restricted fat, with complete supplements, is necessary.
- Opportunistic infections and malignancy: the individual experiences a number of nutritional complications, which require special nutritional care and attention. A number of gastrointestinal, liver or kidney problems dictate different dietary regimens and/or modifications. When oral and esophageal lesions are present, a soft, semi-soft or liquid diet would be suggested, avoiding citrus fruit, spicy, very hot or very cold foods.
- Food and drug interactions should be considered also at all times.

Conclusion. The maintenance of adequate nutrition in patients with AIDS is a major concern. However, the care plan cannot be generalized. The significant nutritional effects of AIDS challenge all dietitians who play a role in the care of AIDS patients, and requires that they understand the disease processs and its implications on nutritional status.

Th.B.P.381 DIETARY INTERVENTION IN KAPOSI'S SARCOMA PATIENTS.

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Objective. To determine the role of dietary intervention in Kaposi's sarcoma patients.
Methods. An open study was conducted with 5 patients with Kaposi's sarcoma (KS) to determine the role dietary intervention might play in this clinical manifestation of AIDS. The dietary intervention consisted of a combination of metabolically activated essential fatty acids formulated to increase the tissue levels of dihomo gamma linolenic acid (DGLA) relative to arachidonic acid (AA) in order to influence prostaglandin production.
Results. In patient #1 with early lesions, total regression was seen within 2 months. Biopsies taken four months since lesion regression demonstrated no evidence of active KS lesions. Patient #2 was being treated with AZT which had decreased the rate of lesion formation prior to supplementation. With dietary supplementation, the most recent lesions were observed to regress within 2 months. Biopsies in the areas of the regressed lesions indicate no evidence of active KS. There has been no change in the long term lesions. Patient #3 demonstrated a 50% reduction of his most recent lesions. Patients #4 and #5 who had much more advanced lesions, have not yet seen lesion regression. Patient #1 has been on the dietary supplementation program for 6 months, whereas Patients #2-5 have been on the dietary supplementation program for 2 months.
Conclusion. This initial data indicates that appropriate dietary intervention may play a role for regression of early Kaposi's sarcoma lesions. Potential mechanisms will be discussed.

Th.B.P.383

Th.B.P.384

Grossesse et obstétrique
Pregnancy/Obstetrics

B.501 SEMEN BANKS/EMBRYO BANKS: POTENTIAL HAZARD OF HIV TRANSMISSION: AN OVERVIEW

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Donor artificial insemination (AID) and in vitro fertilization (IVF) using human fresh semen and cryopreserved/thawed semen from HIV-seropositive or asymptomatic donors play a critical role in HIV transmission. HIV and various strains of STD's can adhere to and penetrate the plasma membrane of human sperm head/midpiece. Mammalian sperm can express CD4 epitopes, which are involved in the binding of HIV with other cells. Certain surface proteins, involved in sperm-egg adhesion are attached to sperm plasma membrane via lipid phosphatidylinositol. Replication of HIV and subsequent budding of viron particles may occur within the cytoplasma/nucleus of sperm. HIV transmission from Semen Banks involves antigen cross-linkage among sperm/lymphocyte/NK cells; glyolipid/glycoprotein; and humoral/local immunity against sperm antigen. Other cofactors for HIV transmission inicude mucosal trauma in urogenital tract and its associated lymphoid tissues of semen donors and perhaps host recipients Little is known about the immunopathogenic mechanisms which regulate HIV replication/colonization of HIV in the female/male reproductive tract. HIV-infected sperm transmits HIV to the oocyte at the time of fertilization. As in rodents HIV-infected males can infect both the oocyte at fertilization as well as the fetus/neonate. These phenomena are related to Pediatric AIDS. Future research is needed to evaluate qualitative/quantitative, intermittent/persistent, levels and temporal changes of HIV viron particles in the seminal plasma vs sperm surface membrane

B.502 CONTRACEPTIVES, HIV INFECTIONS AND HETEROSEXUAL TRANSMISSION

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Contraceptive copper IUD's, contraceptive diaphragms, rubber condoms, and spermicides may produce allergic contact dermatitis in sensitized persons. Rubber chemicals may cause condom dermatitis/diaphragm balanitis in rubber sensitive men, and vulvititis/vaginitis in rubber-sensitive women. Dermatitis may be due to sensitizers in contraceptive spermicides: phenylmercuric acetate, oxyguinoline sulfate, quinine hydrochloride, and hexylresorcinol. Increased blood flow to the uterus and increased cellularity associated with IUD's enhances HIV heterosexual transmission. IUD's cause local damage of endometrial lining, which is a potential entry point for HIV, or a site from which it is transmitted. Cofactors which enhance HIV heterosexual transmission include increased menstrual bleeding adherence to IUD's tails of bacteria, viruses, cervical mucus; and fragmentation of copper spirals of copper IUD's. The infectivity rate of seropositive women wearing IUD's is aggrevated further by absorption, by IUD tail, of HIV virions and infected cellular elements in the semen. These adverse responses are protected from publication by certain wealthy pharmaceutical companies. Copper salts and black copper dental cement may induce itching urticarial rash thrombocytopenic purpura, an allergic reaction. In developing countries, most risk groups for AIDS and contraception are similar. AIDS counseling can be conducted in an INTEGRATED Family Planning/Maternal-Child, Health Centers/Drug Treatment Center/STD Clinics.

B.503 ETUDE PROSPECTIVE DE L'INFECTION A VIH CHEZ LES FEMMES ENCEINTES : SUIVI DE 96 PATIENTES, 51 ENFANTS ET 49 FAMILLES

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Objectifs : Déterminer la prévalence de l'infection à VIH chez les femmes enceintes, leurs enfants et leurs partenaires, en étudier l'évolution, apprécier le rôle éventuel de la grossesse.
Méthodes : Depuis 1986 nous avons institué le dépistage systématique chez les consultantes, et en cas de positivité, celui des nouveaux nés et des familles, apprécié régulièrement les stades évolutifs, étudié les foetus.
Résultats : Nous avons inclus 96 nouveaux cas (3 patientes enceintes 2 fois) ; 40 grossesses ont été interrompues, 59 poursuivies. Dans les groupes à risque la prévalence est de 5 %, chez les autres 0,5 %. Pendant la grossesse, les stades ont pu être appréciés chez 59 femmes : 42 stades II, 17 stades III. L'évolution de la grossesse et l'accouchement n'a pas posé de problèmes particuliers. Depuis leur grossesse, 41 femmes sont suivies : 23 stades II, 17 stades III. La grossesse n'a pas modifié les stades, aucune patiente n'est décédée. Un seul des 6 foetus étudiés avait des anomalies. Parmi les 56 enfants nés, 34 sont déjà évaluables avec 15 (44 %) infectés : 6 stades P1, 8 stades P2 et un décédé. Dans les 49 familles revues, 19 (38 %) partenaires sont infectés, et sur 35 enfants antérieurement nés, 3 sont séro positifs.
Conclusions : Malgré un recul de 3 ans, il est nécessaire de confirmer ces résultats encore préliminaires par le suivi au long cours de la cohorte.

B.504 HIV INFECTION RATES IN PARTURIENTS WHO RECEIVE NO PRENATAL CARE

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Objective. To test the hypothesis that women receiving no prenatal care represent a higher risk group for HIV infection than those who receive regular care at an urban hospital serving primarily indigent patients (Charity Hospital [CH]).
Methods. All women presenting to the obstetrical clinics of CH are offered HIV testing and pre/post test counseling (group I). Between 5-10% of deliveries each month at CH are among women who have not received any prenatal care (group II). Beginning 10/1/88 all such women were offered the test during their hospitalization accompanied by pre/post test counseling. All specimens were screened using EIA, with confirmation by Western Blot (WB).
Results. Ninety-eight percent of women in group I and 100% of women in group II consented to HIV testing.

	#tested 10/1/88-1/13/89	# (+) by WB
Group I	1357	8 (0.59%)
Group II	101	1 (1.0%)

Conclusion. In this area where the overall seroprevalence of HIV in pregnant women is low, being outside the health care system is not reflective of being in a higher risk group.

Soins
Care

B.505 MASSAGE FOR TERMINALLY ILL AIDS PATIENTS

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OBJECTIVE: To describe the pioneering venture of using Registered Massage Therapists (RMTs) in a healthcare institution and to outline the massage techniques and modalities contributing to the care of terminally ill AIDS patients at Casey House.
Methods: The activities within the scope of practice of RMTs in Ontario are described, their clinical effects noted and hypotheses for the mode of action proposed.
Results: Physical results include reduction of pain, swelling, anxiety, insomnia, joint stiffness, muscle spasm, skin pathologies. Psychological results include reduction of the feelings of isolation, improved body image/self-esteem.
Conclusion: Registered Massage Therapists have a valuable role in a health care institution. Massage is a useful adjunct in palliative care of AIDS patients by relieving physical symptoms and suffering as well as enhancing social/emotional well-being through the medium of wholesome and skilled touch.

B.506 EVALUATING THE OUTCOMES OF A LINKAGE SYSTEM DESIGNED TO FACILITATE ACCESS FOR CHRONICALLY HOMELESS PERSONS TO AN OUTPATIENT AIDS PROGRAM

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Significance. The numbers of known HIV+ residents residing in Boston's shelters has grown from 1, in 1985, to more than 75 in 1988. Chronically homeless constitute 25% of the Aids program patients.
Objective. Our primary effort has been to broaden AIDS-specific health care to our city's chronically homeless population by developing a linkage system between The Boston Health Care For The Homeless Project and the Adult AIDS Clinic at Boston City Hospital.
Method. A physician from the Homeless Project cares for the HIV+ shelter patients in the AIDS Clinic thus, the expertise and the network of support systems from both specialties are integrated into the primary care model for this population.
Outcomes. 1. Client-selected case manager system that most often originates in the shelter system,has been better able to track their clients through the health care system and with this information are more effective in their support and cooperation of prescribed therapies.
2. The shelter residents who receive their care in the AIDS Clinic benefit from the AIDS specialty networks, resources, and on-site liaisons from these systems. 3. Clinic visit compliance for the patients in this system is now greater than 75% in an outpatient department that is about 65%.
Conclusion. This initial effort has obtained the results sought and is now considering these patients for clinical drug trials and opening new avenues of care.

B.507

COMPREHENSIVE OUT-PATIENT CARE OF HIV-INFECTED PATIENTS UTILIZING A PRIMARY CARE MODEL

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Objective. To meet the total health needs of HIV infected individuals, of all ages and all states of illness, in a community with very high HIV seroprevalance.
Method. The establishment of a comprehensive out-patient health care program for HIV-infected individuals.
Results. A community hospital in the South Bronx has developed a program for the out-patient care of HIV infected patients, provided both by primary-care trained physicians practicing in primary-care centers, and by infectious disease sub-specialists in an Infectious Disease Out-patient Center. All sites adhere to uniform, well defined standards of care, specifically designed to meet the health and medical requirements of HIV infected persons in all stages of infection. These include: initial comprehensive evaluation and on-going management of all acute and chronic medical problems, both HIV-related and other (e.g. DM, HTN); evaluation for anti-retroviral and preventive therapies (e.g. PCP prophylaxis); general and HIV-related health maintenance (e.g. immunization, PPD, pap smear, ophthamologic exam, etc.); patient education. Protocols have been developed in detail to cover these and other areas. Provider continuity, including inpatient care, is maintained in all primary care centers. On-going subspecialty input for all patients is provided by the infectious disease team.

B.508

AIDS AND PHISICAL EDUCATION

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The human is an integral composition of mind and body represented by pleasure and aestetics, emotions and reason. The boby is the very first human experience moment. The individual senses and lives prior to know,partcipating through the boby of the real life.However the individual are being threted by the AIDS virus contamination which brings together the feeling of an ending bench mark an impossibility of action.He is not anymore owner of his body which is now controlled by another owner called HIV. In the enviroment dominated by the AIDS virus, the body is felt through disgust, depression,guilt,rejection,solitude,tension and death.This conduct the patient to a kind of intense exile, rupturing the life links.The body activity represents,at this point in time,an important link with the life since it may be felt though the activity in a concious way.Specialiãtsaare required to help the AIDS patients in an adequate enviroment Which motivatie for the life.In the same Way the specialists need to be helped by the techiniques.In our particular case we use relaxation and movementation to promote the body awarness.Our real possibility isthe creation of an space for the body expression in a awareness way to restore in the patient what his body represents in the workd.

Le sang et les produits sanguins
Blood and Blood Products

B.509

LONG-TERM FOLLOW-UP OF UNTREATED SEVERE THROMBOCYTOPENIA(STP) IN THREE HIV INFECTED DRUG ADDICTS.C.Tural.B.Clotet.G.Sirera. D.Romeu.A.Casals.J.Tor.M.Foz.Infectious Disease Unit.Hospital de Badalona "Germans Trias i Pujol".Barcelona .Catalonia.Spain.Objective:To report the findings and follow-up observed in three seropositive patients who denied any therapeutic approach during a mean period of 18months (range 27-15). Methods:3 out of 12 HIV seropositive IDAs with severe thrombocytopenia(STP) (platelet count < 9000/mm^3 and rich marrow aspirate)related to HIV infection,refused any kind of treatment but accepted a follow-up control each 4 months. Results:are summarized in table 1

Initial Data				Follow-up		
P	st	p/mm^3	T^4/mm^3	months	p/mm^3	T^4/mm^3
1	III	9000	540	27	9000	855
2	III	3000	468	13	53000	409
3	III	9000	351	15	54000	-

Discussion:There were only minor hemorrhagic diathesis manifested by occasional epistaxis in 2 patients and petechiae in lower extremities in all three. An increase in platelet count (> 50000/mm^3) has been observed in the three patients. It was spontaneous in two of them and possibly related to a non-opportunistic disease in the third.Only one has relapsed to the initial low count.None of the three patients developed AIDS during the follow-up period.Since we have observed a low response ratio to steroids(only 25% responded)and due to the potential immunosupressive side effect of prednisone in HIV+ patients, we argue for enhaced control and expectant attitude, although we propose to assay AZT treatment in all of them according to the recent literature.Nevertheless STP is not an unfavorable prognostic sign in IDAs seropositive for HIV.

B.510

FULLY AUTOMATED SYSTEM FOR THE DETECTION AND REGISTRATION OF HIV-ANTIBODIES IN DONOR BLOOD

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Objective. To develop a fully automated system for the detection and registration of anti-HIV in donor blood.
Methods. Anti-HIV tests are done with an ELISA system in microtiter plates (Wellcozyme, Wellcome, UK). The automated system functions as follows: microtiter plates are provided with barcoded labels and positioned in a pipetting robot (Tecan RSP, Switserland). Before the pipetting program for the delivery of serum in the wells starts, the plate's barcode is read by a barcode pen and the barcode of the test tubes is automatically read by the built-in laser scanner of the robot. The position in the plate of each sample is stored in an IBM-PC. After the completion of the tests, the plates are automatically read by a reader (Wellcome diagnostics) and the results are stored on a diskette in the IBM-PC. A special program transfers the test results from the IBM-PC to the HP 3000 minicomputer.
Results. The system now operates under routine conditions and over 100,000 serum samples are tested. No major problems were encountered.

Conclusion. ELISA test systems for anti-HIV detection can be fully automated, which contributes to a safer blood supply by avoiding human errors as well as a reduction of the workload in the bloodbank.

B.511

HEMOPHILIAC POPULATION OF COSTA RICA FROM 1979 to 1989

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Objective: To analyze the serological profile in the hemophiliac population in Costa Rica.
Methods: Serum samples stored in the LSU-ICMRT serum bank were tested with anti-HIV ELISA (Abbott HTLV-III), Western Blot (LSU-ICMRT), HIV antigen (vironostika-Organon), IRMA HB_sA_g and anti-HB_s (LSU-ICMRT). Clinical data were obtained from the hospital case files.
Results: Of the 147 hemophiliacs, 80 (54%) were positive for either HB_sA_g or anti-HB_s. 64 (44%) were positive for anti-HIV-1 with the following distribution:

Anti-HIV-1	Hemophilia A	Hemophilia B	Hemophilia C	Von Willebrand
Positive	44	18	0	3
Negative	46	3	2	31
TOTAL	90	21	2	34

Sixteen (36%) of the A hemophiliacs were anti-HIV-1 positive since 1980 or before, while 11 (55%) of the B hemophiliacs were positive since 1986. HIV-1 antigen test was done in 39 of the 64 anti-HIV-1 positive hemophiliacs whose sera were available. The presence of the HIV-1 antigen was evaluated in correlation with seroconversion, development of ARC or AIDS and death of the hemophiliac.
Conclusion: The analysis of HIV-1 seropositivity in Costa Rican hemophiliacs provided some new insights into the origin of this disease in Central America.

B.512

IMMUNE ACTIVATION IN HIV POSITIVE AND NEGATIVE HEMOPHILIACS

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Objective. To analyze signs of immune activation observed in hemophiliac patients with and without HIV infection.
Methods. The absolute CD4 number, percent , CD4/CD8 ratio, Ia positive cell percent and Ig (G, A, M) were measured on a cohort of 41 hemophiliac patients (18 seropositive, 23 seronegative) followed for 5 years in Hyogo prefecture.
Results. Increased levels of serum IgG and Ia positive cell percent were observed in both seropositive and seronegative groups. And the level of serum IgG in seropositive group was higher than that in seronegative group with statistical significance (P<0.005). Moreover, the correlations between T4/T8 and IgG (r=-0.646), and between T4/T8 and Ia positive cell percent (r=-0.605) were showed only in seropositive group.
Conclusion. Hemophiliac patients show some signs of immunostimulation. Increasing levels of IgG and Ia positive cell percent appear to be correlated with declining immune status in seropositive group.

B.513

HIV-INFECTION IN HEMOPHILIACS IN ARGENTINA

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Objective. To describe an update of HIV-infection in hemophilia.
Methods. HIV antibodies(ab) were detected through EIA (Abbott) and confirmed by means of IFA and ENVACORE (Abbott).
Results. A total of 467 hemophiliacs has been studied since November,1984.

Hemophilia A (n=407)	Severe	Moderate	Mild	Sev.with Inhibitor	Total
Total (a)	256	61	65	25	407
HIV ab pos.(b)	102	17	10	6	135
% pos.(pos.(b)/total hem.(a))	40%	28%	15%	24%	
% pos.(pos.(b)/total pos.A(407))	76%	13%	7%	4%	

Hemophilia B (n=60)	Severe	Moderate	Mild	Sev.with inhibitor	Total
Total (c)	23	22	13	2	60
HIV ab pos.(d)	12	10	0	1	23
% pos.(pos.(d)/total hem.(c))	53%	43%	0%	4%	
% pos.(pos.(d)/total pos.B(60))	20%	17%	0%	2%	

Conclusion. Since 1984 and up to the present time, there has been a progressive decrease in anti-HIV positiveness, coincident with admission of patients less exposed to antihemophilic concentrates. In spite of this, seropositiveness has continued to be statistically significant in severe hemophilia ($p < 0.005$).

B.514

B.515

FINDINGS OF INDETERMINATE RESULTS TO WB (p17, p24, p55) IN MEXICAN NORMAL DONORS.

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Objetive.
The previous detection (screening) which is done mandatory by law to the blood drawn from normal donors showed the presence of certain bands that made WB results indeterminate such instance took us to search for HIV Ag in order to confirm an earlyseroconvertion or posible cross reaction with another retrovirus like HTLV I
Method.
The determination for HIV Ag to 1544 donor samples were made by the method of Elisa using different available brands. Such results were negative, and only 11 samples were positive by Elisa Dupont. WB testing from Dupont was made to these sample
Results.
WB Testing showed the presence of p17, p24, p55 bands (indeterminate) HIV Ag testing in serum was done as well as Ac Anti HTLV I with negative results as a finding.
Conclusion.
The study of these samples still is not over jet at this point in time we're in the stage of re sampleing again to stablish if any of these donors has seroconverted.

B.516

PLATELETS IN HIV-INFECTION: DECREASE ASSOCIATED WITH IMMUNODEFICIENCY. MYCOBACTERIAE INFECTION AND SALMONELLAE SEPTICEMIA. PSEUDOTHROMBOCYTOPENIA IN HIV-INFECTION.

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** MEDIS, GSF Neuherberg, FRG.

Objective. To describe different events associated with platelet reduction in HIV-infection.
Methods. Classification of immunodeficiency according to Walter Reed Classification System (WR 1-6). Documentation of the first platelet count / µl (PL) at admission, after progression in WR, after developing an opportunistic infection or malignoma and in HIV-ab. negative risk groups (HIV -). Semiquantitative assessment of megakaryopoiesis in bone marrow cytology (number of megakaryozytes (MEGAK) / low power field).
Results.

	HIV -	WR 1	WR 2	WR 3	WR 4	WR 5	WR 6
Mean PL counts:	255327	242388	229582	209846	219059	181207	211931
std. dev.:	58916	67899	71065	64381	55161	76975	87404
n =	137	49	55	26	17	29	58

PL < 100T were found in 6% (14/234). PL of 100T-150T in 11% (26/234), both predominantly in WR 5 and 6. In 11 of 17 mycobacteriae infections PL < 150T were found. In 1 case of salmonella septicemia a transient PL decrease occurred. One transient EDTA-dependent pseudo-thrombocytopenia (-TP) due to PL-associated antibodies was detected.
Bone marrow cytology in WR 1-5 and PL < 100T (n = 6) showed high numbers of mostly juvenile MEGAK suggestive of immune-TP. In mycobacteriae infections and PL < 100T (n = 4) high numbers of MEGAK were found also, whereas in 5 of 6 other opportunistic infections MEGAK were low.
Conclusion. In HIV-infection immune-TP, TP due to ineffective hematopoiesis and a slight decrease of PL with progressing immunodeficiency seems to occur. In thrombocytopenia an EDTA-dependent pseudo-TP and infections with mycobacteriae and salmonellae must be considered.

B.517

EVALUATION OF HIV-ANTIBODIES IN SAMPLES OF COMMERCIAL PREPARATIONS OF γ-GLOBULIN FOR PARENTERAL USE IN THE PERIODS 1973 1981 AND 1984-1986.

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Objective. Evaluation of the presence of HIV-antibodies in γ-globulin different commercial preparations in the periods 1973-1971 and 1984-1986.
Methods. Samples have been screened by ELISA commercial kits and, if positive, confirmed by home made western-blot.
Results. In period 1973-1981 we tested 13 γ-globulin lots and all the preparations were negative for HIV-antibodies. In period 1984-1986 we evaluated 25 γ-globulin lots and 22/25 were positive in ELISA, while 25/25 were positive in Western-blot. Western-blot reactivity was mainly directed against p 17 and p 24 "core" proteins and gp 41 "transmembrane" glicoprotein. Reactivity against "core" p 17 and p 24 proteins and not against gp 41 glicoprotein was demonstrated in same preparations.

γ-globulin	No. tested	ELISA pos.	WB pos.
1973-1981	13	0	0
1984-1986	25	22	25

Conclusion. At present, the transmission of HIV-infection by human γ - globulin preparations has not been yet demonstrated. The potential presence in the human immunoglobulin for parenteral use of anti-HIV antibodies suggest the routine-screening of blood donors to obtain a safe product.

B.518

CORRELATION OF THE HIV AND HTLVI ANTIBODY, HIV ANTIGEN IN HAEMATOLOGICAL DISEASE (H.D.).

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Objective: to investigate the prevalence, the correlation and the follow up of HIV antibody, HIV antigen, HTLVI antibody in H.D., to investigate the significance of indeterminate western blot.
Methods: During 1988, 1400 patients with H.D. were tested by ELISA (Organon) for HIV antibody (if positive W.B. was performed), in 5 of these with indeterminate W.B., the in situ ibridization, using D.N.A. probes, visualized by sandiwich immunoistochemical reaction (alcaline phosphatase) was performed. 600 out of 1400 patients were studied for HIV antigen and 1000 for HTLVI antibody.
Results: As for HIV antibody among 1400 patients: 1295 resulted negative (92.5%) 101 positive (7.5%): 50 diagnosed before 1988-already positive-, 50 in 1988-new positive-. 5 cases showed P24,P55 at W.B. but only one infected mononuclear cells. Among 176 haemophilic patients 30 (17%) were already positive and 15 (8.5%) recently diagnosed. Among 261 patients with limphoadenopathy, thrombocytopenia and miscellaneous 21 (8%), 29 (11%) 211 (81%) were respectively already positive, new positive and negative. 5 out 963 (0.5%)of other cases were positive. 2 out 600 were positive for HIV antigen and 3 out 1000 for HTLVI antibody. Conclusion: limphoadenopathies, thrombocytopenias and haemophilia showed the higher prevalence for HIV antibody.

Manifestations cliniques
Clinical Manifestations

B.519

EXTRAPULMONARY CRYPTOCOCCAL DISEASE AS A MANIFESTATION OF AIDS IN LOUISIANA

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Objective. To determine the frequency and characteristics of patients with extrapulmonary cryptococcosis (EC) as a manifestation of AIDS in Louisiana (LA) residents between 1981 and December 1988.
Methods. Cases of AIDS were identified by an active hospital-based surveillance system. Only definitively diagnosed cases meeting the CDC case definition were included in the analysis. Case data was collected by hospital record review. EC was defined as culture proven cryptococcal meningitis or sepsis.
Results. As of 12/30/88, 957 cases of AIDS were identified in LA residents (943 adult and 14 pediatric). One hundred ten (11.5%) cases were diagnosed with EC, 109 in adults and one child. For 76 (69%) patients EC was the only opportunistic infection identified. Patients with EC did not differ significantly from AIDS patients without EC by age, sex or risk group. Forty-eight percent of EC in adults with AIDS were black. Of 276 black adults with AIDS, 53 (20.3%) had EC compared to 53/667 (7.9%) of white adults with AIDS. The proportion of AIDS cases with EC does not appear to be increasing over time.
Conclusion. EC is a frequent manifestation of AIDS in Louisiana (11.5%), more frequent than for the U.S. as a whole (7.7%). Black patients with AIDS appear to be at higher risk of EC than whites.

B.520

INFECTION PAR HIV 1 AU DECOURS D'UNE GREFFE DE FOIE : ETUDE DE 2 MALADES PENDANT 2 ANS.

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Objectif. Analyser l'évolution clinique et sérologique d'une infection par HIV survenue au décours d'une greffe de foie (GF).
Méthodes. Une surveillance clinique et sérologique a été réalisée chez 2 malades (m1 et m2), séronégatifs pour HIV avant GF, pendant 2 ans après une GF indiquée chez m1 pour une cirrhose virale B et chez m2 pour un cholangiocarcinome. L'infection par HIV était liée à une toxicomanie reprise dans le mois précédant la GF pour m1, et à la greffe d'un foie HIV+ par erreur de transmission des résultats sérologiques chez m2.
Résultats. L'Ag p24 était décelable de J25 à J36 chez m1, et dès J20 jusqu'en fin d'évolution chez m2. Les Ac anti p18, p24, p55, p64, gp41 et gp60 ont persisté à un taux élevé à partir de J132 chez m1. Les Ac anti p24, p31, gp41 transmis passivement ont disparu à J48 pour réapparaître et persister à partir de J254. L'évolution (sous traitement par ciclosporine) a été marquée par une mycose buccale à J90 chez m1, des adénopathies chez m2, et la récidive de la pathologie initiale chez m1 et m2 entraînant le décès de m2, 2 ans après la GF. Les lymphocytes CD4+ étaient <200/µl dès J159 chez m1, et toujours >500/µl chez m2.
Conclusion. Contrairement aux observations antérieurement rapportées, ces infections par HIV contemporaines d'une GF n'ont pas été marquées par une évolution particulièrement défavorable.

B.521

IS ENTAMOEBA HISTOLYTICA IN HOMOSEXUAL MEN A PATHOGEN?

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Objective. Entamoeba histolytica occurs frequently among sexually active homosexual men. We tried to evaluate the clinical importance of this protozoa.
Methods. 320 male homosexuals were screened for intestinal parasites. E. histolytica was cultured in Robinson' medium and positive cultures were classified into zymodemes by means of starch-gel electrophoresis. Serological tests for E. histolytica were done in two different methods (IFAT and Elisa). Each individual was asked for clinical symptoms.
Results. 52 out of 320 (16,3 %) male homosexuals presented with E. histolytica in their feces. An isoenzyme classification was achieved in 26 patients and all belonged to non-pathogenic zymodemes. This correlated well to negative amebic serology in all subjects. 13 patients presented with diarrhea. In 5 of these 13 diarrhea could be explained by other enteric pathogens; in 8 patients no other pathogen was detected. In HIV-infected persons with inquired immunity no signs of invasive amebiasis were seen.
Conclusion. In male homosexuals only non-pathogenic zymodems of E. histolytica were found. Also in long lasting infections these zymodemes remain stable. We found no hint for invasive amebiasis in these patients. E. histolytica strains with a non-pathogenic zymodeme seem to be harmless commensals.

B.522

SPONTANEOUS BACTERIAL PERITONITIS AND AIDS

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The authors relate a case of a 28-year-old white homossexual man with AIDS, who was being treated for Kaposi's sarcuma and toxoplasmic encephalitis during 7 months when he developed aqueous diarrhea, weakness an difuse abdominal pain. The physical examination revealed poor general condition, anemia, dehydration, anasarca, disseminated cutaneous Kaposi's sarcoma and a distended and painful abdome. Laboratory results were as it follows: leukocytes counts 11.000 with 94 per cent of polymorphonuclear cells; CD4 < 200; CD4/CD8 0,5 seric albumin 2,4 gammaglobulin 1,3; protrombin time 67 per cent (15,5 seconds), and normal hepatic biochemistry values. Five days after admission ascites developed. Abdominal paracentesis was performed and a cloudy liquid was observed. Spontaneous bacterial peritonitis was suspected and empiric treatment with Cephalotin (8g/day) was initiated. Peritoneal liquid analysis revealed: leucocytes counts 7000, with 100 per cent of polymorphonuclear cells, peritoneal liquid protein 0,5 and peritoneal liquid DHL/seric DHL 0,8. Bacteriological studies revealed the growth of C.group Salmonella with susceptibility to various antibiotics, including Cephalotin. In spite of 5 days of antibiotic therapy unfavourable evolution was observed and he died in the ninth day of hospitalization. As we have no knowledge of reports of spontaneous bacterial peritonitis in HIV patients, we think this case description may be helpful in enlarging our knowledge about clinical manifestations of this disease.

B.523

CHOLECYSTITE ALITHIASIQUE, STENOSE DE LA PAPILLE, CHOLANGITE SCLEROSANTE ET SIDA.

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L'atteinte des voies biliaires est une complication rarement décrite du SIDA.
Objectif : Décrire un cas de l'association cholécystite alithiasique, sténose de la papille et cholangite sclérosante comme complication d'une Cryptosporidiose au cours d'un SIDA.
Cas clinique : Un homosexuel de 34 ans, HIV 1 positif et ayant un passé de plus de 5 mois de diarrhée sévère à Cryptosporidie, est hospitalisé pour un tableau clinique de cholécystite aigue. Il existe une cholestase biologique (Cf tableau). L'échographie hépato-biliaire met en évidence un aspect de cholécystite alithiasique à parois épaissies (10 mm), une dilatation des voies biliaires intra-hépatiques et une voie biliaire principale dilatée à 14 mm (photo). L'exploration chirurgicale confirme la cholécystite alithiasique. La cholangiograhie per-opératoire retrouve d'une part une importante dilatation de la voie biliaire principale avec un aspect d'oddite du bas cholédoque (photo), d'autre part un aspect très évocateur de cholangite sclérosante au niveau des branches de division secondaire des voies biliaires intra-hépatiques (photo). Aucun agent pathogène n'est isolé en dehors des Cryptosporidies dans la vésicule et la bile ; les cultures virales sont négatives ; aucune inclusion cytomégalique n'est retrouvée. Une sphinctérotomie endoscopique s'avère nécessaire devant la récidive de la dilatation après clampage du drain chirurgical.
Discussion : Les aspects cliniques et étiologiques de ces anomalies acquises des voies biliaires au cours du SIDA sont discutées.
Conclusion : Tout SIDA présentant une augmentation durable des phosphatases alcalines devrait bénéficier d'une échographie hépato-biliaire.

B.524

SPONTANEOUS RUPTURE OF SPLEEN IN A H.I.V. SEROPOSITIVE NON THROMBOCYTOPENIC PATIENT.

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We recently observed a case of rupture of the spleen, in a HIV seropositive asymptomatic and non thrombocytopenic patient in relation with a large spontaneous splenic hematoma. A 25-old male patient, intravenous drug abuser from 1982 to 1984, HIV seropositive since February 1986 and regularly followed without any symptoms, presents with abdominal pain and deglobulization. There was no abdominal traumatism. Echography and CT. scan showed mild splenomegaly with heterogeneous zones, and intraperitoneal blood. There was not any alteration of hemostasis. Platelets were 218 x 10.9/1. Patient did not take any drugs or toxic, and there were no signs of opportunistic infection.
Splenectomy was performed : spleen was large, 460 g weight, with rupture on inferior pole and a 4 cm circonference hematoma. On microscopy there was a follicular hyperplasia commonly observed in HIV seropositive patients. The research of disease responsible of spleen rupture was negative. Actually, patient remains well and his HIV status is always asymptomatic. Spontaneous rupture of the spleen has been described in a lot of affections, frequently of viral origin. In our patient the research of any cause of spleen rupture is negative, and not any alteration of hemostasis, frequently observed in HIV positive patients such as thrombocytopenia and/or circulant anticoagulant was found. However, generalized lymphadenopathy and splenomegaly are well known in HIV seropositive patient, and this chronic viral portage may be responsible of spleen damage followed in rare cases by spleen rupture.

B.525

THE PREVALENCE OF THE HEPATITE B VIRUS (HBV) MARKERS IN PATIENTS CARRIERS OF ANTI-HIV IN SAO PAULO, BRAZIL. Diaz,R.S.; Silva,A.E.; Ferraz,M.L.; Sador,M.S.; Castilho,M.P.; Lewi,D.S. from Escola Paulista de Medicina, Sao Paulo,Brazil.

Objective:To study the behaviour of VHB infection in patients who are carriers of HIV, separated in two distinct groups evaluated in different times. The two groups were compared betwen themselves and with a control group of blood donors from a blood bank.

Material and Methods:The pacients were divided in two groups depending on the time they were evaluated.

Group 1-29 patientes anti-HIV positive(Elisa,Lab. Abbott) homo or bissexual studied from 1982 to 1983,where were determined the HBV markers(Elisa,Lab.Abbott): HBsAg, antiHBc and antiHBs.

Group 2-43 patients anti-HIV positive(Elisa,Lab.Abbott) homo or bissexual studied from 1987 to 1988, where the markers from HBV described above were determined.

Control Group-Blood donors from a blood bank in the city of Sao Paulo.

Our statistical analisis was made using the Qui-square and Fisher's exact test and were considered significant when differences were p<0,05.The results are presented bellow:

	CONTROL	GROUP-1		CONTROL	GROUP-2		GROUP-1	GROUP-2	
HBsAg	5/500	03/29	p<0.001	5/500	08/43	p<0.000001	3/29	9/43	p<0.3
	1.0%	10.3%	OR=11.4	1.0%	23.2%	OR=26.2	10.3%	23.2%	
AntiHC	15/100	28/29	p<0.000001	15/100	33/43	p<0.03	28/29	33/43	p<0.03
	15.0%	96.5%	O=159	15.0%	67.4%	OR=8	96.5%	67.4%	OR=8
AntiHS	24/97	24/29	p<0.000001	24/97	15/43	p<0,001	24/29	19/43	p<0.001
	24.7%	82.7%	OR=14.6	24.7%	37.2%	OR=6	82.7%	37.2%	OR=6

Results:The results can sugest that in initial HIV infection period in our communit (1982-1983) there was a tendency to better imunological response to the HBV, shown by the greater incidence of anti-HBS in the HIV positive patients studied from 1982 to 1983 when compared to the group of HIV positive patients studied from 1987 to 1988.

B.526

SEROPREVALENCE AND CLINICAL CORRELATES OF HERPES SIMPLEX VIRUS (HSV) ANTIBODY IN 41 AIDS PATIENTS.

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Objective: (1) To assess the clinical course of mucocutaneous HSV in patients with AIDS; (2) To determine the seroprevalence of HSV antibody in this cohort; (3) To analyze the correlation of the presence of serum HSV antibody with clinical herpetic disease activity.
Methods: Forty-one patients with the diagnosis of first-episode *Pneumocystis carinii* pneumonia in 1986 were studied. Data regarding history of clinical outbreaks of herpetic infection, viral typing of isolates, and therapy with acyclovir (ACV) was collected retrospectively by review of the medical chart. Specimens for viral culture were inoculated onto human diploid fibroblast monolayers: virus typing was performed using fluorescein labelled monoclonal antibodies to HSV-1 and HSV-2. Serologic assay was performed for antibody to the HSV glycoprotein gG-2.
Results: Of 33 patients in whom clinical data was available, 24 had recorded outbreaks of mucocutaneous HSV infection. Locations of herpetic outbreaks included the perirectal (N=14), orofacial (N=10), and genital (N=4) areas. Virus typing demonstrated HSV-1 in 3 patients and HSV-2 in 9 patients. Seventeen of 24 patients received therapy with oral ACV for HSV infection; one patient was treated with intravenous ACV. Six patients received chronic suppressive therapy with ACV, for intervals ranging from 2 to 16 months. Data on antibody titers to HSV-1 and HSV-2 in these 41 patients will be presented.
Conclusion: Clinical HSV infection in common in patients with AIDS; location and virus type is variable. Correlation of serologic HSV status with clinical herpetic activity will be reported.

B.527

DISEASES OTHER THAN AIDS AMONG IV DRUG USERS.
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Objective: To describe the distribution of disease other than AIDS among a cohort of IV drug users.
Methods: As part of a study which tests two interventions to reduce the risk of AIDS among IVDUs, 346 subjects were recruited from drug networks, tested for HIV-1 positivity, and interviewed. Bivariate analyses were performed to assess associations between variables, and relative risks (and 95% confidence intervals) were calculated.
Results: Genital sores were reported among 11.3% of the cohort; pneumonia among 18%; hepatitis among 10%; tuberculosis among 6%; gonorrhea among 39%; syphilis among 19%, and genital herpes among 3.5%. Rates varied by race/ethnicity, with whites and Hispanics having twice the reported frequency of hepatitis and herpes of blacks, and tuberculosis seen only in blacks and Hispanics. HIV-1 seropositives were more than twice as likely to report a history of syphilis than seronegatives (1.4-3.4).
Conclusion: A variety of non-AIDS diseases occur in IV drug using populations which may present opportunities for targeted screening and interventions.

B.528

B.529

INCREASED INCIDENCE OF M. KANSASII INFECTION DUE TO AIDS AND HIV INFECTION AT COOK COUNTY HOSPITAL, CHICAGO
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* Blair S.; * Sonnenberg, M. et. al.
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Objective: To compare the incidence of M. kansasii infection at Cook County Hospital (CCH) from 1977-1982 and 1983-1988, and to evaluate the significance of associated AIDS and HIV infection.
Methods: All patients with M. kansasii infection between 1977 and 11/88 were cross-referenced with all persons with AIDS and HIV infection (AIDS/HIV), and a retrospective chart review was conducted to determine the site of infection and HIV status.
Results: Table I shows the results:

TABLE I

	All M. kansasii	Dissem. M. kansasii	AIDS	HIV+
1977-1982	23	0	0	0
1983-1988	40	6	10	5

An increase of 17 cases (57%) was observed from 1977-1988; of these, 15 (88%) were persons with AIDS/HIV infection. From 1983-1988, 15 (37.5%) of infections occurred in the AIDS/HIV group. Of these, 10 had AIDS, and 5 symptomatic HIV infection (Class IV). Of 6 patients with disseminated disease between 1983-1988, all had AIDS.
Conclusions: A 57% increase in M. kansasii infection at Cook County Hospital from 1977 to 1988 was primarily due to associated AIDS and HIV infection. Disseminated infection occurred only in persons with AIDS. HIV counseling and testing of patients with M. kansasii infection, and diagnostic and therapeutic interventions for M. kansasii infection in AIDS in endemic areas are appropriate.

B.530

THE KOËBNER PHENOMENON IN AIDS-RELATED KAPOSI'S SARCOMA
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The Koëbner phenomenon is the development of isomorphic lesions in the traumatized normal skin of patients who have psoriasis, lichen planus or various cutaneous diseases. Kaposi's sarcoma (KS) in its classical form sometimes koëbnerizes. We have observed 4 cases of Koëbner phenomenon in the course of AIDS-related KS.
Case 1 : Homosexual male, 46, with cerebral toxoplasmosis. A single lesion of KS developed at the site of a prior venous puncture.
Case 2 : Homosexual male, 40, LAS ; A KS lesion developed at the site of a BCG abscess. Other lesions of KS appeared thereafter.
Case 3 : Homosexual male, 38. A KS lesion developed after hurting himself with a dumb bell for body building. Other lesions appeared thereafter.
Case 4 : Homosexual male, 36. A KS lesion developed on the right flank after strongly bumping himself against a table. Other lesions appeared thereafter.

AIDS-related KS could potentially arise in every patient infected with the HIV but nevertheless only occurs in a minority of them, mainly homosexuals. Secretion of soluble angiogenic factors by HIV infected lymphocytes might explain the endothelial proliferation but additional factors are necessary. Among these factors wich remain controversial (genetic predisposition, poppers, other virus infection), trauma is another trigger mechanism.

B.531

ANO-RECTAL SURGERY OF AIDS PATIENTS.

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* Pedro Ernesto University Hospital, State University of Rio de Janeiro (UERJ) - Brazil.

Objective: To discuss the importance of proctologic surgical procedures for HIV infected patients.

Methods: During 1987 and 1988 we operated 20 HIV infected patients of groups II, III and IV of CDC criteria. All patients were tested for HIV antibodies by ELISA, Indirect Immunefluorescence and/or Western blot.

Results: Patients were all males, 18 homo/bisexuals (90%), 1 blood transfused (5%) and 1 intravenous drug abuser (5%). The ano-rectal diseases studied were: 10 fistules, 5 fissures, 3 biopsies of perianal lesions, 1 hemorroid, and 1 criptitis. Only 2 cases had delayed resolution after surgery - one from group II and one from group IV.

Conclusions: We conclude that under a criterious selection, HIV infected patients should be treated for co-existent ano-rectal diseases. Positive results justify the importance of proctologic surgical procedures for these patients that are already suffering deeply because of HIV infection.

Diagnostic
Diagnosis

B.532

RADIOGRAPHIC PATTERNS OF PULMONARY TUBERCULOSIS AMONG AIDS PATIENTS IN RIO DE JANEIRO - BRAZIL.

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Objective: Describe roentgenographic features of pulmonary tuberculosis among Brazilian AIDS patients.

Methods: We reviewed standard chest radiographs of 42 patients who met the current CDC criteria for AIDS and who also had a diagnosis of pulmonary tuberculosis.

Results: Among 42 patients reviewed, 41 were men and 1 was woman, with mean age 34,4 ± 9,0. Twenty-four (57,1%) also had extrapulmonary disease. Chest radiographs revealed diffuse interstitial infiltrates in 6 (14, 3%), hilar and (or) mediastinal lymphadenopathy in 7 (16,6%), pleural effusion in 13 (31,0%), miliary infiltrates in 9 (21,4%), localized pulmonary infiltrates involving middle or lower lung field in 14 (33,3%), localized pulmonary infiltrates involving upper lung lobes in 11 (26,2%), cavitation in 4 (9,5%), pericardial effusion in 3 (7,1%) and normal chest radiograph in 6 (14,3%). Only 3 patients presented with localized upper pulmonary infiltrates without lymphadenopathy, a typical pattern of reactivation tuberculosis, frequently seen in non-immunossupressed patients.

Conclusion: Although we strongly believe that most, if not all, patients had disease due to reactivation of latent bacilli, radiographic pattern was highly atypical for secondary tuberculosis.

B.533

ECHOCARDIOGRAPHIC (ECHO) FINDINGS IN HIV INFECTED PATIENTS.

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Objective: To study echocardiographic findings in patients infected by HIV, groups III and IV (C.D.C.), from the out-patients unit and from in-patients of the HUGG, related to the period from August'85 to November'88.

Methods: Parameters of dimensions, structures movements and cardiac functions were obtained by ECHO in 60 patients. The findings were classified individually and in cardiac segments (pericardium, myocardium and endocardium).

Results: Group III: 19 cases, all males,aged from 18 to 34 ($\bar{m}$ = 28,7). Risk groups: homosexuals - 10 (52,6%), haemophiliacs - 1(5,3%), drug-addicts - 1(5,3%) and 7(36,8%) unknown. Normal ECHO found in 11(57,9%), mitral valve prolapse - 3, isolated increased dimensions - 5, left ventr. hypocontratility - 1 and tachycardia 2 cases. Group IV: 41 cases, 38 males and 3 females. Aged from 14 to 54 (m = 34,3). Risk groups: Homosexuals - 28(68,3%), haemophiliacs - 2(4,9%), drug-addicts - 3(7,3%), blood transfusion - 1(2,4%); heteroxesual transmission - 1(2,4%) and 6 (14,6%) unknown. Two ECHOS were inconclusive. From the remaining 39, 15 were normal (38,5%). Isolated pericardial disease in 8 cases (20,5%), dilated cardiomyopathy in 1 (2,6%) and endocardial disease in 2(5,1%). Association of myocardial and pericardial disease in 6 cases (15,4%) and non-specific alterations in 7 (17,9%), pericardial effusion was the most frequent individual finding - 14 cases (35,9%).

Conclusion: Group III presented 1 patient with findings of mild cardiomyopathy. The others were normal or with non-specific alterations. Group IV presented 61,5% patients with ECHO alterations, the most frequent being pericardial effusion. The 2 cases with endocarditis were drug-addicts.

B.534

CARDIOLOGIC FINDINGS IN AUTOPSIES OF AIDS PATIENTS.

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Objective: To study the cardiologic findings in autopsies of AIDS patients performed at the Department of Pathology, Gaffrée & Guinle University Hospital.

Methods: We studied the cardiologic findings in the autopsies of 33 AIDS patients classified individually and per cardiac segment (pericardium, myocardium and endocardium) related to the period from March'85 to November'86.

Results: Sex: 31 males, 2 females. Risk groups haemophilia - 16(48,5%), homosexualism/bi 14 (42,4%), blood transfusion - 1(3,0%), unknown - 2(6,1%). Isolated pericardial disease were found in 9 cases (27,3%), isolated myocardial disease in 2(6,1%) and endocardial disease in 3(9,1%). Association of myocardial and pericardial disease in 7(21,2%), pericardial and endocardial disease in 4(12,1%) and the 3 segments in 1 case (3,0%). The most frequent individual finding was pericarditis - 19 cases (57,6%) followed by pericardial effusion in 9 cases (27,3%). One case of Chagas'Disease and 6 with no cardiac alterations. Five from these 6 cases belonged to the haemophiliac group.

Etiology: Endocarditis due to T.B. - 1 case (3,0%), Torulosis - 2 cases (6,1%), Candidiasis - 1 (3,0%). It was not possible to determine the etiology of the remaining findings.

Conclusion: Most of autopsies perfomed (78,7%) evidenced cardiac alterations almost equally distributed between isolated (42,4%) and associated lesions (36,4%). The most frequent findings were related to pericardium (60,6%).

Etiology was not asserted in most of the cases. The majority of the normal heart (83,3%) belonged to the haemophiliac patients.

B.535

INTERET DES PEPTIDES SYNTHETIQUES SPECIFIQUES VIH1-VIH2 POUR DES SERUMS PROVENANT D'ABIDJAN

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Objectif. Confirmer une première sérologie VIH1 et/ou 2 chez 110 patients prélevés entre Mai 1988 et Août 1988 au CHU d'Abidjan.

Méthodes. Dépistage ELISA en ELAVIA 1 et 2 (Diagnostics Pasteur). Confirmation en W.B. par "New" LAV Blot 1 et 2 (D.P.): les critères de l'OMS ont été retenus pour l'interprétation; puis par pepti-LAV 1 et 2: nouvelle méthode utilisant 2 pept. synth. spéc. mimant 1 épitope de GP 41 et 1 de GP 36.

Résultats. Sur 352 sérums testés, 110 étaient positifs en ELAVIA 1 et/ou 2.

Spécificité	ELAVIA	Western-Blot	Pepti-LAV 1 et 2
VIH1+ seul	5	54	67
VIH2+ seul	0	1	6
VIH1+ et VIH2+	105	50	30
VIH1- et VIH2-	/	5	7

5 sérums sur 110 n'ont pas été confirmés en W.B. et 7 en pepti-LAV. Les 2 sérums discordants ont un profil de séroconversion. On constate une proportion élevée de double spécificité: 47.6% si on se réfère au W.B., et 28.6% si on se réfère au pepti-LAV, double spécificité qui se retrouve en majorité chez les patients symptomatiques: 27/30 (90%).

Conclusion. En raison des fortes réactions croisées entre les 2 virus et de l'interprétation difficile des W.B. des sérums africains, un test spécifique est indispensable mais devrait être aussi sensible que le Western-Blot.

B.536

EVALUATION OF A RAPID MEMBRANE BASED ASSAY (HIV CHEK) FOR DETECTION OF ANTIBODY TO HIV IN SERUM SAMPLES FROM NAIROBI

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OBJECTIVE: To evaluate a rapid membrane based HIV antibody assay.

METHODS: Serum obtained from various Nairobi clinics where HIV studies are being performed were tested for HIV antibody by ELISA and a rapid membrane based assay (RA) (HIV CHEK, Dupont). Western blots (WB) were performed on samples positive on either assay and on a subset of negative samples. A sample was considered HIV+ if it was WB+, and negative if it was either WB- or ELISA- if no WB was performed.

RESULTS: 567 serum samples were obtained. Of 562 producing interpretable RA results, 197(35%) were positive (RA+) and 365 (65%) were negative (RA-). WB was performed on 192 RA+ and 93 RA- samples. Compared to WB, the RA had a sensitivity of 93.6% and specificity of 96.4%. Compared to a WB/ELISA determined HIV status, the RA had a sensitivity of 93.6% and specificity of 99.4%. 14 of 369 (3.8%) frozen specimens had to be centrifuged to obtain an interpretable RA result.

CONCLUSION: This RA compares well to WB. It may be of particular utility where standard laboratory methods are impractical, when a result is needed quickly, or when analyzing single or small batches of samples.

B.537 SERUM LDH ISOENZYME ACTIVITY IN HIV PATIENTS WITH RESPIRATORY DISEASE

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OBJECTIVE: To characterize the serum LDH isoenzyme pattern in HIV patients with elevated LDH and bronchoscopically diagnosed PCP or non-PCP respiratory pathogens.
METHODS: 14 HIV pts presenting with fever, cough, SOB or roentenographic findings had serum LDH activity and isoenzyme analysis within 24 hours of bronchoscopy. 2 outpatients with elevated LDH activity but no respiratory complaints were evaluated for isoenzyme analysis (Group C). To assess a standard hospitalized population, 42 non-HIV patients were chosen at random over a 24 hour period for LDH activity and isoenzyme pattern (Group D).
RESULTS: 10/14 HIV/AIDS pts were diagnosed with PCP by bronchoscopy (Group A). In the 4 remaining pts (Group B) no PCP was isolated.

Group	Total LDH (mean)	% LDH (mean) / Absolute LDH (mean) Iso 1	Iso 2	Iso 3	Iso 4	Iso 5
Lab normal	90-180	19-25	25-35	10-20	5-10	0-10
A n=10	478	23/118	36/170	22/103	10/46	9/42
B n= 4	396	17/62	34/122	23/89	11/50	16/72
C n= 2	283	29/81	44/126	16/46	5/15	6/16
D n=42	255	26/62	40/96	18/46	7/18	9/24

CONCLUSIONS: Preliminary data suggest: 1) as per previous studies, elevated serum LDH activity correlates with episodes of PCP although background elevation does occur in hospitalized patients and in non-PCP respiratory disease. 2) In PCP, increases in isoenzymes 2 and 3 are noted. In non-PCP respiratory illness isoenzymes 3, 4, 5 are elevated. Further study is needed to confirm if isoenzyme patterns, in particular isoenzyme 2 and 3, are more predictive of PCP than total LDH in the HIV population.

B.538 MONITORING FOR HIV-1, HIV-2, HTLV-I SERO-PROGRESSION AND SERO-CONVERSION

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Objective. To serologically monitor individuals whose sera had previously exhibited reactivity by at least one of seven retroviral screening assays, for sero-progression and sero-conversion for HIV-1, HIV-2, and HTLV-I.
Methods. Sera from 33 high risk individuals in Djibouti were collected and re-examined after four months by western blot (WB) assays for HIV-1, HIV-2, and HTLV-I (DuPont). Resultant WB profiles were compared to those obtained from the same person four months prior. All sera were also tested for antigen by ELISA neutralization (Abbott). An IFA (ENI.) was used to test sera yielding indeterminant results.
Results. Nine sera showed no sero-progression by any WB; one serum exhibited full sero-conversion for HIV-1; one HIV-1 positive (pos.) also became pos. for HIV-2; and two sero-progressed to become HTLV-I confirmed pos. Fourteen samples were WB indeterminant but profiles had progressed to include reactivity to at least one additional virus specific antigen. Six of these had highly suspect profiles, including one IFA pos. serum from a patient who subsequently acquired TB. All sera were antigen neg. The serum which sero-converted by WB had been identified only by the Serodia HIV screening assay.
Conclusion. After four months, some sera had converted from screening assay pos. only, to become confirmed for HIV-1, HIV-2, and/or HTLV-I. Many exhibited progressive profiles. (Supported by NAVMEDRSCHDEVCOM, Bethesda, Md Work Unit No. 3M463105.H29.AA.335.)

B.539 EPIblot-HIV WESTERN BLOT AS SUPPLEMENTAL ASSAY IN TESTING HIV INFECTION

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We evaluated the EPIblot-HIV western blot from Epitope Inc Beaverton, Oregon USA as supplemental test for serum samples from patients suspicious of HIV infection.
This western blot test was used in a total of serum 70 samples: 65 were from patients whose EIA screening tests gave repeatedly positive results, 5 samples from people without any known risk factor for HIV infection were included as extra negative controls. Procedure was performed according manufacturer's instructions. The manufacturer's positivity criteria was the presence of at least two of these bands : gp 160/120, gp 41, p 24. Negativity criteria was the absence of any band. Indeterminate criteria is the presence of any other band not related to the virus structure.
Our positivity criteria was as been already described above plus any other virus-related band present. The assay gave us the following results. 41 positive, 22 negatives and 8 indeterminated serum samples. The positive pattern showed bands gp160/120 present in 100% of the cases; p65 in 95%; p55 in 51%; p51 in 95%; gp41 in 97.6%; p31 in 73%, p24 in 75.6% and p18 in 31.7%. We also detected in the 8 indeterminated samples a constant pattern; this corresponded to one band around 50-55 Kd which as not been related to the HIV structure, by its appereance - rather diffuse- we presumed could correspond to some glycoprotein. These 8 samples coming from patients with repeated blood transfusions (4), patients with chronic renal failure in dialysis (2) and patients with connective tissue disease (2). Using an IFA test (Frappier Diag. USA) all western blot positive samples, but one, gave also positive results. The 8 inespecific ones also gave inespecific results using this procedure.
The use of a supplemental test as the EPIblot-HIV allowed us to diagnosticate HIV infection in 41 of 70 serum samples whose previous EIA screening test were positive. For indeterminated samples there is a constant pattern, a protein band around 50-55 Kd. We use a more stringent criteria than the recommend due to band gp 41 is present only in 97.5% of the cases and band p24 in 75.6 % of the cases.

B.540 INCREASED ADA ACTIVITY IN CHILDREN WITH PERINATAL HIV INFECTION

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Objective. To evaluate whether adenosine deaminase (ADA) activity is enhanced in erythrocytes of children with perinatal HIV infection and its possible prognostic significance.
Methods: ADA was assessed, according to Hopkinson's method in RBC of 33 children born from HIV+ mothers (8 P2, 13 P1, 12 P0) and in a control group of infants and adults. RBC of normal donors were also incubated for 1 hr, before ADA evaluation, with serum samples of children who showed high values of enzyme activity.
Results: The ADA levels were significantly higher in infected symptom-free (P1) children when compared to those of the control group (0.34 ± 0.01 vs 0.25 ± 0.06 U/ml RBC, p = 0.001). A futher significant increased was found in symptomatic (P2) children (0.45 ± 0.02 U/mlRBC, p<0.01 vs P1). The enzyme activity was enhanced also in the group of (P0) infants, with indeterminate state of infection (0.29 ± 0.03, p<0.05 vs controls). The enzyme values of normal RBC did not increase after incubation with positive serum samples.
Conclusions: Our results demonstrate that ADA is significantly increased in RBC of perinatally infected children, as previously reported in HIV + adults. High ADA levels may be an early, though indirect, marker of infection of possible prognostic significance, because the enzyme activity is related to the progression of the disease. Since the increased ADA values are not induced by serum factors, the infection of erythroid cells by HIV might account for the enhanced enzyme activity.

B.541 WESTERN-BLOT QUANTITATIF : INTERET DANS LA SURVEILLANCE DES PATIENTS HIV-SEROPOSITIFS

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Objectifs. Evaluer l'intérêt d'une quantification du Western-blot.
Méthodes. Les bandes d'immunoblot obtenues (Du Pont De Nemours)sont quantifiées par lecture densitométrique automatisée (Electrophoresis Data Centers-Helena). Les résultats sont exprimés en intégrales représentatives de la surface délimitée par chaque pic de la courbe.Deux groupes de 9 patients appariés d'après l'âge,la sexualité et le stade clinique(défini par le CDC) ont été constitués: le groupe Malades(M) formé de sujets ayant progressé du stade II au stade IV, et le groupe Témoin(T)de malades restés asymptomatiques(stade II)durant le même suivi de 24 à 31 mois.
Résultats. Cette technique assure une lecture objective.Elle permet un suivi précis des différents anticorps:ainsi les valeurs représentatives des Ac anti p24 et anti-p17 sont plus faibles dans le groupe M que dans le groupe T ($p<0,05$) et décroissent jusqu'à s'annuler au cours du suivi;chez un malade traité par AZT, ces 2 valeurs augmentent alors que l'antigénémie p24 disparait.Sa sensibilité est supérieure à celle des tests EIA de 2ème génération(ENVACOR Abbott) pour la détection des anticorps anti-p24.Sa reproductibilité intrasérie est bonne. Cependant elle pose des problèmes méthodologiques (défaut de reproductibilité intersérie)nécessitant l'apport d'améliorations.
Conclusion.Les perspectives sont intéressantes dans l'évaluation précoce de l'évolutivité de la maladie chez les sujets asymptomatiques, dans le suivi des nouveaux-nés de mères séropositives et dans la surveillance du traitement antiviral.

B.542 MODUL SYSTEM IN HIV-ANTIBODY TESTING FOR BOEHRINGER MANNHEIM ENZYMUN-TEST(R) DIAGNOSTICS

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Screening tests have to be sensitive for possibly all specificities of HIV-antibodies, while specific antibody tests are important for prognosis of diseases (p24) or distinguishing HIV-I from HIV-II-infection.
For our automatical Boehringer Mannheim Enzymun-Test(R)-System we developed a modul-system using a single universal biotin binding solid phase in all tests and combination of specific biotin labelled antigens for the individual tests.
Polystyrene tubes were coated with streptavidin. Recombinant antigens were labelled with biotin. Synthetic peptides were synthesized by solid phase technology.
The samples were incubated with the antigens in PBS containing bovine serum. Solid phase bound complexes were detected by peroxidase labelled second antibodies and visualized using ABTS(R) substrate. We showed that the modul system is suited for detection of p24 specific antibodies in a quantitative test with the linear standard curve in high precision (< 3 %) as well as for screening tests to HIV-I and HIV-II using recombinant HIV-I gp41 and p24 antigens and synthetic peptides from HIV-II gp32.

B.543 OKT4 EPITOPE DEFICIENCY AND SYMPTOMATIC IMMUNE IMPAIRMENT MIMICKING AIDS.

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Case Report: The patient was a 14-year old girl presenting with disseminated cutaneous candidiasis, severe pain on left foot and persistent diarrhea. A X-ray film of the left foot revealed an osteitis lesion of the calcaneum suggestive of tuberculosis. Massive infestation of stool samples by *Giardia lamblia* was disclosed. The patient had no risk factors for HIV infection. She was virgo and had no history of blood transfusion. She was seronegative for HIV by both EIA and WB. Normal absolute number of Peripheral Blood Lymphocytes (PBL) of 1860 / microL was counted. Complete cutaneous anergy to tuberculin (10 IU purified protein derivative), candida, and phytohemagglutinin 1 and 10 microGr was found. B lymphocytes were quantitated by means of a direct immunofluorescent assay (IFA) and found to represent 36% of the total PBL. T-cell subsets were identified by means of an indirect IFA using monoclonal antibodies (MoAb; OKT3, OKT8, OKT4 and OKT4A which is directed to a distinct epitope of the CD4 molecule; Ortho Diagnostic Systems). The following values for T-cell subsets were found: OKT3+, 69%; OKT8+, 21%; OKT4+, 4%; OKT4A+, 56%. The calculated OKT4:OKT8 ratio was 0.2 but the OKT4A:OKT8 ratio was 2.7, clearly indicating OKT4 epitope deficiency (OKT4 ED).

Conclusions: In contrastto many other cases of OKT4 ED, our patient had profound T-cell function impairmentsand experienced clinical consequences of these dysfunctions which were initially believed to be HIV-associated. We feel that a monoclonal antibody directed to a CD4 other than the T4 should be included in the T-cell subset identification of patients with a suspicion of HIV infection. A significant decrease in T4 epitope recognition by the OKT4 MoAb has been observed in as many as 20% of American blood donors***. However, only 1/127 asymptomatic pregnant women (0.8%) enrolled in an ongoing cohort study on perinatal HIV infection in Kigali presented with this congenital defect. Our observation suggests that OKT4 ED could be accompanied by symptomatic T-cell dysfunctions. We also suggest that the frequency of this congenital abnormality is not homogeneously distributed in people of African origin.

***Casey TT et al. Arch Pathol Lab Med 1986; 110: 702-704.

B.544 PERIPHERAL BLOOD LYMPHOCYTES (PBL) FORMING ROSETTES WITH THEIR AUTOLOGOUS ERYTHROCYTES (AE)-(AELFR) IN HIV INFECTED PATIENTS.

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Objective.we observed that a small part of normal PBL 8-14% forms spontaneous rosettes (R) with their AE in Man. We wanted to investigate how is this phenomenon in individuals infected by HIV. We studied 23 Hemophiliacs positive for HIV and 22 individuals infected by HIV and/or suffering from AIDS.

Methods.PBL were separated according to classic techniques. AE suspensions 1% were prepared and the mixture (V/V) were observed by microscopy after incubation for 24 hours in 4°C temperature.

Results.We found AELFR from 50% till 97% and we were able to inhibit the R formation by using monoclonal antibodies (MA) from "Dakopatts": T_1, T_2, T_4, T_8, B after addition of them into the mixture. The inhibition was strong by T-MA and very low by B-MA except for one case: a patient with Coombs positive hemolytic anemia (A).

Conclusions.We may until now conclude that a small numeral of PBL are able to attack against their AE in order to eliminate old or altered E from blood stream. Probably this PBL subpopulation may increase in pathologic states like HIV infection so as become dangerous for normal AE.It is posible this mechanism to be partially responsible for the A, wich A develops later in such patients.

B.545 MULTIDISCIPLINARY APPROACH TO HIV SEROPOSITIVE PATIENTS: A TWO YEARS EXPERIENCE OF AN OUT-PATIENTS DEPARTMENT.

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Objective: To give a complete response to increasing needs of HIV seropositive subjects.

Methods: Since 1986 in the Clinic of Infectious Disease of Pavia, a special out-come patients Department was established for ambulatory management of HIV infected subjects. In this structure are always present an infectivology, a neurologist and a psychologist; many other specialists (hematologist, pneumologist, oculist, pediatrician, obstetrician and dermatologist) are available every day; they are working, as agreement with their Clinics, in our structure.

Results: There is one diagnostic-therapeutical protocol for every specialist; all these protocols are coordinated by an infectivologist, chief of the department. Thre is also an endoscopy room, where it's possible to make bronchoscopies, recto-colonscopies, gastroscopies and hysteroscopies.

Conclusion: The polymorphism of symptoms in HIV positive patients requires a multidisciplinary approach. In our Clinic we established an ambulatory menagement; we think to give in this structure complete responses to medical and psychologycal needs of HIV positive patients.

B.546 UNE CAUSE INHABITUELLE DE DIARRHEE CHEZ UN PATIENT VIH POSITIF

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Objectif. Les auteurs rapportent une localisation inhabituelle leishmanienne, oesogastroduodénale chez un patient VIH positif apyrétique présentant une dysphagie, des douleurs rétrosternales, des épigastralgies associées à une diarrhée intermittente.

Méthodes. Des biopsies oesophagienne, gastrique et duodénale sont réalisées. Les différents échantillons sont apposés sur lame et colorés au Giemsa.

Résultats. Les biopsies révèlent une infestation massive leishmanienne dans cette surprenante localisation oesogastroduodénale. Il existe une candidose oesophagienne associée. Aucune autre infection opportuniste n'est retrouvée. Un frottis médullaire et une biopsie cutanée montrent de rares leishmanies.

Conclusion. La leishmaniose digestive massive est inhabituelle dans les leishmanioses viscérales disséminées des patients VIH+. Cette observation incite le biologiste à une recherche exhaustive de tous les agents opportunistes pouvant compliquer l'infection VIH.

B.547 MULTIPLICATION OF HHV-6 AND HIV1 IN BLOOD LYMPHOCYTE CULTURE

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Objective. To detect the simultaneous multiplication of HIV and human herpesvirus-6 (HHV-6) in primary lymphocyte culture from patient's blood.

Methods. Peripheral blood mononuclear cells (PBMC) were grown in primary culture according to conventional procedures. Secondary cultures were performed with freshly stimulated lymphocytes from a healthy donor. HIV production was evidenced by enzyme immunoassay and reverse transcriptase activity. HHV-6 was detected by molecular hybridization.

Results. During an attempt to isolate HIV1, PBMC from a Congolese AIDS patient exhibited a typical HHV-6 cytopathic effect whereas both HIV1 antigen and HHV-6 hybridization signal were detected in culture supernatant. In addition, cell-free supernatant could transmit mixed infection by HIV1 and HHV-6 to PBMC from a healthy donor. However, reverse transcriptase activity was not detectable in primary culture and sequential cocultures starting from the primary culture led to the exclusive multiplication of HHV-6. This suggests that the potent cytocidal effect of HHV-6 progressively inhibited the replication of HIV1 by means of lymphocyte destruction.

Conclusion. Cocultivation of HIV1 and HHV-6 can be observed in primary lymphocyte cultures from AIDS patients. This finding could contribute to the debate on the possible cofactorial role of HHV-6 in AIDS.

B.548 A SYNTHETIC PEPTIDE ELISA FOR DETECTION OF ANTIBODIES TO HIV1.

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Objective.To synthesise and evaluate a peptide to be used in a diagnostic immunoassay.

Methods.Hydrophilicity and the presence of two cysteines in close proximity were determinants to select a conserved sequence among different isolates of HIV1 derived from the transmembrane glycoprotein gp41. A twelve aminoacid peptide (env 593-604;Leu-Gly-Ile-Trp-Gly-Cys-Ser-Gly-Lys-Leu-Ile-Cys) was synthesised using solid phase methodology.High pressure liquid cromatography showed a purity of 81% w/w peptide.ELISA polystyrene plates were coated with 5µg of peptide per well and air dried at 37°C overnight.Sera were tested at a dilution 1/10 and incubated with alkaline phosphatase conjugated rabbit antihuman IgG and p-nitrophenyl substrate.The plates were read at 405 nm.

Results.The peptide was evaluated using a panel of 266 negative and 35 HIV1 positive Swedish sera and 395 blood donnors sera from Tanzania of which 26 were HIV1 positive.The cut off point was determined as two times the mean value of the negative Swedish sera.A specificity of 97.7% and a sensitivity of 100% was found for the Swedish panel.The african panel showed a specificity of 90.2% and a sensitivity of 92.3%.

Conclusions.A good sensitivity specially for the Swedish sera was found. A further improvement of the technique should allow the use of this peptide for routine diagnostic.

B.549

CONCORDANCE OF POLYMERASE CHAIN REACTION (PCR) WITH HIV ANTIBODY (Ab) IN HIV INFECTION

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Objective. To evaluate the correlation of PCR detection of HIV DNA and detection of HIV Ab.

Methods. We examined peripheral blood mononuclear cells (PBMC) and serum from 112 homosexual men, 85 hemophilic men, 30 HIV-infected transfusion recipients, and 91 heterosexual partners of HIV-infected persons in 5 prospective studies of HIV infection. PCR+, Ab- subjects who seroconverted at the subsequent test date and one who died of a stroke before a followup specimen could be obtained were excluded. PCR was performed using a gag region primer pair (SK38/39). Selected PBMC were also tested with env region primers (SK68/69 or CO71/72). Amplified HIV DNA was detected using specific oligomer probes.

Results. Of 104 HIV Ab+ persons, 91 (88%) had HIV DNA by PCR (86 were gag+ while 5 were gag- but env+). Of 214 HIV Ab- persons, 2 (1%) had HIV DNA by PCR. These were 2 homosexual men who have each subsequently been HIV Ab-, PCR-, and clinically well for 3 years. Analysis of HLA genotypes of the specimens is in progress.

Conclusion. PCR detects HIV DNA in PBMC of most HIV Ab+ persons; detection is increased by use of multiple primer pairs. Some HIV Ab+ persons may have HIV DNA in PBMC which is below the level of detection of PCR. PCR positivity without Ab may represent specimen mislabelling, false positive test results, or, less likely, transiently detectable HIV DNA.

B.551

ETIOLOGY OF INDETERMINATE HIV WESTERN BLOTS.

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Objectives. To ascertain the etiologies of indeterminate HIV Western blots (IWB), the rates of seroconversion and sexual transmission, and the yield of supplemental HIV diagnostic tests.

Methods. Thirty-seven individuals with positive HIV ELISAs and IWB and their current sexual partners were enrolled from diverse HIV testing sites in Washington state in an ongoing prospective study. Eighty % were from low and 20% were from high-risk groups. Serologic assays were performed for HIV, HTLV-1 and other retroviruses, hepatitis B, and autoantibodies (antinuclear antibodies, rheumatoid factor, VDRL). Supplemental HIV tests were performed: HIV culture by University of Washington, radioimmunoprecipitins assay (RIPA) by Biotech, recombinant envelope antigen ELISA (ENV 9) by Dupont, recombinant core/pol/env antigen ELISAs (HIVAGEN) by SmithKline Bio-Science, and HIV polymerase chain reaction (PCR) by CETUS.

Results. Reactivity on Western blot was in the gag only region in 76% of cases. Autoantibodies were found in 29% and hepatitis B surface and core antibodies were positive in 25% of the cases. All were negative for surface antigen. One of 26 cases was indeterminate on HTLV-1 Western blot. Gag and pol reactivity was confirmed by HIVAGEN recombinant ELISA in 20 of 27 (74%) cases and envelope reactivity in 1 of 30 (3%) cases by ENV 9 ELISA. RIPA was negative in 12 (48%) and indeterminate in 13 (52%) cases, primarily with weak p55 and gp 120 reactivity. Only 1 of 29 cases (a homosexual male) was HIV PCR positive. HIV cultures in that case and 21 others have been negative. None of 17 cases with 6 months or greater follow-up have seroconverted. All 17 sexual partners who were tested have been HIV ELISA negative, but 7 of 15 (46%) tested by Western blot were indeterminate. Of the 7 sexual partners with IWB, all were low risk for HIV and 2 had the same WB bands as their partner.

Conclusions. Indeterminate HIV Western blots were not related to HIV infection or HLTV-1 cross-reactivity in this cohort with HIV gag reactivity (22 negative HIV cultures and no seroconversions at 6 months in 17 cases). The significance of IWB in ELISA negative sexual partners is unknown. Cross-reactivity due to other human and animal retroviruses is under investigation.

B.553

RESULTS OF NEUTRALIZATION ASSAYS AND USE OF THE VRL CORRECTION FACTOR WITH THE ABBOTT AND DUPONT p24 ANTIGEN ELISAs.

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We compared DuPont (NEK046) and Abbott p24 antigen ELISAs using 35 serum samples found to be positive for p24 antigen by 1 or both assays. Of the 35, 34 were positive (>10 pg/ml) by DuPont and 27 were positive by Abbott. However, 12 of the samples initially positive by DuPont failed to neutralize using DuPont confirmatory reagents, compared to only 1 initially positive by Abbott that failed to neutralize using Abbott confirmatory reagents ($P<0.01$). The 12 samples that failed to neutralize with the DuPont reagents included 8 negative by Abbott, the 1 that was initially positive by Abbott but failed to neutralize, and 3 that were positive by Abbott and did neutralize.

We have also compared the quantitative determination of p24 antigen in the two assays both before and after application of a correction factor developed by the Virus Reference Laboratory (VRL) of the AIDS Clinical Trials Group. For this comparison, we used 21 samples that were positive and neutralizable in both assays. All results were calculated using the VRL standards (25-200 pg/ml) and data reduction software developed by Dataworks Development. The mean and SD of the 21 samples using the Abbott assay were 140±95 pg/ml uncorrected and 98±67 pg/ml corrected. The corresponding results for the DuPont assay were 97±78 uncorrected and 114±96 pg/ml corrected. The r^2 values were 0.43 for the uncorrected results and 0.44 for the corrected values.

The frequent occurrence of non-neutralizable positives using the DuPont assay is a problem that may prevent the recognition of some truly positive samples. Even with the use of the VRL correction factor, substantial differences persist in the quantitative results of testing individual samples with the two assays.

B.550

A RETROSPECTIVE ANALYSIS OF DISEASES ASSOCIATED WITH INDETERMINATE HIV WESTERN BLOT PATTERNS

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Some individuals possess antibodies reactive to HIV Western blot proteins in patterns not diagnostic of HIV infection. A retrospective chart review of patients exhibiting such antibodies was performed and compared to a control cohort of sex and age matched individuals from the same base population of HIV-negative blots to determine if such blots were associated with any specific disease states. 21 such patients were found in a total population of 816 (2.6%). GAG-only (core) blots made up the majority, 79% (23/29). An indeterminate blot was statistically associated with Hashimotos thyroiditis ($p<.01$) and Non-Hodgkins lymphoma ($p<.05$). Kikuchis disease and malignant histiocytosis were associated but the numbers of subjects were too small to reach statistical significance. Indeterminate Western Blots, blots for HIV could be explained by antibodies reactive with non-viral antigens or could represent antibodies to as yet uncharacterized retroviruses, cross-reactive with HIV.

B.552

USE OF VITREOUS HUMOUR OF THE EYE FOR HIV ANTIBODY TESTS OF MEDICOLEGAL AUTOPSIES

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Background. In a HIV surveillance study all medicolegal autopsies have been tested in Helsinki area (N=3558). Since serum is often hemolysed and difficult to run in the standard tests we tried other fluids for sample material.

Objective. To evaluate vitreous humour as sample material for HIV antibody tests of medicolegal autopsies.

Methods. Wellcome's and Abbott's recombinant EIA:s were used as primary tests for HIV-antibodies. Confirmation was done with standard western blots. Sera, vitreous humour and gall bladder fluid were collected from a HIV positive case and the results compared to negative cases.

Results. Vitreous humour gave a positive result in both EIA tests, although the signal was weaker than for sera. WB showed typical pattern with reactivity against all major components of the virus. No indication of nonspecific background reactivity was observed.

Conclusion. Vitreous humour can be used for HIV antibody assay using standard commercial EIA tests. Comparison of the sensitivity of different tests will be presented.In autopsies the material is easy to obtain and does not have the drawbacks of serum samples which are often severely hemolysed.

B.554

FALSE-NEGATIVE RESULTS IN HIV-DETECTION ASSAYS DUE TO SAMPLE DISTRIBUTION

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Objective. Only a small proportion of lymphocytes carry virus in HIV-infected persons. This proportion might be related to the severity of the disease. The number of HIV carrying lymphocytes necessary to elicit a positive response in virus culture assays is unknown, but is likely to be higher than one. Due to the Poisson distribution of virus-infected cells, smaller blood samples from subclinical infected persons may yield negative results in reverse transcriptase (RT) or p24 assays. It can also be safely assumed that the smaller the number of infected cells the longer the time necessary to detect virus activity in cocultivation assays.

Method. Blood from 3 asymptomatic HIV-positive (AS) and 3 AIDS patients were cocultured as a single large (20cc) and divided into 6-10 small samples (9-10cc each). The cultures were established, stimulated with PHA and cocultivated with donor lymphocytes. Supernatants were checked every 4 days for presence of p24. Cocultures were carried for 35 days.

Results. All large samples were p24 positive; mean time required to detect p24 ag in samples from AIDS patients was 4 days compared to 16.5 days for AS patients. All small samples from AIDS patients were positive within 7 days of cocultivation. In contrast only 25-67% of small samples taken from AS patients were p24 positive. The first positive samples were observed between 12 & 31 days following coculture.

Conclusion. The results suggest caution in the interpretation of negative results in HIV antibody positive persons when small volumes (≤10cc) of blood are tested. The results suggest that there is strict need for standardization of the methodology of coculture as a means of monitoring response to antiviral therapy.

B.555

HIV Antigenemia in Patients with AIDS and HIV Infection: A Comparison Between Racial Groups.

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Objective: To determine if HIV p24 antigen(Ag) differs in white and black American patients, as has been suggested in African and European patients.
Methods: 193 consecutive patients with AIDS or HIV infection who presented for clinical trials were studied; 164 had evaluable results. HIV-Ag was measured by the Abbott EIA and verified by neutralization assay. CD4 counts were performed by flow cytometry. Patients were classified by clinical diagnosis and by CD4 counts.
Results: Overall, 32/132 (24%) of white patients and 7/32 (22%) black patients were HIV-Ag+ (p=NS). Specific results are as follows:

	White			Black			
	Ag+	Ag-	%+	Ag+	Ag-	%+	p value
AIDS	27	16	63	7	8	47	0.55
Non-AIDS	15	74	17	0	17	0	0.29
CD4 < 200	28	19	60	6	8	43	0.42
CD4 > 200	12	71	14	0	16	0	0.20

A higher proportion of white non-AIDS patients (30%) were symptomatic than black non-AIDS patients (6%; p=.06).
Conclusion: The prevalence of serum HIV-Ag does not differ between clinically comparable white and black populations, regardless of clinical status or CD4 number. Prior observed differences cannot be explained by racial variation and suggest that perhaps geographic factors or difficulty in diagnosing AIDS in developing countries may play a role.

B.556

TRADITIONAL EIA AND RAPID SCREENING FOR HIV1 CONFIRMED BY COMBINED TESTING FOR ANTIBODIES AND ANTIGENS

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Objective. A total of 14 sera from well defined patient infections (5 AIDS, 1 ARC, 4 asymptomatic; 4 negative) were used to evaluate 15 commercial kits for HIV antibodies and another 3 for antigens.
Methods. Antibody tests included 6 EIA's (Abbott, Organon, Dupont, Genetic Systems, Wellcome and Cambridge), 3 Western Blots (Dupont, Virion, BioRad), 2 Microscopy tests (Virion Immunoflourescence, IF and immunoperoxidase, IP) and 4 rapid assays (Abbott passive hemagglutination (PHA) and Testpack; Dupont HIVCheck and Cambridge latex agglutination (LA). Sera were tested for antigens using tests from Abbott, Coulter and Organon.
Results. All 6 EIA screening tests were in agreement on 11 sera (8+3-). Discordant results were seen in an antigen positive AIDS patient, an asymptomatic patient with a single p24 band and an HIV2 positive patient. EIA results were confirmed by WB, IF or IP except for these 3 problem sera. The IF and IP tests mimicked WB results closely. Antigen testing which showed no discordance in this series, provided a better understanding of discordant antibody test results. The rapid antibody tests were accurate except for HIVCheck which demonstrated a problem with sensitivity.
Conclusion. A combination of confirmatory tests such as WB and IF or IP can provide added assurance on interpretation and reporting of difficult sera.

B.557

ABSENCE DE SEROCONVERSION APRES UNE MENIGITE DE PRIMOINFECTION A VIH.

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Objectif : Suivi sérologique et virologique du VIH chez un homme de 26 ans ayant présenté une urétrite aigüe, une ulcération génitale et une méningite de primo-infection à VIH 10 jours après un premier et unique contact hétérosexuel avec une prostituée.
Méthodes : sérologie ELISA VIH1 et 2, RIPA, immunofluorescence, Western Blot, recherche d'anticorps antiprotéine nef, antigènémie P24, culture rétrovirale à partir de lymphocytes du sang périphérique avec mesure de l'activité transcriptase inverse, PCR (en cours).
Résultats : Tous les examens répétés sur 10 mois sont restés négatifs hormis une positivation transitoire du Western Blot à J40 après le contage (P18, P25, Gp120, Gp160) et la culture rétrovirale à 3 reprises (J40, J134, J280). Le patient est asymptomatique et séronégatif à 1 an.
Conclusion : Cette observation confirme la possibilité de transmission du VIH après un contact hétérosexuel unique, favorisée par les maladies sexuelles associées. L'infection à VIH apparait dans certains cas impossible à détecter par les techniques usuelles pendant des périodes prolongées risquant ainsi de favoriser la dissémination du virus. Des études sont actuellement en cours pour caractériser le virus et le statut immunitaire du patient.

B.558

LE RÉTROVIRUS FORMÉ/EXPRIMÉ CHEZ SON PORTEUR EST SEMI-QUANTIFIABLE À PARTIR DES CELLULES MONONUCLÉÉES (CMN) DU SANG

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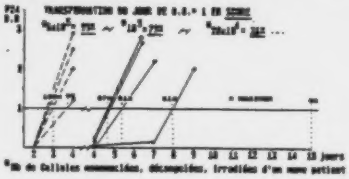
Objectifs: quantifier le rétrovirus présent dans les CMN du patient au moment du prélèvement de sang sans tenir compte des HIV génomiques non transcrits/traduits in vivo (infection productrice versus infection latente).
Méthode: les CMN (ficoll) congelées de sujets HIV+ sont décongelées, irradiées (60000 r.) et cultivées à 500, 100, 20x10.3 (4 répliques) avec 700x10.3 PHA-blastes normaux + IL2/SVF/RPMI. Le matériel rétroviral qui se propage dans la culture devait être présent dans les CMN in vivo, avant blocage des divisions-maturations cellulaires ex vivo.
Résultats: la vitesse de positivation de chaque puit (P24 surnageant >D.O 1) est transformée en valeur-score, de allant de 0% (D.O<1 à J15) à 100% (>1 à J3). La moyenne des vitesses pour un spécimen donné est fonction du nombre de cellules irradiées.

Les mêmes donneurs de blastes donnent un CV<20% sur le même spécimen testé à 12-18 mois d'intervalle. Le système titre moins de 5 H9-HIV irradiées.

Conclusions: le niveau d'expression HIV peut être un point de mesure biologique pour le suivi des patients traités par anti- viraux et les porteurs HIV en général (abstracts connexes).



B.559

INTEREST OF COMPUTED TOMOGRAPHY OF THE CHEST (C-CTS) IN 120 HIV-INFECTED PATIENTS (PTS) WITH RESPIRATORY SYMPTOMS (RS).

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We evaluated prospectively the interest of C-CTS in 120 HIV-infected pts with RS leading to pulmonary investigations.

All C-CTS were performed in high resolution (1 mm - 512 x 512) and were studied with knowledge of clinical features; data were compared with final diagnosis. First data showed that we had to consider 2 groups according to normal (GI) or abnormal (GII) chest X-ray.

In GI : 1) Normal C-CTS does not exclude T8 lymphocytic alveolitis or opportunistic infection at an early stage. 2) In some cases, C-CTS showed hilar or mediastinal enlargement, usually associated with tuberculosis. 3)In few cases with suppurative bronchitis and sinusitis due to community-acquired bacteria, C-CTS demonstrated bronchial abnormalities.

In GII : Pneumocystis carinii pneumonia (PNC-P) or a localization of Kaposi sarcoma (KS) were usual. 1) PNC.P. appeared as very low intensity diffuse interstitial (and alveolar) opacities, without other abnormalities except cysts. 2) If there was pleural effusion, lymph node enlargement or pulmonary excavation, another diagnosis or an association must be considered. 3) KS appeared as bilateral pleural effusion and peribronchovascular opacities more clearly than on X-ray. It may also appear as a focus or a diffuse nodular pneumopathy.
In conclusion : C-CTS was of a major interest : 1) In GI when there were hilar or mediastinal adenopathies. 2) In GII when there was an association of radiological abnormalities.

B.560

A SENSITIVE AND RAPID METHOD TO DETECT HISTOPLASMA

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Objective. To report a sensitive and rapid method for the identification of Histoplasma in tissues and in body fluids of AIDS patients.
Material. Over a period of 18 months we examined 12 specimens from 7 patients There were 6 alveolar lavages, 2 bone marrow aspirates, 2 peripheral blood smears, 1 liver biopsy and one lymph node biopsy. Cultures were prepared at 37°C and at room temperature.
Method. Touch preparations from solid tissues and smears from fluids are air dried and stained with a modified Wright stain (DiffQuik®). Staining takes less then 30 seconds, the slide is rinsed in water and examined with a water mounted cover slip.
Results. Clusters of oval yeasts occur both free and within macrophages. Extracellular yeasts generally are enveloped by a clear zone, giving the appearance of a capsule. Cells measure from 4x3 to 3x2mu. The cell wall stains purple to blue and the interior is clear except for a crescent or half moon shaped polar body which stains pink to red. Budding is frequent. In every instance cultures yielded Histoplasma capsulatum and antifungal treatment was given.
Conclusion. Histoplasmosis may be diagnosed in a few minutes with this simple inexpensive and sensitive method. Treatment may be intiated with no delay.

B.561

QUANTIFICATION DES ANTI-p25 VIH PAR DENSITOMETRIE SUR ANTIGENE DE RECOMBINANT GENETIQUE (CHIRON RIBA-HIV216).

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Objectif. Quantifier par densitométrie les anticorps anti-p25 dans un test de confirmation basé sur des antigènes de recombinants génétiques sur phase solide avec mise en évidence des anticorps par une antiglobuline marquée à la peroxidase de raifort (CHIRON RIBA HIV-216, Ortho France) et comparer les résultats obtenus sur les sérums séquentiels de patients avec ceux de la technique utilisée en routine (ABBOTT HIV core recombinant antigen competitive EIA) calibrée sur un sérum de référence permettant le titrage de 1 à 256.

Méthodes. Les bandelettes RIBA CHIRON sont utilisées conformément aux recommandations du fabricant. La lecture est réalisée avec un densitomètre SHIMADZU CS-930. Les anti-p25 sont exprimés par rapport au témoin de révélation IgG fort, présent sur chaque bandelette. Des courbes de dilution (du pur au 1/4000) de sérums fortement positifs en anti-p25.ont été réalisées sur 4 échantillons. Les échantillons séquentiels de 25 patients (84 sérums) ont été étudiés.

Résultats. L'évolution du taux des anti-p25 mesurés par densitométrie se conforme aux résultats connus. La sensibilité de la mesure des anti-p25 par RIBA CHIRON est supérieure à la technique de référence pour les valeurs basses comme pour les valeurs élevées. Chez certains patients les anti-p25 continuent d'augmenter plusieurs années apres la contamination

Conclusions. Un test destiné à la confirmation mais standardisé par l'utilisation d'antigènes de recombinants génétiques et de témoins fournit des indications quantitatives d'intéret pronostique.

B.563

STUDY OF INFECTIONS IN 58 AIDS AUTOPSIES FROM 1985 TO 1988 IN RIO DE JANEIRO, BRAZIL.

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OBJECTIVE: To demonstrate the main infectious conditions found among 58 autopsies of AIDS patients, and compare the findings among risk groups.
METHODS: The staining techiniques used were: Hemathoxillin-eosin, PAS, Grocott and Reticulin.
RESULTS:

	HS/BS		HEMOF.		OTHERS		TOTAL	
	32 patients		17 patients		9 patients		58 patients	
	n	%	n	%	n	%	n	%
GRAM (+) and (-) Bacteria	11	34.38	10	58.80	3	33.33	24	41.38
Hepatite B virus	11	34.38	10	58.80	3	33.33	24	41.38
Cytomegalovirus	12	37.50	6	35.30	2	22.22	20	34.48
Papovavirus	13	40.63	1	5,89	2	22.22	16	27.59
M. tuberculosis	12	37.50	-	-	2	22.22	14	24.14
Toxoplasmose gondii	9	28.15	2	11.77	3	33.33	14	24.14
Candida albicans	6	18.75	2	11.77	2	22.22	10	17.25
Criptosporidium	5	15.63	2	11.77	2	22.22	9	15.52
Pneumocystis carinii	2	6.25	4	23.53	1	11.11	7	12.07
Cryptococcus neoformans	1	3.13	4	23.53	-	-	5	8.63
Histoplasma capsulatum	3	9.38	-	-	-	-	3	5.18
M. avium intracellulare	1	3.13	2	11.77	-	-	3	5.18

CONCLUSIONS: 1. Toxoplasmosis was the most important CNS lesion in our material.
2. Glossitis was the most frequent organic alteration caused by association of gram positive and negative bacteria,, papilomavirus and Candida albicans.
3. Tuberculosis is frequent causa mortis of HS/BS AIDS patients.
4. Tuberculosis shows a generalized exaudative character.M.tuberculosis meningitis was rare among our patients.
5. Among the lesions caused by Citomegalovirus we emphasize lung and gastrointestinal tract processes, showing ulcers and perforations in the last.

Neurologie générale
General Neurology

B.565

PRIMARY MALIGNANT LYMPHOMAS OF THE CENTRAL NERVOUS SYSTEM IN HIV INFECTION.

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Objective: to describe the incidence of primary malignant non Hodgkin lymphomas (NHL) of the Central Nervous System (CNS) in HIV positive patients.
Methods: the data concern 65 autopsies of full-blown AIDS pts. and 10 stereotaxic biopsies from pts. with expansive endocranial processes with problems of differential diagnostics in inflammatory and neoplastic lesions. Routine stains were employed. Immunohistochemical analysis and phenotypic cell identification failed for autoptic nature of specimens.
Results: post mortem examination of HIV positive-drug addict pts. revealed 6 cases of primary malignant NHL of CNS: at onset of neurologic signs 1 patient was group II, 2 pts. group III and 3 cases group IV-C1 (1986 CDC classification); none had systemic clinical signs of lymphoproliferative disease. P.M. inspection revealed 4 cases of single deep intracerebral mass, 1 case of double cerebro-cerebellar expansive processes and 1 case of encephalitic-like lesion. WORKING FORMULATION (W.F.) classified 5 cases as immunoblastic with plasmocytoid differentiation NHL and 1 case as large non cleaved cell NHL (like the stereotaxic bioptic case). Neoplastic lymphoid cells presented thick perivascular cuffs and spread to subaracnoidal and Virchow-Robin spaces.
Conclusion: 1) Primary malignant NHL represent 10% of all P.M. series. 2) Prevalence of high grade primary malignant NHL (W.F.). 3) The primitive cerebral localization and therapeutic possibilities make stereotaxic biopsies essential in diagnosing these patients.

B.562

A SENSITIVE AND SPECIFIC ANTI HIV 2-ELISA USING AN ENV-DERIVED SYNTHETIC PEPTIDE

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Objective: To evaluate the efficiency of an ELISA (®Enzygnost-Anti-HIV 2), based on a synthetic peptide corresponding to the gp41 protein of HIV 2.
Methods: 50 µl undiluted specimen are pipetted to 50 µl diluent into each well of microtitration plates coated with 1 synthetic peptide. The incubation over 30' at 37 °C is followed by 4 washings and the addition of 100 µl peroxidase labelled Anti human IgG. After another incubation for 30' at 37 °C and 4 washings, the colour development is performed over 30' at RT using TMB.
Results: Of 71 Anti HIV 2-sera all specimens reacted clear cut positive. Compared to a commercial assay an improved detection limit of factor 4 was found by testing serial dilutions of Anti HIV 2-sera. Only weak cross-reactivities were observed when 182 Anti HIV 1-specimens were tested. From a total number of 1500 negative sera and plasma a specificity of 99,8 % was calculated.
Conclusions: This new ELISA turned out to be highly sensitive for Anti HIV 2 showing only weak cross-reactivities with Anti HIV 1, making this assay best suited to differentiate between Anti HIV 1 and -2.

B.564

ROLE OF HIV IN HUMAN ORAL CAVITY.

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Oral health status deteriorates drastically in AIDS patients. The present studies aim at correlating incidences of the presence of HIV in periopheral blood lymphocytes (PBL), gingiva and salivary lymphocytes (SL) with incidences of oral disease.

HIV was searched for in PBL, gingiva and SL obtained from 96 patients at different stages of HIV infection by means of immunofluorescence (IF), post-embedding immunogold electron microscopy (IEM) and culturing techniques. Quantity of HIV positive cells were compared with the incidences and the evolution of oral diseases assessed by-monthly over a period of two years. HIV particles and/or antigens were found in PBL, gingival epithelial cells and endothelial cells, lymphocytes infiltrated in gingiva, as well as in SL. The incidence and the percentage of HIV-containing cells found in gingiva and saliva was significanty higher than in PBL. Incidences of a variety of oral disease can be positively correlated with the number of infected cells in gingiva and saliva.

These findings suggest that: Virus-positive PBL in gingiva receive antigenic and/or mitogenic stimulation by the oral folra resulting in the greater expansion of the virus. This contension is supported by our current studies in vitro of stimulation of production of HIV by oral micro-organs. The presence of HIV in gingiva may be associated with the elimination of the local CD4+ T-cell mediated immunologic barrier associated with a high incidence and severity of a variety of oral disease observed.

B.566

NEUROPSYCHOLOGICAL EFFECTS OF EARLY HIV-1 INFECTION: DIAGNOSTIC AND METHODOLOGICAL ISSUES

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Objective. To recommend a common methodological approach for neuropsychological assessment in HIV-1 infected individuals to foster meaningful comparisons among studies.
Methods. Methods used in studies of neuropsychological performance in HIV-1 seropositive individuals were reviewed.
Results. Despite considerable methodological variation observed in studies, investigators generally agree on general domains for assessment. We here recommended specific instruments.
Conclusion. Investigators can optimally contribute to knowledge about neuropsychological effects of HIV-1 by: 1) developing or using markers for disease state in early HIV-1 infection, 2) applying longitudinal designs, 3) using common instruments when assessing the multiple domains that demonstrate sensitivity to the neurotoxic effects of HIV-1, 4) selecting controls appropriate to the design and research question, 5) evaluating and controlling for co-factors such as knowledge of serostatus, substance abuse, and psychiatric symptomatology, 6) reporting results for both observed change (e.g., 1 SD) as well as impairment (e.g., 2 SD), and 7) reporting how impairment affects individuals' daily activities.

B.567

B.568

THE INCIDENCE OF A MARKER FOR CHOLINERGIC DYSFUNCTION IN AIDS/ARC

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Objective. A specific pattern on the Wechsler Adult Intelligence Scale–Revised (WAIS-R) associated with cholinergic dysfunction has been reported by Fuld to occur in 50% of patients with Alzheimer's disease and in 50% of younger individuals given scopolamine, while occurring in only 10% of patients with multi-infarct dementia, head injury, depression, and normal elderly individuals. This study sought to determine the incidence of this WAIS-R pattern ("Fuld formula") in patients with AIDS and ARC and the AIDS Dementia Complex.

Methods. The WAIS-R was administered to 116 patients: 40 with AIDS and 76 with ARC. The incidence of the Fuld formula on the WAIS-R was calculated for all patients.

Results. Of the 116 subjects tested, 11 demonstrated a positive Fuld profile pattern on the WAIS-R (9%), not significantly different from the incidence in non-cholinergically deficient patient groups studied to date. However, 8 of the persons with AIDS (20%) demonstrated this WAIS-R pattern, while only 3 of the ARC patients (4%) demonstrated this pattern.

Conclusion. An increased incidence of a WAIS-R pattern associated with cholinergic disruption (scopolamine) and cortical dementia (Alzheimer's disease) was not demonstrated in this sample though a greater number (p.>.05) of more seriously immunocompromised patients demonstrated the profile compared with less immunocompromised patients. These results support prior reports of the specificity of the Fuld formula for dementia of the Alzheimer's type than in other types of dementia, including the AIDS Dementia Complex.

B.569

B.570

B.571

B.572

Pédiatrie
Pediatrics

B.573

HIV ANTIBODY AND ANTIGEN IN THE CSF OF AN HIV-INFECTED CHILD WITH PROGRESSIVE SPASTIC PARAPARESIS AND COGNITIVE DEFECTS, TREATED BY INTRAVENTRICULAR ADMINISTRATION OF GAMMAGLOBULIN

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Objective: To monitor fluctuations in HIV antibody and antigen in the CSF of a perinatally infected child receiving intraventriculer gammaglobulin for the treatment of HIV-associated neurologic defects.
Methods: An Omaya reservior to deliver intraventricular hyperimmune gammaglobulin was inserted at age 3½ (1986). HIV antibody in the CSF was monitored by ELISA and Western Blot of serial samples. HIV antigens were detected using an HIV-1 p24 Antigen Capture Assay and by Western Blot of CSF proteins separated by SDS-polyacrylamide gel electrophoresis.
Results: Appearance of progressive corticospinal tract signs resulting in spastic quadraparaparesis was accompanied by increasing titers of HIV antibody in the CSF. Antibody reactive with an increasing number of proteins was detected from 1985-87, followed by increase in intensity only. p24 concentration has decreased with resumption of infusion of hyperimmune gammaglobulin. The number of HIV proteins detectable in the CSF increased from 1985-1988, with no further increase. The neurologic course stabilized in 1988 with long-tract signs showing little further progression.
Conclusion: HIV concentration or activation may be causally related to the neurologic status. Stabilization of neurologic course was observed concomitant with decrease in HIV p24 and stabilization of antibody titer in the CSF.

B.574

NEURODEVELOPMENT OF INFANTS WITH PERINATALLY-ACQUIRED HIV INFECTION

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Objective. To determine the effect of HIV infection upon the developing nervous system.
Methods. Twenty infants born to English speaking HIV positive intravenous drug abusing mothers were followed prospectively from birth as part of an ongoing study of perinatal HIV infection. All infants were evaluated every three months on a standard battery of tests including neurologic status, and cognitive, motor and language development.
Results. No significant differences have been found to date between the HIV positivie and control infants in the measures utilized, but subtle neurologic findings may be indicative of subsequent CNS infection.
Conclusion. The continued monitoring of neurodevelopment in infants exposed to HIV infection in the perinatal period is essential to detect early onset of CNS infection and determine efficacy of theraputic interventions.

B.575

MOVEMENT DISORDERS IN CHILDREN WITH PERINATAL HIV INFECTION.

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OBJECTIVE. To describe specific movement problems observed in children (age birth to five) with HIV infection and appropriate treatment goals and priorities.
METHODS. 22 children admitted to the ICLC since January, 1988 were evaluated by occupational therapists using observation, criterion referenced evaluation and standardized tests.
RESULTS. Multiple movement deficits were identified and provisionally categorized based on clinical factors: 1. Movement deficit associated with increased muscle tone or rigidity, 2. Movement deficit due to muscle weakness, 3. Deficit in eye-hand coordination, 4. Deficit in motor planning. Children with increased muscle tone or rigidity are the most movement impaired and little improvement in functional motor skills is observed. Children with muscle weakness show fluctuating abilities from day to day with an overall loss of motor skills. Children whose main areas of difficulty are motor planning or eye-hand coordination are older, less symptomatic, progressing developmentally in many areas and seem to respond well to therapy.
CONCLUSION. Treatment priorities may change with changes in ability. Some children may be working on remediation of that problem and progression to more advanced activities. If a child becomes progressively weaker or tighter, priorities may be focused on compensation.

B.577

PROPOSAL FOR INTERNATIONAL PERINATAL AIDS PROTOCOLS

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Objectives: To facilitate international co-operation and co-ordination of research in perinatal AIDS.
Methods: Analyses of reported studies are presented, showing that differences in sample selection, case definition, clinical description, and laboratory procedures limit the pooling of findings from different sites.
Results: An organisational framework and a common core protocol are described that could facilitate pooling of findings. Criteria for insuring comparability and reliability of clinical and laboratory measures are proposed, and approaches to data processing that would permit each site to produce speedy analyses and updates of findings, aspects of which would conform to a common, agree-upon pattern.
Conclusion: It is argued that the current pattern of many investigative groups in one or other country devising and maintaining follow-up studies of infants of seropositive women is inefficient, wasteful of procedures and impedes progress. Achievement of co-ordination in the elements described above would (to some extent) standardise follow-up studies and maximise the usefulness of each set of observations.

B.576

PERIODONTAL DISEASES IN HIV-POSITIVE PATIENTS IS MORE RELATED TO THE NUMBER OF T-4 CELLS THAN TO SPECIFIC MICROORGANISMS

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Gingival inflammation (GI) and periodontal disease (PD) were compared in 10 patients with HIV infections without clinical symptoms, 10 patients with ARC, 10 patients with AIDS and 10 healthy non-infected sex and age matched controls. All subjects were investigated regarding supragingival dental plaque, subgingival microflora, GI and periodontal pockets. These parameters were compared between the groups and in relation to the numbers of T-4 cells in peripheral blood. GI and PD were inversely correlated to the numbers of T-4 cells but were not correlated to dental plaque or any specific microorganism. GI and PD increased significantly ($p<0.001$, $p<0.01$) with more advanced HIV-disease.

B.578

DO ANTI-SPERM ANTIBODIES INTERFERE WITH HIV ANTIBODY TESTS?

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Objectives: 1. To determine whether anti-sperm antibodies interfere with HIV-1 antibody test results. 2. To evaluate the performance of a 10-minute, peptide-based antibody test for HIV done in a physician's office.
Methods: Sera from patients undergoing infertility evaluation were tested for anti-sperm antibodies (Isojima, Kibrick or Immunobead) and for anti-HIV antibodies with a rapid test (Genie, Genetic Systems) in a urology clinic laboratory. Specimens were also tested using a whole virus assay for antibody to HIV-1 (Genetic Systems LAV EIA) in a research laboratory. Samples that were repeatably reactive on either test were tested by Western blot.
Results: Of 189 patients (including 31 with high titers of antisperm antibodies), one patient (0.5%) was positive for antibody to HIV-1 on Genie.
Conclusions: 1. The seroprevalence of infection with HIV in patients being evaluated for infertility is low; however, some patients are antibody-positive. 2. High titers of antisperm antibodies do not interfere with HIV-1 antibody tests. 3. The Genie test provides a rapid, single-test format for office HIV antibody testing that requires little technical expertise and no equipment, without sacrificing sensitivity and specificity of results.

B.579 THROMBOTIC THROMBOCYTOPENIC PURPURA(TTP) IN AN HIV-INFECTED CHILD: TREATMENT WITH 1-DESAMINO-8-D-ARGININE(DDAVP) AND INTRAVENOUS IMMUNOGLOBULIN(IVIG).

Church, Joseph A.; Marshall, G. and Laug, W. Childrens Hospital of Los Angeles and U.S.C. School of Medicine, Los Angeles, California, U.S.A.

Objective: To describe therapy of TTP in and HIV-infected child. Method: Case report. Results: After 2 weeks of upper-respiratory infection-symptoms, a 6½ year old boy with Down Syndrome and transfusion-associated HIV infection presented with acute hemolytic anemia. Previous hemograms and blood chemistries were normal. Immune status was stable with CD4+ lymphopenia(524/mm^3) and hyper$_g$IgG(3,193 mg/dl). Laboratory data: Hgb-4.5 g/dl, Hct-12.8%, WBC-20.0 x 10^9/l(79% pmn's, 18% lymphs), nucleated rbc's-81/100WBC platelet count-10.2 x 10^9/l, peripheral smear-consistent with severe microangiopathic hemolysis, urinalysis-2+ protein, 2+ heme, blood urea nitrogen-50 mg/dl, direct and indirect antiglobulin tests-negative. Despite supportive therapy with antibiotics and rbc and platelet transfusions, hemolysis continued, the platelet count dropped to under 5 x 10^9/l and gross hematuria developed. The patient was given DDAVP(0.3 mcg/kg) and begun on IVIG(500 mg/kg daily for 5 days). Promptly thereafter, hemolysis decreased, platelet count improved and hematuria cleared. Three months later his hemogram and blood chemistries were normal. Conclusions: This patient's clinical course indicates that, as in adults, HIV-infected children are at risk for TTP. DDAVP and IVIG may be useful in the termination of the microangiopathic process characteristic of TTP.

B.581 MUCOCUTANEOUS KAPOSI'S SARCOMA: A MARKER OF PAEDIATRIC AIDS.

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Objective: To describe clinical features of childhood Kaposi's sarcoma (KS) that are diagnostic of AIDS.
Methods: Case records of all children admitted to the UCI with diagnosis of KS between June 1987 and January 1989, were reviewed for features that are suggestive of paediatric AIDS. Evaluation of these children included a history and physical examination. Investigations included a full hemogram, an ESR, chest X-ray, liver function tests, renal function tests, ultrasound of the abdomen and biopsy of either a skin lesion, lymphnode or both. HIV serology was done using Welcozyme kit and western blot for confirmation. Patients were staged according to the staging classification by R.L. Krigel et. al.(Cancer Treatment Reports 1983: Vol. 67, pg. 531-534).
Results: Six children all stage 4 (5 male, 1 female), median 2.5 yrs (range 2-4 yrs) were seen over this 18 mos period. All had histologically confirmed KS and HIV serology with Western blot confirmation in 1 case. 4 were HIV +ve, 1 falsely negative, 1 HIV -ve. The 4 HIV+ve children and the one falsely negative child had mucocutaneous KS in addition to lymphnode involvement. The HIV -ve child had only lymphadenopathic KS.
Conclusion: Disseminated aggressive histologically confirmed KS in children should be considered a marker of AIDS as it is in adults.

B.583 RANULA CYSTS IN CHILDREN WITH AIDS

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Object: To report the clinicopathologic correlations of ranula cysts in children with AIDS.

Method: Two cases are reported: 1) Patient 1 had lymphadenopathy and lymphocytic interstitial pneumonitis (LIP) at age 1 year and a 3cm in diameter, sublingual, ranula cyst which was excised at age 2. Within 3 weeks it reoccurred only to spontaneously disappear two months later. 2) Patient 2 had LIP with cor pulmonale and hypoxia at age 2 years. Following treatment with steroids, a 1cm in diameter ranula cyst disappeared.

Results: The sublingual excisional biopsy of the collapsed cyst revealed a fibrous shell containing lymphocytes and plasma cells that also infiltrate islands of mixed salivary gland tissue containing ectatic ducts lined by pseudostratified epithelium.

Conclusion: Ranula cyst resembles cystic parotid lymphoepithelial lesions described in adults with AIDS. Ductal obstruction by inflammatory cells is part of the spectrum of steroid-sensitive, extranodal, polyclonal, polymorphic, B cell lymphoproliferation most often presenting as EBV related LIP in children with AIDS.

B.580 GIANT CELL TRANSFORMATION OF THE LIVER IN PEDIATRIC AIDS.

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****Albert Einstein Med.College,NY,NY;*****NYC Dept.Health,NY,NY,U.S.A.

Objective. Emphasize that giant cell transformation occurs in the liver of children with HIV infection.
Methods. Review of liver tissue of 46 children with AIDS (biopsies =7, autopsies=42).
Results. Giant cell transformation of the liver was seen at autopsy in 4 of 46 children. All 4 had parental IV drug abuse as their risk factor for AIDS.

Pt	Age	Sex	MAI	Inflammation	Cause of death
1	4y	M	+	+	sepsis, DAD
2	8y	F	+	+	resp. failure
3	5mos	M	-	-	resp. failure
4	10mos	M	-	-	resp. failure

Conclusion. Giant cells occur not only in AIDS associated encephalopathy but also in the liver of children with HIV infection. We therefore confirm a previously published report (Witzleben - Hum Pathol 19: 603, 1988) that HIV infection in children may cause giant cell transformation of the liver.

B.582 SIMULTANEOUS OCCURANCE OF PAROTID SWELLING & LYMPHOCYTIC INTERSTITIAL PNEUMONITIS IN CHILDREN WITH HIV DISEASE.

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Over the last 4 years, 110 children under the age of 13 years have been followed at our affiliated institutions. 25 of these children had clinical & radiological evidence of lymphocytic interstitial pneumonitis (LIP). In three of the cases, the diagnosis was confirmed by biopsy. All of the 25 children also had parotid swelling. There was no child in our series who had either of these two physical findings as an isolated finding.

It has been postulated that LIP is caused by Epstein Barr virus induced lymphoproliferation. Children who are exposed to HIV in utero handle EB virus infection abnormally leading to the development of LIP. Adults on the other hand acquire HIV infection after primary exposure to EBV and LIP is a rare occurance in adults. We postulate that parotid swelling may also be caused be EBV infection related lymproproliferation.

Demonstration of EBV genome in parotid gland will be required to support this hypothesis.

We conclude that the findings of parotid swelling and LIP occur simultaneously in pediatric HIV disease. Children who present with parotid swelling should be observed carefully for the development of LIP and LIP should be a consideration in these children if they develop respiratory symptoms.

B.584 SEVERE REACTIONS TO TRIMETHOPRIM-SULFAMETHOXAZOLE IN CHILDREN INFECTED WITH THE HUMAN IMMUNODEFICIENCY VIRUS.

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Adverse reactions to trimethoprim/sulfamethoxazole (TMP/SMZ) therapy occur with greater frequency in patients infected with HIV and commonly involve one or all of the following: leukopenia, thrombocytopenia, and rash. Severe reactions, such as Stevens-Johnson syndrome or seizures, have been reported in several adult patients. We report two congenitally infected children who developed severe life-threatening reactions to TMP/SMZ therapy. An eight month old male was noted to develop fever of 40°C, vomiting, lethargy, a full fonanelle and a combination of a maculopapular and urticarial eruption shortly after beginning a second course of TMP/SMZ. Laboratory investigation failed to identify an alternate etiology. Later, he was rechallenged with TMP/SMZ and developed identical symptoms. A second child, 10 months old, with a history of maculopapular eruption to TMP/SMZ therapy, was rechallenged and shortly thereafter developed vimoting, fever of 38.4°C, and respiratory distress (with a negative chest X-ray). Over the next 24 hours, he developed hypotension, seizures, and a cardio-pulmonary arrest. TMP/SMZ was discontinued and the patient recovered over 96 hours. Over the next five days, the following were noted: glossitis, conjunctival injection and erythema of the palms, soles, and lips, which led to diffuse, superficial desquamation. Investigation failed to determine an alternate etiology. The occurrence of life-threatening reactions to TMP/SMZ therapy should be taken into consideration in the care of children with HIV infection.

B.585 PREDICTIVE MARKERS OF VERTICALLY TRANSMITTED HIV INFECTION: A PRELIMINARY STUDY.

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Objective. All the children born to HIV+ mothers from jan. '86 to dec. '88 were reviewed to detect any possible early marker of neonatal infection. Results. 16/26 observed cases are presently being monitored and monthly administered i.v. immunoglobulins. 4/16 (aged > 15 mths) became HIV- (6-12 mths), never showed significant alterations in any biochemical, immunological and clinical parameters nor evidence of seric p24. 5/16 (aged < 15 mths) are likely loosing maternal Abs, show weak reactivity to ELISA and indeterminate W.B. patterns. None of them presents any sign of biochemical, immunological, virological nor clinical impairment. Out of the 7 HIV+ children (3 aged > 15 mths; 4 aged <6 mths), 3 are actually showing signs of paediatric AIDS. In all of them seric p24 antigen was present, togheter with precocious (since 6 months of age) immunological impairement (T4 n° > 800/mm2; IgG twice the normal limit) and chronic chronic increase of ESR. None of the 13 healthy cases showed similar alterations at any age.

Conclusion. According to our limited experience, T4 absolute n°, seric immunoglobulin G level, evidence of seric p24 antigen and ESR could represent early markers of congenital infection and disease progression in children born to HIV+ mothers and their role needs to be further investigated.

B.586 COMPARISON OF IMMUNOGLOBULINS AND GROWTH PARAMENTERS AT BIRTH AMONG HIV SEROPOSITIVE AND SERONEGATIVE INFANTS

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Objective. To examine growth and biological data at birth in infants born to HIV seropositive and seronegative mothers in high risk groups (IV drug users (IVDA), sex partners of IVDA).

Methods. Twenty-three infants born to high risk women,enrolled in a 15 month longitudinal study, were examined at birth for immunoglobulins, HIV (antibody) birthweight (BW), and gestational age (GA).

Results. Eleven of the 23 infants (48%) tested HIV positive (+) at birth. Maternal HIV risk factors included: IVDA=65% (N=15); sex partner of IVDA=22% (N=5); and IVDA and sex partner=13% (N=3). No statistically significant differences were observed in immunoglobulins, BW and GA in the HIV seropositive and seronegative infants.

Variable	Mean HIV+	Mean HIV-	ttest	p value
IgG (mgm/dl)	1300.5	1365.5	-.49	.6312
IgM (mgm/dl)	19.2	12.6	1.61	.1357
IgA (mgm/dl)	5.7	5.0	.52	.6100
GA (weeks)	38.5	38.9	-.46	.6513
BW (grams)	2750	2929	-.73	.4760

Conclusions. Immunoglobulins and growth parameters measured at birth do not distinguish HIV seropositive from seronegative infants born to similar risk mothers.

B.587 TREATMENT OF HIV+ DRUG ADDICTS WITH IFN ALPHA 2 RECOMBINANT - PRELIMINARY REPORT

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Methods. 18 HIV positive patients (16 drug addicts) classified according Walter Reed's classification as 14-WR2; 1-WR3; 2-WR5; and 1-WR6) have been treated since 1987 according to the following scheme: IFN alpha 2a (Roferon) 3xMU/die consecutively for 6 days and for 6 weeks subcutaneously.

Toxicology, collateral effects, clinical and immunological controls were effected every three months.

Results. Up to now 12 patients are still under treatment (min. 18 months, max. 24 months, average 19 months) with excellent compliance and tolerability. From the clinical point of view the disease has slowed down in 9 patients compared to the untreated controls. Three patients have worsened (1-WR6; 2-WR5/6)but these started their treatment in already bad clinical conditions.

We have noticed a diminution of hospital admittance (>50%) and a reduction (about 35%) of opportunistic infective pathology as compared with the control group.

Conclusion. We can assume the treatment with IFN alpha 2a as a possible retardant of the progression of HIV infection, well tolerated and without important collateral effects, even if more data and clinical cases are needed for a cleaner and more precise therapeutical indication.

B.588 NON-MYELOSUPPRESSIVE CHEMOTHERAPY FOR HIV-ASSOCIATED AGGRESSIVE LYMPHOMA

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Objective. To demonstrate the efficacy and toxicity of Bleomycin, Oncovin, and Prednisone(BOP)in combination with AZT and Acyclovir in treatment of HIV infected patients with aggressive lymphoma. Methods. Our early attempts to utilize modern, intensive, myelosuppressive chemotherapy in HIV infected patients with stage IIB-IV lymphoma led almost invariably to brisk tumor regression accompanied by profound, prolonged and often fatal myelosuppression. As a consequence, we began a trial of non-myelosuppressive chemotherapy aiming for palliation and continued maximal performance status instead of cure. To date, we have treated five patients, all with stage IIB-IVB biopsy proven large cell diffuse lymphoma using a regimen of q 2-3 weekly Bleomycin (10-15u), Oncovin (1.5-2mg), and Prednisone (60mg/dx5) in combination with AZT (300-1000 mg/d) and Acyclovir (2.4-3.6 gm/d) for a period of 3 to 8 months. Results. All patients have had complete tumor regression determined by physical exams, scans, or re-biopsy for a duration of 4 to 30 months. No pulmonary toxicity has been observed. No apparent increase in opportunistic infection has occurred. One patient developed CNS recurrence (no CNS prophylaxis was given), but otherwise remains in remission. Conclusion. BOP plus AZT and Acyclovir represent a highly effective non-toxic treatment regimen for patients with HIV associated aggressive lymphoma. Longer follow-up is needed to evaluate the durability of these responses.

B.589 CHIMIOTHERAPIE AGRESSIVE (CH.A) DES LOCALISATIONS BRONCHO-PULMONAIRES DE SARCOME DE KAPOSI (LBP-SK) S'ACCOMPAGNANT D'INSUFFISANCE RESPIRATOIRE AIGUE (IRA).

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Jusqu'en septembre 1987, l'évolution immédiate des patients (pts) admis dans notre USI pour IRA résultant de LBP-SK était constamment mortelle. Le but de cette étude prospective, débutée à cette date, est d'évaluer l'efficacité d'une CH.A avec ou sans corticothérapie adjuvante, au cours de ces IRA.

. 9 épisodes d'IRA, survenant chez 5 pts infectés par le VIH, ont été traités. Dans tous les cas, l'IRA était sévère : $PaO_2=\overline{59}$ mm Hg (47-68) ; elle résultait de LBP-SK (critères cliniques, radiologiques, endoscopiques et/ou histologiques) sans infection associée (négativité de l'enquête microbiologique).

. Le traitement débuté dans 8/9 cas chez des pts avec PN $>$ 2 500/mm^3 comportait : 1)Au cours des 9 épisodes, une CH.A avec à J1, adriamycine 50 mg IV, vincristine 2 mg IV et bleomycine 15 mg IV, à J8, vincristine 2 mg IV et à J15, vincristine 2 mg IV et bleomycine 15 mg IV ; 2)Au cours de 4/9 épisodes, 1 bolus adjuvant de méthylprednisolone à J1 et J2.

. La CH.A avec ou sans corticothérapie adjuvante, a toujours été efficace sur le plan clinique, autorisant la sortie du pt de l'USI. Au cours de 5 épisodes, la PaO_2 s'est normalisée dans un délai de $\overline{9}$ jours. Au cours des 4 autres, elle s'est améliorée atteignant $\overline{90}$ mm Hg (70-88) en $\overline{15}$ jours.

. Au cours de 6 épisodes, une baisse des PN $<$ 1 000 mm/^{3} est survenue entre J5 et J12 empêchant de compléter la cure de CH.A. Dans 5 cas, $<$ 500/mm^3, elle s'accompagnait de fièvre d'évolution favorable sous antibiothérapie empirique.

En conclusion : au cours des IRA résultant de LBP-SK, une CH.A peut être remarquablement efficace à court terme. Le gain à long terme reste à évaluer.

B.590 DOES HLA BACKGROUND INFLUENCE THE RATE OF PERINATAL TRANSMISSION OF HIV?

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Objectives; To determine whether there is any association between HLA class I and II types and the development of HIV infection in infants born to HIV seropositive mothers.

Methods; 8 HIV seropositive symptomatic children (age 2-5) were studied for HLA A,B and DR types together with 25 children age 1-5 all of whom were HIV antibody negative, clinically and immunologically normal, and therefore presumed un-infected. Both groups had mothers who were HIV seropositive.

Results; We have not been able to confirm any association between the development of symptoms and HLA type such as B35, DR5, A1, B8, DR3 described by other groups. No haplotype was found to be predominant in our infected group. HLA type A3, which is present in 30% of the normal Edinburgh population, was found in none of the infected children, but 12 of the other group ($p < 0.05$).

Conclusion; HLA type does not appear to be a major factor influencing the risk of vertical transmission of HIV. Further studies will be needed to substantiate the weak association we have found between apparent non-transmission and HLA A3.

B.591

EFFICACY AND SAFETY OF KETOCONAZOLE IN HIV INFECTED INFANTS WITH MUCOCUTANEOUS CANDIDIASIS. LeMay, M.D.; Cooper, E.R.; Patel, D.K.; Pelton S.I. Boston City Hospital and Boston University School of Medicine, Boston, Massachusetts, U.S.A.

Mucocutaneous candidiasis is a frequent opportunistic infection in children with HIV disease and associated with significant morbidity (pain, poor feeding, failure to thrive). Recommended therapies such as Nystatin and gentian violet have not been efficacious in immunocompromised hosts with moderate to severe candidiasis. We treated 4 infants, ages 1 to 8 mos. with a Ketoconazole suspension (prepared by pharmacy) of 3 mg/kg q 12 h for moderate to severe thrush (3 patients) which involved buccal mucosa, tongue and palate and was associated with poor feeding and weight loss. All had failed a minimum of 7 days of Nystatin ± gentian violet. All 3 cleared on Ketoconazole in 3-5 days. 2/3 had recurrence when therapy was discontinued which necessitated "prophylactic" administration of 3 mg/kg/day for 3 and 10 mos. respectively. 1 patient (8 mos.) was treated for monilial dermatitis which had failed topical therapy. The rash cleared after 10 days of treatment. All patients tolerated Ketoconazole well. All children had pre and post treatment evaluation of liver function. No adverse effects were observed. Specifically 1 infant (P2 F1) 4 mos. of age received Ketoconazole and Zidovudine concurrently for 3 mos. Pre therapy LFTs demonstrate moderate hepatocellular injury (SGOT 390, SGPT 149, Bili 7.3). LFTs progressively return to more normal values (SGOT 79, SGPT 50, Bili .7) over a 3 mos. course while on both medications. We believe Ketoconazole is a safe and effective therapy of mucocutaneous candidiasis. More information is needed about its concurrent use with Zidovudine and its use in children with evidence of hepatocellular dysfunction.

B.592

HIV-1 GP 41 ANTIGEN IN THE SERUM OF HIV INFECTED CHILDREN
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Objective. To detect the presence of HIV-1 gp 41 antigen in the sera of HIV-infected children and correlate with disease activity.
Methods. HIV-1 gp 41 antigen (Ag) was assayed by an immunoblot assay involving reaction with monoclonal gp 41 antibody followed by peroxidase-conjugated goat anti-mouse IgG. A positive reaction was detected by color development upon addition of substrate, and reactive samples visually graded from +1 to +4. One hundred forty-five samples from 100 patients were assayed.
Results. Eighteen of 100 (18%) patients had gp 41 Ag present in their sera. The concentration of gp 41 Ag increased in patients who had a severe clinical course and who died. The concentration of serum gp 41 paralleled the concentration of HIV proteins p17, p24 and gp 120 in the serum.
Conclusion. The detection of gp 41 antigen can be of value as an additional marker of disease activity and prognosis and could be potentially useful in monitoring patients on treatment.

B.593

WHICH AIDS PATIENTS NEED STEP DOWN CARE? A PROSPECTIVE STUDY
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Objective.To assist in discharge planning for hospitalized AIDS patients in need of special AIDS residences with skilled nursing ("step down care"), we carried out a prospective study of 100 persons with AIDS to determine the characteristics of patients in need of such care, and to develop a discriminant rule to easily identify them at the time of admission.
Methods.We obtained demographic, medical, and social profiles of patients near the time of admission to the hospital, and concurrently interviewed their doctors, nurses, and social workers regarding appropriateness of step down care as a substitute for part of their hospital stays.
Results.Of the 100 patients(men, mean age 35 yrs), 31 were considered appropriate for step down care by their physician and nurse or social worker(or all 3). The appropriate patients were more likely to live alone(52% vs 25%), have poor(<24) MiniMental State(MMS) scores(48% vs 6%), be impaired in activities of daily living(ADLs)(77% vs 17%), or on Medicaid(65% vs 42%) (all p<.05). In multivariate analysis, three variables contributed significantly to a discriminant function: living alone, poor MMS scores, and impairment in ADLs. The function was developed on a 60% random sample of subjects, (83% correct classification, sensitivity 92%, specificity 78%, positive predictive value 73%, negative predictive value 93%, Kappa .67) and tested on the remaining 40%(sensitivity 83%, specificity 87%, Kappa .63).
Conclusion. AIDS patients appropriate for step down care differ from those who are not in several important characteristics identifiable at the time of admission. Knowledge of these factors may aid in discharge planning.

B.594

B.595

AN EARLY INTERVENTION PROGRAM FOR CHILDREN WITH HIV INFECTION.
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OBJECTIVE. To describe a program for developmentally delayed (DD), HIV infected children and to evaluate the children's performance.
METHODS. The Infant and Child Learning Center (ICLC) provides a comprehensive educational, therapeutic and psychosocial program. Each child and caregiver attends a small class several times a week where they participate in activities which promote developmental skills and coping strategies. The staff routinely reassesses the goals for each child. In order to document developmental skills, a retrospective review was done on 23 children enrolled in the program for various lengths of time (1 mo. to 16 mos., mean 7.5 mos.)
RESULTS. Located in a hospital setting, the ICLC provides a supportive environment where families can freely express their concerns and receive immediate medical consultation and services. The table shows the results of a 3 point criterion rating scale measuring the number of children who progressed, regressed or remained the same during the time spent in program.

	Cognitive	Social/Emotional	Motor	Language
% progressed	65	52	39	52
% same	13	4	26	18
% regressed	22	44	35	30

CONCLUSION. In order to effectively service these children, an interdisciplinary, comprehensive model is necessary.

B.596

CONTROLED CLINICAL TRIAL OF ANGINLYC, CHINESE HERBAL IMMUNE ENHANCER, IN HIV SEROPOSITIVES
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San Francisco, California, USA.

Objective. To assess the safety and efficacy of a new Chinese herbal immune enhancer developed in the People's Republic of China, which is produced from extracts of angelica, ginseng, and fructus lycium, in the treatment of early to mid-HIV infection.
Methods. 300 HIV seropositive patients with T_4 helper lymphocyte counts between 100 and 600/mm^3 and no prior HIV-related hospitalizations or ongoing treatments were randomized into double-blind treatment and placebo-controled groups. The treatment group was given two Anginlyc 50 mg capsules three times a day. Diet instructions were to avoid lobster, shrimp, crab, bamboo shoots, duck, goose and alcohol. The placebo group received similar-looking capsules and instructions. All patients were followed at biweekly visits and monthly laboratory studies including CBC, chemistry panel, T and B lymphocyte panels and p24 antigen were performed.
Results. Symptom tabulation, labs, Karnofsky score, frequency of opportunistic infections, and HIV-related hospitalizations are analysed on a monthly basis over a 6 month period and summary statistics presented with multifactorial analysis.
Conclusion. Promising non-western therapies for HIV infections deserve formal clinical trials in a randomized double-blind controled fashion to evaluate their usefulness.

B.597

EFFICACITE' ET TOLERANCE DU TRAITEMENT PAR ZIDOVUDINE (ZDV) A PATIENTS ARC OU SIDA AFFECTES.

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OBJECTIF.Déterminer l'efficacité et la tolérance d'un traitement à long terme par ZDV donnée à deux differents dosages à patients (pt) affectés par ARC ou SIDA.

METHODES. 107 patients avec ARC (72) ou SIDA (35) ont été traités pendant 36 sem. (range 4-60) par ZDV en plein dosage (pd) (1000 mg/j) ou en demi dosage (dd) (600 mg/j) en cas d'anémie ou de granulocytopénie. Le suivie clinique, le nombre des CD4+ et l'antigenemie p 24 ont été evalués tous les mois.

RESULTATS. Aucun de nos patients avec ARC a developpé le SIDA. Entre les 34 cas de SIDA 12 sont décédés aprés un temp moyen de 9 mois sans aucune difference significative de survie entre le deux groups.(long rank test). Une augmentation des CD4 a été remarqué aprés un mois dans les 2 groups avec un retour a la valeur de base en 7 mois dans le pd group et en 5 mois dans le dd groups. Des 25 patients avec une antigenemie du 43% et 64% dans les premiers 2 mois avec un retour aux valeurs de base dans 5 mois. Dans 7 patients on a assisté à la negativation de l'antigenemie (4 à pd et 3 a dd). Tolérance:le 12,5% des patients ont montré une sévere neutropénie et le 17,5% une anémie à transfuser.

CONCLUSIONS.Le traitement par la ZDV à provoqué une transitoire amélioration des paramétres immunologiques et virologiques. Pas de difference entre les 2 group en terme de survie. Tous les patients avec un ARC n'ont pas developpé un SIDA.

B.598

B.599

RÉSULTATS PRÉLIMINAIRES DU TRAITEMENT DES MÉNINGO-ENCÉPHALITES À C. NEOFORMANS AU BURUNDI. (À PROPOS DE 50 CAS.)

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La fréquence de la cryptococcose dans le SIDA à Bujumbura dépasse celle décrite dans les autres pays (12,7% sur 322 cas de SIDA; Zaïre, 6%; É.-U., 6-10%).

Méthodologie: 50 cas de cryptococcose furent recueillis en 19 mois (juin 87-déc. 88). Les patients furent traités avec du fluconazole (FCZ), 400mg pour 2 jours, puis 200mg pour 6 semaines (A1); du fluoconazole 400mg/jour pour 6 semaines (A2); ou de l'amphotéricine B (AMB), 50mg/jour plus 5-fluorocytosine (5FC), 150mg/kg/j (B).

Résultats:

Protocole	A1 No. cas guéris Total (%)	A2 No. cas guéris Total (%)	B No. cas guéris Total (%)
Guérison:			
Sérologique	6/6 (100%)	13/15 (86,7%)	9/13 (69,2%)
Clinique	8/8 (100%)	17/17 (100%) en 24 j. (moy.)	15/17 (88%) en 26 j. (moy.)
Mycologique	4/5 (80%)	15/16 (93,6%) en 30 j. (moy.)	13/14 (92,9%) en 30 j. (moy.)
Médiane de survie	62,86 jours	86,29 jours	49,33 jours
Intolérance	1/8	1/17	6/17

Après guérison clinique et mycologique des patients, un traitement d'entretien avec FCZ 200mg/j p.o. est proposé.

Conclusion: Ce nouveau triazolé, le fluconazole, semble aussi efficace et moins toxique que AMB et 5FC.

B.600

THE TREATMENT OF INTERCURRENT PROCESSES FOR CHILDREN WITH AIDS.

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We selected 11 children,whose ages ranged from 2 months to 11 years,who suffer sympthomatic HIV infection.All of them are included in P_2 class of the CDC and present intercurrent processes:100%mucocutaneous candididiasis,100%upper respiratory infections(S.Auresus,Candida and H.Influenzae),80%malnutrition,63%gastrointestinal infections(Salmonella,Cryptosporidium,Campylobacter,E.Coli),63%hepatitis,54%sepsis(Salmonella,Pseudomona,S.Pyogenes),45%UTI(E.Coli,Proteus,Candida,Pseudomona,Klebsiella),36%pneumonias(H.Influenzae,S.Pneumoniae,Adenovirus),27% CMV + in cell culture,18%cardiac involvement,9%recurrent mucocutaneous herpes simplex.None case of tuberculous infection or pneumonia by PNC.We sistematically treat them very promptly and intensively with antibiotics.We have observed a decrease in number of bacterial infections in these patients when we use prophylaxis with antibiotics and IV gammaglobulin.We have noticed almost the disappearance of chronic mucocutaneous candidiasis with prophylaxis with Ketoconazol. The use of Cotrimoxazol prophylactically must be reserved to those children who have suffered PNC infection or to those who present other serious lung disease.Sistematic use of hipercaloric diet improves nutritional status and decreases the number of infections.

CONCLUSIONS:

1)The severity of HIV infection depends mainly on the immunosuppresive status that they present,which leads to recurrent infectious diseases.

2)An agressive treatment with antibiotics is essential for these patients with acute systemic infections and it's absolutely crucial to mintain the prophylaxis with antibiotics,antifungal agents and IV gammaglobulin to prevent infectious diseases. 3)It's important to treat the secondary condition of malnutrition with a high intake of calories to improve their nutritional status.

Toxicité et autres médicaments
Toxicity and Other Drugs

B.601

ADVERSE DRUG REACTIONS IN AIDS PATIENTS.

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Objective: Appraisal of the incidence and severity of adverse reactions to drugs (ARD) in AIDS patients.

Methods: A prospective evaluation was made of the ARD that occurred in 112 patients who were diagnosed as AIDS in our hospital between 1985 and December 1988. The number of secondary hospital admissions, drugs responsible, need for suspending treatment and type of adverse reactions were also evaluated.

Results: There were 48 episodes of ARD in 37 (33%) of 112 patients diagnosed as AIDS. The table summarizes the number of episodes per drug and the number of suspended treatments:

DRUG	Episodes (No.)	Suspended Treatment (No.)
TMP-SMZ	13	8
AZT	11	3
Rifampicin	8	8
Pyrimethamine	5	5
Pentamidine	4	4
Amphotericin	4	2
Chloramphenicol	1	1
Ampicillin	1	1
Corticoids	1	1
Ciprofloxacin	1	0*
Vancomycin	1	1
Acyclovir	1	1

* Reinstated after desensibilization

Of the 37 patients who suffered adverse reactions, 23 were out-patients and 13 (35%) of them required hospitalization.

Conclusions: 1. ARD are common in AIDS patients. 2. Adverse reactions occur with drugs that frequently cause adverse effects (TMP-SMZ-AZT) as well as with others (ciprofloxacin, acyclovir). 3. An appreciable part of AIDS admissions are motivated by ARD. 4. Alternatives are needed for drugs like pyrimethamine, pentamidine, and, to a lesser degree, TMP-SMZ: these drugs are necessary for the treatment of opportunistic infections in AIDS patients but are highly toxic.

B.602

"CLONING AND EXPRESSION OF HIV-I AND HIV-II PROTEINS WITH DIAGNOSTIC PURPOSES"

Authors:García,J.,Novoa,L.I.,Machado,J.A.,Benitez,J.,
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Center of Genetic Engineering and Biotechnology
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Objective:To obtain HIV-I and HIV-II viral antigen using genetic engineering techniques.

Methods:Representative regions of the genes coding for the gag 24, gp 41, gp 160 HIV-I and gp 36 HIV II proteins were inserted into a plasmid under the control of tryptophan promoter and the ligation products were transformed in E.coli.Ampicillin resistant transformants were screened by colony hibridization and those ones expresing the antigens were selected by immunoidentification with HIV positive sera.

Results:All the antigens were expressed in E.coli (15-20 o/o of the total cellular protein) as insoluble materials and prepurified by washed pellet cell procedures, followed by HPLC chromatography steps on the solubilized proteins up to purity levels higher than 90 o/o. The purified proteins were tested in an ELISA test, showing to have a high sensibility and specificity.

Conclusions:At this moment we have the major proteins for the detection of HIV-I and HIV-II antibodies in biological fluids.

B.603

HIV IMMUNOBLOT PATTERNS AND p24 ANTIGEN DETECTION IN SEQUENTIAL SERA OF HOMOGEXUAL MEN

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Sequential sera, collected every 3 months over a 3 year period from 15 HIV seroconverters and 21 individuals who have developed AIDS during the study period, had antibody patterns examined by immunoblot and were tested for p24 antigen.

In the seroconverter group, one indiviual showed p24 antigen prior to the detection of HIV antibodies by immunoblot. Antibody to p24 was the first marker to appear in 6/15, antibody to p18 was the first to appear in 1 individual, while p24 and gp41 markers appeared simultaneously in 8 others.

Of the 21 persons who developed AIDS (PWAs), 20 showed persistently weak, absent or declining p24 antibody over 6 to 24 months prior to developing disease. One PWA showed an increase in p24 antibody without evidence of p24 antigen. 12 others had detectable antigen prior to and during disease.

These results provide further evidence that HIV p24 antigen may be present in seroconverters prior to the development of detectable HIV antibodies, and that declining p24 antibodies and the presence of p24 antigen are predictors of declining immunologic and clinical status.

B.604

B.605

DETECTION OF HIV ANTIGEN BY FLUOMETRIC ENZYME IMMUNOASSAY

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Objective. Detecting HIV antigens is more important to find HIV infection in earlier stages and to the safety of blood and blood products.
Methods. Mouse MoAbs against p24 of LAV, DEAE-Cellulose-purified anti-HIV rabbit IgG and column-purified anti-HIV human IgG from HIV carriers were used. A microplate was coated with anti-HIV human IgG and 100 μl of each sample was added. Then, biotin labelled anti-HIV antibody and β-galactosidase avidin (indirect method) or galactosidase-labelled MoAbs (direct method) were added. Finally, 4-methylumbelliferyl-galactosidase-avidin was added and the reaction was detected by Fluoro-skan II.
Results. About a few pg/ml of HIV protein was detected in the best method among them.
Conclusion. Our method is thought to be same as or slightly excceed the commersial EIA antigen detection kit in sensitivity. We are now going to examine field samples from AIDS patients, carriers and blood products.

B.606

THE EFFECT OF ZIDOVUDINE ON PLATELET COUNTS IN HIV POSITIVE INDIVIDUALS *

Montaner, Julio SG; Le, T; Gelmon, K; Fanning, M; Falutz, J; Tsoukas, C; Wells, G; O'Shaughnessy, M; Wainberg, M and Ruedy, J. Multicentre Canadian Azidothymidine Trial (MCAT).

OBJECTIVE. To characterize the nature, time course and dose dependency of zidovudine effect on platelet counts in HIV infected individuals within the Multicentre Canadian AZT Trial.
METHODS. DESIGN: Multicentre, prospective, dose range finding study. SUBJECTS: 57 HIV positive homosexual men; CDC groups IIB, III and IVC2; helper count >270 M/l and platelets ≥ 150 G/l. INTERVENTION: Following a 3 week observation period, consenting volunteers were treated with zidovudine 600 mg/day for 18 weeks, 900 mg/day for 9 weeks, 1200 mg/day for 9 weeks, no zidovudine for 6 weeks and 1200 mg/day or the highest tolerated dose for 18 weeks for a total of 60 weeks of therapy. FOLLOW-UP: Clinical and laboratory evaluations were performed at 3 weeks intervals. ANALYSIS: Analysis of variance was used to compare the mean platelet values at each zidovudine dose. Where statistical differences were found analysis of variance was performed within the dose period to characterize the timing and magnitude of the maximal change.
RESULTS. Platelet count (To) was 241 ± 44 and rapidly increased to 261 ± 50 (p<.0001) with low dose zidovudine reaching a peak by 3 weeks (3 wks vs To, p=.001). Platelet count promptly decreased to initial levels despite increasing zidovudine dose (18 wks vs To, p=.68; 900 mg vs To, p=.26; 1200 mg vs To, p=.47). Platelet count further decreased below initial values upon discontinuation of zidovudine (0 mg vs 1200 mg, p<.0001; 0 mg vs To, p<.0001) and increased once again when zidovudine was reinstated but only to the initial level (1200' mg vs 0 mg, p[illegible]002; 1200' mg vs To, p=.46). The absolute magnitude of this increment was similar to that observed initi[illegible] low dose zidovudine therapy.
CONCLUSIONS. An increase i[illegible]et count was observed in early HIV-infected individuals with initially normal platelet count treated with [illegible]ovudine. This effect was shortlasted despite continued therapy or even increasing zidovudine dose. The fact that platelet count decreased during the washout phase to increase once again upon reinstitution of therapy suggests that zidovudine may have a prolonged beneficial effect on platelet count.

* Supported by a grant from the National Health Research Development Programme (NHRDP), Health & Welfare, Canada

B.607

ADMINISTRATION OF AEROSOLIZED PENTAMIDINE TO THE HOMELESS AIDS POPULATION IN A NON-TRADITIONAL SETTING/SHELTER

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Objective. To determine the number of homeless AIDS patients living at the City of Boston's Long Island Shelter who would benefit from prophylactic treatment of aerosolized Pentamidine (A.P.) at the shelter level.
Method. The identification of the clients needing prophylaxis has been obtained from Boston City Hospital AIDS Clinic, Healthlink for the Homeless Clinic, and Long Island Shelter Nursing Clinic. The nursing protocols were adapted for application at the Shelter.
Results. Ten individuals were identified as having had one or more bouts of Pneumocystis carinii Pneumonia (P.C.P.). The high rate of HIV infection among Intravenous drug abusers and minorities within the homeless population is rapidly increasing. Delivery of A.P. prophylactically is know to decrease recurrance rates of P.C.P. Models of alternative healthcare which provide on site clinical care at shelters has demonstrated increased compliance.
Conclusion. By initiating A.P. at the Shelter, the homeless are given the opportunity for prophylaxis with minimal cost. This population who are often non-compliant would be better followed through the health care providers in the shelter with whom they have established a trusting relationship. As the disease process progresses the access to the availability of the treatment increases in importance, making the shelter the appropriate setting for administration.

B.608

INHIBITION OF SEXUAL DRIVE IN HIV CARRIERS BY MEDROXYPROGESTERONE ACETATE

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Objective. To report further clinical experience with medroxyprogesterone acetate (MPA) as an inhibitor of sexual drive in HIV carriers.
Methods. Since our original report in 1987 of the use of MPA in one sexually promiscuous HIV carrier, we have treated 7 additional patients. All were young gay men who were seropositive for HIV antibody; all were doing well at school or work, and none had AIDS. All requested MPA because of inability to reduce high-risk sexual behavior, with resulting fear of further compromising their health and that of others. These 8 patients, treated with MPA and psychotherapy, have been followed for 3 months-2½ years
Results. Intramuscular MPA effectively inhibited sexual drive in 3-4 weeks in all patients, regardless of baseline testosterone levels. When combined with psychotherapy, it allowed patients to abstain from high-risk sexual behavior. Side effects were weight gain, hypertension (that required treatment in one patient), and boredom secondary to diminished sexual activity.
Conclusions. MPA can reduce sexual drive in HIV carriers who engage in high-risk sexual behavior. It should be reserved for persons whose behavior is paraphilic in intensity and who volunteer with informed consent. Psychotherapy is an essential component of this treatment program.

Manifestations cliniques
Clinical Manifestations

B.609 HIV-INFECTIONS AMONG i.v.- DRUGABUSERS IN THE FRG:
Prevalence-rates, differential risks and proportions of behavior change of addicts.

Kleiber, Dieter; Sozialpädagogisches Institut Berlin , Berlin (West), FRG.

Our results of a German (nearly) representative differential-epidemiological study (N= 630) to estimate the actual HIV- prevalence-rate and the relative riskiness of needle-sharing and sexual activities among i.v. drugabusers show a *much smaller percentage of infected persons than expected* (20,1% HIV-positive). A highly significant difference appeared between people living in rural vs. urban environments (Berlin 26%; North German rural area 15,7%) and in sub-populations with different sociological status. Prevalence-rates are significantly higher in i.v. drug-addicts having prison-experience (63%) compared to those who never have been inprisoned (37%). The important factors that seem to influence HIV-infection are the frequency of needle-sharing and sex-techniques especially anal intercourse and sex-techniques with high risk. From a preventive perspective the amelioration of living conditions of drugabusers (decriminalization; provision of housing opportunities, work opportunities, rehabilitation from illegality; provision of aid; self-help) cannot be stressed enough. In addition, public announcements should be visible in all places where addicts meet to shoot heroin. Acceptance of condoms must be increased and offers of support for drug-dependant prostitutes who want to leave prostitution should be provided.

B.610 INCIDENCE OF AIDS AND OTHER INFECTIONS IN SPANISH DRUG ADDICTS ANALYSIS OF 8660 CASES AFTER A DECADE OF FOLLOW-UP (1977-87)

Spanish Group for the Study of Infections in Drug Addicts.

OBJECTIVE. To study the prevalence and the characteristics of AIDS and other infections in Spanish parenteral drug addicts (PDA).
METHODS. Fifty eight Spanish hospitals reported, using a standardized form, all infectious complications in PDA who required hospital admission or hospital control as outpatients. The diagnosis of the infections were made following preestabished criteria and were the same in all participating centers. The P4F routine of the BMDP package were used for calculations.
RESULTS A total number of 8660 infectious complications in PDA have been reported from 1977 to 1987. The number of cases increased abruptly since 1984. The mean age of PDA was 24 years and the male/female ratio 3/1. Infective endocarditis was diagnosed in 637 cases (7%)(right sided or mixed endocarditis in 78%), osteomyelitis or septic arthritis in 261 (3%), skin or soft tissue infections in 416 (5%), tuberculosis in 362 (4%), tetanus in 6, self limited fever of unknown etiology in 546 (6%), acute hepatitis in 3321 (38%), chronic hepatitis in 912 (11%), AIDS in 400 (4.5%), systemic candidiasis (skin, ocular and/or chondrocostal involvement) in 671 (8%), malaria in 8 and "other infections" in 1120 (13%). The overall mortality was 3.5%. AIDS in PDA appeared in our country in 1984 and increased abruptly in 1987. Extrapulmonary or disseminated tuberculosis (27%), esophageal candidiasis (24%), Pneumocystis carinii pneumonia (18%) and C.N.S. toxoplasmosis (11.5%) were the most common diagnostic presentations. The cumulative mortality of AIDS cases was 36%.
CONCLUSIONS. Infectious complications in PDA have became an emerging and growing problem in Spain since 1984 and AIDS increased abruptly in 1987.

B.611 RAPID PROGRESSION OF ORGANIC DELUSIONAL SYNDROME TO DEMENTIA IN AIDS

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Objective. To clinically assess the course of Organic Delusional Syndrome in patients with AIDS.
Methods. Hospitalized AIDS patients referred to the Stony Brook University Hospital Psychiatric Consultation Service were assessed by a board certified psychiatrist utilizing medical chart review and semi-structured interview. Diagnoses were made using DSM-III-R criteria.
Results. Case 1: 39 y.o. male IVDA with AIDS on methadone maintenance experienced an acute onset of delusional parasitosis. He responded well to pimozide, but developed akathisia and cogwheel rigidity. These resolved with the addition of diazepam and discontinuation of pimozide. Within 2 months he became demented. Case 2: 45 y.o. female former IVDA with AIDS experienced an acute onset of paranoid delusions. She responded well to haloperidol, but developed acute dystonia. This resolved with benztropine and discontinuation of haloperidol. Within 1 month she became demented. She died 3 months later.
Conclusion. It is known that some organic mental disorders can progress to dementia and even death. These cases: (1) confirm the increased frequency and severity of adverse reactions to conventional pharmacotherapies noted by other investigators; (2) suggest that the presence of an organic mental disorder, specifically Organic Delusional Syndrome, may be predictive of the dementia process, perhaps hastening its onset or making its course more fulminant; and (3) raise the question of increased vulnerability to organic mental disorders in HIV-infected IVDAs.

B.612 CLINICAL CHARACTERISATION OF HIV2 DISEASE IN WEST AFRICA

TUMANI CORRAH EGBOGA A.A. WILIKINS A.B.GAYE I, WHITTLE H AND GREENWOOD B.
MEDICAL RESEARCH COUNCIL, FAJARA, THE GAMBIA.

OBJECTIVES: Particular attention is paid to the pattern of secondary infections in patients with HIV2 disease.
METHODES:All cases suspectical of having AIDS, AIDS selected complex on progressive generalised lumphodepathy were enclosed in the study. Seaological diagnosis was made by. Hardard methods priorier tested in our laboratory. Primary sceening users wellocozyme 1 and 2 tests. Positive HIV1 is confirmed using seaodiagnostic gel agglutimation test (Fujinibio) and positive HIV2 by Elania II. When concordant test for me or both Viauses are made.
RESULTS: At the total number of HIV seropositives studied 26% ARE, 2% PGL, 5% tuberculosis. The main clinical manifestations of HIV2 disease include wight loss 100%, pynexia 93% oral thoush 71, chronic diarrhoeas 64%, chronic cough 50% and neurologicaloynitons 43%.
HIV2 exerce mortality and morbidity similar to HIV1. There is evidence of vertical transmission.
CONCLUSIONS:

B.613 HIV INFECTION - IMMUNOLOGICAL STUDIES IN BULGARIA

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For a period of three years we have been studiing the immunological status of 50 men infected with HIV /proved by ELISA and western blot/. 3 of them have AIDS, 7 slight clinical disturbances and 40 are carriers of HIV.

22 out of these 50 men with HIV infection have signs of disfunction in the immune system: impaired cell-mediated immunity, changes in the T4/T8 ratio and negative skin multitest. In this group 3 men have AIDS, 7 - slight clinical disturbances and 12 are HIV carriers, the latter having no signs of opportunistic infections or neoplasms associated with AIDS.

B.614 OBSERVATIONS CLINIQUES SUR H I V INFECTION EN BULGARIE

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''Hopital Regional ,BOURGAS,BULGARIE

Pendant le period de 01.01.1986 jousqu'a 31.12.1988 ont ete observe 33 persons de nationalite bulgare avec une serologie positive pour HIV / par ELISA et WesternBlot /. Dápres l'observation dynamique clinique,laboratoire et immunologique on distingue: un malade avec tableau clinique du SIDA et infections opportunistiques et Sarcoma Kaposhi generalisee, qui est decede apres 13 mois d'evolution, un malade avec polyneuropathie recidivante isolee, 9 persons avec infections indicatrices / candidiases,dermatoses seborrheiques, campylobacterioses et otr./. 7 persons avec signes laboratoires / VS eleve, leucopenie et lymphopenie / sans signes cliniques.

B.615

PULMONARY HEMORRHAGE IN PNEUMONITIS OF HIV-INFECTED PATIENTS

Bréchot, Jeanne-Marie*; Doré, M.F.*; Capron, F.**; Waked, M.*; Rochemaure, J.*
*Department of Pneumology; ** Laboratory of Anatomy and Pathologic Cytology; Hôtel Dieu; Paris; France.

Objective. Study the frequency of pulmonary hemorrhage (PH) in pneumonitis of HIV-infected patients by scoring alveolar macrophage hemosiderin load as described by Golde (Golde's score GS).
Results. On 16 of the consecutive 134 bronchoalveolar lavage (BAL), PH was diagnosed with a GS greater than 100 (mean value= 125) and was occult in 14 cases. In one, a severe thrombocytopenia was concomittant (13.10^9/ml).
PH was associated with bacterial pneumonitis (2 cases), opportunistic pneumonitis (11 cases) and bronchopulmonary Kaposi sarcoma (3 cases).
A fatal outcome occured in 2 cases (GS: 117 and 126). In 2 patients with an initial GS of 118 and 113, GS of control BAL performed 1 and 3 months later were respectively 36 and 0. In 3 patients, GS remained greater than 100 in a delay of 1 to 10 months, associated with persistent pulmonary multiple opportunistic infections.
Conclusion. Hemosiderin score is a semi-quantitative approach for the diagnosis of PH. However, in our serie, this diagnosis was always associated with either bacterial or opportunistic infections or Kaposi sarcoma.

B.616

HEMOPTYSIS COMPLICATING PNEUMOCYSTIS CARINII PNEUMONIA

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Objective: To describe pulmonary destruction with hemorrhage associated with Pneumocystis carinii (PC) pneumonia.

Case Report. A 54 year old Hispanic female intravenous drug addict presented with hemoptysis of two days duration, fever, chills and productive cough.She had cachexia, tachypnea, generalized lymphadenopathy, oral candidiasis and bibasilar rales. Radiograph revealed interstitial infiltrates in the right upper and left lower lobes, which subsequently became diffuse, and strongly suggestive of PC pneumonia. Bronchoscopic examination detected active bleeding from the right upper lobe bronchus, anterior segment. Bleeding persisted for five days. The patient's condition deteriorated to respiratory distress, right side pneumothorax, and she expired ten days after admission. At autopsy all lobes showed diffuse hyaline membrane formation, masses of PC in the alveoli and aggregates of foamy macrophages. In addition, the right upper lobe contained a few cavitary lesions (0.3 to 1.0 cm) lined by granulation tissue, small remnants of bronchiolar epithelium, and dilated engorged blood vessels close to the surface. Few PC organisms were demonstrated within the cavities but no other infectious agents were noted in spite of prolonged search with various special stains. It is noteworthy that the patient had survived an episode of PC pneumonia seven months earlier.

Conclusion: Hemoptysis in an AIDS patient may be a sign of PC pneumonia.

Diagnostic
Diagnosis

B.617

ETUDE DE LA SPECIFICITE DES ANTICORPS DETECTES CHEZ DES SUJETS EN COURS DE SEROCONVERSION A L'AIDE DE PROTEINES RECOMBINANTES

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Objectif : Montrer la prédominance d'anticorps dirigés préférentiellement contre la protéine interne P25 ou contre la glycoprotéine d'enveloppe gp160 lors de séroconversions.
Méthodes : Les prélèvements séquentiels de sujets en cours de séroconversions ont été analysés par Western Blot et par un test ELISA fondé sur l'utilisation de protéines recombinantes (TRANSGENE, France). Les premiers prélèvements (n=8) ont été testés par un ELISA indirect gp160 (exprimée dans les cellules BHK21 infectées par un virus recombinant de la vaccine),par un ELISA indirect p25 (exprimée sous forme native dans une souche E.Coli transfectée) et par un ELISA mixte gp160/p25.

Résultats : ELISA	P25	GP	P25 + GP
DO valeur seuil	0.295	0.398	0.258
Nombre de positifs (n=8)	7	7	8
Nombre de négatifs	1	1	0
	(DO:0,133)	(DO:0,317)	

CONCLUSION : La majorité des séroconversions présentent des anticorps dirigés préférentiellement contre la gp160. Cependant la prévalence d'anticorps anti p25 chez certains sujets confirme l'intérêt de l'utilisation des deux protéines p25 et gp160 dans les tests de seconde génération afin de garantir le dépistage de toutes les séroconversions.

B.618

EVALUATION OF AN ULTRASENSITIVE ELISA FOR SPECIFIC DETECTION OF ANTI HIV 1

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Objective: To evaluated an improved competitive ELISA for the detection of antibodies against HIV 1.
Methods: 100 µl undiluted specimens are pipetted to 25 µl diluent buffer in each well of microtitration plates coated with cell culture propagated HIV 1 antigens. The first incubation step over 60 min at 37 °C is directly followed by addition of ready to use conjugate (peroxidase labelled human Anti HIV 1). After 30 min (37 °C) and 5 washings H_2O_2 and the chromogen TMB is added. The enzymatic reaction is stopped after 30 min (RT) with 0,5 N H_2SO_4 and readings are made at 450 nm. The cut off value is defined as 50 % of the negative control.
Results: The results on screening 643 Anti HIV 1 samples refer to a sensitivity of 100 % with clear cut positive inhibited O.D. values. The detection limit of ^{R}Enzygnost-Anti-HIV 1 ultra was found to exceed that of western blot analysis by factor 8. A panel of 13 sera derived from early stages of HIV 1 infections were found positive, even those, which were negative in the Western blot and in commercial 2nd generation ELISAs. A specificity of 99,86 % (retest 99,95 %) can be deduced from testing 3000 paired serum and plasma specimens.
Conclusions: In view of the fact, that Anti HIV 2-sera were found negative or weak positive, this ELISA in combination with a specific Anti HIV 2-test will help discriminating HIV infections.

B.619

EFFICACY OF ABBOTT RECOMBINANT HIV-1/HIV-2 EIA FOR EARLY DETECTION OF HIV-2 AND/OR HIV-1 SEROCONVERSION

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The greatest difficulty in HIV diagnosis in Europe is to have at one's disposal an Elisa test sensitive enough to detect low levels of HIV-2 as well as HIV-1 antibodies. We determined the performance characteristics of Abbott Recombinant HIV-1/HIV-2 EIA by studying sequential sera from one HIV-2 and seven HIV-1 seroconversions.
HIV-2 seroconversion Results

	ELAVIA I*	ELAVIA II*	ELAVIA I + II*	Ab Rec I	Ab Rec I + II	RIPA HIV 2			
						gp140	p36	p26	p16
June 20, 1986	0.02	0.36	0.36	0.34	0.62	-	-	-	-
June 21	0	0.28	0.28	0.28	0.61	-	-	-	-
June 23	0.42	0	0.85	0.82	1.52	-	-	-	-
July 7	0.20	1.7	1.48	0.77	1.23	+	-	-	-
July 30	0.40	2.9	4.13	0.91	1.33	+	-	++	+
Aug. 11	1.2	≥ 6	≥ 6	0.84	1.97	++	+	+++	++
Aug. 28	2.43	≥ 6	≥ 6	1.04	2.42	++	+	+++	++
Jan. 21, 1987	2	≥ 6	N.D.	1.14	5.42	N. D.			

* Elavia I, Elavia II, Rapid Elavia I et II : Diagnostics Pasteur

All HIV-2 confirmed positive sera of our panel (n = 21) were detected by Abbott Rec. HIV-1/HIV-2 EIA.
HIV-1 seroconversions results : the seven cases of our panel HIV-1 seroconversions were documented at the same time by Abbott Rec. HIV-1/HIV-2 EIA and Rec. HIV-1 and in five of these cases 13 to 27 days before the western blot showed any specific band.
We can conclude that in our hands Abbott Rec. HIV-1/HIV-2 recognized all HIV-2 positive sera and low level of initial antibody production associated with HIV-2 or HIV-1 primary infection.

B.620

DETECTION OF SERUM ANTIBODIES AGAINST ONLY THE GAG PROTEINS: A LATENT OR AN ABORTIVE INFECTION WITH AN HIV VARIANT?

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Objective: To determine whether heterosexuals displaying antibodies against only the gag proteins are realy HIV-infected
Methods: Peripheral blood lymphocytes (PBL) were co-cultured with the HIV- permissive CEM leukemic cell line and virus replication was evaluated by the reverse transcriptase activity (RT) and the p24 antigen of the culture supernatant (SN). Moreover, the ultra centrifecgated pellet of SN was tested for HIV by an RNA \cDNA dot blot using specific cDNA probes. The membrane expression of p24 protein on PBL was evaluated by immunofluorescence using moABs. Intergrated viral sequences were detected by Southern blot.
Results: PBL of 7\9 subjects expressed the p24 molecule (range 3-16%) whereas p24 protein was detected on adherent cell but not PBL in an additional subject. Gp120 was also expressed on PBL in 6\9 and on the adherent cells in the above mentioned subject. Low levels of RT activity were detected in the SN of 2\5 subjects whereas p24 Ag could be revealed in 2 additional cases. RNA\cDNA dot blots of the ultra centrifugeted pellet revealed a positive reaction with both gag and env HIV-1 cDNAs in 6\16 cases. Finally, Southern analysis of DNA from adherent but not unfractionated PBL revealed HIV-related sequences in 1\3 tested cases.
Conclusions: These findings indicate that some of the heterosexuals displaying antibodies against only the gag proteins present a latent or an abortive infection with an HIV-related virus.

B.621

SIMULTANEOUS THREE COLOR DETECTION OF HUMAN T CELLS (CD2, CD4 AND CD8) BY FLOW CYTOMETRY

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Objective. To obtain rapid results with T cells markers utilizing 0.1 mL of blood. By choosing some optical filter and dye configurations on a flow cytometer that has 3 color-photomultiplier tubes (PMTs).

Method. A Coulter EPICS Profile (PROFILE) was configured with 3 log. fluorescence PMTs. The optical bench had three interchangeable filter blocks, each block held 5 filters. For this project we chose allophycocyathin (APC/red/FL3), phycoerythin (PE/orange/FL2) and fluorescein (FITC/green/FL1) as colors because all 3 dyes absorb light at 488nm. FL1 with the green PMT was nearest to the laser. The FL2 and FL3 PMTs received the PE and FITC signals respectively. The monoclonal antibodies and dyes were matched empirically. Some electronic color compensation was required.

Results. Starting with filter block 1 the dichroic filters were 488, 550LP, and 610SP nm respectively. Again in the same order the barrier filters for the three PMT's were 530 DF 30, 660 DF 35 and 580 DF 20 respectively.

Conclusion. Utilizing only 0.1 mL of blood with a PROFILE instrument three T cell markers were detected simultaneously.

B.622

Anti-HIV test of third generation
(Evaluation of sensitivity by HIV seroconversion)

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Sera were available of 15 individuals before anti-HIV screening test became positive (seroconversion). HIV antigen (p24) became detectable before seroconversion in all 15 individuals. As early as HIV-Ag, IgM anti-HIV also became detectable as measured by Western Blot but these antibodies persisted longer. In 10 individuals anti-HIV as measured by a new anti-HIV test system (based on synthetic peptides, directed towards the transmembrane associated anti-HIV 1 and anti-HIV 2 respectively and recombinant produced p24) also became positive before seroconversion. IgM anti-HIV and HIV-Ag are of help in early diagnosis of HIV infection but cannot be used as screening tests. For anti-HIV screening only tests of second or third generation should be used.

B.623

DIAGNOSIS OF HIV-1 INFECTION IN AFRICAN COUPLES: COMPARISON OF SEROLOGY AND PCR.

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AIDS Reference Laboratory, Université de Liège, Belgium.

Objective. Search for the rate of HIV-1 contamination among seronegative sexual partners of seropositive individuals.

Methods. Classical serological methods (EIA, WB) and PCR.

Series. 36 heterosexual couples from central Africa, accounting for a total of 73 persons:
13/37 seropositive women,
23/36 seropositive men.
All couples were serologically discordant, i.e. one partner was seropositive.

Results. Detection of provirus by PCR in peripheral mononuclear cells from seronegative partners was distributed as follows:

seronegative	women	men
PCR positive	15	9
PCR negative	7	3
not tested	2	1
TOTAL	24	13

Conclusion. In such a population, particularly at risk of HIV contamination, the rate of false negative serological diagnosis reached 70%

B.624

PROPOSAL FOR THE ANTI HIV TESTING PROTOCOL

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Objective: To propose a strategy for testing Anti HIV. In view of new assays for the simultaneous detection of Anti HIV-1 and -2 a second ELISA-level might be useful for the differentiation and confirmation of positive or equivocal results obtained in the initial level of combined screening.

Methods: The peptide based indirect test ^{R}Enzygnost-Anti-HIV 1 + 2 was used for the initial testing (4 env-peptides of HIV 1 and HIV 2; 50 µl undiluted specimen; total assay time 90 min.). For testing on Anti HIV 1 and Anti HIV 2 two highly sensitive and specific assays were employed. ^{R}Enzygnost-Anti-HIV 1 ultra is a sequential saturation assay using a modified competitive format and cell culture propagated viral antigens. ^{R}Enzygnost-Anti-HIV 2 is based on the indirect principle and a synthetic peptide corresponding to gp41 of HIV 2.

Results:

n	positive by combined screening RE.-Anti-HIV 1+2	positive with ^{R}E.-Anti-HIV 1 ultra	positive with ^{R}E.-Anti-HIV 2	western blot A.HIV 1	western blot A.HIV 2
182 Anti-HIV 1	182	182	11 borderline pos.	182	23
39 Anti-HIV 2	39	13 borderline pos.	39	19	39

Conclusions: These findings indicate both second-level ELISAs best suited for the differentiation and confirmation of initially positive results by testing with a combination assay. This procedure will help reducing the cost- and time-consuming western blot analysis.

B.625

HIV IgG ANTIBODY AT THE AGE OF 12 OR 18 MONTHS BUT NOT HIV IgM ANTIBODY AT BIRTH OR AGE 3 MONTHS CORRELATES WITH CLINICAL EVIDENCE OF PERINATALLY-ACQUIRED HIV INFECTION(PI).

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Objectives. To determine the correlations between detection of HIV IgM antibody (cord blood, age 3 mos.) and HIV IgG antibody (12 mos., 18 mos.) and the development of clinical evidence of PI.

Methods. Two groups of children have been followed since birth. Group I children had 373 children with HIV(+) mothers. Group II consisted of 100 children born to HIV(-) mothers. Blood collected at birth(IgM-0) and at age 3 months(IgM-3) from both groups of children was tested for HIV IgM antibody by Western blot (DuPont). Blood collected from the same children at age 12(IgG-12) and 18(IgG-18) months was tested for IgG by ELISA (Welcozyme) and confirmed by IgG Western blot (DuPont). Children who developed clinical signs/symptoms compatible with the provisional WHO case-definition for pediatric AIDS were defined as having AIDS. Pearson's correlation coefficients(CC) were calculated.

Results. Pearson's CC for various diagnostic criteria for PI.

	Clinical AIDS	IgM-0	IgM-3	IgG12	IgG18
IgM-0	.0568	-	-	-	-
IgM-3	.0588	.3867**	.3867**	-	-
IgG-12	.3581**	.0482	.1172*	-	-
IgG-18	.2966**	.0489	.1176*	1.00**	-

(P value for Pearson's CC; *P<.05; **P<.01)

All 100 GpII children were persistently negative for all serologic markers.

Conclusions. Use of IgM Western blots to diagnose PI was not useful. A high correlation did exist between development of clinical AIDS and a positive IgG-12 and IgG-18. The CC of 1.0 between IgG-12 and IgG-18 suggests that in most infants detection of IgG-12 indicates PI and not residual maternal antibodies.

B.626

AN IN VITRO EIAV RT MODEL FOR SCREENING OF ANTI-HIV AGENTS

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Objective. To establish an in vitro model for HIV using reverse transcriptase (RT) assay of equine infectious anemia virus (EIAV).

Methods. Virus was concentrated from tissue cultures and disruped. EIAV RT assay was directed by (rA)n.$(dT)_{12-18}$ with normal substrate dTTP (specific activity,5070cpm/pmol). Several 5′-triphosphates of 5-substituted 2′-deoxy-uridine (-Et, -nPr, -nPre, -iPre, -CE) including AZTTP and FLTTP were synthesised chemically.

Results. The IC$_{50s}$ of 5′-triphosphates of nucleoside derivatives were estimated against EIAV RT with decreasing potent order : FLTTP > AZTTP > PrearaUTP > PFA(phosphonoformic acid) > PredUTP = CEdUTP > EtdUTP > nPrdUTP >> PAA(phosphonoacetic acid). PrearaUTP was a competitive inhibitor and PFA was a non-competitive inhibitor of EIAV RT with respect to dTTP respectively. The K_m value of EIAV RT for dTTP was 2.0uM. The main properties of EIAV RT were also investigated.

Conclusion. The sensitivities of EIAV RT towards the inhibitors and profile of enzyme kinetic study were corresponding to HIV RT. Thus the EIAV RT in vitro model is suitable for anti-HIV agent screening especially easy handing.

B.627

CORRELATION OF SEXUAL BEHAVIOUR AND ANTISPERM ANTIBODIES IN HOMOSEXUAL MEN

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Objective: To detect antisperm antibodies in the serum of homosexual men and their relation to sexual practices, with a view to the development of a screening test that would act as a epidemiological marker for the practice of anal sex.
Methods. Using information obtained from a questionnaire, 60 homosexual volunteers from a previously enrolled cohort were grouped according to life-style over the previous six months viz. group 1 - oral intercourse only (n=13), group 2 - oral and anal intercourse (n=39), group 3 - anal intercourse only (n =2), group 4 - celibate (n=6). Test sera were screened for antisperm antibodies using an indirect immunobead assay; in addition all sera were screened for anti-HIV antibodies, and lymphocyte subsets were quantitated.
Results. Six of 60 (10%) sera were positive for antibodies to sperm; all were from groups 2 and 3. None of the recipients of oral intercourse alone had antisperm antibodies. Thirty subjects had antibodies to HIV; clinically they were all asymptomatic. Of the six antisperm antibody positive sera, two were positive and four negative for antibodies to HIV. There was no difference in lymphocyte subsets between the HIV seropositive and seronegative groups or between antisperm antibody positive and negative subjects.
Conclusions. These findings suggest a role for antisperm antibodies as a marker of receptive anal intercourse. Further studies are needed to test this possibility more fully.

B.628

VALUE OF Ig CLASS AND IgG SUBCLASS DETECTION IN THE SERUM AND CSF AS A PRONOSTIC MEANS IN HIV INFECTED PATIENTS.

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OBJECTIVE : To estimate the pronostic value of the IgA,IgM, and IgG subclass specific antibodies in the sera and CSF of HIV infected patients.
METHODS : Sera and CSF samples were obtained from 15 HIV infected patients (7 AIDS,4 ARC,4 Asymptomatic).Ig class and IgG subclass specific antibodies were identified by western blot using monoclonal antibodies.The intrathecal synthesis (ITS) was investigated.P24 HIV antigen and HIV isolation were carried out. A physical examination of the patients was performed 12 months later.
RESULTS : We found an ITS in most cases.In all patients IgG1 was the preeminent subclass,followed by IgG3,then IgG2 and IgG4.Antibodies to env proteins were mainly IgG1.IgG3 developed to gag and sometimes to env and pol proteins. In contrast to IgG1 response to env proteins in sera and CSF of the 3 groups of patients, a restriction of the other IgG subclasses was observed in AIDS patients.The CSF IgG/Serum IgG antibody ratio was approximately 1 to 3. Sera anti p24 IgM were detected in 2 symptomless patients.Sera and CSF specific IgA were found in 4 symptomless, 1 ARC and 1 AIDS patients.Twelve months later, 5 of the 7 AIDS patients were dead;one of the ARC patients had AIDS.The other patients were in the same clinical condition.
CONCLUSION : In a few cases of AIDS, ARC and symptomless patients, our data suggest that IgG subclass determination in sera and CSF were not significantly correlated with clinical stages of infection and may not be of pronostic value.

B.629

DEPISTAGE SIMULTANE DES INFECTIONS VIH1 ET VIH2 EN FRANCE A L'AIDE D'UN TEST MIXTE

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(5) CRTS Nancy, France

Objectif : Vérifier la capacité d'un test mixte à détecter les anticorps contenus dans le sérum de sujets infectés par les virus VIH1 ou VIH2 et à être utilisé en dépistage de routine.
Matériel et Méthodes : Le test RAPID'ELAVIA MIXT (REM, Diagnostics Pasteur) est un test ELISA en microplaque utilisant sur une simple cupule un mélange des virus entiers VIH1 et VIH2. Ce test a été modifié et la nouvelle formule a été utilisée en France dans 2 Centres de Transfusion Sanguine (CRTS,Nancy; CRTS, La Pitié Salpêtrière, Paris), à l'Institut National de Transfusion Sanguine, et à l'Hôpital Bichat à Paris. Ont été testés 2870 sérums de donneurs de sang, 108 sujets infectés par le virus VIH1 dont 16 sujets en cours de séroconversion et 115 sujets infectés par le virus VIH2.
Résultats

SERUM	Resultats REM	Performances
2870 donneurs	2853 négatifs	spécificité:1ère intention : 95,41 % 2ème intention : 99,62 %
92 VIH1 positifs	92 positifs	Sensibilité : 100 %
16 séroconversions VIH1	16 positifs	
115 VIH2 positifs	115 positifs	

Conclusion : Le test REM utilisant la totalité des épitopes des deux virus présente une sensibilité permettant la surveillance simultanée de l'épidémiologie VIH1 et VIH2. Sa spécificité en Centre de Transfusion en fait un test tout à fait utilisable en routine.

B.630

TAX: IT'S ROLE IN THE DIAGNOSIS OF HTLV I INFECTION

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OBJECTIVE. To evaluate the diagnostic potential of antibody to the HTLV I tax protein (p40X).
METHODS. Blood was collected from 619 Martinique donors, 25 IV drug abusers in the U.S., 33 TSP/HAM and 25 ATL patients. Samples were screened by two types of EIA; the first using HTLV I virus lysate as the capture antigen, the second using a tax recombinant protein. All samples were also tested by Western blot and SDS-PAGE RIPA.

RESULTS.

EIA	MARTINIQUE		IVDA		TSP/HAM		ATL	
	40X+	40X-	40X+	40X-	40X+	40X-	40X+	40X-
HTLV I +	10	15	2	20	32	0	8	13
HTLV I -	1*	593	0	3	0	1	0	4

*Western blot and RIPA negative

CONCLUSIONS. Greater than 95% of TSP/HAM, but only 35% of ATL patients tested, developed antibodies to 40X. Data from endemic blood donors and IVDA suggest that antibody to 40X does not seem to provide an additional diagnostic role in HTLV I infection.

B.631

SEROPREVALENCE OF HTLV-I AND HIV-1 IN ADULT HEMATOLOGIC ONCOLOGY PATIENTS

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Objective. To determine the seroprevalence of HTLV-I and HIV-1 in cancer patients with hematologic malignancies.
Methods. Sera from patients with hematologic malignancies were assayed by ELISA for the presence of antibodies to both HTLV-I and HIV-1 using the FDA-approved, commercially available kits. Patient categories included acute and chronic T and non-T lymphoid and myeloid leukemias, Hodgkin's and non-Hodgkin's lymphomas, as well as preleukemic states. Volunteer normal blood donors served as cohorts.
Results. A positive reaction was scored according to manufacturer's recommendations

Group	N	HIV-1 Reactive	HTLV-I Reactive	
			Initial	Repeat
Patients	272	3	9	NA
Normal	2050	0	29	11

Conclusion. The seroprevalence rates in hematologic oncology patients for HIV-1 and HLTV-I are 1.1% and 3.3%, respectively. The rate for HTLV-I is more than double that seen in normal blood donors.

B.632

B.633

NATURAL HISTORY OF HTLV-I INFECTION

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Objective: To describe the natural history of HTLV-I infection within an endemic area of Kyushu, Japan.

Methods: A population based cohort established of approximately 1687 adult residents of two villages, of whom 505 are HTLV-I positive. HTLV-I antibody titer was determined by PA and proviral DNA in carriers lymphocytes was investigated.

Results: Antibody titers of sixty percent of carriers ranged between 512 and 2048. Of 78 consecutively determined for four years, 63 kept the same titer. During this period 7 seroconversions have been observed.
No ATL case has been observed. However, among 40 carriers tested for proviral DNA in the lymphocytes, a sample from a healthy woman presented the pattern of monoclonal integration. Thirty-six percent of her lymphocyte was Tac positive but the abnormal lymphocyte count was less than one percent, suggesting to be in the preleukemic stage.

Conclusions: Continuing the surveillance on carriers in association with preleukemic stage is important in understanding of natural history and may provide a lead to elucidate the factors in leukemogenesis of the virus.

B.635

DUAL ASSAY OF HTLV-I AND HIV-1 ANTIBODY USING ANTI-FC EIA WITH RECOMBINANT HIV-1 AND HTLV-I ANTIGENS.

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Objective. To develop a recombinant antigen immunoassay (EIA) that has the capacity to detect both HIV-1 and HTLV-I antibodies in human sera. Methods. Affinity-purified goat anti-human IgG Fc and anti-human IgM Fc were coated on microtiter plates to capture human antibodies from test serum. Virus specific antibodies were then detected by peroxidase-labeled recombinant HIV-1 and HTLV-I antigens using individual antigen conjugates or mixtures. 200 HIV-1 positives, 80 HTLV-I positives, 2 HIV-1 and HTLV-1 coinfections, 1027 HIV-1 negative blood donors, and a seroconversion panel were evaluated. In addition, dilutions of positives were also tested. Results. The assay identified all the positive samples tested using individual antigen conjugates. No significant change in positive signals were observed when both antigen conjugates were used. The HIV-1 and HTLV-I coinfected samples produced additive signals. This assay could detect HIV antibody as early or earlier than current viral lysate EIA's using an HIV-1 seroconversion panel. Conclusion. In this EIA test, each antigen conjugate reacted with their respective target antibodies independently. This EIA system can be used to detect both HIV-1 and HTLV-I antibodies in one test without significant loss of sensitivity for antibodies to either virus.

B.637

FOCUS OF HTLV-1 ASSOCIATED TROPICAL SPASTIC PARAPARESIS IN EQUATEUR, ZAIRE

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Objective. To present the first focus of HTLV-1 associated tropical spastic paraparesis (TSP) in Africa. Only 5 sporadic cases are known in Africans, although Africa has the largest world reservoir of HTLV-1.
Methods. Search among chronic paraparesis patients from Lisala, population 50,000, Equateur Province, Zaire, by HC and KK. Elisas and immunoblots by PG and JD.
Results. 39 cases (11 men, 28 women) of HTLV-1 associated TSP were identified : 21 by direct examination, and 18 in close blood relatives of 10 of the above, as derived from typical history and confirmed in all 4 examined. 7 mothers but no fathers or spouses of TSP patients had TSP; 3 familial cases were in paternal relatives. Half of the patients were Mundunga who represent 10 % of the population (p<0.01). Presentation, history, serology and spinal fluid findings were as seen elsewhere.
50 % of healthy close relatives had anti-HTLV-1. Patients were anti-HIV negative.
Conclusions. This first African focus is probably the largest in a population of similar size worldwide. The familial clustering observed can only be explained by cofactors in addition to HTLV-1. Some epidemiological definitions of the disease would have missed many true cases and they should be revised.

B.634

PREVALENCE OF HTLV I/II INFECTION IN BLOOD DONORS AND HIGH RISK GROUPS IN THE U.S.

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OBJECTIVE. To determine the prevalence of HTLV I exposure among plasmapheresis donors and high risk populations in the U.S.
METHODS. Specimens from IV drug abusers (IVDA), blood donors and high risk groups such as hemophiliacs and homosexuals were collected between 9/87 and 10/88 and tested for antibodies to HTLV I by EIA. Repeat EIA positive samples were confirmed by Western blot and SDS-RIPA.
RESULTS.

CATEGORY	NO. TESTED	EIA +	% CONFIRMED
IVDA	1092	226	0.04
Volunteer Blood Donors	66513	24	0.23
Plasmapheresis Donors	6200	14	0.23
Hemophiliacs	165	0	0.00
Homosexuals	152	2	1.30
ATL	41	39	97.5
Contacts of ATL	40	15	68.2
TSP/HAM	62	59	96.3
Contacts of TSP/HAM	12	5	41.7

CONCLUSION. IVDA constitute the main reservoir for HTLV I/II infection in the U.S. (12.5% by HTLV I alone and a further 6.2% HTLV I coinfected with HIV). Unlike HIV, hemophiliacs and homosexuals are not risk groups. Plasmapheresis donors show a five times higher seroprevalence rate when compared with volunteer donors.

B.636

DETECTION OF EARLY HTLV-I SEROCONVERSION (SC)

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Objective. Evaluate sensitivity of HTLV-I screening and confirmatory assays during SC among transfusion recipients (REC).
Methods. Pre-transfusion negative exposed REC from Jamaica, followed at monthly intervals, were tested by whole virus (wv) (DuPont and Abbott) and recombinant envelope (env) (Cambridge Biosci.) EIA, Western blot (WB), and radioimmunoprecipitation (RIPA) using HUT 102-B2/DA202 cell lines. McNemar's test was used to detect differences in sensitivity.
Results. 12 of 66 exposed REC, 9 with >10mos. of follow-up, and 8 with persistently positive SC patterns were analyzed. 58/93 samples were WB p19+p24 positive. WB was used as reference for comparing test performance:

EIA1	EIA2	ENV	FDA+
40/58	44/57*	58/58	48/58
(69%)	(77%)	(100%)	(83%)

*one sample not tested by EIA2; +FDA criteria 2 gene groups(MMWR,Dec88)

WB was more sensitive than EIA1 and EIA2; *env* EIA was as sensitive as WB, but specificity was not evaluated. WB detected antibody earlier than other methods. Early gag protein patterns preceding "FDA" SC were either p19 only, p24 only, or p19+p24 +/- other bands. Sensitivities between the two wv EIAs were not significantly different (p=.35).
Conclusion. Two wv EIAs had comparable sensitivities in this population of exposed transfusion recipients. Patterns showing either p19 or p24 only preceded FDA seroconversion criteria via WB determination. *Env* EIA may be an alternative to RIPA as a confirmatory test.

B.638

HIV P24 ANTIGEN IN ASYMPTOMATIC, PGL AND AIDS PATIENTS AT GAFFRÉE & GUINLE UNIVERSITY HOSPITAL, RIO DE JANEIRO, BRAZIL.

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** FIOCRUZ

Objective: To determine the presence of p24 antigen in patients with different clinical status of HIV infection.
Methods: Serum HIV p24 antigen measured by antigen capture ELISA (Abbott$^{(R)}$ Laboratories, North Chicago, Il. USA) was perfomed in 125 patients who met the Surveillance case definition of HIV infection by Centers for Disease Control (MMWR, 35(20):334, 1986) distributed as GROUP IV = 41, GROUP III = 30 and GROUP II = 54.
For statistical analysis we used the statistics χ^2 (Chi-square), watching for the linear tendency (Armitage, P - Statistical Methods in Medical Research - John Wiley and Sons - N.Y., 1971).
Results: Overall, 52 of 125 patients tested for antigenaemia were positive (41,6%). The distribution of these patients according to CDC's criteria is shown in following table:

CDC'S GROUPS	TOTAL NUMBER	ANTIGENAEMIA	
		NUMBER	%
IV	41	32	78,5
III	30	10	33,3
II	54	10	18,5

$\chi^2 = 35,106$ P < 0,001 χ^2_T for departures from linear trend = 2,08 P < 0,05
Conclusions: There is a clear evidence of association between antigenaemia and clinical status. There is also a definite trend which results in approximately equal increases in the proportion of presence of P24 antigen as it changes successively to more severe categories of HIV infection.

B.639

INTRACUTANEOUS TESTS WITH UBIQUITOUS ANTIGENS AND CD4-CD8 DETERMINATIONS IN AIDS

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Objective. To correlate simple immunological parameters with the clinical classification of AIDS.
Methods. A total of 127 AIDS patients classified according to CDC criteria were tested in vivo with PPD, candidin, trichophytin and streptokinase--streptodornase; the absolute numbers of CD4 and CD8 lymphocytes were also determined.
Results.

	2 or more positive cutaneous tests	mean of CD4 cells/mm^3	mean of CD8 cells/mm^3
Groups II and III (n=61)	69%	760	1067
Group IVa (n=33)	30%	279	796
Groups IVc and IVd (n=33)	17%	179	481

Conclusion. A progressive decrease in the reactivity to intracutaneous tests with ubiquitous antigens and in the absolute numbers of CD4 and CD8 cells was observed across the clinical spectrum of AIDS, emphasizing the value of these procedures.

B.640

PREDICTIVE VALUE OF THE DETERMINATION OF HIV-1 Ag IN SERUM

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University of Seville. Seville. SPAIN.

OBJECTIVE: To assess the predictive value of the determination of HIV-1 Ag in serum.
METHODS: We have tested for HIV-1 Ag by EIA 212 serum samples sequentially collected from 51 Anti-HIV-1 positive patients. On an average, they had been followed during 42.10 11.9 months (range 24-73) and 4.15 1.11 (range 3-9) serum samples had been taken from each patient. All of the subjects were at the stage II or III of the current CDC classification for AIDS related diseases at the beginning of the study.
RESULTS: The overall follow-up time and the number of samples taken from each patient were similar for those developed AIDS and those that did not. Six patients were found to be antigenemic at entry. Eight of the remaining 44 seroconverted during the follow-up. Seven of the 14 (50%) individuals (6/10 hemophiliacs, 1/2 drug-addicts and 0/2 homosexual men) who were found to be antigenemic in some time developed AIDS (stage IVc). The passage of time from the first evidence of HIV-1 Ag to the diagnosis of AIDS ranged from 0 to 73 months. All of the remaining 37 patients are still at the same clinical stage.
CONCLUSION: These results show a close association between the presence of HIV-1 Ag in serum and poor prognosis of HIV-1 infection. On the other hand, the rate of AIDS developing among antigenemic patients observed by us is one of the highest reported so far.

B.641

ASPECTS CLINIQUES HIV1 ET HIV2 ET CLASSIFICATION DE BANGUI

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Objectifs. Evaluer la sensibilité et la spécificité des critères de diagnostic clinique du SIDA HIV1 définis à Bangui et proposer leur élargissement éventuel au SIDA HIV2.
Méthodes. Etude rétrospective de 73 cas de SIDA HIV1-HIV2 hospitalisés de janvier 1986 à décembre 1988 au Service des Maladies Infectieuses du C.H.U. de Dakar. Une cohorte de témoins (patients suspects mais séronégatifs) a été étudiée. Les critères de la classifications de Bangui ont été recherchés pour chaque cas et une étude comparative statistique a été effectuée.
Résultats. Sur 73 cas de SIDA :

49 HIV1
21 HIV2
3 double profil

Le sex-ratio est de 2.4. La grande majorité des malades HIV1 comme HIV2 présentent les signes majeurs de la classification de Bangui : amaigrissement > 10%, diarrhée > 1 mois et fièvre > 1 mois. Les manifestations cliniques HIV1 et HIV2 sont comparables dans notre série. Un pourcentage non négligeable de suspects ont eu une sérologie négative (sensibilité ?).
Conclusion. L'élargissement à HIV2 de la classification de Bangui est proposé mais une amélioration est possible.

B.642

ETUDE DE LA VALEUR DIAGNOSTIQUE DU WESTERN BLOT CHEZ 113 CONGOLAIS

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Méthode
Il s'agit d'une enquête de type rétrospective. Les cas sont les patients répondant à la définition clinique du SIDA (effectif=64). Les témoins sont les donneurs de sang considérés (effectif=49). Les sérums ont été répartis en pas de bande ou trace, et bande nette.
Résultats
Les malades ont plus souvent des Ac gp41 : chi2 = 6,25, p = 0,012, odds ratio (or) = 2,17. La même constatation a été faite pour les Ac gp160 : chi2 = 8,44, p = 0,0037, or = 3,36.
Il n'a pas été trouvé de valeur aux Ac p25. Les sérums ont été répartis en présence d'au moins un des deux Ac anti-gp d'une part, et absence des deux Ac d'autre part ; une liaison a été également trouvée : chi2 = 13,2, p = 0,028, or = 5,56. La liaison persiste pour la gp160 lorsque l'on neutralise l'effet de la gp41, elle disparaît pour la gp41 lorsque la gp160 est neutralisée. Cependant, la liaison persiste pour la gp41 dans le groupe absence de gp160.
Discussion
Nous n'avons pas trouvé au Congo de liaison statistique entre le stade clinique et la présence d'Ac p25. Nous avons montré qu'est associée à un mauvais pronostic la présence d'Ac gp160, la présence d'Ac gp41 chez les patients n'ayant pas la gp160.

B.643

DETECTION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV)DNA SEQUENCES IN SEROPOSITIVE PATIENTS AND SERONEGATIVE AT RISK SUBJECTS BY POLYMERASE CHAIN REACTION (PCR).

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Objective: To investigate the earlier stage of the infection we detected HIV-1 DNA sequences in seronegative people at high risk as drug addicts and partners of seropositive subjects and seropositive patients classified according to CDC criteria. Normal blood donors were employed as controls.
Methods: Genomic DNA's collected from PBMC of seropositive and seronegative people were subjected to forty cycles of amplification. Two primer pairs for different conserved regions of the env gene were used. Specificity of amplification products was confirmed by Southern Blot. Serology was assessed by Western Blot; antigenemia by an Elisa system.
Results: Almost all seronegative poeple at high risk were confirmed negative by DNA amplification; individuals that resulted positive for HIV sequences also seroconverted after a few weeks. On the other hand no HIV sequences were detected with these primer pairs in a small percentage of seropositive but antigenemia negative patients.
Conclusion: PCR coupled with serological techniques is very useful to investigate the HIV infection especially in those cases in which serology remains silent or unclear. Studies are in progress with primer pairs for different regions of HIV genome to better characterize the integrated sequences during the disease.

B.644

CONTROLE DE QUALITE DES TESTS DE DEPISTAGE ET DE CONFIRMATION DES ANTICORPS ANTI HIV EN 1988

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et le groupe retrovirus.
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2 Société Nationale de Transfusion Sanguine.

Objectif : Contrôle de qualité national des laboratoires déclarant pratiquer le test de confirmation (Western Blot) des anticorps anti HIV - 160 laboratoires.
Méthode : Les laboratoires ont reçu 3 envois de 4 échantillons de plasma, sur lesquels ils effectuent conformément à la circulaire du 24-02-87, deux tests de dépistage et un test de confirmation. Les 12 plasmas correspondent à : 6 HIV1 dont 3 débuts de Séroconversion et un cas de sida, 3 non spécifiques 2 p25, 1 p18, 2 négatifs, 1 HIV2.
Résultats : 8 réactifs de dépistage et 3 réactifs de confirmation ont été utilisés. Au total : 94 erreurs sur 1472 diagnostics ont été faites par les laboratoires tous réactifs confondus (soit 6,3 %).

	HIV1	HIV2	non spécifique	négatif
% d'erreurs de diagnostic	8,2 %	4,1 %	7 %	0,8 %

Les résultats des laboratoires en fonction des réactifs utilisés seront détaillés.
Conclusion : Ce contrôle a permis une amélioration des performances des utilisateurs et des réactifs.

B.645

THE USE OF GRAPHIC ART TO MEASURE NEUROPSYCHOLOGICAL FUNCTION IN HIV-INFECTED PERSONS

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Objective. To measure neuropsychological function in people with HIV infection through their artwork.
Methods. Twice-weekly, 3 hour sessions for HIV-infected persons for art therapy/instruction generated written and photographic observations of artwork and behavior of 75 patients over 4½ years. In an unstructured, group setting, an AIDS-sensitive therapist familiar with multiple art media (water-based paints on paper, oil and chalk pastels, inks, oil paint on canvas, markers, collages using art tissue and "found" objects) developed close relationships with patients leading to verbalization of problems and evidence of patient's physical and neurological deficits.
Results. Illustrative case studies of 5 AIDS patients demonstrate that changes in composition, subject matter, and color selection correlated with 1) progressive cognitive and affective deterioration (2 pts), 2) improved physical and cognitive status during AZT therapy (1 pt), and 3) incipient seizures (2 pts). For example, within hours to days of first painting characteristic, red, vertical stripes, 2 patients had generalized seizures.
Conclusion. In addition to its therapeutic value, artwork may provide a useful diagnostic approach to neuropsychological dysfunction in AIDS by illustrating changes in cognitive function and affect and by predicting seizures.

B.647

ADVERSE REACTIONS TO TRIMETHOPRIM-SULFAMETHOXAZOLE (TMP-SMX) TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN ADIS .

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Toxic effects of TMP-SMX treatment of PCP are frequent in American-white patients with AIDS . Better tolerance to this treatment has been reported in Non-american AIDS patients. Our experience is reported here .
Methods: 43 patients with HIV infection and a first episode of PCP diagnosed by bronchoscopy with bronchoalveolar lavage were retrospectively evaluated. Patients received TMP 20 mg./Kg.day and -SMX 100 mg./Kg. day for at least 7 days. Mean age was 30.2 years (20-56). 35 patients werw male. 31 patients intravenous drug abusers (IVDA), 9 homosexual men, 1 heterosexual parther of IVDA - and 2 had no recognizable risk factor.
Results: Adverse effects were identified in 23 patients (53.4%):

- Hepatic: aminotransferases: 2-5 times normal (or value at entry): 7 (16.2%)
- Neutropenia: 11 (25.5%): <500: 3.
  500-1000:8.
- Rash: moderate: 3 (6.9%)
  severe: 1 (2.3%)
- Renal: creatinine: 1.5-3 mg./dl.:3 (7.6%)
  > 3 mg./dl.:0
- Vomiting: 8 (18.6%)

Discontinuation of treatment because of severe toxicity: 6 (13.9%):

- Creatinine: 1.5-3 mg./dl.: 1.
- Neutropenia: ≤ 500 : 3.
- Neutropenia (500-1000)+vomiting severe: 1
- Rash severe: 1 .

Comments: Although toxicity is frequent, discontinuation of TMP-SMX treatment is needed in a minority (13.9%) of patients. Manifest differences in rash frequency between our patients and American-white AIDS patients are observed .

B.646

OUTCOME OF ADVANCED MATERNAL AIDS IN OFFSPRINGS

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Objective: To define the outcome of advanced maternal AIDS in offsprings.
Methods: We followed 20 infants born to mothers with advanced clinical AIDS.
Results: Eighteen mothers had produced 2 twins and 16 singles. Mothers were all ill at the time of delivery. Four died within 4 weeks of giving birth. Two had tuberculosis and one had Kaposi's Sarcoma. The others were hospitalized for AIDS. All 20 babies were born small for age. Six babies were born at term weighing from 1830-2500 grams. Fourteen were born at 32-38 weeks of gestation, weighing from 1000-2000 grams. All newborns were doing poorly at birth and manifesting the following clinical signs after birth: 20 (100%) with asthenia, 13 (65%) with diarrhea, 13 (65%) with respiratory infections, 9 (45%) with fever, 9 (45%) with anemia, 8 (40%) with oral candidiasis, 6 (30%) with vomiting, 3 (15%) with neurological complications, 3 (15%) with physiological jaundice, 2 (10%) with pyoderma and 1 (5%) with splenomegaly. In the course of hospitalization, one term infant was sent home in a stable condition. A second infant, who weighed 1540 grams at birth, gained 280 grams and was discharged in satisfacotry condition. Of the remaining 18 newborns, 6 died within the first week of life and 12 died within 2 months of birth.
Conclusion: HIV seropositive mothers infect 30-40% of their offsprings, however, in our series, advanced maternal AIDS was associated with a significantly higher maternal and neonatal morbidity and mortality. There was 22% maternal and 90% neonatal demise shortly after delivery.

B.648

ADVERSE EFFECTS OF ZIDOVUDINE (AZT) IN PATIENTS WITH HIV INFECTION.

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OBJECTIVE. Assesment of adverse effects (AE) to Zidovudine in patients with HIV infection in an intensive pharmacologyc surveillance program.

MATERIAL AND METHODS. 33 patients were entered. 22 patients fulfilled AIDS criteria, 3 patients had a group III (CDC) infection, 3 group IV-B infection and 3 group IV-C2 infection. 24 patients were drug abusers, 6 were homosexuals, 2 bisexuals, and one was a heterosexual partenaire of an HIV carrier. Mean age was 30 years (Range: 24-50). 25 were males. AZT dose was 1200 mg/day. This dose was modified upon haematologic parameters. An intensive pharmacologyc surveillance program for detection of AE, with twice a month evaluation during first three months, and thereafter monthly was begun.

RESULTS. 1) Haematologycal toxicity. 14 patients showed anemia (42%). In 9 it was severe (32%) (Hemoglobin < 7.5 gr%). Anemia usually begun between 8th and 10th week of treatment. It was recurrent anemia, and required transfusion of 9 units of eritrocyte concentrates per patient, as a mean. Macrocytosis was observed in 61% of cases, neutropenia in 43%. 3 patients showed agranulocytosis. 2) Gastrointestinal toxicity. In 2 patients (7%) severe nausea and vomiting required withdrawal of therapy. 3) Dermatologyc toxicity. 4 patients showed blue-colored nails (14%), and one patient showed difuse cutaneous hyperpigmentation. 4) Hepatic toxicity. In one case there was a transaminase elevation during the 2nd week, that normalised after withdrawal of therapy. 5) No renal nor neurologic toxicity was observed.

CONCLUSIONS. 1) Haematologic toxicity was the most severe AE observed, requiring modification of therapy, but not supression. 2) Gastrointestinal toxicity, although uncommon, was the poorer tolerated AE. 3) Changes in cutaneous and ungueal pigmentation are a new contribution to the AE constellation of AZT.

SECTION C

Recherche fondamentale (biomédicale)

Basic Research (Biomedical)

Mécanismes de pathogenèse du VIH
Mechanisms of Pathogenesis of HIV

M.C.0.1

VIRAL AND HOST FACTORS INFLUENCING THE PROGRESSION TO AIDS.

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A basic question in AIDS is why the time for development of clinical symptoms and progression to disease differs widely among HIV-infected individuals. The vast heterogeneity in the biologic, serologic, and molecular properties among HIV strains offers one explanation. In particular, their differential ability to infect different cell types (both CD4+ and CD4-), to replicate rapidly to high titer in these cells, to cause cytopathic changes, and to be neutralized by various sera has been demonstrated. Moreover, certain isolates appear more sensitive to serum enhancement. Furthermore, through the interaction of the HIV nef gene product with the viral LTR, a state of latency can be induced that may delay or prevent disease in the infected individual. Our studies have indicated, for example, that individuals with a rapid progression to disease have viruses that replicate rapidly and are more cytopathic with a wide cellular host range. Moreover, brain and blood isolates can be distinguished by their relative ability to grow in macrophages and lymphocytes, to modulate the CD4 antigen on T cells, and by their serologic properties. Molecular and protein studies have indicated a relationship of some of these biologic activities with changes in protein and genetic structures.

The host immune response also plays a substantial role in determining the HIV pathogenic process. Antibodies that enhance virus infection can permit HIV spread to several different cell types including lymphocytes, macrophages and fibroblasts. Cellular immune responses can destroy virus-infected cells or suppress virus release via the production of antiviral cytokines or mechanisms involving cell:cell interaction. Thus, the dynamics of a quickly changing replicating virus and an active immune system provides an important "key" to whether an individual has a long asymptomatic course or a rapid progression to AIDS.

M.C.0.2

IMMUNE RESPONSE TO HIV

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M.C.0.3

ROLE OF N-LINKED GLYCOSYLATION IN HIV INFECTION.

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N-linked glycans represent 50% of the MW of HIV *env* gene product, and glycosylation sites are well conserved among different isolates. Carbohydrate oligosaccharides (CHO) are likely to be prominent structures on the virus surface, although their precise role is still poorly understood. We have demonstrated that complete enzymatic removal of glycans from recombinant gp120 or gp160 (rgp120/160) in the absence of denaturating agents does not significantly modify *in vitro* interaction with its CD4 receptor : deglycosylated rgp120/160 attached to soluble or membrane-bound CD4 with comparable affinity and inhibited fusion of HIV-infected and non-infected cells to the same extent than glycosylated rgp120/160. This apparently contradicts a previous observation that deglycosylated native viral gp120 (ngp120) displayed markedly reduced binding capacity to CD4. Differences between these observations may stem from technical conditions, or they may be related with differences in the glycosylation patterns of rgp120 and ngp120 that could result in functional differences of the glycan moieties. In addition, experiments conducted with glucosidase inhibitors that interfere with early oligosaccharide processing indicate that CHO may play a role at a post-translational level and be involved in other functions of gp120/160 in relation with post-binding events. *Env* glycoproteins may also interact with extra-cellular or cell-membrane lectins, especially on mononuclear phagocytes. On the other hand, our recent data suggest that gp120 behaves as a lectin, binding β-D-N acetylglucosamine. These properties might be used by HIV to attach to cell membranes independently of CD4 and be one of the explanations that HIV can infect CD4- cells under some circumstances. Finally, CHO chains may intervene in the immune response to HIV either by directing responsiveness to certain sites or by masking part of gp120/160 epitopes.

M.C.0.4

NEW APPROACH TO THE STUDY OF OLIGOSACCHARIDES AS DETERMINANTS OF THE TISSUE TROPISMS OF HIV-1.

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The envelope glycoprotein, gp120, of the human immunodeficiency virus (HIV-1) is highly glycosylated with a diverse array of N-glycosidically linked oligosaccharides[1-3]. We have proposed[1] that these oligosaccharides which are likely to be prominent structures on the virus surface, are candidate attachment and addressing factors in the host at various stages of the virus cycle. This communication will be concerned with the molecular dissection of oligosaccharide-mediated interactions by a novel approach involving the generation of oligosaccharide probes from the envelope glycoprotein.

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3. Geyer, H., Holschbach, C., Hunsmann, G. & Schneider, J. Biol. Chem. 263, 11760-11767 (1988).

Biologie moléculaire : Diversité génomique et ses liens aux aspects cliniques
Molecular Biology: Genomic Diversity and Relationship to Clinical Aspects

M.C.O.5

GENETIC ANALYSIS OF SIV DERIVED FROM MANDRILL (SIV_{MND})

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Objective. To understand genetical relationship and phylogenic epidemiology of HIV/SIV group.
Methods. Two isolates of SIV were obtained from apparently healthy mandrills in Gabon. One of them was molecularly cloned from the circular replicative intermediate DNA by linearization with one-cutting restriction enzyme, and totally sequenced by the methods of Sanger et al.
Results. Gene structure of SIV_{MND} is almost equal to other HIV/SIV, but the open reading frames such as *vpr* and *vpx* were uncertain. The amino acid sequence homologies of each open reading frame to other HIV/SIV (HIV-1, HIV-2, SIV_{MAC} and SIV_{AGM}) were almost equal, about 50% in *gag*, 50-60% in *pol*, and about 30% in *env* region.
Conclusion. The SIV_{MND} was totally sequenced and was considered to be a new member of HIV/SIV group, equally distant from other HIV/SIV including SIV_{AGM}. It suggest the species-specificity of SIV group and unlikeliness of recent interspecies transmission among primates.

M.C.O.6

GENOMIC DIVERSITY OF SIV_{AGM} GROUP OF VIRUS.

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Objective.To estimate the genomic diversity among various isolates of simian immunodeficiency virus from African green monkey (SIV_{AGM}).
Methods.The full- or partial-length of viral DNA of 4 SIV_{AGM} isolates from African green monkey originated from different places, SIV_{AGM}[TYO-2], [TYO-5], [TYO-7] and [KE-1] were molecularly cloned from their viral infected cell lines and were compared with previous reported isolate, SIV_{AGM}[TYO-1] by restriction endonuclease mapping.
Results.All the isolates are strongly hybridized with SIV_{AGM}[TYO-1] probe, but not with probes of HIV-1, HIV-2, SIV_{MAC} and SIV_{MND}. SIV_{AGM}[TYO-2] and [TYO-5] are as long as [TYO-1] and once digested by Eco RI, however, their restriction sites (including Eco RI, Hind III, Kpn I, Sac I, Xba I etc.) shows great divergence not only in their env region but also in other regions. The genome sizes of SIV_{AGM}[TYO-7] and [KE-1] are shorter than those of others, and are digested by Eco RI twice or more.
Conclusion.The genomic diversity of SIV_{AGM} group might be as well as (or greater than) those of other HIV/SIV groups although all the isolates belong to the one group, SIV_{AGM}. The heterogeneity was also observed in the virus isolated from one animal as seen in HIV-1 infected person.

M.C.O.7

PROSPECTIVE CLINICAL, IMMUNOLOGICAL, AND VIROLOGIC FOLLOW-UP OF AN INFECTED LAB WORKER (LW)

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Objective: Follow natural history of accidental laboratory acquired infection with H9/HTLV-III_B strain.
Methods: Sequential isolations (SI) obtained by cocultivation (Science 239:68, 1988). Neutralizing antibodies (NA) measured by virus infectivity syncytium inhibition assay (AIDS Res. and Hum. Retro. 3:238, 1987). Nucleotide and deduced amino acid sequences of the viral envelope gp120 immunodominant loop region (a 302-337) determined for cloned SI. CD4 counts by FACS.
Results: LW is clinically healthy. CD4 counts show an initial lymphopenia (CD4 (375) and CD8 (426) 11 months after initial sample), rising over the next six months to a currently stable value at 28 months of CD4 (860) and CD8 (470). NA responses show an initial low titer type specific immune response which broadened over time. Heterologous hyperimmune goat anti HTLV-III_B sera used to block infection by SI in a syncytia inhibition assay demonstrated a shift in neutralization profile away from parent virus. Sequential point mutations representing a total of 3 new amino acid substitutions over a 28 month period in the immunodominant loop were detected.
Conclusion: Cumulative changes in immunologically relevant domain of the HIV-1 envelope may reflect serial mutations of the virus or selection of coincidentally present substrains as part of a repertoire to avoid the host immune response.

M.C.O.8

EVOLUTION OF THE BIOLOGICAL PHENOTYPE OF SEQUENTIAL HUMAN IMMUNODEFICIENCY VIRUS (HIV) ISOLATES IN SEROCONVERTING HOMOSEXUAL MEN,

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Two types of HIV isolates can be distinguished: syncytium-inducing (SI), high-replicating isolates with a broad host range and non-syncytium-inducing (NSI) isolates only replicating in peripheral blood mononuclear cells (PBL) (Tersmette et al.,J.Virol.(1988) 62:2026-2032). From stable asymptomatic seropositive persons only NSI isolates were recovered. SI isolates were only recovered from persons progressing to ARC or AIDS. To investigate whether syncytium-inducing (SI) HIV isolates, associated with CD4+ cell depletion and disease, are present from seroconversion onwards or emerge in the course of HIV infection, and to account for the paradox that apparently transmission of HIV by an SI isolate carrier does not generally result in an infection with an SI isolate in the recipient, we analysed the biological phenotypes of sequential HIV isolates obtained from a cohort of seroconverting homosexual men. The results of this study allow for the following conclusions: 1) Early after seroconversion only non-syncytium-inducing (NSI) isolates are recovered; 2) SI isolates, if detectable, emerge in the course of HIV infection; 3) Upon transmission, SI isolates are presumably suppressed in the host. The results of this study support a model for AIDS pathogenesis in which the duration of the latency period between seroconversion and AIDS is determined by the capacity of the host immune system to suppress the emergence of virulent, CD4+ cell-depleting HIV variants.

M.C.O.9

REPLICATIVE CAPACITY OF SEQUENTIAL VIRUS ISOLATES FROM HIV-1-INFECTED SUBJECTS AND RELATIONSHIP TO CLINICAL PROGRESSION

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Objective. To study changes in the replicative capacity of HIV-1 that occur in the same individual over time.
Methods. Eight patients were followed with sequential virus isolations during a 30-months observation period.
Results. Patients with stable lymphadenopathy syndrome (LAS) yielded slow/low viruses on repeated isolations. Viruses isolated from patients during the period of clinical progression from LAS to AIDS-related complex (ARC) showed increasing replication potential. In sequential virus isolates from patients with ARC, the replication potential of sequential virus isolates fluctuated during the observation period. Accordingly, changes from slow/low to rapid/high and back to slow/low replication pattern, could be observed. One patient showed a rapid development of severe immunodeficiency, progressing from LAS to AIDS within one year. Viruses isolated during this period replicated with increasing efficiency in vitro.
Conclusion. The results show that HIV-1 isolates with distinct replicative capacity may be obtained from the same individual over time. Rapid clinical progression is often accompanied by the emergence of variant viruses with increased replicative capacity.

M.C.O.10

CD4+ T LYMPHOCYTES FROM THE PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMC) OF HEALTHY SEROPOSITIVE INDIVIDUALS HARBOR THE HIV-1 PROVIRAL SEQUENCES

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Objective. To demonstrate the presence of integrated proviral HIV-1 in PBMC of healthy seropositive individuals and determine the viral load and the specific subset of PBMC that harbors the HIV-1 at early stages of the disease.
Methods. PCR amplification was performed on the subsets of PBMC obtained by fluorescence automated cell sorting from ten healthy, seropositive individuals using primers from LTR, gag and envelope conserved regions.
Results. HIV-1 proviral sequences were found in all subjects studies and the CD4+ T cell subpopulation which retains the CD4 surface molecule is the predominant cell that harbors HIV-1. In two cases (2/10) CD14+ (monocyte/macrophage) subsets also harbor HIV-1 but at a significantly lower level. Serial dilutions of sorted CD4+ T cells show that at least 1/1,000 - 1/10,000 cells are infected.
Conclusion. The cell populations that harbor HIV-1 are CD4+ T cells that continue to express the CD4 surface molecule. Healthy seropositive individuals have a 100 fold lower viral load than AIDS patients. Their immune system may be able to maintain a chronic or latent infection for extended periods of time when there are low levels of virus.

Les bases moléculaire et cellulaire des immunodéficiences provoquées par les rétrovirus
Molecular and Cellular Bases of Retrovirus Induced Immunodeficiencies

M.C.O.11 THE MURINE ACQUIRED IMMUNODEFICIENCY SYNDROME (MAIDS) IS CAUSED BY A DEFECTIVE RETROVIRUS

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The Duplan strain of murine leukemia virus (MuLV) induces MAIDS, a disease showing striking similarities with human AIDS. We identified the etiologic agent of the disease as being a defective retrovirus having a 4.8 kbp genome. Sequencing of this DNA showed that the pol and env genes have been deleted and that the complete gag region has been conserved and harbors a novel p12 sequence. Using a cell-free translation system, the genome has been shown to encode a 60 kd gag fusion protein. The same protein was detected in non-producer cells harboring the defective genome and is not cleaved. N-tropic pseudotypes have been constructed with this virus and the role of helper virus in the disease is also being investigated using the Ψ2 encapsidation-negative system. This mouse model emphasizes the need to search for pathogenic defective retroviruses in AIDS.

M.C.O.12 INDUCTION OF IMMUNODEFICIENCY DISEASE BY FeLV AND RELEVANCE TO SIV- AND HIV-DISEASE

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Objective. We are developing animal models for AIDS using a feline leukemia oncovirus (FeLV-FAIDS) and a simian immunodeficiency lentivirus ($SIV_{mac-BK28}$). FeLV results have led to questions now being addressed in both the SIV-macaque model and in HIV-infected people.
Methods. Establish disease models and relevant in vitro correlates using molecularly cloned viruses, and identify viral genetic and biochemical factors which determine pathogenesis.
Results. Molecular clones of pathogenic FeLV-FAIDS genomes, isolated directly from tissue DNA were replication defective, whereas nonpathogenic clones replicated in vitro and in vivo (see Overbaugh et al). Defectiveness per se, however, is not required for pathogenicity since a replication competent pathogen could be created in vitro. Similarly, a molecular clone of $SIV_{mac-BK28}$ derived from extensively culture-passaged virus was highly replicative in vivo and in vitro and only weakly pathogenic in vivo. However, passage of $SIV_{mac-BK28}$ through a macaque that eventually died from SIV-disease resulted in evolution of a more acute pathogen. The length of the transmembrane gene did not influence virus pathogenicity significantly, although the TM was altered by the type of selection imposed - a shorter coding region was selected for in vitro, and a longer gene/protein was selected in vivo (see Edmonson et al). The T-cell killing determinants of an FeLV-FAIDS clone were mapped to the envelope glycoprotein gene and were correlated with several biochemical features of the cytopathic gp70. Killing is also prevented by exposure of infected cells to neutralizing antisera (see Donahue et al).
Conclusions. Strong viral genome selection occurs in vitro as well as in vivo, and in vitro propagation may obscure viral gene coding capacity as well as select against acute pathogens. T-cell killing, at least in the FeLV-FAIDS system, likely occurs from a failure or delay in the establishment of superinfection interference.

M.C.O.13 ROLE OF ANTIBODIES, CYTOKINES, AND VIRUS VARIATION IN SIV/SMM INDUCED DISEASE.

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Objective. To identify the role of antibodies, cytokines, and biologic and genetic variation in disease associated with different isolates of SIV/SMM.
Methods. Antibody responses, including neutralization and autoantibodies, and cytokine levels in serum from mangabeys and macaques were compared. SMM-9 and SMM-PBj14, a variant that causes rapid death, were analyzed for phenotypic and genotypic properties which included the ability to replicate in and their effects on PBMC from various species as well as cloning and sequencing.
Results. Comparison of humoral immune responses to SIV/SMM in mangabeys and macaques showed that disease in macaques was associated with the presence of autoantibodies but not with total or neutralizing antibody titers. In contrast to SMM-9, the lethal SMM-PBj14 strain, which was associated with the presence of high levels of TNF-alpha in serum, induced PBMC from macaques and mangabeys to proliferate, replicated in resting PBMC in the absence of exogenous IL-2, formed syncytia with Sup-T1 cells and had a transmembrane protein of 45-46,000 daltons that lacked a premature stop codon.
Conclusions. Humoral immunity does not appear to be a major factor in the pathogenesis of SIV/SMM for macaques and mangabeys. Autoantibodies and TNF-alpha, however, may play a role in disease induction by SMM-9 and SMM-PBj14, respectively. SMM-PBj14 appears to have multiple mutations, some of which affect env-encoded proteins and perhaps regulatory proteins. (NIH RR-00165)

M.C.O.14 NEW CONCEPTS IN HUMAN AIDS PATHOGENESIS

Montagnier, Luc, Unité d'oncologie virale
Institut Pasteur, Paris Cedex, France.

Séance thématique
Specialty Session

Recherche fondamentale (biomédicale)
Basic Research (Biomedical)

Pathogenèse (partie 1)
Pathogenesis (Part 1)

M.C.O.15 EFFECT OF SOLUBLE RECOMBINANT HUMAN CD4 (sCD4) ON INFECTIVITY OF SIX MONOCYTOTROPIC STRAINS OF HIV (MO-HIV)

Gomatos, Peter John, Gendelman, H.*; Stamatos, N.; Fowler, A.**; Hoover, D.; Burke, D.; Tramont, E. and Meltzer, M. S. Walter Reed Army Inst. Res., *Henry M. Jackson Fndn., **SRA Tech., Inc. , Washington DC ,USA.

Objective. Determine effect of sCD4 on the infectivity of MO-HIV in monocytes.
Methods. MO-HIV were isolated from 6 HIV seropositive patients by cocultivation of blood mononuclear leukocytes with recombinant human colony stimulating factor-M (Cetus Corp., Emeryville CA)-treated adherent monocytes from normal donors. Infectivity of MO-HIV for monocytes was monitored by measurement of p24 and reverse transcriptase activity in culture fluids.
Results. Infectivity of 1x10^5 TCID$_{50}$ HTLVIII$_B$ for the H9 T-cell line was completely inhibited (quantitated by inhibition of H9 syncytia formation and p24 antigen) by prior exposure of virus to 10 ug/ml sCD4 (Biogen, Boston MA) 37°C 30 min and continuous sCD4 exposure throughout the culture interval. In contrast, infectivity of 6 different MO-HIV was only partially inhibited by 10 ug/ml sCD4. Whereas the infectivity of strains 16 and 24 (1x10^3 TCID$_{50}$) was inhibited 100-fold by sCD4, that of strains 36, 37, and 38 was minimally (≤10-fold) inhibited. The effect of sCD4 on the prototypic MO-HIV, ADA, was intermediate: release of p24 into culture fluid was delayed, yet the ultimate level of p24 at 20 days was not different than control cultures. HIV-induced cytopathic effect on monocytes (formation of multinucleated giant cells) was evident with all MO-HIV with or without sCD4.
Conclusion. Exposure of MO-HIV to sCD4 partially inhibited infectivity in monocytes: the extent of inhibition varied with virus strain. Prior exposure of some MO-HIV to sCD4 may inhibit a required step in their growth cycle. It may be possible to select those patients who will respond favorably to treatment with sCD4.

M.C.O.16 HIV PERSISTENCE IN MONOCYTES INVOLVES NEGATIVE REGULATION OF VIRAL REPLICATION AND ESCAPE FROM IMMUNE SURVEILLANCE

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Objective. To study HIV life cycle and persistence in cultured monocytes.
Methods. Standard viral, cellular and molecular techniques were used.
Results. A human monocytoid leukemic cell line, THP-1, and fresh elutriated monocytes were infected with isolates of HIV-1 and HIV-2. In the infected cells, the virus life cycle had distinct pathways. At first, all infections were productive with HIV-1 titers much higher than HIV-2 titers. On continuous passage, most cultures no longer produced detectable extracellular virus. These cultures either had provirus but no transcription of viral gene products (latency) or chronic low level expression with viral intracellular budding into vacuoles (VIB). Thus, failure to detect extracellular virus was related to either latency or intracytoplasmic sequestration of virions. In the case of VIB expression, LTR directed in vitro nuclear run-off transcription assays showed that cell nuclei contain materials that negatively regulate HIV transcription. Intracytoplasmic virions were infectious and caused viral-mediated T-cell cytolysis. Latent and VIB cultures had no detectable virus or gp-120 on the cell surface. Such cells were not lysed by IL-2 activated large granular lymphocytes while productively infected cells were efficiently lysed.
Conclusions. In HIV-infected monocytes, viral transcription can be negatively regulated such that viral expression can be either latent or restricted to intracytoplasmic viral retention. Infected monocytes not producing extracellular virus can escape immune surveillance and still be able to evoke viral induced T-cell pathology suggesting a mechanism for persistent HIV infection.

M.C.O.17 HIV-1 INFECTED MONOCYTES AS A TARGET FOR ADCC

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Objective: To determine whether persistent viral reservoirs in HIV-1 infected monocytes can be eliminated by antibody dependent cellular cytotoxicity (ADCC).
Methods: Peripheral blood monocytes were isolated from leukapheresis products by Ficoll-Hypaque sedimentation, followed by differential density seperation on a discontinuous Percoll gradient. Cells were infected with the BAL isolate of HIV-1, and cultured in Teflon flasks in both the presence and absence of 100 units/ml of recombinant M-CSF . Culture supernatants and cell lysates were periodically monitored for p24 and reverse transcriptase activity, while infection was directly documented by in situ hybridization of HIV-1 RNA and DNA probes. At weekly intervals, infected monocytes were tested as targets in ADCC assays, with virally infected CEM.NKR cells serving as a positive control.
Results: At 21 days post infection, p24 concentrations in M-CSF treated and untreated culture supernatants were 99 ng/ml and 131 ng/ml, respectively. Culture supernatants for both conditions were shown to contain approximately 10^4 infectious units of HIV-1 per ml of solution. Virus infection was directly detected by in situ hybridization in 30% of M-CSF treated and 20% of untreated monocytes. Cell lysates confirmed the presence of virus, with 10^6 cells containing approximately 10 ng of p24. Despite the high degree of infection, neither M-CSF treated nor untreated monocytes were lysed in ADCC assays, while virally infected CEM.NKR cells were actively destroyed (45% lysis of these cells at a 50:1 E.T and a 10^5 dilution of anti-HIV-1 serum).
Conclusion: HIV-1 infected monocytes appear notably resistant to ADCC. This resistence not only provides an excellent sanctuary for virus within the host, but may also explain, in part, why recognized anti-viral immune mechanisms may be unable to eradicate infection.

M.C.O.18 ANTIVIRAL EFFECTS OF AMINO SUGARS: POTENCY OF N-BUTYLDEOXYNOJIRIMYCIN (Bu-DNJ)

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Objective. To assay amino sugars for anti-HIV activity relative to cytotoxicity for selection of a potential chemotherapeutic agent.
Methods. A series of compounds, including 5 aminosugars, was added to cultures of Karpas T-cells and Molt4 cells at different concentrations, in 96-well plates. Half of the wells were infected with HIV. The effect on T-cell replication was monitored by cell counts. The effect on HIV replication was assessed both by the inhibition of its characteristic cytopathic effect (giant and dying cells) and by determining the yield of infective particles (tissue culture infectious dose - TCID).
Results. A series of sugar analogues was found to inhibit both HIV-1 and HIV-2 replication in our T-cells. The inhibition in infectious HIV synthesis ranged between 10-10^5 fold, even at concentrations which did not interfere with cell division. Bu-DNJ was the most effective compound and long-term growth of infected cells in the presence of Bu-DNJ gradually decreased the proportion of infected cells, assayed by the IP method. Our results suggest that replication is associated with cytolysis (PNAS 85:9229, 1988).
Conclusion. Bu-DNJ was the most effective aminosugar to inhibit HIV replication and therefore could be used as a drug in a trial of patients with AIDS.

M.C.O.19 NOVEL MODE OF HIV REPLICATION IN PERSISTENTLY INFECTED MONOCYTOID CELLS: ACCUMULATION OF SELF-INTEGRATED, EXTRACHROMOSOMAL PROVIRUSES LEADS TO THE PRODUCTION OF DEFECTIVE VIRIONS.

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Objective. Examine alternative modes of replication that might explain the ability of HIV to establish and maintain a persistent infection in terminally differentiated and non-dividing cells of the monocyte/macrophage lineage.
Methods. Persistently infected monocytoid lines were established by HIV-1 infection of the U937 cells. The structure of HIV provirus in these cells and in subcloned cell lines, was examined by Hirt extraction of extrachromosomal DNA, restriction analysis, and blot hybridization. In addition, molecular clones of these unusual proviruses were obtained and characterized structurally.
Results. The extrachromosomal provirus in persistently infected monocytoid cells is a self-integrated, multimer; these unusual proviruses are denoted "nested self-integrates". Structural characterization indicated that these molecules arose via sequential integration of monomeric proviral circles into larger, pre-existing multimers. Conservation of restriction endonuclease sites is consistent with direct DNA to DNA replication of these proviruses and is inconsistent with a replication strategy that proceeds via the error-prone reverse transcriptase pathway.
Conclusion. This novel mode of HIV proviral DNA replication in monocytoid cells might explain paradoxical features of virus replication in normal monocytes and macrophages. It is generally accepted that provirus is integrated into the chromosome of dividing cells and that this is an obligatory stage in the infectious cycle. Monocytes and macrophages are non-dividing cells; a DNA-dependent mode of HIV replication could resolve this paradox and explain the ability of HIV to establish and maintain a persistent infection of monocytes and macrophages.

M.C.O.20 BIOLOGIC, BIOCHEMICAL AND MOLECULAR ANALYSES OF MONOCYTOTROPIC HUMAN IMMUNODEFICIENCY VIRUSES

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Objectives. To investigate the biology of monocytotropic HIVs.
Methods. Isolation of HIV by cocultivation of patient peripheral blood leukocytes onto lymphoblasts (T-cell HIV) or macrophages (MO HIV) are effective means of virus recovery. MO and T-cell HIVs were evaluated by propagation onto new monocytes and T-cells. Isolates were examined by restriction enzyme mapping of proviral DNAs, radioimmunoprecipitation (RIP) and CD4 binding assays.
Results. 20/23 MO isolates serially propagated on MOs produced HIV Ags and cytopathic effects. Eight simultaneously isolated (MO and T-cell HIVs) were studied for target cell tropism. During the first MO passage (P1), 5/8 T cell HIVs propagated on MO; 1/8 released p24 >1 ng/ml and 0/8 titered > 1:10. In contrast, 8/8 P1 MO HIVs propagated on MOs; 4/8 released p24 > 1 ng/ml and 4/8 titered > 1:10. The viral titer and p24 of MO and T-cell HIVs in P1 T-cell infection assays were identical; HIV Ags were > 7 ng/ml and titers > 1:100. Those T-cell and MO HIVs tested modulated CD4 and showed plasma membrane virus budding. Serial passage of MO and T-cell HIVs abrogated their abilities to efficiently infect heterologous cells. MO HIV show increases in gag/envelope proteins compared to T-cell HIV but bind CD4 by RIP of MO cell lysates. Restriction mapping of MO isolates reveal proviral heterogeneity.
Conclusion. Unique aspects in MO HIV-MO life cycle are demonstrated which may ultimately affect the persistence of HIV in the human host.

Biologie moléculaire (partie 1)
Molecular Biology (Part 1)

M.C.0.21 THE IMMUNODOMINANT NEUTRALIZATION LOOP OF HIV-1: BIOLOGICAL AND IMMUNOLOGICAL SIGNIFICANCE

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Objectives: We described blocking of neutralizing activity (NA) of type-specific heterologous anti-sera by synthetic oligo-peptides from the RP135/136 region (a.a. 298-330) of gp120. The change of a single residue within this cysteine loop reduced blocking of NA. To further investigate the functional and immunological significance of this area of HIV-1 env, a panel of mutants were constructed.
Methods: Mutants were constructed in M13 containing a BglII - PvuII-BglII segment of BH10 envelope, inserted back into a phage clone containing the SalI-BamHI BH10 envelope insert, and the entire envelope cassette substituted for the the corresponding region of pHXB2gpt.
Results: The characteristics of mutant clones suggests that the integrity of the RP135 loop is important in viral infectivity, cell range, and syncytium formation, as well as determination of neutralizing phenotype. This this area does not appear to be involved in viral binding to CD4.

M.C.0.23 Three-dimensional Structure of the HIV-1 Protease and its Role in Virus Maturation

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The structure of the HIV-1 protease has been solved by X-ray diffraction analysis, and is shown to be a dimer. Large regions of the HIV-1 protease monomer can be roughly matched to the N- and C- terminal domains respectively of the pepsin-like aspartyl proteases of known three dimensional structure, although significant differences do exist. The immediate active site region is assembled around the dimer interface with one characteristic Asp-Thr-Gly site sequence contributed by each monomer. An examination of the structure immediately suggests a mechanism for the auto-proteolytic excision of the protease from the gag-pol polyprotein fusion product on which it is synthesized. Further, an explanation for the central role of the protease in the control of the final assembly and maturation of the HIV-1 virus particle is suggested.

M.C.0.25 CONSTRUCTION OF AN INFECTIOUS MOLECULAR CLONE OF SIV$_{AGM}$ AND GENETIC COMPLEMENTATION WITH A REPLICATION-DEFECTIVE *ENV* MUTANT OF HIV-1 AND *POL* MUTANT OF SIV$_{AGM}$

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Objective. To get a basic information for making a recombinant HIV-1 which can infect African green monkeys as an useful animal model system for AIDS.
Methods. Some full-length SIV$_{AGM}$ DNAs were cloned from the circular replicative intermediate DNA by linearization with one-cutting restriction enzyme. These clones were reconstructed to generate provirus form (pSAI21). The *env* defective mutant of HIV-1 (pNL-Kp) and *pol* defective mutant of SIV$_{AGM}$ (pSA-Ba) were constructed respectively. These constructs were transfected to COS-1 cell line. After 24 hr, the supernatants were inoculated to Molt4/cl8 cell line.
Results. Remarkable cytopathic effect (CPE) was observed and SIV$_{AGM}$ antigen was detected in inoculated Molt4/cl8 about a week after transfection with pSAI21. Weak CPE was observed when pSA-Ba and pNL-Kp were co-transfected, while no CPE was observed at all when pSA-Ba or pNL-Kp was used individually.
Conclusion. An infectious SIV$_{AGM}$ molecular clone was obtained and the genetic complementation with a replication-defective *env* mutant of HIV-1 and *pol* mutant of SIVAGM was suggested.

M.C.0.22 MOLECULAR ANALYSIS OF SINGLE CELL LYSIS BY HIV-1.

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Objective: To define regions of the HIV-1 envelope glycoproteins important for the cytopathic effects of the virus.

Methods: Mutations were introduced into the amino terminus of the gp41 transmembrane glycoprotein. The effects of the mutations on virus replication and cytopathic effect were determined.

Results: Mutations in the gp41 amino terminus resulted in either replication defective viruses or in viruses that replicated at levels approximately that of the wild-type virus. The latter viruses exhibited significant reductions in cytopathic effect in established human lymphocyte lines and in primary peripheral blood lymphocytes. Both syncytium formation and the lysis of single cells were attenuated in these mutants.

Conclusion: The amino terminus of the gp41 transmembrane glycoprotein, which has been previously shown to be important for the fusion of cell membranes during syncytium formation, is also involved in the lysis of single cells accompanying HIV-1 infection *in vitro*.

M.C.0.24 STRUCTURAL PATTERNS IN REGULATORY SEQUENCES OF HIV

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Objective. To define DNA sequence-dependent structures for the TAR and NRE cis-acting regulatory elements.
Methods. Computer-assisted nucleotide sequence analysis--alignment and modeling of DNA tertiary structure--is correlated with mutational and biochemical results pertaining to the sequences for TAR and NRE.
Results. Two sequence-dependent consensus structures are identified for the HIV-1 TAR regulatory element at positions +16 and +37; hexanucleotide sequences corresponding to these structures have been shown by mutational and biochemical(i.e., footprinting) analyses to subtend the core of TAR. Different sequences yielding equivalent DNA structures are in HIV-2s at +18 and +33 and in SIVAGM at +17 and +39. The second of these two structures, responsive to cellular UBP-1 protein, is found in all lentiviral LTRs (EIAV, CAEV, Visna, FIV) at ca.+35 while the first of these structures is found only in HIVs and SIVs. Extension of this analysis to the NRE region of the LTR, now thought to be the cis-acting element for the NEF regulatory function, again reveals the role of DNA tertiary structure in HIV regulation. Sequence-dictated microcurvature of the DNA may be essential to this region of the LTR.
Conclusion. Transactivation of HIVs and SIVs partly entails indirect (versus direct) readout of the DNA by proteins; site-directed mutagenesis of HIVs and related retroviruses should have this phenomenon in mind. The results suggest ways to uncouple the RNA effects and DNA effects pertinent to transactivation.

M.C.0.26 EXPERIENCE WITH EIGHT HIV-VACCINE TRIALS IN CHIMPANZEES

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Objective. To test the efficacy of various HIV-vaccines in chimpanzees.
Methods. The following HIV vaccine candidates were employed to actively or passively vaccinate 27 chimpanzees: 1. synthetic peptide (735-752), 2. vaccinia-env recombinant, 3. recombinant gp120 expressed in mammalian cells, 4. HIV-immune globulin (HIVIG) prepared from HIV-1 positive asymptomatic people, 5. recombinant gp160 peptide (350-674), 6. vaccinia-gag recombinant, 7. a combination of vaccinia gag and env recombinants 8. idiotypic antibodies (cocktail of anti-CD4s).
Results. Cell-mediated immunity in immunized animals, as assayed by specific lymphocyte blastogenesis or cytotoxicity, was only detected in vaccine trials 2,3,6,7. While all vaccines induced humoral antibodies as detected by Elisa and/or Western blotting, only passive immunization (trial 4) conferred significant neutralizing antibodies. All immunized and control chimpanzees that were challenged (trials 1-4) were not protected, i.e. HIV could be isolated and/or seroconversion was documented. Due to the experience gained in trials 1-4 and the poor neutralizing antibody response it was decided that vaccine candidates 5-7 did not warrant a challenge with live HIV. The experiment with vaccine candidate 8 is still in progress.
Conclusion. Eight HIV vaccines tested in 27 chimpanzees did either not confer protection or did not warrant challenge with live HIV or are in progress.

Pathogenèse (partie 2)
Pathogenesis (Part 2)

M.C.O.27

INTESTINAL HIV INFECTION IN AIDS AND ARC: CORRELATION WITH TISSUE CONTENT OF P24 AND INTERLEUKIN-1 BETA

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Objectives. To localize and quantitate HIV in the rectal mucosa of patients with AIDS and ARC: to correlate HIV expression with the occurrence of diarrhea, the tissue content of interleukin-1 beta (IL-1) and with lymphocyte numbers in peripheral blood.
Methods. Rectal biopsies from 30 AIDS and 18 ARC patients were studied by quantitative p24 ELISA (Coulter) of homogenates, immunoperoxidase studies (IP) of tissue sections using monoclonal anti-p24 (Dupont), and by quantitative IL-1 ELISA (Cistron).
Results. ELISA assays demonstrated p24 in 67% of AIDS and 89% of ARC. Tissue p24 was higher in ARC than AIDS (368±167 v 96±37 pg/mg prot, p=0.06) while serum p24 was higher in AIDS than ARC (65±25 v 9±4pg/ml, p=0.08). In ARC, tissue p24 was higher in patients with diarrhea (408 v 131, NS). IP localized p24 to lamina propria mononuclear cells in 72% as well as intraepithelial lymphocytes in 59% and epithelial cells in 52%. Tissue IL-1 was higher in AIDS and ARC (217±88, 253±83 pg/mg prot) than in normal controls (11±8). There were no correlations between tissue p24 and CD4, CD8 or total lymphocytes in blood. An infectious cause was found in 15/18 AIDS but only 1/9 ARC patients with diarrhea.
Conclusions. Intestinal HIV infection is common in AIDS and ARC. In ARC, tissue HIV content is associated with diarrhea, and with increased tissue IL-1. HIV may be a direct cause of diarrhea in ARC.

M.C.O.28

ACTIVATED ASTROCYTE-CONDITIONED MEDIUM STIMULATES HIV-1 EXPRESSION IN A CHRONICALLY INFECTED PROMONOCYTE CLONE

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Objective. To test the hypothesis that an interaction between chronically HIV-infected monocytes and reactive astrocytes may lead to the activation of HIV-1 in brain.
Methods. A human promonocytic cell line infected with HIV-1 (clone U1.1.5) were grown in the presence of media conditioned by growth of primary rat cortical astrocytes in the presence or absence of lipopolysaccharide (LPS; 10 ug/ml). HIV-1 expression was assessed by measuring reverse transcriptase activity. Tumor necrosis factor alpha (TNF_{α}) was measured in astrocyte-conditioned media with biological cytotoxicity and enzyme-linked immunosorbent assays.
Results. The media conditioned by growth of astrocytes and LPS-activated astrocytes induced 1.5-fold and 4.0-fold, respectively, the expression of HIV-1. LPS alone, media conditioned by growth of the uninfected parental cell line of U1.1.5 (U937) or mouse fibrosarcoma cells (WEHI 164, clone 13) had no effect on viral expression. The magnitude of induction was dose-dependent. TNF_{α} was detected in astrocyte-conditioned media and was neutralized by specific antibody. Time course and dose-dependence of the induction were similar to those observed when either human or mouse (recombinant) TNF_{α} were added to growing U1.1.5 cells.
Conclusion. These results suggest that astrocytes are capable, through secreted factor(s), of inducing HIV-1 in chronically infected monocytes and that one of the inducers is TNF_{α}.

M.C.O.29

SPERM MEDIATED TRANSFER OF HIV INTO TARGET CELLS: ROLE IN AIDS TRANSMISSION.

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We have previously reported that human sperm bind to and penetrate human lymphocytes. This interaction is mediated by the HLA-DR and -DQ ligands on target cells and a CD4-like receptor on sperm. We have identified two mechanisms of sperm entry into lymphocytes and HLA-DR transfected murine fibroblasts: 1) endocytosis, where electron micrographs show sperm clearly inside endocytic vesicles, and 2) direct fusion between sperm and target cell membranes, in which case sperm heads are visible inside the cytoplasm with no surrounding membrane. We have subsequently shown that normal sperm, when preincubated with HIV, bind to and penetrate $CD4^+$ $HLA\text{-}DR^-$ cells, and that in this case, the ligand on the target cells is the CD4 molecule.

We have proposed that the event of somatic cell penetration by sperm is one mechanism for AIDS transmission by semen. According to this model, HIV transported by sperm would have access to non-$CD4^+$ cells, and if penetration is by direct fusion, the virus would be directly exposed to the cytoplasm. In support of this model, we have evidence that sperm isolated from AIDS patients is capable of infecting activated PBL cultures *in vitro*. Two different separation techniques were used: 1) the swim-up method, where motile sperm are allowed to swim-up from a pellet into culture medium, and 2) centrifugation through 90% Percoll. Although a substantial number of round cells (immature germ cells) were visible in some of these preparations, staining with anti-CD45 antibodies revealed no lymphocyte contamination. In addition, using immunogold-electron microscopy we detected the presence of gp120 antigens on AIDS patients' sperm cell surfaces. We are currently investigating the possibility of HIV transmission by normal donor sperm and HIV combinations.

M.C.O.30

INVESTIGATION OF THE SUSCEPTIBILITY OF THYMIC PRECURSOR T CELLS TO INFECTION BY HIV-1

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Objective. Infection of precursor lymphoid cells could be one of the possible causes of the lymphopenia observed in HIV-infected individuals. Studies showing that bone-marrow cells are susceptible to infection by HIV-1 give support to this hypothesis, but, the nature of these cells is unknown. Our aim was to evaluate the infectibility of immature thymic cells by HIV-1 and to determine the phenotype of permissive cells.
Methods. FACS analysis, cell depletion using antibody-coated magnetic beads (A-MB), immunohistochemistry and in situ hybridisation (ISH).
Results. We have successfully infected total thymocytes from normal infants up to 12 months of age, with HIV-1. Ficoll gradients used to enrich for immature thymocytes have yielded five fractions each expressing CD1, CD3, CD4 and CD8 antigens to varying degrees and being equally infectible by HIV-1. In order to purify immature thymocytes, we used A-MB to deplete $CD4^+8^+$, $CD4^+8^-$ and $CD4^-8^+$ cells. We obtained a 95-98 % pure $CD4^-8^-$ population which was successfully infected by HIV-1 as determined by ISH (37.9 % positive cells) and appearance of RT activity in 10 day culture supernatants.
Conclusion. Our data suggest that immature $CD4^-8^-$ thymic cells are susceptible to infection by HIV-1. The phenotype of these permissive cells is under investigation.

M.C.O.31

TRANSIENT EXPRESSION OF THE HIV-1 GENOME DURING INFECTION OF THE DEVELOPING HUMAN NERVOUS SYSTEM

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Objective. To examine the virus-specific events associated with HIV-1 infection of primary neural cell populations isolated from the developing human peripheral nervous system.
Methods. HIV-1-infected human fetal neural cells derived from the dorsal root ganglia (DRG) were examined for the production of virus-specific protein and nucleic acid utilizing immunohistochemistry and hybridization techniques. Transmission electron microscopy (TEM) was used to examine cellular ultrastructure after infection by HIV-1 and the production of infectious HIV-1 was monitored by cocultivation and reverse transcriptase (RT) assays.
Results. We have previously demonstrated that human fetal DRG glial cells are susceptible to HIV-1 infection and express HIV-1 gag (p17 and p24) antigens. HIV-1-specific RNA detected in DRG neural cells by 2 hr postinfection (PI) increases in quantity to a maximal level between 2 and 3 days PI and declines thereafter to minimally detectable levels by 16 days PI. The regions of the HIV-1 genome which are being actively transcribed during acute infection were examined using HIV-1 gene-specific probes. Cocultivation and RT assays indicate that within 4 weeks after infection of the DRG neural cells by HIV-1, no infectious HIV-1 was produced in the infected cells even at time points when considerable quantities of HIV-1-specific RNA and protein were synthesized. Although TEM analyses have suggested the absence of intracellular viral particles, highly electron-dense inclusions in the cytoplasm of HIV-1-infected DRG glial cells were observed. The nature of the cytoplasmic inclusions in relationship to the apparent abortive infection is currently under investigation.
Conclusion. These results suggest that HIV-1 infection of human fetal DRG glial cells results in transient expression of the viral genome terminating in an abortive and possibly latent infection.

M.C.O.32

HIV gp41 synthetic peptides inhibit LAK activity

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Objective. Previous studies from our group have demonstrated that HIV gp 41 synthetic peptides inhibit natural killer cell activity of normal subjects interfering with the post-binding phase. (Cauda R. et al. Cell. Immunol.115, 57-65,1988). Aim of this work was to demonstrate the effect, if any, of HIV gp 41 synthetic peptides on the lymphokine activated killer cell activity (LAK), which is compromised in HIV infected patients. LAK cell activity is a functional activity induced by long term incubation of peripheral blood lymphocyte with recombinant interleukin 2 (rIL2). The cells acquire the ability to lyse cell lines which are usually resistant to normal NK cell activity. LAK cell activity seems to be predominantly due to Fc γ^+ receptor cells and in a lesser extent to CD3 γ/δ^+ cells.
Methods. Two different HIV synthetic peptides corresponding to amino acid sequences 735-752 and 846-860, were synthetized. Two different synthetic peptides (cT and mT from SV-40) were used as controls. PBMC, obtained from normal subjects were cultured (at a concentration of $1x10^6$/ml) in RPMI 1640 medium with FCS for 3 days at 37° C in 5% CO_2 with 100 U of rIL2 and in presence of the HIV synthetic transmembrane peptides (or control peptides) and subsequently used as effector cells. Target cell line used was HL 60 cell line. The cytotoxicity assay was a 4-h ^{51}Cr release and the effector/target cell ratio was 40:1, 20:1, 10:1, 5:1 2.5:1.
Results. LAK cell activity was significantly inhibited at all the effector:target cell ratios tested in presence of the two synthetic peptides of 18 and 15 amino acids in length homologous to sequences 735-752 and 846-860 of HIV gp 160. On the contrary the control peptides did not exerted any significant inhibition. Results in table are expressed as % specific release.

	40:1	20:1	10:1	5:1	2.5:1
735-752 peptide	15	9	4	2	<1
846-860 peptide	18	10	7	4	<1
cT peptide	78	54	35	24	18
without peptides	80	55	36	26	20

Conclusion. HIV synthetic peptides exhibit a profound inhibition of both NK and LAK activity probably acting on the lytic capability of LAK cells. The long term effect of this inhibition could be the increased frequency of viral infections and the development of neoplases which characterize the natural history of AIDS.

Virologie (partie 1)
Virology (Part 1)

T.C.0.1

DESIGN AND ACTIVITY OF A NOVEL CLASS OF NUCLEOSIDE ANALOGS EFFECTIVE AGAINST HIV-1.

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Objective: To replace the pentose of nucleoside analogs by isosteric rings in which the 3'-carbon = an S or O atom and to test these cpds. to block HIV replication *in vitro*.
Methods: Synthetic strategies were used to make intermediates with a 5'-hydroxymethyl group in the desired steric relationship with base substituents. The *de novo* syntheses led to mixtures of *cis*- (natural) and *trans*- (unnatural) isomers which were separated and fully characterized.
Results: Two cpds., both carrying a cyt substituent, were generated on a scale which allowed extensive biological evaluation. The best analog, NGPB-21, having the "natural" *cis*-configuration was very effective *in vitro* as an anti-HIV-1, its potency equivalent to AZT in all assays, as well as an improved therapeutic index. Another analog, DDIII30A (unnatural *trans*-configuration), had a surprisingly good *in vitro* profile. Some structure-activity relationships will be discussed briefly.
Conclusion: Novel compound NGPB-21 is a drug candidate for AIDS and is less toxic than AZT. Supported by an NSERC/IAF BioChem-Industrial Research Chair (Bernard Belleau).

T.C.0.2

DIFFERENTIAL SENSITIVITY OF WILD TYPE AND RECOMBINANT HIV-REVERSE TRANSCRIPTASE TO INHIBITION BY FOSCARNET.

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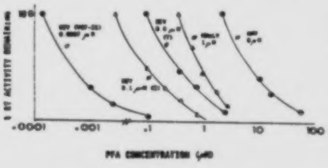
The recombinant reverse transcriptase from HIV-1 cloned into the vaccinia vector VCF-21 (Moss) was expressed in monkey kidney cells and purified from culture supernatants by conventional chromatographic procedures. The kinetic characteristics for inhibition of the recombinant enzyme by phosphonoformic acid (Foscarnet) were compared to that of the wild type HIV-RT and RT's of other retroviruses. Incorporation of ^{3}H TTP directed by a poly rA dT_{m} template was inhibited with an IC_{50} of only 0.0007 µM compared to 0.4 µM for the wild type HIV-RT (Figure). K_m for TTP substrate, however was not significantly different. Sensitivity of a recombinant HIV-RT expressed in E.Coli is reportedly the same as that of wild type RT. Properties of the VCF-21 RT construct expressed in different mammalian cells were compared. The results indicate that post transcriptional processing of the vaccinia RT construct may vary in different eucaryotic cell types and can give rise to HIV-RT variants with markedly enhanced sensitivity to Foscarnet.

SENSITIVITY OF VIRAL REVERSE TRANSCRIPTASES TO INHIBITION BY PHOSPHONOFORMATE



T.C.0.3

INHIBITION OF HIV-1 INDUCED SYNCYTIA FORMATION BY MONOCLONAL ANTIBODIES TO THE MEMBRANE ADHESION PROTEIN CD18.

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OBJECTIVE To study the partecipation of the leukocyte adhesion glycoprotein CD18 in HIV induced syncytia formation.
METHODS U937 clone 16 cells were pretreated with monoclonal antibodies (Mab) 60.3 resp. IB4 directed to the CD18 or Mab to major histocompatibility complex class I (MHC-I). Treated and control cells were infected with the HTLV-IIIB strain of HIV and grown in presence or absence of the respective Mab. Viral replication was monitored by reverse transcriptase (RT) activity, immunofluorescence (IF) and syncytia formation.
RESULTS HIV infection of U937 clone 16 cells resulted in extensive viral replication as demonstrated by high RT activity of culture medium, high percentage of IF positive cells and pronounced syncytia formation leading to cell death. In contrast, cells pretreated with Mabs to CD18 yielded cell cultures with no signs of cell aggregation or syncytia formation, low percentage of infected cells, low RT activity and high cell viability for several weeks. The specificity of the inhibition of HIV induced syncytia formation was demonstrated by addition of MHC-I Mab. No difference in cytopathic effect was observed between this culture an the control.
CONCLUSION Mabs directed to the leukocyte adhesion glycoprotein CD18 efficiently block HIV induced syncytia formation and cell death. Our results also suggest that intercellular adhesion contributes to and enhances spreading of the viral infection in vitro and possibly in vivo.

T.C.0.4

STRUCTURE AND FUNCTION OF HIV-1 REVERSE TRANSCRIPTURE (RT)

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Objective: To determine important structural features of the HIV-RT.
Methods: A variety of genetic manipulation techniques including site directed mutagenesis has been used to create a large number of variants of the HIV RT. These include enzymes with modified amino-acid sequences, with portions of the enzyme deleted (at N or C terminus or internally), or with additional amino-acids added. These mutant enzymes have been used to delineate the function of specific regions of the enzyme.
Results: Deletion of the C Terminal region of the enzyme has previously been shown to remove part but not all of the enzymes activity. We further define this region and further delineate a region of the enzyme that can be deleted without major loss of enzyme activity. Site specific mutants have been generated which alter the sensitivity of the enzyme to the anti-HIV drugs AZT and PFA. To determine the effect of such mutations on the ability of HIV to replicate proviral constructs were made encoding the mutant RT genes. On transfection of these constructs into T-cells two were found to replicate. These viruses showed decreased sensitivity to PFA, demonstrating infectious PFA resistant virus can arise *in vitro*. Finally, we have attempted to crystallise each of the variants to get better ordered crystals of RT. An up-to-date progress report on how the mutant enzymes crystalise will be given.
Conclusion: Mutational analyses have been successfully applied to determine functionally important regions of the HIV RT.

T.C.0.5

IDENTIFICATION OF SEVERAL SPECIES OF HIV-1 MAJOR CORE PROTEIN : PRODUCTION AND CELL-SURFACE EXPRESSION

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Objective : Characterization of HIV-1 gag gene product p25 by two dimensional gel isoelectrofocusing analysis.
Results : The p25 detectable in HIV-1 infected cells is composed of four species designated as a, b, c and d with isoelectric points : 6.8, 6.6, 6.5 and 6.3, respectively. Species b and d are the phosphorylated forms of species a and c, respectively. The two most acidic species c and d have a slightly slower electrophoretic mobility in polyacrylamide gels compared to the species a and b. All four species of p25 could be immunoprecipitated by polyclonal and monoclonal antibodies but only species a and b could be identified by electrophoretic transfer immunoblot assay using these same antibodies. Thus once p25 is denatured, then species c and d cannot be identified by polyclonal or monoclonal antibodies.
Pulse chase experiments indicated that all four species of p25 are produced at the same time after the synthesis of p55 but their subcellular localization is different.Only species a and b are recovered with the virus particles whereas species c and d and a proportion of species a and b are secreted by virus producing cells. In addition to these results, lactoperoxydase catalyzed iodination of the cell surface was employed to show that the four species of p25 are expressed on HIV-1 infected cells.
Conclusion : These different observations suggest that there might be distinct processing pathways for the production of species a,b compared to species c,d.

T.C.0.6

GAG AND GAG-POL PROTEIN PRECURSORS MADE FROM A SV40 LATE REPLACEMENT VECTOR ARE PROPERLY PROCESSED AND ASSEMBLED INTO PARTICLES

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The expression of the HIV-1 gag and pol genes has been studied using fragments of the BH10 clone of HIV inserted into a SV40 late replacement vector. An initial construct containing the entire coding regions of *gag*, *pol* and *vif* produced only minute amounts of the gag precursor (p55). However, high level expression was obtained when an additional sequence from the *env* gene (the rev-responsive element) was inserted 3' of *vif* in the correct orientation, and rev was provided in trans from a second vector. Western blot analysis of transfected cells showed the presence of large amounts of both gag and gag-pol precursors as well as all of the expected cleavage products. In addition analysis of the culture medium showed the presence of particle-associated reverse transcriptase activity. Experiments are presently underway to determine whether envelope proteins, expressed from a separate vector, and virus-specific RNA are associated with these particles.

Mécanismes de pathogenèse des rétrovirus humains
Mechanisms of Pathogenesis of Human Retroviruses

T.C.0.7

VARIANTS OF HIV RESISTANT TO ZIDOVUDINE (AZT)

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Objective. To investigate whether prolonged exposure of HIV to zidovudine in patients leads to selection of resistant variants.
Methods. HIV was isolated from PBLs prepared from untreated and zidovudine-treated individuals and propagated in MT-2 cells. Zidovudine sensitivity was assessed by plaque-reduction in a HeLa cell line (HT4-6C) expressing the human CD4 gene.
Results. Infection of HT4-6C cells with HIV results in formation of plaques (foci of multinucleated giant cells) allowing precise determination of drug-sensitivity. Isolates from untreated individuals showed very similar sensitivity to zidovudine (mean ID$_{50}$ 0.03µM; range, 0.01-0.05µM). However, most isolates from patients with AIDS or ARC treated for 6 months or more showed decreased sensitivity characterized by increase in ID$_{50}$ or ID$_{95}$ values (or both). Several isolates showed 100-fold increases in ID$_{50}$, although these were sensitive to all other drugs tested except AZdU. The resistance mechanism is being investigated by analysis of cloned reverse transcriptase genes. The sensitivity of HIV isolated from asymptomatic individuals during therapy is also being determined.
Conclusion. Zidovudine-resistant variants of HIV can be isolated from patients with AIDS or ARC after prolonged therapy. At present the clinical significance of this observation is unclear.

T.C.0.8

SURFACE STRUCTURES INVOLVED IN HIV RECOGNITION

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T.C.0.9

TRANS-REGULATION OF HIV-1 GENE EXPRESSION

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This presentation will briefly address the physiological role of the regulatory proteins encoded within the genome of HIV-1, focusing particularly on the viral rev gene product. The Rev protein is required for expression of the viral structural gene products and, hence, for viral replication. I will review data demonstrating that rev functions post-transcriptionally to modulate the transport of HIV-1 mRNAs from the infected cell nucleus to the cytoplasm, where translation into viral proteins occurs. In addition, I will review recent data demonstrating that the rev protein contains two discrete functional domains. One of these is required for the specific interaction of rev with its viral RNA target sequence. The second is required for the subsequent activation of viral RNA expression. These results will be discussed with reference to possible targets for therapeutic intervention into AIDS.

T.C.0.10

CURRENT DEVELOPMENTS IN PATHOGENESIS

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Biologie moléculaire : les différents niveaux d'expression du provirus VIH 1
Molecular Biology: Different Level of Expression of HIV-1 Provirus

T.C.0.11

EXPRESSION, PURIFICATION, STRUCTURE, ACTIVITY AND SUBSTRATE SPECIFICITY OF THE HIV-1 RETROVIRAL PROTEASE.

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Objective. The gag and pol coding region of HIV-1 is translated into large precursors that are cleaved by a protease encoded by the virus and that is unique and essential. Our goal is to develop specific inhibitors of this enzyme that will block the maturation and infectivity of the virus without interfering with the host physiology.
Methods/Results. The HIV-1 protease was expressed as a precursor and in its mature form in various E. coli strains and shown to specifically cleave its own gag-pol substrate in vivo as well as heterologous substrates containing appropriate cleavage sites. This system was used to identify residues in the enzyme that are essential for its activity. The enzyme was purified to homogeneity and its structure and enzymatic activity characterized. A simple peptidolytic in vitro assay was developed to be used to screen natural products and rationally designed compounds for inhibitory activity.
Conclusion. Asp-25 and Cys-95 are residues critical for the HIV-1 protease activity. The enzyme is an aspartyl-protease and behaves as a dimer in solution. Peptides with inhibitory activity were identified in an in vitro assay for the enzyme.

This work was supported in part by NIH grants AI24845 and GM39526.

T.C.0.12

TUMOR NECROSIS FACTOR-ALPHA ACTIVATES HIV EXPRESSION IN A CHRONICALLY INFECTED T CELL CLONE THROUGH INDUCTION OF NUCLEAR FACTOR BINDING TO NF-κB SEQUENCES

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Objective. To describe the molecular events by which TNF-α activates HIV expression.
Methods. The ACH2 cell line is a clonal cell line derived following infection of A3.01 T cells with HIV-1. ACH2 cells are chronically infected with HIV and contain a single integrated HIV provirus whose expression can be augmented by TNF-α treatment. Steady state HIV RNA levels were studied by slot blot hybridization, and activation of HIV transcription was analyzed by nuclear run-on assays. Gel retardation assays employing P-32 labeled oligonucleotides were used to study the induction of nuclear proteins binding to the HIV long terminal repeat. Transfections of wild type and mutant HIV LTR-CAT plasmids into A3.01 T cells were performed to identify LTR sequences responsible for activation.
Results. TNF-α treatment of ACH2 cells resulted in an increase in steady state levels of HIV RNA and HIV transcription. Gel mobility shift assays demonstrated that the transcriptional activation of the HIV LTR by TNF-α was associated with the induction of a nuclear factor(s) binding to the NF-κB sites in the LTR. Deletion of the NF-κB sites from the LTR eliminated activation by TNF-α in T cells transfected with plasmids in which the HIV-LTR directed the expression of the CAT gene.
Conclusion. TNF-α appears to activate HIV RNA and virus production by ACH2 cells through the induction of transcription activating factors that bind to the NF-κB sequences in the HIV LTR.

T.C.0.13

RNA SPLICING EVENTS DETECTED IN EARLY IN VITRO HIV INFECTION USING THE POLYMERASE CHAIN REACTION (PCR)

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Objectives: The HIV genome codes for at least six additional regulatory gene products along with the gag, pol and env products. The complexities of this 9 kb virus are in part due to the regulation of a series of splicing events during the production of these gene products. We studied the early splicing events that occur after infection of H9 cells with purified HIV to determine the sequence of events.

Methods: RNA was extracted from infected cells at a series of time points ranging from one hour after viral absorption to forty-eight hours. Antisense primers and AMV reverse transcriptase were used to make cDNA which was amplified by PCR using sets of oligonucleotide primers designed to detect specific splicing events. The regulatory primers were chosen from within the 2nd and 3rd exon flanking the splice donor-acceptor sites at nucleotides 6044 and 8378. The envelope primers were from within the first and second exon and flanked the splice donor-acceptor sites at nucleotide 703 and 5975 respectively.

Results: The splicing between the first and second coding exons of the regulatory genes tat, rev and nef could be detected within hours after infection and appeared before splicing of the envelope exons which occurred within six hours of infection. Standard Northern blotting did not detect these mRNAs at the early time points.

Conclusion: mRNA splicing occurs very early in infection of H9 cells with HIV. Splicing of regulatory exons precedes splicing of mRNA coding for structural gene products.

T.C.0.14

POTENTIAL BIOLOGICAL SIGNIFICANCE OF A SECONDARY RNA START SITE WITHIN THE HIV-LTR

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Objective: The aim of the present study was to determine the biological significance of a secondary RNA start site within the HIV-LTR.
Methods: While studying the ability of the HIV-encoded tat/III gene product and heterologous viruses to transactivate the HIV-LTR, we noticed that S1 nuclease analysis of RNA consistently gave two specific size RNA transcripts. Using S1 nuclease analysis of RNA obtained in permanent and transient assays of three HIV-LTR/reporter gene constructions, HIV-LTR deletions, provirus transfections, HIV infection of T and Monocyte primary cells, in addition to PCR analysis, we have demonstrated that indeed RNA initiates from this secondary site.
Results: S1 nuclease mapping has localized the site of the secondary RNA start to 80 base pairs downstream from the primary RNA start site. RNA analyses show that whereas the HIV-LTR containing 167 nucleotides 5' from the primary RNA start site results in RNA expression from both start sites, an HIV-LTR deletion containing only 45 nucleotides results in RNA expression only at the secondary start site. Provirus transfections and HIV infections suggest the existence of more than one RNA transcript for the HIV-encoded tat/III gene product, possibly due to RNA initiation at the secondary site. We are using PCR analysis to attempt to further map and to ascertain the biological significance of a secondary start site in HIV regulation.
Conclusion: These data support the possibility that the existence of a secondary RNA start site could play a significant role in HIV gene expression and replication.

T.C.0.15

REGULATORY ELEMENTS IN THE LTR (HIV-1) RESPONSIVE TO GLUCOCORTICOID STIMULATION

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Within the LTR of HIV-1 provirus we have identified two hormone responsive elements (HREs) corresponding to the TGTTCT sequence identified as the glucocorticoid receptor binding element within the LTR or MMTV (mouse mammary tumor virus).
We have used an LTR (HIV-1)-CAT construct to transfect infected (H9V3) and non infected H9 cells. Four hours before harvest the two cell types were divided into two and one half treated with hydrocortisone (10-7M). The cells were harvested, washed and the CAT activity measured. In eight repeat experiments an increased (50%) expression of the CAT gene in the presence of the glucocorticoid cells has always been observed in H9V3, but no effect of the steroid has been measured in the non infected cells. Double transfection of LTR(HIV-1)-TAT and LTR (HIV-1)-CAT into non infected H9 cells results in a cell population in which the CAT gene was responsive to glucocorticoid stimulation. We have further shown, using cells transfected with a mutant LTR(HIV-1) promoted CAT that only one of the steroid HREs is required for the glucocorticoid response. Our results are discussed in relation to the well characterised MMTV-LTR system and to the well established role of glucocorticoids in HIV-1 viral expression.

T.C.0.16

MECHANISM OF HIV-1 INFECTION OF MONONUCLEAR PHAGOCYTES

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Objective. To investigate mechanisms of mononuclear phagocyte infection by macrophage-tropic strains of HIV-1.
Methods. Two distinct HIV-1 isolates with differing ability to productively infect mononuclear phagocytes *in vitro* were molecularly cloned and compared at the sequence level. Kinetics of virus infection were measured in mononuclear phagocytes following treatment with granulocyte-monocyte colony-stimulating factor (GM-CSF). Fragments of the HIV-1 LTR linked to the indicator gene, CAT (chloramphenicol acetyltransferase), were transfected into primary blood-derived mononuclear phagocytes +/-GM-CSF to identify sequences necessary for GM-CSF activation.
Results. The complete nucleotide sequence of two HIV-1 isolates from the same individual having different tropism for mononuclear phagocytes show a sequence difference of 3%. The macrophage-tropic virus replicates to high titers in these cells, and its production is further enhanced by GM-CSF treatment. Sequences in the HIV-1 transcriptional enhancer region necessary for GM-CSF activation were identified. These sequences are distinct from the NF-κB binding sequences of the LTR.
Conclusion. Related viruses may have biologic differences. Sequences in the HIV-1 LTR neccessary for GM-CSF activation in mononuclear phagocytes are distinct from those necessary for virus replication following T-cell activation.

Pathogenèse (partie 3)
Pathogenesis (Part 3)

T.C.0.17 THE ROLES OF THE VPX AND VPR GENES IN SIMIAN IMMUNODEFICIENCY VIRUS LIFE CYCLE

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Objective. To study the function of SIVmac vpx and vpr genes in viral life cycle.

Method. The approach of site-directed mutagenesis was used to introduce mutations in the vpx and vpr genes of SIVmac. The phenotype of the wild type and mutant viruses were analyzed by monitoring reverse transcriptase activity, cytopathogenicity, morphological changes and the expression of viral genes.

Results. The vpx mutant has an increased cytopathogenicity when compared with the wild type virus. Persistant cell killing in some human cells was observed only with the vpx mutant. The increased cytopathogenicity of the vpx mutant was not due to increased synthycia-forming ability or increased infectivity. The vpr gene appears to be dispensable for the viral replication in vitro. Sortly after infection, the vpr mutant had a different growth rate from that of the wild type virus.

Conclusion. Mutations introduced into the vpx and vpr genes appear to have effects in the SIVmac life cycle. These effects were not readily scored in all the cell lines studied. The existance of vpx and vpr genes in some closely related retroviruses but not in others may suggest that the function of these two genes is spieces and/or cell type dependent.

T.C.0.18 EFFECT OF RECOMBINANT SOLUBLE CD4 (rCD4) ON INFECTION OF NON-LYMPHOID CELLS BY HIV-1.

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Objective. To test the blocking effect of rCD4 on non-lymphoid cell infection with HIV-1 IIIB.
Methods. Adherent L132 (human embryonic lung epithelial cells), U138MG (human glioblastoma cells), F13 (human foreskin fibroblast cells) and MRC5 (human fetal lung fibroblast cells) were inoculated with HIV-1 IIIB. Residual virus was removed by trypsinization and vigorous washing. After more than 10 days in culture, uninfected H9 indicator cells were added. For blocking experiments, rCD4 or Leu3a was added to the cultures.
Results. Virus production in L132 and U138MG cells was directly detected by immunofluorescence and reverse transcriptase activity. Infection of MRC5 was detected only after co-cultivation with H9 cells. No infection of F13 was detected. Recombinant CD4 and Leu3a blocked infection of L132 and U138MG with HIV-1 IIIB. These agents also blocked the transfer of infection from infected L132 and U138MG cells to H9 cells.
Conclusion. L132, U138MG and MRC5 can be infected with HIV-1 IIIB by a CD4-dependent mechanism. Recombinant CD4 may be effective as an anti viral agent for non-lymphoid cell types.

T.C.0.19 GENETIC ANALYSIS OF SEQUENTIAL HIV-1 ISOLATES FROM AN INFECTED LAB WORKER.

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To better understand the nature of genetic and antigenic variation of HIV-1 in humans, virus was sequentially isolated and characterized from a previously reported (Science 239:68, 1988) lab worker (LW) infected by the H9/HTLV-IIIb strain of virus. Between 9/4/85 and 5/18/88, 7 HIV-1 isolates were established in 3 independent laboratories from the peripheral blood mononuclear cells (PBMC) of LW by co-cultivation with PBMC of normal donors. Southern blot hybridization patterns of all 7 LW isolates were indistinguishable from each other and from a component of the H9/HTLV-IIIb isolate after digestion with 7 restriction endonucleases (SstI, PvuII, BglII, HindIII, EcoRI, CvnI, KpnI). Recombinant λ phage libraries from LW virus isolates from 9/4/85 (λOF001), 11/30/87 (λFD651), and 5/18/88 (λLW5A) were prepared and 10, 8, and 10 full-length HIV-1 clones, respectively, were analyzed. All 28 clones were identical to each other and to the BH10 clone of H9/HTLV-IIIb in 7 of 7 restriction enzyme patterns, except for 2 clones from the LW5A isolate that differed in single PvuII polymorphisms. The nucleotide and deduced amino acid sequences of the viral envelope gp120 immunodominant loop region (aa302-337) of 3 λOF001 clones, 3 λFD651 clones, and 6 λLW5A clones were determined and compared to a molecular proviral clone BH10 derived from the H9/HTLV-IIIb isolate, as follows:

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λBH10    C T R P N N N T R K S I  R I  Q  R G P G R A F V T I  G K I  G  N M R Q A H C
λOF001   - - - - - - - - - - R -  - -  -  - - - - - - - - - -  - - -  -  - - - - - - -
λFD651   - - - - - - - - G - R -  - -  -  - - - - - T - - - -  - - -  -  - - - - - - -
λLW5A    - - K - - - - - G - R -  - -  -  - - - - - T - - - -  - - -  -  - - - - - - -
```

Clones from within each of the 3 LW isolates were identical to each other in the loop sequence but between isolates they showed cumulative nucleotide point mutations that resulted in the amino acid changes shown. Viral sequences were also amplified from uncultured LW PBL using the PCR technique and the loop regions sequenced. The envelope genes from λOF001, λFD651, λLW5A, and λBH10 clones were substituted into the HIV-1 proviral expression vector pHXB-2d and transfection-derived virus strains generated for analysis of antigenic and biologic properties. These studies demonstrate that cumulative changes develop in immunologically relevant regions of the HIV-1 envelope and will provide insight into the nature and significance of host-viral interactions mediated by this viral protein.

T.C.0.20 MOLECULAR CHARACTERIZATION AND COMPLETE NUCLEOTIDE SEQUENCE ANALYSIS OF AN ATTENUATED ISOLATE OF HIV-2

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HIV-1 and HIV-2 are two distinct classes of human immunodeficiency viruses known to cause AIDS in the US, Europe, and Africa. A particular isolate of HIV-2, termed HIV-2_{ST}, was recently obtained from a healthy prostitute from Senegal, West Africa, and was found to be less cytopathic *in vitro* when compared to prototype HIV-1, HIV-2_{ROD}, as well as SIV_{MAC} viruses (Kong, *et al.*, Science 240:1525, 1988). Biological comparisons revealed that HIV-2_{ST} infected cells did not form syncytia with CD4-bearing T-cell lines and that cell-free or cell-to-cell transmission of the virus was markedly delayed. In order to characterize HIV-2_{ST} molecularly, a recombinant λ-phage library was prepared from a highly-infected producer cell line. A full-length proviral clone designated λJSP4-27 was isolated, shown to be transfection competent and resemble the biological properties of the parental virus, and subsequently sequenced in its entirety. The data showed that the genomic organization of HIV-2_{ST} was very similar to that of HIV-2_{ROD} with the exception of an in-frame TAA stop codon in the vpr open reading frame. When compared to the prototype HIV-2_{ROD} sequence, an overall nucleotide sequence homology of 90% was observed. Amino acid homologies between different genes ranged from 75% for tat to 93% for gag. The envelope genes of HIV-2_{ST} and HIV-2_{ROD} differed considerably (18% amino acids), although their overall structure remained conserved. Interestingly, three amino acid changes were identified in the otherwise highly conserved envelope fusion domain of JSP4-27, suggesting they might be responsible for the nonfusogenic properties of this virus. To test this hypothesis, we PCR amplified, M13-cloned, and subsequently sequenced the fusion domains of two additional HIV-2_{ST} strains, one representing an early noncytopathic parental culture and the other representing a fusogenic variant of HIV-2_{ST} which had been generated by repeated cell-free passage. The data showed that 2 of 3 M13 clones derived from the fusogenic variant contained an additional, non-conservative change (Ala-->Arg) in the fusion domain, while the third clone as well as 3 of 3 M13 clones from the parental culture exhibited no changes as compared to the JSP4-27 proviral sequence. From these analyses we conclude that changes in the envelope fusion domain are, at least in part, responsible for the attenuated phenotype of the HIV-2_{ST} isolate. We also conclude that HIV-2_{ST} differs from HIV-2_{ROD} slightly more than do American HIV-1 viruses from each other, and that a functional vpr gene is not required for HIV-2 replication.

T.C.0.21 ANTIBODY-MEDIATED ENHANCEMENT OF HIV INFECTIVITY: MECHANISMS AND SIGNIFICANCE.

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Objective: To investigate the host and viral range of antibody-dependent enhancement (ADE) of HIV infectivity and define the mechanisms involved in this phenomenon.
Methods: Enhancing experiments were conducted with different cell types derived from human peripheral blood. A variety of antibodies to block potential ADE receptors was used.
Results: Decomplemented anti-HIV antisera of both human and animal origin can enhance both HIV-1 and HIV-2 infectivity and cytopathicity in human macrophages and CD4+ lymphocytes obtained from the peripheral blood as well as fibroblastic cell lines. Such sera can also induce the tropism of certain HIV strains for macrophages.

Neither anti-CD4 monoclonal antibody nor soluble recombinant CD4 could inhibit HIV enhancement in CD4 lymphocytes, macrophages or fibroblasts. However, this phenomenon was inhibited by blocking the third Fc receptor (FcRIII) on macrophages. Other anti-FcRs antibodies had no effect. IgG aggregates but not anti-FcRIII antibodies could block HIV enhancement in CD4+ lymphocytes.
Conclusion: ADE of HIV infectivity is independent of the CD4 receptor and appears to require the presence of FcRIII on human macrophages. A different Fc receptor may be involved in enhancement of HIV in CD4+ lymphocytes and fibroblasts. These observations have important implications for the spread of HIV in vivo.

T.C.0.22 SEROLOGICAL AND MOLECULAR ANALYSIS OF THE IMMUNODOMINANT LOOP (IL) (296-331 a.a.) FROM NEUTRALIZATION RESISTANT VARIANTS DERIVED FROM HIV-1 IIIB INOCULATED CHIMPANZEES

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Objective: To determine the factors and epitopes of the IL amino acid (a.a.) 296-331, involved in the derivation of neutralization resistant variants (NRV) from the HIV-1 IIIB stock passaged through either chimpanzees or primary peripheral blood mononuclear cells (PBMC).
Methods: HIV-1 IIIB virus either passaged through human (H-) or chimp (C-) PBMC or sequentially re-isolated from experimentally HIV-1 IIIB infected chimpanzees were serologically typed, and the IL PCR amplified, cloned/or directly sequenced. Serologic analysis from the IIIB infected chimpanzees included ELISA based IL peptide analysis and serial neutralization analysis with three molecular clones of the IIIB stock, HX10, HXB2, and HXB3.
Results: A homogenous serotypic/genotypic IIIB-NRV resulted from single passage in C- and H-PBMC. Viruses from unvaccinated or gp120 immunized chimpanzees also demonstrated yet a different, homogenous genotypic/serotypic IIIB-NRV. NRV obtained later from these animals demonstrated additional IL a.a. substitutions. Neutralizing antibody (NA) produced to the inoculating strain is detected earliest. Sera obtained later now contains NA capable of recognizing the IIIB-NRV first established *in vivo*.
Conclusion: It appears that specific IIIB-NRV established *in vitro* or *in vivo* are due initially to selective forces other than NA. NA subsequently appears to induce/drive additional a.a. substitutions in the IL.

Origines des rétrovirus humains et modèles animaux
Origins of Human Retroviruses and Animal Models

T.C.O.23 THE ORIGINS OF HUMAN RETROVIRUSES

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When HIV-1 was first isolated and identified as the agent responsible for causing human AIDS, it was thought to be unique to the family of retroviruses. Since then two additional HIV-related viruses, SIV (Simian Immunodeficiency Virus) and HIV-2, have been identified and characterized; they both share the genetic complexity that was once believed to be unique to HIV-1. Based on nucleotide sequence homology, serologic cross-reactivity assays and genetic structural analyses, there seems to be a very close evolutionary relationship between SIV, which is naturally found in healthy African monkeys, and HIV-2, which infects humans in West Africa. HIV-1 is more distantly related to both.

Since SIV is highly prevalent in wild populations of common species of healthy African monkeys, it seems likely that this virus has little or no virulence in its natural host. However, when similar viruses infect the Asian macaque, which is an unnatural host for SIV, simian AIDS occurs with high frequency. Whether this variable pathogenicity is due to immunoevolutionary adaptation, to virus strain differences based on subtle genetic changes, or to both, is unclear. HIV-2 as well, appears to be less virulent than is either HIV-1 in humans, or SIV in Asian macaques; it is perhaps more virulent than SIV in African primates. Indeed, prospective studies with HIV-2 infected female prostitutes in West Africa suggest that the rate of disease development within this group is substantially lower than rates for similar cohorts of HIV-1 infected individuals in Central Africa.

T.C.O.24 TRANSGENIC CONSTRUCTS INVOLVING HIV-1 GENES

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T.C.O.25 RELATIONSHIP AMONG PRIMATE RETROVIRUSES

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Objective Several species of non-human primates are naturally infected with SIV genetically related to HIV. For understanding the origin and transmission of HIV/SIV, it is necessary to clarify genetical relationship of these viruses.
Methods Twenty isolates of SIV from African green monkey (SIV_{AGM}) originated in Ethiopia and Kenya, and two from mandrill (SIV_{MND}) in Gabon were obtained from naturally infected apparently healthy animals. Five of SIV_{AGM} and two of SIV_{MND} were molecularly cloned, and one of each was tatally sequenced.
Results The gene structures of SIV_{AGM} and SIV_{MND} are similar to other HIV/SIV, and functionally responsible elements known in each region of HIV-1 are also conserved in these viruses. However, SIV_{AGM} has *vpx* region but lacks *vpr* region while SIV_{MND} has *vpr* region but lacks *vpx* region . The amino acid sequence homologies of each region of these viruses HIV/SIV (HIV-1,HIV-2,SIV_{MAC} derived from rhesus monkey) and each other were almost equal, suggesting that they are equally distant each other except between HIV-2 and SIV_{MAC}. Although there was considerable genomic diversity among SIV_{AGM} isolates, no isolate was close to other HIV/SIV and no overlap with other HIV/SIV group viruses was observed.
Conclusion The species-specificity of SIV and unlikeliness of recent interspecies transmission among primates are suggested except for the case of HIV-2 and SIV_{MAC}.

T.C.O.26 PRIMATES FOR THE STUDY OF AIDS-RELATED DISORDERS

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Objective. The establishment of various primate species as models for AIDS.
Methods. Baboons, rhesus monkeys, and chimpanzees were inoculated with HIV or SIV either with blood from AIDS patients, cell-free virus or in vitro infected autologous lymphocytes. In chimpanzees several cofactors such as type and dose of HIV inoculum, superinfection with other viruses, immunosuppression or immunostimulation were evaluated in the development of disease. In addition, approximately 30 chimpanzees were used in the evaluation of various vaccines such as peptides, recombinant proteins and hyperimmunoglobulin.
Results. Whereas baboons and rhesus monkeys could not be infected with HIV, chimpanzees were exquisitely sensitive to infection. However, virtually all cofactors, with the possible exception of the HIV dose, had no effect on the induction of HIV infection and the development of HIV-related disease. In contrast, chimpanzees were not susceptible to SIV infection. While baboons and rhesus monkeys were successfully infected with SIV only the latter showed evidence of immunosuppression with ensuing death. All HIV vaccines evaluated in 30 chimpanzees did either not confer protection or did not warrant challenge with live HIV.
Conclusion. Chimpanzees and rhesus monkeys are extremely sensitive to infection with HIV and SIV, respectively, and are therefore good models for HIV and SIV vaccine evaluation. Both animal species are useful studying parameters in disease development, however, only rhesus monkeys are good models for therapy evaluation.

Biologie moléculaire : les mécanismes de régulation de type *tat* des gènes viraux
Molecular Biology: TAT-Mediated Regulation of Viral Genes

T.C.0.27 THE TAR REGION OF HIV-1 BINDS AND ACTIVATES THE DOUBLE-STRANDED RNA DEPENDENT KINASE (DSI)

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Objective: To elucidate the mechanism by which the tat-responsive element (TAR) within the 5' non-coding region of HIV-1 mRNAs activates the double-stranded RNA dependent kinase (dsI), resulting in inhibition of protein synthesis, as observed in vitro in reticulocyte lysate.
Methods: An RNA mobility shift assay was devised to study nucleoprotein complex formation between dsI purified from reticulocyte lysate and small RNAs comprising the TAR region of HIV-1 (nucleotides +1 to +80).
Results: We show specific RNA-protein complex formation between dsI and TAR RNAs. Mutant TAR RNAs with reduced secondary structure loose their ability to bind dsI and are considerably less potent in activating the kinase. The introduction of compensatory mutations designed to restore the secondary structure of the TAR region restored the RNA's ability to complex with and activate dsI. An excess of the double-stranded RNAs polyI:C and reovirus dsRNA compete out complex formation and inhibit activation.
Conclusion: The double stranded nature of the TAR region present at the 5' end of all HIV-1 mRNAs renders it capable of activating dsI, a protein involved in the anti-viral response mediated by interferon. Activation of dsI correlates with the ability of the TAR RNA to bind to purified dsI. These studies may have important implications for the regulation of HIV-1 replication.

T.C.0.28 PROGRESSIVE GENETIC CHANGES IN HIV-1 TAT GENE COINCIDENT WITH DISEASE

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Objective : Analysis of the HIV-1 proviral population of four virus isolates taken from the same individual as he progressed towards AIDS (PGL - ARC - AIDS).
Methods : Tat gene sequences were amplified by PCR and cloned into an expression vector. Twenty plasmid clones of each isolate were sequenced.
Results and conclusions : 1) Comparing viral populations after short term culture, significant changes in the dominant viral species were observed during disease progression. This effect is less prominent with tat variants obtained directly from lymphocytes. 2) In vitro cultivation distorts the virus population present in blood lymphocytes, whereas long term cultivation does not constitute a further selective pressure. 3) On the protein level, single and multiple amino acid changes as well as defective genomes were observed. Functional studies complementing the structural analysis underway will allow us to interpret better these data.

T.C.0.29 BINDING OF THE HIV-1 TAT PROTEIN TO TAR SEQUENCES IN VITRO.

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Objective. To investigate the binding *in vitro* of HIV tat protein and cellular factors to TAR sequences.

Methods. A synthetic *tat* gene has been expressed both in an *E. coli* expression system and in a number of eukaryotic cell lines. The binding of expressed tat protein to nucleic acid representing the TAR sequence has been investigated *in vitro* using gel retardation assays.

Results. The tat protein produced from both the *E. coli* and from the eukaryotic expression systems has been shown to be biologically active. The binding of tat, synthesised *in E. coli*, to TAR nucleic acid has been examined both in the presence and absence of host cellular proteins. Binding of tat expressed in eukaryotic cells gives a different pattern, suggesting that host proteins interact with the tat/TAR complex. The specificity of binding has been examined using a number of different nucleic acids, including mutant TAR sequences.

Conclusion. Direct interactions between tat protein and TAR sequences are involved in *trans*-activation.

T.C.0.30 SIV_{mac} (BK28) HAS THE CAPACITY TO ENCODE ISOFORMS OF THE TAT AND REV PROTEINS THROUGH ALTERNATE mRNA SPLICING

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Objective. We previously demonstrated that, in contrast to HIV-1, coding exon 2 of SIVmac (BK28) tat is required for significant tat activity and that disruption of the presumed splice acceptor at the start of this exon activates a downstream splice acceptor site and results in the formation of a functional tat protein. We now seek to characterize the structure and functional coding capacity of mRNA molecules which encode the SIV_{mac} tat and rev proteins.
Methods. Polymerase chain reaction was used to specifically amplify cDNAs corresponding to either tat or rev mRNAs from SIV_{mac} (BK28) infected HuT78 cells and the different spliced forms were characterized by oligonucleotide probe hybridization and DNA sequencing.
Results. We found that tat and rev mRNAs use different splice acceptor sites at the beginning of their respective first coding exons. Three different splice acceptor sites are used at the beginning of tat coding exon 2. The different mRNAs which utilize these sites have the capacity to encode proteins which differ by single amino acid substitutions and the deletion of either 1 or 6 amino acids. The two 5' most splice acceptor sites, which incidently flank the stop codon in the env reading frame (see abstract by Edmonson et al), were used at frequencies of 54% and 45%, while the 3' most site was used at a frequency of 2%. Similar splicing events which join rev coding exons 1 and 2 were also identified. They were used at frequencies of 61%, 37% and 1.7%, respectively. Finally, rev mRNAs fall into 2 classes with respect to their 5' structure. These classes are approximately equivalent in frequency and differ by the presence or absence of a 144 nucleotide intron located within the R region of the LTR. The biological activity of clones of each of the tat and rev cDNAs are currently under investigation.
Conclusion. SIVmac uses alternative splicing to generate mRNAs with the capacity to encode isoforms of the tat and rev proteins.

T.C.0.31 BINDING OF HIV-1 TAT TO THE 5' REGION OF mRNA

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Objective: HIV-1 gene expression is positively regulated by the viral transregulatory protein, tat. Evidence suggests that the structure of the RNA stem loop within the TAR region is critical for transactivation therefore we proposed that the tat protein binds directly to this RNA structure.

Methods: Recombinant tat protein produced in both E. coli and baculovirus expression systems were tested for their ability to bind directly to gel-purified ^{32}P-labeled transcripts from the initial 5' 80 nucleotides of the HIV-1 mRNA that were synthesized from constructs using the bacteriophage T7 polymerase. RNA gel mobility shift assays were performed using the wild type as well as a mutant transcript (ΔS) generated by a four base pair deletion (+35-+38) at the SST1 site, known to lack transactivation potential.

Results: Introduction of the recombinant tat proteins by the "scrape-loading" procedure into HeLa cells stably integrated with the HIV-1 LTR linked to the bacterial chloramphenicol acetyl transferase gene confirmed the activity of the proteins. Wild-type TAR transcripts formed a stable complex with the recombinant tat proteins resulting in retarded gel migration. The deleted transcript (ΔS) did not form a stable complex.

Conclusion: The data suggest that tat protein of HIV-1 specifically and stably binds to TAR RNA which may be a required step in vivo in the transactivation pathway.

T.C.0.32 CD8+ LYMPHOCYTES CAN CONTROL ACUTE HIV INFECTION OF CD4+ T CELLS

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Objective: To determine if peripheral blood CD8+ T cells from HIV-infected subjects can suppress the growth of HIV in acutely infected CD4+ T cells.
Methods: Peripheral blood mononuclear cells from HIV-infected and uninfected subjects were stimulated with PHA for three days, and T lymphocyte subsets expressing the CD4+ and CD8+ surface antigens were enriched by immunoaffinity selection. CD4+ cells were infected with an HIV isolate, and then cultured with the CD8+ T lymphocytes. Culture supernatants were assayed every three days for reverse transcriptase activity.
Results: CD8+ T cells from HIV-1 seropositive subjects, but not seronegative controls, were able to prevent replication of HIV in acutely infected CD4+ T cells. Suppression of virus growth required the continuous presence of CD8+ T cells, and was not HLA-restricted. Monoclonal antibodies to antigens on mature T cells (i.e. CD3 and CD8 positive), but not cells that can mediate antibody-dependent cellular cytotoxicity or natural killing (i.e. CD16 positive) blocked suppression when added to the culture. The response was broadly cross-reactive; replication of an HIV-2 isolate could also be suppressed by CD8+ cells from HIV-1 infected subjects.
Conclusion: Cytotoxic suppressor T lymphocytes can prevent the growth of HIV after acute infection and are present in the peripheral blood of HIV-infected individuals. The mechanism of action of these CD8+ T cells remains to be determined.

Virologie (partie 2)
Virology (Part 2)

T.C.0.33 IDENTIFICATION OF SITES WITHIN GP41 WHICH SERVE AS TARGETS FOR ADCC USING HUMAN MONOCLONAL ANTIBODIES.

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Objective: To utilize human anti-HIV-1 monoclonal antibodies (mAb) to define target epitopes for antibody-dependent cellular cytotoxicity (ADCC).
Methods: PBMC from HIV-1 infected individuals were EBV transformed, screened for mAb production, cloned and maintained in long term culture. Six cell lines made mAb to gp41 and five made mAb to p24. These mAb were tested in 6 hr ^{51}Cr release ADCC assays using virally infected and gp120 adsorbed CEM.NKR targets.
Results: None of the anti-p24 mAb mediated ADCC. However, five of the 6 mAb directed at regions within gp 41 mediated significant lysis of IIIB, RF and MN infected targets, at dilutions in the range of 1-5x10^{-8} M. No lysis of gp120 adsorbed targets was seen. The specific lysis of the three most effective mAb at two dilutions is shown in the table. Interestingly, the isotype of all ADCC directing anti-gp41 mAb was IgG2, not IgG1(the predominant isotype of ADCC mediating antibodies in patient sera).

	IIIB		RF		MN		GP120	
mAb (isotype)	1:4	1:100	1:4	1:100	1:4	1:100	1:4	1:100
120-16 (IgG2)	29.2	16.0	22.7	11.5	7.0	5.0	1.2	2.5
126-50 (IgG2)	22.5	10.1	19.4	6.7	6.7	4.4	2.0	1.9
98-6 (IgG2)	20.8	6.7	20.0	4.6	4.5	4.0	2.3	1.1

Conclusion: These results for the first time assign a protective functional activity to antibodies directed against the immunodominant region of gp41. The purity, potency and broad specificity of these human mAb makes them ideal for passive immunotherapy. Current work on the identification of the specific epitopes to which these mAb are directed will facilitate the design and development of a future vaccine.

T.C.0.35 PUTATIVE INTERACTION SITE BETWEEN HIV gp120 AND gp41 : ANTIVIRAL ACTION OF SYNTHETIC PEPTIDES.

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Objective: To determine the antiviral action of synthetic peptide analogs corresponding to a putative interaction site between envelope glycoproteins gp120 and gp41, of HIV.
Methods: Purified synthetic peptides of 8 to 25 residues were tested (at 10-100uM) for their ability to inhibit HIV replication 'in vitro' at moi of 0.0005–0.02 pfu/cell.
Results: We have identified a region in gp120 (99-119) and a complementary sequence in gp41 (571-591) with four matched charge residues conserved for all HIV isolates which has a propensity to form amphipathic helices with charged residue contacts and complementary hydrophobic residues. Synthetic peptide analogs partially spanning either region inhibited virus replication as measured by reverse transcriptase activity and delayed syncytial formation.
Conclusion: Our results illustrate that it is possible to reduce HIV infectivity with synthetic peptides that mimic structures involved in the contact region between gp120 and gp41.

T.C.0.37 DEFINITION OF EPITOPES ALONG A IMMUNO-DOMINANT REGION OF THE HIV-1 GP41 AND THE EFFECT OF CONSERVATIVE AND NON-CONSERVATIVE AMINO ACID SUBSTITUTIONS CORRESPONDING TO VARIOUS HIV-1 ISOLATES

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Objective. To delineate precise epitope locations for continuous epitopes along a region of the HIV-1 gp41, previously shown to be immuno-dominant, and to study the reactivity of sera from different parts of the world to synthetic peptides with amino acid substitutions according to known isolates.
Methods. Eighteen hexapeptides overlapping by five amino acids (aa) spanning a 23 amino acid segment, previously shown strongly immuno-reactive, of the env gene corresponding to aa 596-618 were synthesized on solid-phase pins (Geysen technique). These peptide-pins were then assayed in a standard indirect ELISA against three different HIV-1 positive sera.
Furthermore nine variants containing conservative and non-conservative aa substitutions of the 23-mer peptide were synthesized. Each variant, representing sequenced isolates of HIV-1, were assayed against a large serum panel of HIV-1 positive sera originating from different parts of the world.
Results. Five different epitopes confined within the 23-mer peptide could be distinguished. Different sera tested against the panel of nine variant peptides exhibited different patterns as to their individual reactivity to the various peptides. In particular the reactivity pattern of some East African sera will be discussed. Non-conservative as well as conservative single aa substitutions in an epitope drastically can alter its reactivity with individual sera.
Conclusion. Within a small sized (23 aa) immuno-dominant peptide as many as five different epitopes can be distinguished but individual serum samples may not show reactivity to all of them. A conservative single aa substitution may alter the immune reactivity of an epitope.
Small synthetic peptides representing different HIV-1 isolates may be useful in epidemiologic studies of the HIV-1 pandemic.

T.C.0.34 FUNCTIONAL DOMAINS ON THE HIV-1 ENVELOPE PROTEIN

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Objective. To examine the functional domains on the HIV-1 envelope (env) glycoprotein.
Methods. Recombinant vaccinia viruses containing intact or mutated forms of the HIV-1 env gene were constructed.
Results. Cells, infected with a recombinant virus that contains the entire env gene, synthesized glycosylated gp160 which was cleaved to gp120 and gp41 and inserted into the plasma membrane leading to CD4 binding and syncytium formation. When the DNA encoding the proteolytic cleavage site was deleted, gp160 was no longer cleaved, was inserted into the plasma membrane, but no syncytia were formed. Isolated gp160 was still able to bind soluble CD4.

A family of recombinant vaccinia viruses that express N-terminal overlapping env proteins of 204, 287, 393, 506 (gp120), 635, 747, and 851 (gp160) amino acids (aa) were constructed. Only the 747 aa and the full-length proteins mediated syncytium formation. The remaining proteins were all present in intracellular and secreted forms which differed in extent of glycosylation. Curiously, the 393 aa protein also was anchored in the plasma membrane but neither it nor smaller proteins bound to CD4.
Conclusions. (1) Uncleaved gp160 can insert into the plasma membrane and bind to CD4; (2) cleavage of gp160 is required for fusion to CD4-bearing cells; (3) the carboxy terminal 104 aa are not required for anchorage or fusion; (4) the transmembrane domain is between aa 635 and 747; (5) the CD4 binding domain is between aa 393 and 506; (6) a cryptic membrane anchor sequence is between aa 287 and 393.

T.C.0.36 CHARACTERIZATION OF THE HIV-2 ENVELOPE GLYCOPROTEINS : THE TRANSMEMBRANE GLYCOPROTEIN IS A HOMODIMER

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Objective : Identification of HIV-2 envelope external and transmembrane glycoprotein (EGP and TMP) by polyclonal and monoclonal antibodies.
Results : A 80-Mr glycoprotein (gp80) is produced in HIV-2 infected cells along with three other glycoproteins that we have recently reported : the external glycoprotein (gp125), the envelope glycoprotein precursor (gp140) and the transient dimeric form of gp140 (gp300). The gp125 and gp80 are detectable after the synthesis of gp140 and the formation of gp300. Among these four glycoproteins, only gp80 and gp125 are associated with HIV-2 virions. As the other glycoproteins, gp80 can be recognized by all HIV-2 positive sera. A murine polyclonal antibody raised against the purified gp300 recognizes all four glycoproteins. On the other hand, a monoclonal antibody raised against a synthetic polypeptide deduced from the sequence of TMP of HIV-2 recognizes gp140, gp300 and gp80; thus indicating that gp80 should be related to TMP of the envelope. Heating (95°C, 5 min) of cellular or viral extracts in 1% SDS results in the dissociation of gp80 into the monomer gp36. These results suggest that during the processing of the HIV-2 envelope glycoprotein gp140, the dimer is produced which when cleaved by the cellular protease gives the EGP gp125 and TMP dimer gp80.
Conclusion : Dimerization of envelope glycoprotein precursor and the TMP is a specific property of HIV-2 and SIV gene expression. Dimerization of the precursor might be required for its processing to give the mature envelope products whereas the TMP dimer might be essential for optimal structure of the virion.

T.C.0.38 gp160 IS ENDOPROTEOLYTICALLY CLEAVED IN A PREFUCOSYLTRANSFERASE CONTAINING COMPARTMENT OF THE GOLGI COMPLEX.

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Objective: To identify the intracellular site of endoproteolytic cleavage of the HIV-1 gp160 envelope precursor.
Methods: HIV-1 envelope glycoprotein determinants were immunoprecipitated from an acutely infected CD4+ T cell line (VB) radiolabeled with [^{35}S]cysteine and [^{35}S]methionine or [^{3}H]fucose and subjected to one- and two-dimensional SDS-PAGE.
Results: gp160 contains 70 kD of endo H sensitive N-asparagine linked high mannose carbohydrate side chains, is devoid of fucose and is neuraminidase resistant (pI - 7.0 to 7.5). gp160 is not transported to the cell surface, but binds to CD4. gp120 has approximately 20 kD of endo H sensitive and 55 kD of N-glycanase sensitive N-asparagine linked oligosaccharides signifying both high mannose and complex side chains. gp120 is rich in fucose and sialic acid, with a broad pI of 5.0 to 7.5 that shifts above 7.0 upon neuraminidase treatment. N-glycanase shifts the pI of gp120 toward the acidic range (5.5 to 6.5) suggesting the presence of abundant sialylated O-linked sugars. Pulse chase studies with 1-deoxymannojirimycin indicate that gp160 has a transit time of approximately 2 hours to the site of action of Golgi α-mannosidase I and that its endoproteolytic cleavage occurs before processing by this mannose trimming enzyme. gp160 cleavage is achieved by a non-acid dependent protease.
Conclusions: gp160 is endoproteolytically cleaved in a prefucosyltransferase compartment of the Golgi complex, likely before processing by Golgi α-mannosidase I, which is consistent with localization to the RER-*cis* Golgi interface.

Modèles animaux (partie 1)
Animal Models (Part 1)

T.C.0.39

PREVENTION OF SIMIAN AIDS BY PASSIVE PROTECTION

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The problem of prevention of inadvertent infection of HIV in health care workers is of serious concern. We are exploring the use of high-titered neutralizing antibody for passive protection in primate models of retroviral infection. The SRV-1 induced immunodeficiency disease of Rhesus Macaques was chosen as our group demonstrated the successful use of active immunization to control the diease. Twelve animals were innoculated with 1.2X10^6 infectious units of SRV-1. Four animals were given control IgG. Four were given high titer neutralizing IgG in a dose of 20 mg/kg 24 hours before challenge, four 24 hours after challenge. Serial blood samples were analyzed for the presence of neutralizing antibody, antiSRV antibody (by ELISA), and for virus. The animals were observed clinically for SAIDS. Results: The 4 control animals show a pattern of incrasing titer of virus and symptoms of SAIDS. One animal has died. All animals given passive protection demonstrated neutralizing antibody on day 2 through day 14. Five of 8 animals cleared all virus by day 14 and are currently alive and without signs of overt SAIDS. Two animals in this group died and one has signs of SAIDS. Eleven of the 12 animals developed titers of antiSRV antibody indicating the induction of a primary immune response. Passively administered IgG is able to reduce the virus load in 5 of 8 animals (62%) and avert disease.

T.C.0.41

CHARACTERISTICS OF SIV_{AGM} ISOLATED FROM WILD CAUGHT ANIMALS IN CENTRAL AFRICAN REPUBLIC (CAR)

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Objective. To determine specific features of SIV_{AGM} isolates from CAR by comparison with prototype HIV/SIV viruses.
Methods. Virus isolation from blood samples of monkeys selected as seropositive by HIV_2 blot. Infectivity and cytopathogenicity of isolated strains for human and monkey cells. Immunologic relatedness with HIV/SIV prototypes. Experimental inoculation into African monkeys.
Results. Among 337 wild caught monkeys including 9 species from CAR, 3 out of 26 healthy AGM were found seropositive by HIV_2 blot. Viruses recovered from their PBL replicate easily in AGM lymphocytes but are poorly infectious and cytopathic for human cells. EM study on one isolate shows the typical HIV/SIV morphology. Immunological cross-reactivities with both HIV_2 and HIV_1 internal proteins as well as with HIV_2 env proteins were observed. Antigenic homology with the immunodominant epitope of HIV_2 Gp36 was found by a peptide assay. Finally, experimental transmission into Patas monkeys from CAR resulted in seroconversion within 5 weeks.
Conclusions. Differences in biological features of SIV isolates from wild caught monkeys in different regions of Africa probably reflect viral genetic diversity. Comparisons of SIV strains at a molecular level are in progress to evaluate the relationship between pathogenicity and peculiar genetic properties.

T.C.0.43

SIV FROM SOOTY MANGABEY MONKEYS: AN AFRICAN PRIMATE LENTIVIRUS CLOSELY RELATED TO HIV-2.

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Objective. The human immunodeficiency viruses may have evolved from ancestors that originated within a reservoir of African primate lentiviruses (SIVs). None of the SIV strains characterised to date share a close relationship with HIV-1. However, HIV-2 is closely related to SIV isolated from captive macaques (SIVmac). Since macaques are not infected in the wild, captive macaques may have been infected by cross-species transmission from an SIV- infected African primate. Sooty mangabeys, a primate species indigenous to West Africa, are infected with SIV (SIVsmm) both in captivity and the wild (pers. comm. , P. Fultz). Thus, we undertook molecular analysis of SIVsmm to establish its relationship to other primate lentiviruses.
Methods/Results. SIVsmm was molecularly cloned and the nucleotide sequence of an infectious clone (smH-4) determined. SIVsmm shares the same genetic organization as SIVmac and HIV-2. Comparison of the predicted protein products of SIVsmm, SIVmac, and HIV-2 revealed significant sequence identity among these viruses (as shown in the table).

SIVsmm vs:	gag	pol	vif	vpx	vpr	tat	rev	env	nef
SIVmac	90	92	84	93	90	72	70	82	77
HIV-2	83	84	69	80	78	65	62	72	64

Evolutionary tree analysis (nucleotide and protein) was in agreement with predictions based on average identity comparisons.
Conclusion. These data suggest that: i) SIVsmm may have been the source of SIVmac; and, ii) SIVsmm or its immediate ancestor may have entered the human population in West Africa and evolved as HIV-2.

T.C.0.40

GENETIC CHARACTERIZATION OF AN ACUTELY LETHAL VARIANT OF SIV/SMN.

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Objective. To analyse the genome of an SIV variant with altered phenotypic properties and pathogenicity for macaques and mangabey monkeys, called PBj14.
Methods. 1) PCR with primers corresponding to conserved SIV sequences on DNA from lymphocytes infected with the lethal variant PBj14 or the original isolate SIV/SMN. 2) Cloning and sequencing.
Results. PBj14 and SIV/SMN genomes are closely related to SIVmac genome. However, many mutations and insertion-deletions are observed.
Conclusion. These genetic differences may account for the particular phenotype of PBJ14. Sequence analysis are ongoing.

T.C.0.42

PROPHYLACTIC EFFECTS OF AZT FOLLOWING EXPOSURE OF MACAQUES TO AN ACUTELY LETHAL VARIANT OF SIV (SIV/SMM/PBJ-14)

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Objective. To determine the prophylactic effects of AZT when administered shortly after exposure to an acutely lethal variant of SIV.
Methods. Four groups of 3 pig-tailed macaques were given 10 $TCID_{50}$ of SIV/SMM/PBj-14. AZT at 100mg/kg/day, divided into 3 doses, was given S/Q for 14 days. Treatment was initiated at 1 (group 1), 24 (group 2) or 72 (group 3) hours after virus exposure; group 4 was untreated.
Results. All animals except one in group 1 were virus positive at 10 days post-inoculation (P.I.). Three animals in groups 1 and 2 remained clinically normal; all other animals developed disease within 10-17 days of virus exposure. One death occurred in group 1, and 2 deaths occurred in each of the other groups. Survivors in groups 3 and 4 are showing clinical disease and immunosuppression, whereas survivors in groups 1 and 2 are clinically normal with normal immunologic parameters (8 mo P.I.). One animal in group 1 has no evidence of SIV infection. Survivors in groups 3 and 4 have 30-fold higher Ab titers than survivors in groups 1 and 2, suggesting that the former had more antigenic stimulation due to increased virus replication.
Conclusion. These data indicate that some protection is provided by AZT when treatment is initiated within 24 hours of exposure to an acutely lethal variant of SIV. (Supported by NIH grant RR00165 and Burroughs Wellcome).

T.C.0.44

HIV-1 INFECTION OF HUMAN PBL-RECONSTITUTED SCID MICE

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OBJECTIVE - To determine if SCID mice reconstituted with human lymphoid cells can be infected with HIV and if the infection results in pathology.
METHODS - Normal adult peripheral blood leucocytes (PBL) were injected into immunodeficient C.B-17 SCID mice, which results in survival and expansion of human T and B lymphocytes and the reconstitution of human antibody responses. A series of SCID mice reconstituted with PBL from an Epstein-Barr virus seronegative donor have been injected with the LAV-1 strain of HIV-1 at 2-8 weeks post-reconstitution.
RESULTS - Virus has been recovered from the lymphoid tissue and peripheral blood of these animals at 2, 4, and 6 weeks post-infection by co-cultivation with fresh T cell blasts, and viral replication has been confirmed by *in situ* hybridization and detection of viral sequences using the polymerase chain reaction.
Mice with high viral titers have shown evidence of human T cell depletion. These results support the use of the human lymphoid cell-reconstituted SCID mouse as a relevent AIDS model.

Biologie moléculaire : les gènes régulateurs et leurs produits
Molecular Biology: Regulatory Genes and Their Products

T.C.0.45

LOCALIZATION OF THE VPR GENE PRODUCT IN SIVmac INFECTED CELLS

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The high degree of sequence conservation of the vpr protein between HIV-1, HIV-2, and SIVmac suggests a significant function for vpr in these viruses. There is, however, no detectable vpr gene in the genome of SIVagm. We expressed the vpr open reading frame of SIVmac as a ß-gal fusion protein in E. coli. This protein is immunogenic and is recognized by sera of SIVmac infected rhesus monkeys as well as by sera of HIV-1 seropositive people. The recombinant ß-gal-vpr fusion protein was purified and used to raise heterologous antisera in rabbits. Data from cell fractionation and immunofluorescence where we show the localization of the vpr gene product in SIVmac infected cells will be presented. Analysis of cellular extracts taken at different time points post infection provide evidence for an important regulatory function of the vpr protein in the course of viral infection.

T.C.0.46

VIRAL PROTEIN R (VPR) OF HIV-1 AND HIV-2 IS DISPENSABLE FOR REPLICATION AND CYTOPATHICITY

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Objective: The vpr gene is found in HIV-1, HIV-2, and SIV-MAC and antibodies to VPR are found in HIV-1 infected individuals. The goal of this study was to define the activity of VPR.
Methods: A functional proviral clone of HIV-1, X, was used to construct proviral clones with frameshift or site directed mutations which truncate the VPR protein from 78 to 40, 31, 22, or 2 amino acids. The functional proviral clone of HIV-2, SE, was used to construct a proviral clone with a site directed mutation which truncates the VPR protein from 105 amino acids to 6 amino acids. Each clone was transfected into COS-1 cells, and then cocultivated with H9 or CEM lymphoid cells to produce virus preparations.
Results: Virus produced from each vpr mutant provirus was compared to that produced by the parental clone, X or SE. No significant differences were noted in their infectivity, replication properties, or cytopathicity for different lymphoid cell lines (Jurkat, H9, Molt 3, CEM, Sup T1), monocytoid cell line (U937), or peripheral blood lymphocytes. Southern blot hybridization confirmed the presence of the mutation in DNA from the infected cells, and demonstrated a similar level of DNA sequences in cells infected with the parental virus and those infected with the vpr mutants.
Conclusions: VPR is dispensable for virus replication and cytopathicity in tissue culture. Experiments are currently in progress to define the role of vpr in animal model systems.

T.C.0.47

FUNCTIONAL CHARACTERIZATION OF THE HIV-1 vpu GENE PRODUCT: NOT JUST ANOTHER PROTEIN

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Objective. To describe the structure of the HIV-1 vpu gene product and its function in the viral replication cycle.
Methods. We used a variety of molecular biological, biochemical and immunological techniques to analyse post-translational modification of vpu, to determine its localization inside the cells, and to analyze the effects of vpu on synthesis, processing or turnover of other viral proteins.
Results. The HIV-1 vpu protein is a non-glycosylated, membrane-associated, phosphoprotein which is expressed in large amounts in HIV-infected cells. It does not appear to be virion-associated. The absence of a functional vpu results in the reduction of HIV-1 particles released from infected cells and in the accumulation of viral proteins intracellularly.
Conclusion. Our data suggest that vpu is a matrix protein that is involved in regulating particle-release from infected cells.

T.C.0.48

T.C.0.49

ANALYSIS OF A POTENTIAL HIV-1 CODING SEQUENCE.

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Objective: To determine if an open reading frame of HIV-1 is a coding sequence.

Methods & Results: The region encoding the possible open reading frame was cloned into an in vitro transcription vector. The ability of the potential open reading frame to encode a protein was examined by programming an in vitro reticulocyte lysate with RNA synthesized in vitro by SP6 RNA polymerase. Analysis of the product of the open reading frame produced in the in vitro lysate using rabbit sera directed against oligopeptides derived from the amino acid sequence of the coding sequence indicates that the open reading frame is expressed in rabbit reticulocyte lysates as a fusion of two reading frames by ribosomal frameshifting.

Conclusion: Our results indicate that in addition to gag, pol, env, vif, vpr, tat, rev, vpu and nef, HIV-1 contains another potential coding sequence that is expressed as a fusion protein in cell-free translation extracts.

T.C.0.50

IDENTIFICATION OF NOVEL HIV-1 mRNAs BY S1 NUCLEASE ANALYSIS AND PCR AMPLIFICATION

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Objective. To study the expression of several different HIV-1 isolates and to correlate the expression with the cytopathic and pathogenic potential of these isolates.
Methods. Polymerase chain reaction (PCR), S1 nuclease and Northern hybridization analyses.
Results. We have analyzed the mRNA species produced by HIV-1 after infection of human lymphocytes and after transfections of proviral DNA clones into human cells. New mRNA species were identified by S1 nuclease analysis. Viral mRNA was also converted to cDNA and amplified by PCR. mRNAs of lengths up to 2 kilobases were successfully amplified by this procedure, allowing the study of all the multiply spliced mRNA species in their entirety. It was found that HIV-1 produces more mRNA species than previously described. The complete characterization and regulation of these mRNAs is currently under investigation. A collection of HIV-1 isolates with variable growth and cytopathic in vitro properties were studied. DNA fragments of these isolates were also amplified successfully by PCR using appropriate primers. Fragments of lengths up to 4 kilobases have been amplified. This method allows the fast cloning of functional domains from different virus isolates and the introduction into appropriate expression vectors for further study.
Conclusion. PCR is a fast and reliable method for the amplification and study of HIV-1 DNA and RNA. It is anticipated that this methodology will allow the isolation and characterization of all viral mRNAs and will provide valuable information about the mechanisms of virus pathogenicity.

Gènes régulateurs et diversité génomique virale
Regulatory Genes and Viral Genomic Diversity

W.C.O.1 GENETIC REGULATION OF HIV-1 EXPRESSION

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W.C.O.2 FELINE IMMUNODEFICIENCY VIRUS - GENETIC ORGANIZATION AND REGULATION

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Feline immunodeficiency virus (FIV) is a T-lymphotropic, cytopathic lentivirus associated with a fatal immunodeficiency syndrome in domestic cats. Disease symptoms include lymphadenopathy, hematologic abnormalities, wasting, diarrhea, and susceptibility to opportunistic pathogens. We have molecularly cloned proviruses from FIV-infected tissue culture cells. One clone was shown to give rise to infectious virus after DNA-transfection of permissive cells. The complete nucleotide sequence of this clone has been determined. The proviral clone has a total length of 9,472 base pairs (bp). Long terminal repeats (LTRs) are 355 bp and contain cis-acting regulatory elements including the TATA box for initiation of transcription and a candidate enhancer element that closely matches the NF-kappa B binding site. The initiation site in the LTR for viral transcripts has been identified by primer-extension. Similar to other lentiviruses, FIV utilizes a tRNA-lys primer binding site. Three long open reading frames (orfs) encoding the gag, pol, and env genes are evident. FIV contains an orf that overlaps the 3' end of pol; this orf corresponds to the viral infectivity factor (vif) of primate lentiviruses. Several short orfs are present in the intergenic region between pol and env and within env; these orfs may serve as exons for viral transactivator functions. Orfs are also found in the region after the env gene extending into the rightward LTR. Alignment of the predicted amino acid sequences of the FIV proteins with those of other lentiviruses indicates that FIV is unique and did not arise recently from other known lentiviruses. Virologic, clinical, and genetic features of FIV suggest that this animal lentivirus may be a useful model for HIV infection and AIDS.

W.C.O.3 VIRAL MUTOGENESIS

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W.C.O.4 THE HIV-QUASISPECIES : A NECESSARY DESCRIPTION

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The HIV genome is extremely plastic. Genetic variation is greatest in the region corresponding to the surface glycoprotein, gp120. It appears so far that every isolate studied is quite distinct. Due to its life cycle, HIV strains are accumulated and not eliminated in a sequential manner. The HIV reverse transcriptase is not unduely error prone. However an error rate of greater than one misincorporation per replicative cycle ensures that every genome is unique.

Necessarily HIV isolates must be described in terms of populations of viral genomes or quasispecies. Such studies have shown that one viral isolate was in fact a mixture of two distinct strains. Many isolates harbour high frequencies of defective genomes to the point that cultured virus probably emerged by genome complementation. Quasispecies are sensitive to selection pressures, in vitro culture being particularly selective. Thus there are striking differences between quasispecies in vivo and in vitro such that an isolate does not correctly describe the in vivo situation. Given such data it will be very difficult to describe correctly the characteristics of HIV viruses using single molecular clones. That the molecular biologist will be able to provide a molecular description of HIV induced disease seems remote, at least for the moment.

Éléments de base en immunologie (partie 1)
Basic Immunology (Part 1)

W.C.0.5 CD8+ LYMPHOCYTES ARE THE CRITICAL CELLS MEDIATING SUPPRESSION OF HIV RELEASE BY CD4+ CELLS

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Objective: To determine the critical cell type responsible for the suppression of HIV replication in CD4+ lymphocytes, and define whether cell killing is a major mechanism of this suppression.
Methods: Purified CD4+ and CD8+ lymphocytes from HIV seropositive donors were prepared by the panning technique. CD4+ cells were cultured alone or with the addition of either CD8+ cells or cells prepared by CD4-depletion. Reverse transcriptase assays were done on culture supernatants at 2-3 day intervals. Cell viability counts were assessed by trypan blue exclusion. Expression of HIV proteins by the CD4+ cells was measured by indirect immunofluorescence (IFA) assay.
Results: Panned CD4+ and CD8+ lymphocyte populations were 85-90% pure by FACS analysis. Cells prepared by CD4-depletion contained 55% CD8+ cells, as well as B-cells and non-T lymphocytes. The suppressive activity of purified CD8+ cells were markedly greater than that of the CD4-depleted cells added in equal number to the CD4+ cell cultures. Neither autologous macrophages nor cells depleted of both CD4+ and CD8+ cells demonstrated suppression of HIV replication.

Cell counts and FACS analysis done at the end of 3 experiments showed no decline in the number of CD4+ cells remaining viable in cultures where suppression of HIV release had occurred. When CD4+ cells were removed by panning after exposure to HIV suppressing CD8+ cells, the percentage of cells expressing HIV antigens by IFA did not decline. Subsequent co-cultivation of these CD4+ cells with fresh, PHA-stimulated lymphocytes from a seronegative donor resulted in rapid release of infectious HIV.
Conclusion: The CD8+ lymphocyte is the critical cell mediating suppression of HIV replication by autologous CD4+ cells. Killing of the infected cells does not seem to be a major mechanism of this suppressive effect.

W.C.0.6 Infection by HIV-1 of purified NK cells with a CD3-, CD2+, CD8+, CD16+ phenotype

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In a previous work, we demonstrated a significant depletion of CD8+, CD16+ NK cells in HIV infected patients (AIDS research and retroviruses 4: 121, 1988). These results prompted us to investigate the possibility that HIV could infect NK cells in vitro. Highly purified CD3+, CD4+ and CD3-CD2+, CD8+, CD16+ cell lines were obtained from peripheral blood of a patient displaying a large granular lymphocytosis; and were infected with the human immunodeficiency virus type 1 (HIV1). While CD4+ cell line displayed the well known pattern of infectivity after exposure to HIV1, in the case of CD3-, CD8+, CD16+ cell line only a transient increase of reverse transcriptase expression without increase of p-25 antigen was observed. On day 23 of culture, noninfected autologous CD4+ cells were added to HIV1 infected CD3-, CD8+, CD16+. An important and substained increase of p-25 antigen was observed 4 days after coculture, whereas in the case of reverse transcriptase an also important and substained expression was observed 10 days after CD4 adjonction. These results suggest that NK cells can be directly infected by HIV, in the presence of relatively little cytopathicity and can propagate the virus to autologous CD4 cells.

W.C.0.7 Activation and Infection of T Cells by HIV-1 Infected Antigen Presenting Monocyte/Macrophages.

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Objective: To investigate T cell infection and antigen presentation by HIV-1 infected monocyte/macrophage (m/m).
Methods: M/m were isolated from peripheral blood lymphocyte (PBL) from HIV-1 seronegative individuals by surface adherence and infected with HIV-1. Infected and uninfected m/m were exposed to tetanus toxin (TT) and streptokinase (Sk) for 24 hours washed, and autologous m/m depleted PBLs added. After 18 hours of exposure to m/m, T cells were removed and cultured with uninfected TT and Sk free autologous m/m. ^{3}H thymidine incorporation was determined in the T cells to assess antigen stimulation and reverse transcriptase activity measured in supernatant to monitor infection.
Results: Maximal T cell infection by HIV-1 infected m/m occurred at 7 days. HIV-1 infected m/m presented TT and Sk to autologous T cells with activation comparable to uninfected m/m. HIV-1 infected m/m stimulated and infected T cells without TT. Stimulation and infection of T cells were increased when TT was presented by HIV-1 infected m/m. MoAb to some MHC class II antigens (HLA-DR,DP) blocked T cell infection by HIV-1 infected m/m with and without TT.
Conclusion: HIV-1 infected m/m present TT and Sk to autologous T cells not unlike that seen with uninfected m/m. Activation of T cells appears to be an important component of T cell infection as antibodies that block antigen activation also block infection.

W.C.0.8 MACROPHAGE-ACTIVATING-FACTORS (MAFs) ALTER HIV-1 PRODUCTION FROM PRIMARY MONONUCLEAR PHAGOCYTES.

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Infection of mononuclear phagocytes by HIV-1 is believed to be a central event in the pathogenesis of AIDS. It is not clear, however, whether activating signals alter HIV production from these key target cells. We have studied the effects of several MAFs, including recombinant tumor necrosis factor-alpha (rTNF), interferon-gamma (rIFNg) and lipopolysaccharide (LPS), on HIV-1 production from blood monocyte-derived macrophages (MDM). MDM were purified (> 99% esterase +) from normal donors by density-gradient centrifugation and adherence to plastic in 10% human serum. After 1-2 weeks of culture, MDM were infected with HIV-1 (strain HTLV-IIIB) at a multiplicity of infection of approximately 5. Virus production was determined by ELISA of culture supernatants and cell lysates for HIV p24 antigen. Treatment of MDM with rTNF (10^2-10^3 U/ml), starting either 2 days before or 7 days after HIV-1 infection, increased virus production 5-fold over control. Treatment with LPS (1-10 ng/ml) starting 7 days after infection increased virus production 4-10 fold over control. In contrast, rIFNg (1-10^3 U/ml) inhibited HIV-1 replication (38-95% inhibition). Viral inhibition was observed irrespective of the timing of rIFNg treatment in relation to HIV-1 infection. Similar inhibition was produced by recombinant interferon-alpha$_{2a}$ or native interferon-beta, indicating that anti-HIV activity was not specific for rIFNg. These studies indicate that interferons inhibit HIV-1 replication in MDM, but that rTNF and LPS enhance virus production from these cells. These observations, combined with clinical evidence that T-cell IFNg production declines and circulating TNF levels rise with progression of HIV-1 infection to AIDS, suggest that certain MAFs may be important modulators of HIV-1 replication in vivo.

W.C.0.9 PATTERN OF HIV REPLICATION DURING IN VITRO MATURATION OF MONOCYTES INTO MACROPHAGES

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Objective : Does macrophage activation control HIV replication ?
Methods : HIV replication was observed in peripheral blood monocytes and monocytic cells (THP1) cultured under various conditions to induce macrophage activation (different concentrations of human serum, phorbol ester or cytokines). Expression of differentiation cell markers : Leu M3 (monocyte specific), Pam 1 (macrophages specific), and expression of cytoplasmic viral antigens : constitutive and regulatory proteins (gp110, gp41, p18, p25, p55, p68 and nef), viral RNA, were detected at different time points after infection.
Results : HIV replication is correlated with differentiation of monocytes into macrophages and with activation of the macrophages (a study of the cell cycle indicates a high synthesis of nucleic acids). If HIV infected cultures are stimulated with heat-inactivated HIV, there is increased viral replication.
Conclusion : Expression of viral markers is correlated with monocytic differentiation. Our results suggest that a second round of viral infection could induce macrophage activation and by this way, stimulate productive HIV infection.

W.C.0.10 ADHERENT LYMPHOKINE-ACTIVATED KILLER CELL (A-LAK) CYTOTOXIC ACTIVITY AGAINST HIV INFECTED MONOCYTES.

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Objective. To characterize non-MHC restricted killing of HIV infected monocytes by a highly cytotoxic and homogeneous recombinant-interleukin-2 (rIL-2) stimulated killer cell population. **Methods**. Monocytes were infected with HIV-1 strain IIIB (H9 derived) and a monocyte-derived strain and incubated at 37°C for 1 to 7 days. Autologous and allogeneic A-LAK cultures were prepared by stimulating monocyte-depleted PBLs from normal HIV-seronegative donors with rIL-2 for 24h at 1000 U/ml and expanding the plastic-adherent population. Cytotoxicity of A-LAK cells towards HIV-infected and non-infected monocytes as well as tumor cell lines was evaluated in 4h ^{51}Cr-release assays. **Results**. A-LAK cytotoxicity against the infected and non-infected monocytes after 3 days of infection was 83 lytic units (U)/10^7 cells (strain IIIB), 364 LU/10^7 cells (monocyte-derived strain) and 17 LU/10^7 cells (non-infected monocytes). Killing of K562 and Daudi cells resulted in 8,584 and 2,008 LU/10^7 cells respectively. A-LAK killing of HIV-infected monocytes was at least 20-fold greater than fresh NK-mediated killing. A-LAK cell killing of infected monocytes (233 LU/10^7 allogeneic cells) was as effective as killing by autologous cells (74 LU/10^7 cells). **Conclusion**. A-LAK cells can express high levels of non-MHC restricted cytotoxic activity against monocytes infected with both strain IIIB and a monocyte-derived HIV strain.

Biologie moléculaire (partie 2)
Molecular Biology (Part 2)

W.C.O.11 INHIBITORS OF HIV-1 PROTEASE INHIBIT THE PROCESSING OF GAG AND GAG/POL POLYPROTEINS IN INFECTED T-CELLS

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Processing of HIV-1 gag and gag/pol precursors into functional proteins is catalyzed by a virus-encoded protease essential for replication. The inhibition of this processing presents an unproven, yet attractive strategy, for the development of AIDS therapeutics. Here we describe that synthetic protease inhibitors are able to inhibit protease processing in infected cells. HIV-1 infected T-cells were treated with synthetic peptide analogues designed on principles of enzyme mechanism and primary protein structure and shown to be competitive inhibitors of HIV-1 protease. Western blot analysis with Mab to p24, p17 and reverse transcriptase, as well as pulse chase experiments followed by RIP with AIDS sera were used to assess processing. A significant accumulation of gag and gag/pol precursors and a decrease in the appearance of mature proteins were seen in infected cells treated with peptide analogue inhibitors relative to controls. Pulse chase experiments indicated a complete inhibition in the appearance of mature p24 at 1.5 and 3 hrs. post chase in treated cultures. These results demonstrate that peptide analogue inhibitors designed to inactivate HIV-1 protease lead to the inhibition of gag and gag/pol processing in T-cells infected with HIV-1 and support the hypothesis of viral protease inhibition as an antiviral strategy in the treatment of AIDS.

W.C.O.12 INTERACTION OF CD4 WITH gp120 OF THE HIV VIRUSES.

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Objective. To define and compare the gp120 binding site on CD4 for different isolates of HIV-1 and HIV-2.
Methods. We produced truncated, soluble forms of the human CD4 protein and series of site-directed substitution mutants in both bacterial and mammalian systems, quantitated their affinity for gp120 of HIV-3b by RIA and a flow cytometry assay, and measured their ability to inhibit virus binding, virus infection and virus-mediated cell fusion. For other HIV isolates the binding is being quantitated by a flow cytometry assay with infected cells.
Results. Soluble derivatives of the human CD4 receptor bind the HIV envelope protein gp120 with high affinity and in this manner block virus binding to CD4+ cells, viral infection and syncytium formation in vitro. As a result, soluble CD4 proteins are in clinical trials as potential therapeutic agents for AIDS. Through truncation and substitution mutagenesis of soluble CD4, we have defined in a quantitative manner the gp120 binding site for the 3B isolate of HIV-1. The determinants for high affinity binding occur as a single site which overlaps the CDR-2 homology region within the first variable-like domain of CD4. This predicted loop on CD4 could be accommodated by a small pocket within gp120 which may protect this site from recognition by antibodies and provide a mechanism for the virus to evade the host humoral response. HIV-2 and SIV appear to be less sensitive to inhibition by soluble CD4 in vitro. In one approach to investigating this differential sensitivity, we are defining the binding site on CD4 for isolates of HIV-2 and SIV. These results will be described.

W.C.O.13 IDENTIFICATION OF AN ATTENUATED AIDS-INDUCING FELV THAT HAS A DEFECT IN ENVELOPE PROTEIN PROCESSING.

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Objective: To characterize the genetic differences between FeLV-immunodeficiency viruses that result in their distinct pathogenicities.
Experimental: We have identified several molecularly cloned FeLVs, obtained from a single natural isolate, that have diverse pathogenicities. The FeLVs that induce immunodeficiency in cats are all replication defective and required a helper virus for transmission. The prototype AIDS-inducing FeLV, 61C, induced disease 2-6 months following inoculation into 8-week-old cats. Another FeLV, 61B, obtained from the same cat tissue as 61C, induced disease only after a prolonged asymptomatic period of 8-20 months. The cytopathology of these viruses in feline T cells mimics their behavior *in vivo*, thus providing an *in vitro* assay to study their genetic differences. Analysis of virus chimeras indentified a defect in 61B that maps to the C' terminus of gp70 or the p15E gene. This defect in 61B results in lack cleavage of the envelope polyprotein precursor and it is responsible for the attenuated phenotype of 61B. Such results are reminiscent of observations made for attenuated strains of influenza that contain mutations at the cleavage site of the envelope precursor. Nucleotide sequence comparisons of 61B and 61C will be presented.
Conclusions: Based on studies of this natural attenuated FeLV isolate, therapies designed to interfere with proteolytic cleavage of envelope polyproteins may help to prolong the asymptomatic period in infected individuals.

W.C.O.14 SINGLE POINT MUTATIONS IN THE HIV ENVELOPE GENE ENCODING THE EXTRACELLULAR GLYCOPROTEIN AFFECT VIRAL TROPISM AND RECEPTOR BINDING.

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Objective: To investigate the functional significance of the domains of the envelope protein that are highly conserved between HIV-1 and HIV-2.
Methods. Short deletions or point mutations were made within the highly conserved regions of the envelope gene and the mutated genes were expressed in vaccinia virus recombinants, plasmid vectors, and/or infectious HIV proviral clones. Receptor binding was analysed by co-immunoprecipitation with soluble CD4. Supernatants from transfection of proviral clones were assayed for infectivity.
Results. *In vitro* studies revealed that the integrity of at least four domains of the envelope protein was indispensable for binding to the receptor. Detailed studies of one of these regions demonstrates that a single amino acid change can be critical for binding to CD4 molecule *in vitro*. Mutation of another highly conserved amino acid in this region did not drastically affect receptor binding but suprisingly, the tropism of the virus particles containing this mutation was modified.
Conclusion. Single amino acid changes in highly conserved regions of the envelope gene can have critical effects on receptor binding and cell tropsim.

W.C.O.15 THE EFFECT OF HIV INFECTION ON MONOCYTE DIFFERENTIATION.

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Two monocytic differentiation markers were examined after HIV infection of U-937 cells: 1) cell surface CD4 antigen levels, 2) myc and fos oncogene mRNA quantities. First, a nearly complete depletion of cell surface CD4 was observed in HIV-infected monocytes. This is similar to the rapid and permanent down-regulation of CD4 occurring during PMA-induced differention of U-937 cells. RNA blot hybridization experiments in conjunction with immunoprecipitation assays revealed that a post-transcriptional inhibitory event is responsible for CD4 down-regulation in both HIV-infected and PMA-treated U-937 cells. Second, c-myc mRNA levels are slightly decreased, while the c-fos mRNA precursor is more abundant in chronically infected U-937 cells, suggesting a possible mRNA processing defect in HIV-infected monocytes. These studies show that HIV may be modulating certain events leading to terminal monocyte differentiation.

W.C.O.16 EVIDENCE THAT CD4(81-92) MAY CONSTITUTE A UNIQUE BINDING EPITOPE FOR HIV ENVELOPE GLYCOPROTEIN/CD4 INTERACTION.

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Objective. To demonstrate the anti-viral mechanism of action of CD4(81-92)-based antireceptor peptide in HIV-1 viral glycoprotein/CD4 cellular and solubilized-CD4 binding assays.
Methods. The binding of iodinated gp120 to CD4-positive CEM-SS cells, the binding of metabolically labeled gp120 to the CD4 receptor on CEM-SS cells, and the binding of gp120 to CD4 solubilized from CEM-SS cells was measured directly (iodinated gp120) or by radioimmunoprecipitation with OKT4 (Kalyanaraman et al., *ibid.* 4:319, 1988). The ability of various CD4-derived peptides to inhibit gp120 binding in both assays was compared to the potency of CD4-derived peptides to inhibit HIV-induced cell fusion and HIV-1 infection of CD4-positive CEM-SS cells (see Eiden et al., this volume).
Results. The concentrations of each peptide required to give 50-100% inhibition in each assay are given:

Peptide	gp120/CD4binding	Cell fusion	HIV-1 Infection
CD4(81-92)BZL(peak 7)	7.8-31 µM	<32 µM	<10 µM
TbYIChEbVEDQKEE	31-62 µM	32 µM	31-63 M
TbYIChEbVEDQKEEalk	15-62 µM	16 µM	10-30 µM
KEEIChEbVEDQTbY	>250 µM	>500 µM	>250 µM
TbYIChEVEbDQKEE	>250 µM	>500 µM	250 µM
CD4(23-56)	no inhibition	>500 µM	>250 µM

Note: b=benzyl ester or ether, alk=residue-specific monoalkylation
The peptide CD4(23-56) completely inhibited OKT4A blockade of gp120/CD4 binding at 125 µM.
Conclusions. There is a good concordance for potency to inhibit gp120/CD4 binding, HIV-1 induced cell fusion, and HIV-1 infection, suggesting that the mechanism of action of CD4(81-92)-derived peptides is direct inhibition of gp120/CD4 interaction. CD4(23-56) may contain the epitope through which OKT4A inhibits CD4/gp120 binding, but not the gp120 binding epitope itself.

Mise au point de vaccins contre le SIDA
Vaccine Developments in AIDS

W.C.0.17 CURRENT TRENDS IN HIV VACCINE PREPARATION

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The development of a vaccine against AIDS has met with considerable difficulties. Not only does the virus remain latent in the body for long periods of time, probably persisting as an integrated provirus in the genome of the host cell, but it also shows considerable genetic variability. For an HIV vaccine to be able to prevent infection, quick neutralization of the virus would be of crucial importance. However, neutralizing antibodies raised against an HIV-1 isolate do not usually cross-neutralize other HIV-1 isolates. Work on a vaccine is further hampered by the fact that the only animal model system available so far for HIV-1 uses the chimpanzee. Following infection the animals replicate the virus and become asymptomatic carriers with no signs of disease. Finally, the HIV envelope glycoprotein appears to be poorly immunogenic. It elicits only weak neutralizing anti-viral antibody titers, perhaps due to epitopic suppression. In our hands, vaccinia virus HIV recombinants elicited a T-cell immune response but only a weak humoral response. An inactivated virus vaccine elicited a good humoral immune response but no T-cell response. Purified HIV antigens added with a MDP-base adjuvant showed however high immunogenic potency. Finding the appropriate presentation of HIV antigens able to elicit high neutralizing antibody titers of broad reactivity is a requisite for the successful development of an HIV vaccine.

W.C.0.18 DEVELOPMENT OF AN HIV SUBUNIT VACCINE

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We have mapped the principal HIV neutralization determinant to a disulfide loop in a variable region of the outer envelope (aa 303-338). Antibodies elicited by peptides as small as eight amino acids from the center of this determinant neutralize free HIV and prevent fusion of HIV infected cells with uninfected CD4 cells. These antibodies are type-specific in that antibodies elicited by a peptide of the sequence from one isolate do not neutralize a panel of divergent HIV-1 isolates.

Using PCR amplification and sequencing of this determinant from independent HIV-1 isolates, we have found that over 40 of 100 randomly isolated viruses have identical or very similar amino acid sequences. In addition, over 80 of 100 sera from randomly selected HIV-1 infected people react with a peptide of this sequence. This indicates that viruses with this amino acid sequence are prevalent. This data,taken along with data that antibodies to this determinant delays HIV infection of chimpanzees, (E. Emini, et al.) suggests that a broadly protective HIV subunit vaccine can be developed.

W.C.0.19 IMMUNISATION EXPERIMENTALE ANTI HIV CHEZ L'HOMME

Zagury, Daniel

Dans le cadre d'une coopération de recherche Franco-Zaïroise, des essais d' immunisation active anti HIV, destinés à préparer un vaccin anti-SIDA, par l'induction d'une immunité à médiation cellulaire, ont été engagés depuis novembre 1986 chez des volontaires séro-négatifs. Ces essais (1-2), précédés d'une expérimentation chez l'animal qui a montré l'innocuité et l'immunogénicité des préparations utilisées, ont comporté une primo-injection de vaccine recombinante (Vr) exprimant la protéine gp 160 du HIV_1 et un rappel variant suivant les individus (Vr ; segment de protéines virales purifiées; cellules autologues infectées par le Vr et fixées à la paraformaldéhyde ; membranes autologues isolées exprimant des signaux du virus). Le protocole d'immunisation Vr + cellules autologues infectées et fixées peut être considéré comme un candidat vaccin puisqu'il induit une réaction anti HIV anamnestique et spécifique de groupe (2-3) avec des cellules tueuses et des anticorps qui sont protecteurs- et non facilitants- vis à vis de l'infection par le HIV_1 des monocytes/macrophages in vitro (4).

Nous recherchons actuellement un protocole d'immunisation reproduisant le même état d'immunité anti HIV que le prototype et plus simple à administrer à un grand nombre d'individus. Cette étape dans le développement d'un vaccin anti SIDA est indispensable avant d'envisager un essai clinique à plus grande échelle (phase 2) susceptible d'évaluer le niveau de protection vis à vis de l'infection naturelle du candidat vaccin.

1. Zagury D. et al Nature (326, 249-250, 1987)
2. Zagury D. et al Nature (332, 728-731, 1988)
3. Berzofsky J. et al Nature (334, 706-708, 1988)
~~4. Bernard J. et al : AIDS Res.Hum. Retrovir. 1989, in Press~~

W.C.0.20 EVALUATION OF A RECOMBINANT HIV-1 ENVELOPE PROTEIN AS AN IMMUNOGEN IN HUMANS

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Mise au point de médicaments : nouvelle approche pour l'étude des médicaments antiviraux
Drug Development: Novel Study Approach to Anti-Viral Drugs

W.C.O.21 INHIBITION OF HIV-1 PLAQUE FORMATION BY A NOVEL CLASS OF MEMBRANE-ACTIVE ETHER LIPID ANALOGS

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Objective. We characterized the *in vitro* anti-HIV-1 activity of membrane-targeted DNA non-interactive ether lipid (EL) analogs of platelet activating factor. Methods. Human CEM-SS cell monolayers were used to determine effects of structural modifications of Type A phosphorus containing and Type B nonphosphorus EL analogs on the inhibitory dose$_{50}$ (ID_{50}) for (a) HIV-1 syncytial plaque formation, (b) cell growth (^{3}H-TdR incorporation into DNA), and (c) protein kinase (PKC)activity. Results. Type A ET-18-OMe and Type B CP-7 (ID_{50}=1.5μM) inhibit HIV-1 plaque formation when added before and at least 2 days after viral infection. Initial data indicate that CP-7 inhibits HIV-1 but not herpes simplex virus plaque formation. Anti-HIV-1 activity does not involve direct inactivation of infectious virus. Type A ether phospholipids (ID_{50} range = 0.2 to 1.1 μM) with a thioalkyl or amidoalkyl moiety at glycerol position-1 and ethoxy or methoxy group at position-2, and Type B compounds (ID_{50} range=<0.62 to 0.75 μM) with an inverse choline at position-3 have anti-HIV-1 activity. The anti-HIV ID_{50} values are 5 to 20-fold below the ID_{50} for cell growth. Also, anti-HIV-1 EL inhibit PKC. Conclusion. These data indicate that EL analogs are a novel class of potential therapeutic agents against the etiologic agent of AIDS and, being membrane-interactive, are ideally suited for combination chemotherapy with anti-HIV nucleoside analogs.

W.C.O.22 GENERATION OF INDICATOR CELL LINES FOR THE FAST ASSAY OF HIV-1 AND FOR THE STUDY OF ANTIVIRAL DRUGS.

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Objective. To generate a fast and quantitative method for the in vitro assay of infectious HIV-1 on human T cells and monocytes. To use this methodology for the study of various HIV isolates and for measuring the effects of drugs and drug combinations on HIV-1 infectivity and replication.
Methods. Retroviral vectors were used to construct stable $CD4^{+}$ human cell lines containing the HIV-1 LTR linked to the convenient reporter genes chloramphenicol acetyltransferase (CAT) or alkaline phosphatase (SEAP).
Results. Uninfected indicator cell lines produce very low levels of the reporter enzyme. Upon infection by HIV-1 the produced tat protein activates expression of the LTR resulting in high levels of CAT in the cytoplasm, or SEAP in the medium of the infected cells. The effects of drugs or drug combinations can be studied quantitatively 2-3 days after infection by 96 well-based chromogenic assays, which detect CAT or SEAP. These convenient assays have also been used to quantitate gene expression after transient transfections of eucaryotic cells. Indicator cells derived from T cells or monocytes were affected differently after infection by HIV-1.
Conclusion. A sensitive and specific bioassay for HIV-1 was used to quantitate the effects of drugs and drug combinations on HIV-1 infectivity and replication.

W.C.O.23 MECHANISM OF ACTION OF SULPHATED POLYANIONS AS INHIBITORS IN HIV INFECTION IN VITRO

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AUSTRALIA

A wide range of sulphated polyanions has been examined for inhibition of HIV infection of MT4 lymphoblastoid cell lines by wild and laboratory strains of HIV. as detected by cytopathic effect and extracellular HIV antigen levels at 6-8 days. The most potent inhibitors were dextran sulphate. polyanethole sulphonate and pentosan sulphate (ID50=10 and 1ug/ml respectively. antiviral index >1000 for all compounds). Fucoidin sulphate. polyvinyl sulphate iota-carrageenan and dextran sulphate 5000 were less potent (ID50=100ug/ml). Potency of these compounds was increased by using serum depleted of polyanion binding proteins in the cell culture medium. Fucoidin sulphate. polyanethole sulphonate polyvinyl sulphate and a dextran sulphate 500.000 (not D.S.5000) inhibited binding of 11/12 anti-CD4 monoclonal antibodies (including anti-OKT4a but not anti OKT4) to T cells. However 20 anti CD8 monoclonal antibodies did not inhibit binding. Therefore a correlation between inhibition of anti OKT4a binding and HIV infection was demonstrated. with the exception of pentosan sulphate and the small dextran sulphate polymer. These anomalies are probably caused by the ability of these smaller polyanions to inhibit binding of large viral particles but not highly specific monoclonal antibodies. In addition. we have not been able to demonstrate binding of radio-labelled partially (lentil lectin) purified native gp120 to dextran sulphate immobilised on fibres.Competition between residual cell glycoproteins and gp120 is most unlikely because of the excess capacity of the polyanion conjugated fibres. Hence these sulphated polysaccharides may bind to basic amino acid residues in the first two domains of CD4. in close apposition to the gp120 binding sites.

W.C.O.24 COLCHICINE INHIBITS HIV-1 IN VITRO

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**Rockefeller University, New York, USA

Objective: To determine whether colchicine, at levels achievable in serum, inhibits replication of HIV-1.
Methods: Colchicine at 10, 1 and 0.1 μmoles was added to CEM and HUT cell lines previously infected with HIV-1, as well as to a continuously infected H9 cell line. Viral replication was measured by reverse transcriptase (RT) and p24 antigen capture. Cell counts were carried out to determine the effect of colchicine on cell replication.
Results: Inhibition of HIV replication was observed in all infected cell lines at all 3 concentrations of colchicine. At 1 and 0.1 μmoles of colchicine there was minimal inhibition of cell replication. Pretreatment of HUT and CEM cell lines prior to adding HIV, without maintaining colchicine in the medium, appeared to delay infection/replication for at least 16 days.
Conclusions: Colchicine inhibits HIV-1 replication in vitro at concentrations achievable by oral doses which are clinically tolerated by most individuals.

W.C.O.25 Structures Necessary for HIV-1 Entry:

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Objective: To define and and analyze at the molecular level HIV-1 envelope structures and human cell structures mediating virus entry.
Methods: We have focused on the molecular definition of fusion/entry structures using novel fusion blocking reagents as well as molecular reagents and interspecific hybridomas. Conclusions: We report here that CD4 expression is not sufficient for HIV-1 entry mechanisms. We have developed antisera which specifically interacts with structures ancillary to molecules which are important in HIV-1 entry. Characterization of these proteins as well as viral epitopes necessary for entry functions have been performed.
Results: Studies have demonstrated that HIV-1 virus entry is not mediated through receptor mediated endocytosis but occurs directly though virus fusion events localized at the plasma membrane. Furthermore CD4 function on the murine background is essentially similar to function on the human background. We have utilized this species trophism to begin to determine the chromosomal position of the ancillary molecules necessary for HIV-1 entry. We have utilized antisera which disrupts post binding events of HIV-1 to epitope map regions of HIV-1 that may have protective value in immunization strategies. We have also developed antisera to characterize secondary structures for HIV-1 entry. The utility of these structures for immunological manipulations which productively alter HIV induced pathogenesis is under investigation.

W.C.O.26 IDENTIFICATION AND CHARACTERIZATION OF COMPLEMENT-MEDIATED ENHANCEMENT OF HIV-1 INFECTION BY MANNOSIDASE I AND II INHIBITORS

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Objective. To study the effects of human serum on HIV-1 infection *in vitro* using virus synthesized in the presence and absence of glycoprotein carbohydrate processing inhibitors.
Methods. HIV-1 was produced in H9/HTLV-III$_B$ cells in the presence and absence of inhibitors, then used to examine the effect that various sera, monoclonal antibodies (MoAbs) and sialidase had on infection of MT-2 cells. Infections were monitored by cytopathic effect, antigen synthesis and reverse transcriptase release.
Results. Fresh human serum enhanced infection when virus was synthesized in the presence of 1-deoxymannojirimycin or swainsonine but had no enhancing effect on virus synthesized in the presence of castanospermine, 1-deoxynojirimycin or bromoconduritol. Enhancement was also observed in the presence of sialidase and in C1q-deficient serum but not in serum that was heat-inactivated or depleted of complement components C3 or factor B. Enhancement did not allow infection in the presence of MoAb against CD4 (OKT4a) and was blocked specifically by monoclonal antibody against CR2 (OKB7).
Conclusions. Infection of $CD4^{+}$ lymphocytes by HIV-1 is enhanced by some agents that may cause the accumulation of high mannose-type, non-sialylated HIV glycoproteins. This enhancement appears to require the alternate pathway of complement, CD4 and the complement component C3d receptor, CR2.

Modèles animaux (partie 2)
Animal Models (Part 2)

W.C.O.27 EVALUATION BY PCR OF HIV-1 STATUS OF CHIMPANZEES CHALLENGED WITH HIV AFTER RECEIVING HUMAN HIVIG

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Objective. To determine the status of HIV after virus challenge in chimpanzees previously immunized with HIVIG.
Methods. Five chimpanzees were passively immunized with HIVIG prepared from plasma of HIV asymptomatic, seropositive donors whose serum contained high titers of neutralizing antibodies (Prince et al PNAs, Vol 85 p. 6944-6948) Virus isolation was performed on peripheral blood mononuclear cells (PBMCs) by coculture. PCR was performed on DNA isolated from lymphocytes, using the gag and env primers for confirmatory detection.
Results. HIV-1 DNA sequences were detected by PCR in lymphocytes of all of the animals after virus challenge although virus cultures were not positive until 3-9 weeks after challenge.
Conclusion. Administration of HIVIG to chimpanzees was unable to prevent HIV infection. Virus expression (RNA-PCR in PBLs) and release of assembled virus in serum (PCR on serum) are being performed to assess virus activity in these animals.

W.C.O.28 THE MURINE ACQUIRED IMMUNODEFICIENCY SYNDROME (MAIDS) IS CAUSED BY A DEFECTIVE RETROVIRUS

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The Duplan strain of murine leukemia virus (MuLV) induces MAIDS, a disease showing striking similarities with human AIDS. We identified the etiologic agent of the disease as being a defective retrovirus having a 4.8 kbp genome. Sequencing of this DNA showed that the pol and env genes have been deleted and that the complete gag region has been conserved and harbors a novel p12 sequence. Using a cell-free translation system, the genome has been shown to encode a 60 kd gag fusion protein. The same protein was detected in non-producer cells harboring the defective genome and is not cleaved. N-tropic pseudotypes have been constructed with this virus and the role of helper virus in the disease is also being investigated using the Ψ2 encapsidation-negative system. This mouse model emphasizes the need to search for pathogenic defective retroviruses in AIDS.

W.C.O.29 EFFECTS OF SPERM AND AUTOIMMUNITY ON MURINE AIDS (MAIDS)

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Objective. To determine the effect of sperm and induced autoimmune disease on the generation and course of MAIDS.
Methods. Disease was induced by viruses obtained from cell line LP-BM5-Scl in male C57BL/6J, B10A, ATL and ATH strains. Allogeneic sperm cells (1-3 x 10^7) were injected intravenously prior to and following the viral inoculations. Experimental SLE-like disease was induced by a human monoclonal anti DNA antibody termed 16/6. Serial serum immunoglobulin levels, cellular proliferations and histopathological examinations were performed.
Results. Splenomegaly in several animals and prolonged suppression of splenocyte proliferation to mitogens and allogeneic stimulation were observed following single sperm injection into normal animals. Sperm enhanced significantly the induction of MAIDS by the viral preparations, which was more evident when using subminimal doses of virus.

	Saline	Sperm	Virus	Virus + Sperm
MAIDS	0/18	0/19	2/19	10/19

16/6 antibody injection to virus inoculated animals increased serum levels of Ig, anti DNA and anti idiotypic antibodies and immunopathology.
Conclusion. Immunomodulation by sperm and autoimmune disease influences the course of MAIDS. This may have direct relevance to their role in the pathogenesis of human AIDS.

W.C.O.30 MOLECULAR CLONING AND SEQUENCE ANALYSIS OF FELINE IMMUNODEFICIENCY VIRUS (FIV)

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Objective. FIV is a T-lymphotropic retrovirus that is associated with immunodeficiency and opportunistic infections in cats and provides an excellent opportunity for the development of a small animal model for AIDS. To initiate these studies, we isolated a proviral clone of FIV for molecular and biological characterization.
Methods/Results. FIV-Petaluma cDNA clones were synthesized and used to isolate the proviral molecular clone, FIV-14. Molecular cross-hybridization analysis of FIV-14 with 5 lentiviruses revealed that nucleotide sequence similarities exist between FIV and these viruses in the gag-pol genes. Significant nucleotide sequence identity was observed between the 5' 1.5kb of the FIV-14 pol gene and the pol genes of SIV, HIV-2, HIV-1, EIAV, visna virus and CAEV (55% to 65% identity). Sequence similarities were not observed upon comparison of the FIV LTR sequence with known viral sequences. Common antigenic determinants appeared to be shared by FIV, CAEV, and visna virus as shown by serological cross-reactivity of rabbit antibodies to CAEV and visna virus with the putative FIV core protein, p28. Importantly, progeny virions of FIV-14 were infectious for experimentally inoculated cats.
Conclusions. These studies demonstrated that FIV is a member of the lentivirus subfamily and is distantly related to the AIDS lentiviruses of primates. The availability of an infectious molecular clone will make possible a detailed dissection of the molecular pathogenesis of FIV, which may facilitate the development of vaccine and therapeutic strategies for AIDS.

W.C.O.31 T-CELL KILLING BY THE FeLV-FAIDS IMMUNODEFICIENCY VIRUS

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OBJECTIVE: Locate the genetic determinant(s) and elucidate some aspects of the mechanisms of T-cell killing by a molecularly cloned feline leukemia virus that induces fatal immunodeficiency disease in outbred specific-pathogen-free cats.
METHODS: Chimeric viruses were generated in vitro using the replication competent nonimmunosuppressive 61E provirus and the replication defective acutely immunosuppressive 61C provirus. To assess their pathogenicity, an in vitro assay using a feline T-cell line was developed.
RESULTS: Replication competent chimeras were obtained that were T-cell cytopathic in vitro and induced immunodeficiency disease in vivo. Analysis of 22 chimeras revealed that the essential determinant for T-cell killing resides within a 21 base pair (7 amino acid) stretch within the extracellular glycoprotein gene (gp70), corresponding to a single amino acid change and a 6 amino acid insertion in the protein. Other changes within gp70 and the viral LTR enhance the efficiency and rate of T-cell killing in vitro and pathogenicity in vivo. T-cell killing occurs along with production of high levels of unintegrated viral DNA and viral mRNA, and can be blocked by exposing newly infected cells to antisera from cats exposed to the virus.
CONCLUSION: These findings suggest that T-cell killing occurs as a result of massive superinfection and that the critical mutations in gp70 cause a failure or delay in the establishment of superinfection interference, possibly through altered interactions with p15E and/or its cellular receptor.

W.C.O.32 INFECTION OF THE NEW ZEALAND WHITE LABORATORY RABBIT (ORYCTOLAGUS CUNICULUS) WITH HIV-1

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Objective: To develop a laboratory model for HIV infection of NZW rabbits.
Methods: NZW rabbits were injected intraperitoneally with HIV-1 or HIV-1-infected cells after thioglycollate-induced peritonitis. Animals were monitored for physical and hematological abnormalities, infectious virus, viral nucleic acids, and antibodies to viral proteins.
Results: Three rabbits inoculated twice at 60 day intervals with HIV-1 produced continuously rising titers to both gag and env proteins. Virus, detected as viral antigens, was also periodically recovered from peripheral blood leukocytes by cocultivation with susceptible cells. Persistent infection was also suggested by detection of proviral DNA in multiple tissues. Physical abnormalities included lymphadenopathy and pulmonary rales. Histopathology revealed a disruption of follicular architecture of lymph nodes.
Conclusion: NZW rabbits appear to be infectable with HIV-1 and demonstrate a pathological effect. However, much work remains in characterizing this potential animal model.

Virologie (partie 3)
Virology (Part 3)

W.C.0.33 ANALYSIS OF T CELL NUCLEAR FACTORS WHICH BIND TO THE NEGATIVE REGULATORY ELEMENTS (NRE) OF THE HIV LTR

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Objective. To analyse the nuclear factors binding to the NRE sequence of the HIV LTR and to investigate the influence of nef on these factors.
Methods. Gel retardation assays and methylation interference techniques have been used.
Results and Conclusion. Nuclear extracts from human E rosette positive peripheral blood cells and from T cell clones were analysed using gel retardation assays. NRE binding factors were detected and their appearance in the nucleus is associated with activation of the cells. Moreover, NRE binding factors in nuclear extracts prepared from cells stimulated with PHA ± TPA appear to be different from that (those) which appear in response to IL-2. At least one of the factors is down regulated when the HIV nef gene is expressed in cells using a vaccinia virus expression system.
Evidence will be presented which demonstrates associations between the appearance of HIV NRE binding factors and genetic elements involved in T cell activation.

W.C.0.34 FUNCTIONAL ROLE OF HIV-1 VPU

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Objective: Determination of the effect of the vpu gene of HIV-1 upon the viral life cycle.

Methods: Isogenic HIV-1 proviruses identical except for possessing a functional vpu were constructed and transfected into CD4+ Jurkat cells. Parameters of virus infection quantitated included cell number, syncytia formation, supernatant reverse transcriptase activity, and both cell and virion associated viral protein levels.

Results: Cells infected with vpu-expressing virus demonstrated a marked increase in the ratio of virion associated versus cell associated viral protein compared to cultures infected with vpu-negative virus. The vpu-positive cultures exhibited lags in syncytium formation, cell death and accumulation of intracellular viral proteins, despite possessing higher levels of supernatant reverse transcriptase activity.

Conclusion: The product of vpu acts to accelerate virus export.

W.C.0.35 EFFECTS OF MUTATIONS IN THE nef GENE ON THE GROWTH OF HIV.

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HIV contains the open reading frame called nef at the 3' end of its genome which was reported to be dispensable for viral growth but to reduce viral gene expression. We have compared two different HIV-1 strains with the same genetic background, except for a lesion in nef; one containing the complete coding region, and the other null for nef. The effects of nef on various stages of HIV infections were examined. We have tested effects on viral entry, DNA and RNA synthesis by examining HIV-specific low molecular weight DNA and RNA after infection. Comparable results were obtained from both nef^{+} and nef^{-} strains. The effects on viral growth were also tested by following changes in reverse transcriptase activity in cell culture supernatant and the fraction of infected cells (determined by indirect immunofluorescence) during the course of infection. The presence of the nef gene product fails to slow down viral growth in many different cell types tested, including human T lymphocyte cell lines, H9 and CEM, human primary T cells, and human monocytic cell lines such as U937 and THP-1. These results were reproducible with the use of a different virus isolate. Our data suggest that nef does not act as a negative factor, at least in the experimental system we employed.

W.C.0.36 VPU - A PROTEIN UNIQUE FOR HIV-1 IS REQUIRED FOR EFFICIENT VIRION MATURATION AND RELEASE

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Objective: To determine the role of HIV-1 vpu and its intracellular location during productive viral infection of human T-cells.
Methods: Infections of T-lymphocytes with virus particles derived from an infectious molecular clone of HIV-1 or a deletion mutant lacking the vpu gene were compared. A monospecific vpu antiserum was used in indirect immunofluorescence assays for the cellular localization of vpu. Morphological changes associated with wild type or vpu mutant infections were examined by electron microscopy.
Results: Wild type or vpu mutant virions have similar infectivity in human T-cells. However, infections with the vpu mutant resulted in earlier cell fusion and cell death, both of which paralleled the intracellular accumulation of viral proteins. Using indirect immunofluorescence assays, vpu was localized to the cytoplasm of infected cells; no vpu was detected in the nucleus or on the outer surface of the plasma membrane of virus producing T-cells. Electronmicroscopic analysis of cells infected with the vpu mutant revealed the presence of virus-like particles in the cytoplasm, intracellular budding, and an accumulation of immature particles at the cell surface; these features were not observed in cells producing wild type virions.
Conclusions: Vpu is required for the efficient release of HIV-1 particles from productively infected lymphocytes. The absence of vpu results in an intracellular accumulation of virus particles and impairs virus maturation.

W.C.0.37 EFFECTS OF NEF EXPRESSION ON HIV REPLICATION AND CELLULAR FUNCTIONS

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Objective. To determine the effects of stable nef expression on HIV replication and cellular functions.
Methods. Stably transformed cell lines expressing the nef protein were obtained by transfection of HUT-78, RD (human rhabdomyosarcoma) and COS-7 (monkey) cells with plasmid constructs of nef under the SV-40 or HIV-LTR promotors. Expression of nef was monitored by an immunofluorescence assay (IFA) and immunoblot analyses. Effects of nef expression on HIV replication was assayed by transfection and infection of these stable cell lines. Effects on cellular function were monitored by cell growth and modulation of cell surface markers.
Results. Stable cell lines expressing the nef gene product, p27, were obtained in HUT-78, RD and COS cells. Expression of nef in HUT-78 results in the down-modulation of the CD4 receptor molecule. This down-modulation appears to be specific since other cell surface markers, e.g. CD3, were not affected. Expression of nef in HUT-78 also leads to the suppression of HIV replication upon transfection or infection with HIV. In some stably transformed cell clones, the expression of nef appears to retard cell growth. This is similar to that observed for ras expression in yeast. Current studies are directed at elucidating the mechanisms by which nef regulates HIV replication and cellular function. Its interaction with other HIV regulatory proteins is also being examined.
Conclusion. Expression of nef in stably transformed cell lines has been shown to suppress HIV replication and affect cellular functions. These cell lines will be used to understand the mechanism by which the nef protein exerts its effects, and the interactions it has with the other HIV regulatory proteins.

W.C.0.38 IN VITRO GENERATION OF NEUTRALIZATION-RESISTANT HUMAN IMMUNODEFICIENCY VIRUS (HIV)

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Objective. To prove that HIV produces antigenic variation in the presence of neutralizing monoclonal antibody (0.5β).
Methods. Plaque-cloned HIVs and monoclonal antibody (0.5β) which shows type-specific neutralization were used. The virus-infected MT-4 cells were cultured with or without 0.5β for 1 month to obtain variants of the virus. To know the antigenic changes of the viral envelope, we performed plaque-assay for neutralization and radioimmunoprecipitation assay. Restriction enzyme map analyses were used to show the genetic changes.
Results. After 1 month of culture, we obtained variant viruses which showed cytopathic effects even in the presence of 0.5β. Neutralization test by 0.5β revealed that antigenic differences between control and variant were marked. Also, 0.5β precipitated gp120 of control but not of variant. Restriction enzyme map analyses showed that there were no differences among them.
Conclusion. We showed that the alteration in virus neutralizability was observed in the presence of neutralizing monoclonal antibody, suggesting that this antibody may exert selective pressure. Restriction enzyme map analyses indicate that the changes at genetic level might be a minor one. Probably a point mutation was proposed.

Éléments de base en immunologie (partie 2)
Basic Immunology (Part 2)

W.C.O.39

ANALYSIS OF THE FUNCTIONAL DEFECTS OF T LYMPHOCYTES IN HIV-INFECTED PATIENTS. Pantaleo, Giuseppe, Koenig, S., Baseler, M., Lane, H.C., and Fauci, A.S. LIR, NIAID, NIH, Bethesda, MD. U.S.A.

Objective. To understand the pathogenesis of in vitro proliferative defects of $CD4^+$ and $CD8^+$ T lymphocytes from HIV-seropositive patients.
Methods. Phenotypic analysis of peripheral blood mononuclear cells (PBMC) from 243 HIV seropositive individuals was performed by fluorescence cytofluorometry using a panel of monoclonal antibodies (mABs) recognizing T cell, B cell, and monocyte cell surface antigens. Two-color cytoflurometric analysis was also performed using anti-CD3, anti-CD4, anti-CD8, anti-HLA-DR and anti-TAC on PBMC from some of these patients. Unfractionated PBMC and T cell subpopulations were cloned using a limiting dilution microculture system to determine the frequency of proliferating T lymphocytes precursors (PTL-P).
Results. In the fluorometric analysis we found an increased number of DR^+ T cells in PBMC of 50 of our patients. The majority of DR^+ cells were $CD8^+$ (~80%), whereas ~ 20% of DR^+ cells were $CD4^+$. However, TAC antigen was not expressed on these DR^+ $CD8^+$ or DR^+ $CD4^+$ T cells. Stimulation of sorted $CD8^+$ DR^+ and $CD8^+$ DR^- cells with anti-CD3 mAB in solid phase showed that in contrast to $CD8^+$ DR^- cells, $CD8^+$ DR^+ cells failed to proliferate even when exogenous IL-2 was added. The proliferative defect of $CD8^+$ DR^+ T cells was further confirmed by limiting dilution clonal analysis.
Conclusions. We provide evidence suggesting that the in vitro proliferative defect of T cells in patients with AIDS may be due in large part to an in vivo expansion of non clonogenic populations of T cells.

W.C.O.41

DETERMINATION OF EPITOPES RECOGNIZED BY HIV-SPECIFIC CTL. Koenig, Scott, Earl, P., Wood, L., Powell, Moss, B., Fauci, A.S. et al. LIR, and LVD, NIAID, NIH, Bethesda, MD, U.S.A.

Objective. To identify group specific epitopes which stimulate HIV-specific cytotoxic T cell responses (CTL).
Methods. Fresh peripheral blood mononuclear cells (PBMC) and T cells cloned by limiting dilution from HIV-1 seropositive patients and participants in a Phase I vaccine clinical trial using recombinant gp160 served as effector cells in these studies. HIV-specific CTL activity was determined using lymphoblastoid target cells (LCL) infected with recombinant vaccinia viruses (rVV) expressing envelope, gag, or pol HIV-1 proteins in a 4 hour ^{51}Cr release assay. Truncations of the envelope and pol genes were also expressed in rVV to define specific regions stimulating CTL responses. Synthesized peptides were used to determine the group specific epitopes of these CTL.
Results. Group specific CTL response against variant HIV-1 envelope proteins have been detected in unfractionated PBMC and cloned T cell populations. In unfractionated PBMC, cytotoxic responses were detected predominantly against one conserved env region (a.a. 228 287) in some of the individuals where others demonstrated a more heterogeneous response. Cloned CTL have been similarly detected against these domains. Studies are in progress using peptides to define the specific epitopes recognized by these CTL.
Conclusions. We have begun the task of defining the group specific epitopes recognized by HIV-specific CTL to several HIV proteins. These studies will help in efforts to develop a vaccine for HIV as well as in therapeutic attempts at adoptive immunotherapy.

W.C.O.43

LONG TERM CULTURE AND FINE ANTIGEN SPECIFICITY OF HIV-1 REVERSE TRANSCRIPTASE-SPECIFIC CYTOTOXIC T LYMPHOCYTE (CTL) CLONES

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Objective. To determine the viral antigens recognized by HIV-1 specific CTL.
Methods. HIV-1 RT-specific T cell clones were derived by culturing peripheral blood mononuclear cells from seropositive subjects at limiting dilution in the presence of recombinant interleukin-2 and a CD3-specific monoclonal antibody. Antigens recognized by these clones were determined in each case by both a) lysis of autologous EBV-immortalized B cells infected with a panel of vaccinia-HIV-1 recombinant viruses expressing truncated portions of the RT protein, and b) lysis of autologous EBV-immortalized B cells incubated with synthetic 25 amino acid RT-peptides.
Results. A total of 6 HIV-1 RT-specific CTL clones derived from 2 seropositive subjects were studied. In one subject, 2 peptide-defined epitopes, restricted by the class I antigens A2 and Bw60, respectively, were identified. In a second subject, 2 different peptide-defined epitopes, restricted by the HLA class I antigens A11 and B8, respectively, were found. These CTL clones have now been maintained in continuous culture for up to 7 months without loss of virus-specific cytotoxic activity.
Conclusions. HIV-1 specific CTL clones can be maintained in long term culture without exposure to exogenous viral antigen. The epitopes recognized by these CTL are heterogeneous and dependent upon the HLA type of the host. This approach should facilitate further mapping of the immunogenic epitopes of HIV.

W.C.O.40

IN VITRO LYMPHOCYTE PROLIFERATIVE RESPONSES TO RECOMBINANT AND SYNTHETIC PEPTIDE ANTIGENS OF HIV-1.
Krowka, John*, Stites, D.*, Steimer, K.**, Duzgunes, N.* et al. *University of California, San Francisco, USA and the **Chiron Corporation, Emeryville, CA, USA.

Proliferative responses of lymphocytes from HIV antibody-negative (HIV-) and -positive (HIV+) individuals to recombinant and synthetic envelope or core proteins were evaluated to assess the roles of cell-mediated immunity in HIV infections. All HIV- and most HIV+ individuals' lymphocytes did not proliferate when cultured with recombinant HIV proteins or soluble synthetic HIV peptides. Even lymphocytes from many HIV+ asymptomatic individuals with normal numbers of CD4+ cells that proliferated in response to other recall antigens such as cytomegalovirus (CMV) failed to proliferate in response to any HIV antigens in the presence of interleukin 2 (IL2) which can augment proliferative responses. A few HIV+ individuals' lymphocytes proliferated weakly when cultured with HIV antigens but these responses were generally transient in nature. These results indicate that the inability to generate or maintain vigorous helper T cell responses to HIV antigens may be important in allowing the progression of HIV-related diseases. In the presence of IL2, lymphocytes from many HIV+ individuals proliferated when cultured with liposome conjugates of a synthetic HIV envelope peptide ($ENVP_{466}$) but not when cultured with unconjugated liposomes or with liposomes conjugated to a peptide, $ENVP_{497}$, that constitutes the carboxy terminus of gp120. These studies as well as results from other laboratories indicate that the conjugation of synthetic peptides to liposomes may be useful to enhance their antigenicity or immunogenicity.

W.C.O.42

A CYTOTOXIC T LYMPHOCYTE INHIBITS AIDS VIRUS REPLICATION IN PERIPHERAL BLOOD LYMPHOCYTES.
Tsubota, Hiroshi; Lord, C.I. and Letvin, N.L. Harvard Medical School, New England Regional Primate Research Center, Southborough, Massachusetts, USA.

Objective. To characterise the CD8+ (suppressor/cytotoxic) lymphocytes which inhibit replication of HIV and SIV in PBLs.
Methods. PBLs of HIV-infected humans and SIV-infected rhesus monkeys were lectin-activated and maintained in IL-2 containing medium with RT activity assessed in culture supernatants.
Results. In a prospective study of SIV-infected monkeys, we demonstrate that this virus-inhibitory CD8+ cell is not present in PBLs in the first weeks following infection. Thus, the inhibitory lymphocyte population appears to undergo clonal expansion in the host during the course of infection. We also show that the rhesus monkey CD8+ lymphocyte inhibits SIV replication in autologous but not in major histocompatibility complex class I mismatched PBLs. These findings suggest that the virus-inhibitory cells have characteristics of antigen-specific T lymphocytes. The CD8+ cells which inhibit HIV and SIV replication were further defined on the basis of their phenotype. The inhibitory lymphocytes express the integrin family molecule 4B4 and the cytotoxic T lymphocyte-associated S6F1 epitope of LFA-1. Finally, this inhibitory function is blocked by anti-LFA-1 and anti-CD8 monoclonal antibodies, indicating that physical contact is required for the CD8+ lymphocyte-mediated inhibition of AIDS virus replication.
Conclusion. The cell which inhibits AIDS virus replication in PBLs of infected individuals is a cytotoxic T lymphocyte.

W.C.O.44

ANALYSIS OF THE STRUCTURAL AND NON STRUCTURAL PROTEINS OF HIV-1 RECOGNIZED BY PRIMARY CYTOTOXIC T LYMPHOCYTES
F. Tanneau[1], P. Sansonetti[1], M.P. Kieny[3], O. Lopez[2], L. Montagnier[1], Y. Rivière[1]. [1] Institut Pasteur, [2] CTS Pitié-Salpêtrière, [3] Transgène Strasbourg France.
Objective to further characterise HIV-1 specific cytotoxic effector cells in the peripheral blood of HIV-1 seropositive individuals.
Methods autologous EBV transformed lymphoblastoid cells were infected with recombinant vaccinia viruses expressing gag (p55, p18 or p25), pol., vif, nef or rev and used as targets of the cytotoxic activity present in PBMC of HIV seropositive donors.
Results a majority of HIV-1 seropositive donors have primary CD8+ CTL that lyse gag and polymerase expressing targets.
- Expression of the gag products p18 and p25 in addition to the precursor p55 is sufficient for recognition by CTL present in PBMC.
- Some donors contain primary CTL that recognise the HIV-1 regulatory proteins rev and nef (the phenotype of these CTL is CD8+).
- The gag specific CTL activity is stable in individual donors tested repeatedly for up to 18 months.
Conclusion Not only the viral structural proteins encoded gag and pol. but some of the nonstructural regulatory proteins of HIV-1 are recognized by CTL during HIV infection. Gag-specific cytotoxicity is maintained at similar levels over time in healthy HIV seropositive individuals. CTL recognition of these viral proteins may be important in the control of HIV infection in vivo.

Modèles animaux (partie 3)
Animal Models (Part 3)

W.C.0.45 NEUROPATHOLOGICAL STUDY OF SIV-INFECTED MACAQUES

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Objective. To determine the pathologic changes in the CNS of macaque monkeys acutely or chronically infected with SIV isolates PBj-14 or SMM-9.
Methods. Brains and spinal cords from macaque monkeys were examined histologically at varied intervals post-SIV infection. Included were brains from 17 macaques that died 8-18 days post-infection (P.I.), brains from 2 animals that died at 7 and 9 months P.I., and brains from 7 chronically infected macaques that died 14-43 months P.I.
Results. Lesions were found in the brain as early as 8 days P.I. Changes seen in animals dying shortly after infection include (1) choroid plexitis with mononuclear cell and occasional multinucleated giant cell inflammation and necrosis of choroid plexus epithelial cells, and (2) meningitis with predominantly mononuclear cell inflammation. Parenchymal lesions were rare in animals dying acutely, but chronically infected animals showed a less striking choroid plexitis and more frequent parenchymal granulomatous lesions.
Conclusion. SIV infection in macaques produces CNS lesions with features comparable to HIV infection in man (meningoencephalitis with multinucleated giant cells and macrophages). Continued study of the pathogenesis of SIV infection should provide important information related to the pathogenesis of CNS involvement in AIDS. (Supported by NIH grant RR00165).

W.C.0.46 CLINICAL, IMMUNOLOGICAL, AND VIROLOGICAL FOLLOW UP OF HIV2 INFECTED RHESUS MONKEYS.

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(1) Centre de Recherches du Service de Santé des Armées, Commissariat à l'Energie Atomique, Fontenay aux Roses , FRANCE. (2) Institut Pasteur, Paris, FRANCE (3) CEA, Bruyères le Châtel, FRANCE.

Objectives : To establish an animal model of human HIV infection and/or clinical manifestations of AIDS, in order to understand pathogenesis of HIV infection, to test therapeutic protocols, and vaccine strategies.
Methods: 10 rhesus monkeys have been inoculated with 2 different strains of HIV2 (ROD, EHO) "wild" or before being "adapted" in vitro to monkeys cells (baboons, cynomolgus, rhesus). Monkeys were injected both by IV route and intracerebrally. Follow-up consisted in clinical survey, serological tests (RIPA), monthly lymphocytes cultures, CD4+/CD8+ cells count and conventional blood chemistry tests. HIV2 isolated in vivo from monkeys PBL and CSF have been compared to starting viral matériel by restriction map and biological properties in cell cultures. A second "in vivo" passage of HIV2 strain which exhibited in vivo pathogenic effect is now performed.
Résults: 7 animals seroconverted (D13 - 230), earlier with the HIV2-ROD strain adapted on cynomolgus cells than the other strains. HIV2 was detectable in lymphocytes culture supernatants in 6 of the 7 animals who seroconverted and in 1 who remains seronegative. Significant lymphopenia and decrease of CD4+ cells count were observed in 6 animals. Two animals exhibited clinical symptoms which might be related to HIV2 infection: severe cachexia, dyspnea, neurologic symptoms related to actinomycetes typical lesions of the lungs and of the meninges, for one animal, and weight loss, lymphadenopathies, and pancytopenia for the other one. HIV2 isolated from these monkeys behave differently in cell culture than the starting viruses.
Conclusion: HIV2 is able to replicate in rhesus monkeys, and may induce clinical symptoms in some animals. This model has to be reproductible before being considered as a model for AIDS or for HIV infection. Molecular and biological markers of in vivo adaptation have to be investigated, and may help in understanding HIV infection pathogenesis and variability of clinical manifestations.

W.C.0.47 MONKEYS WITH SIMIAN AIDS PRODUCE AN ANTIBODY DIRECTED AGAINST A HISTONE-LIKE PROTEIN ON $CD4^+$ T-CELLS.

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Previously it was shown that patients with AIDS and AIDS-related conditions produce a cytotoxic autoantibody that binds to lectin-stimulated or virally-infected $CD4^+$ T-cells (Nature 327: 710-713, 1987). Subsequently it was discovered that the target antigen resembles a histone protein, H2B. We have now investigated the production of this antibody in monkeys infected with simian immunodeficiency virus (SIV). When macaque monkeys are infected with SIV, these monkeys develop symptoms of immunosuppression that are characteristic of simian AIDS (SAIDS). In contrast, when mangabeys are infected with SIV, they remain healthy. Sera from 10 mangabeys and 10 macaques infected with SIV were tested for the presence of antibody against histone H2B by immunoblotting. The ten mangabeys (all healthy) did not have antibody against histone H2B detected in their sera. Four of the macaques were healthy at the time of testing, and none of their sera contained antibody against the histone protein. In contrast, the other six macaques had symptoms of SAIDS, and all six had antibody against histone H2B. When sera from these animals were tested sequentially, detection of antibody against the histone protein appeared to coincide with the onset of disease. The histone-like antigen was also detected on macaque lymphocytes, as determined by immunoblotting using monoclonal antibody against histone H2B. We conclude that monkeys with SAIDS produce an antibody that reacts with a histone-like protein expressed on CD4+ T-cells. This antibody may play a key role in the destruction of CD4+ T-cells in both AIDS and SAIDS.

W.C.0.48 VACCINE PROTECTION AGAINST SIMIAN IMMUNODEFICIENCY VIRUS INFECTION

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Objective. To test the efficacy of inactivated simian immunodeficiency virus (SIVmac) as a vaccine.
Methods. Rhesus macaques were immunized by multiple inoculations with purified, disrupted, non-infectious SIV in adjuvant (threonyl muramyl dipeptide adjuvant formulation of Syntex).
Results. Immunized monkeys developed anti-SIV antibodies detectable by whole virus ELISA and by Western blot; these antibodies had weak neutralizing activity. These macaques were challenged with 200 to 1000 animal infectious doses of live, cell-free SIV one week after the last immunization. SIV recovery from peripheral blood and anamnestic antibody responses were used to monitor infection. Two of six vaccinated macaques showed no evidence of infection after challenge with live virus. One of four vaccinated macaques that became infected after challenge had a delayed anamnestic antibody response that appeared 24 to 40 weeks after challenge. Four of four unvaccinated macaques became infected with these doses and three have died with AIDS 118-258 days after challenge. Only one of six vaccinated-challenged macaques has died to date.
Conclusion. These results suggest that inactivated whole virus vaccination can protect macaques against SIV challenge. The SIV animal model appears useful for comparison of AIDS vaccine strategies.

W.C.0.49 EVIDENCE FOR PROGRESSION TO DISEASE IN CHIMPANZEES CHRONICALLY INFECTED WITH HIV-1?

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Objective: To assess the virologic, immunologic and clinical status of chimpanzees after long-term infection and immunization with HIV-1.
Methods: Following inoculation of HIV-1 and later therapeutic immunization with purified HIV antigens, chimpanzees were evaluated for hematologic status; virus status, including cell-free and cell-associated HIV and p24 antigenemia; and immune responses, including antibodies that neutralized virus infectivity, inhibited cell-to-cell transmission, syncytia formation, or RT activity.
Results: Of six chimpanzees infected for 45 to 58 months, three developed changes in antibody profiles or abnormalities in hematologic parameters. Two animals, one of which was persistently hypergammaglobulinemic for more than 4 years, lost antibodies to *gag*-encoded antigens. The third animal has been lymphopenic, with loss of $CD4^+$ cells, and thrombocytopenic for more than 1 year, and recently became viremic, as evidenced by isolation of cell-free HIV from plasma. Therapeutic immunization had little effect on HIV-specific immune responses or clinical status.
Conclusion: Long-term HIV-infected chimpanzees are developing abnormalities analogous to those that are predictive of AIDS in HIV-infected persons. If HIV-induced disease in chimpanzees is a function of length of time of infection, then HIV-infected chimpanzees may yet develop AIDS. (NIH grant RR-00165 and CDC Contract 200-88-0607).

W.C.0.50 GENETIC VARIATION OF SIV IN EXPERIMENTALLY INFECTED MACAQUES: TISSUE VERSUS TISSUE CULTURE

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Objective. Lentiviruses have the potential for significant genetic variation during natural infection. Viruses isolated from infected animals in tissue culture may not represent the entire spectrum of genetic variation due to: i) selective growth of certain variants in tissue culture; and, ii) the presence of replication defective proviruses. To address these issues, we have begun to analyze and compare SIV proviral DNAs in tissues from SIV-infected macaques and in cell lines established from tissue culture isolates.
Methods/Results. Three groups of macaques were infected with SIV from a sooty mangabey (SIVsmm): group A received uncloned SIVsmm; group B received SIVsmm (smH-3), derived from a biologically active molecular clone; and, group C received smH-4, derived from a second SIVsmm molecular clone. One macaque in group A died 7 weeks after inoculation (from disseminated CMV infection). On Southern blot analysis, the original inoculum of SIVsmm contained one detectable proviral form. Portions of splenic tissue were either co-cultured with CEM cells or processed for genomic DNA isolation. Comparative Southern blotting revealed that: i) multiple proviruses were present in the acutely infected CEM cell line and the splenic tissue; and, ii) a major proviral form present in the splenic tissue (equimolar with the original form) was not detected in the CEM cell line. Furthermore, this proviral form was also detected (at varying levels) in liver, kidney, and lymph node. Cloning and molecular characterization of these proviral variants are underway.
Conclusions. Multiple proviral forms of SIV emerge during infection of macaques. Certain variants may not be recovered in tissue culture despite a high integrated proviral copy number in tissues. The importance of these variants is unclear, but they may play a role in the pathogenesis of SIV infection.

Éléments de base en immunologie (partie 3)
Basic Immunology (Part 3)

Th.C.0.1 SELECTIVE SIGNALING DEFECT VIA THE CD3/TCR COMPLEX IN T CELLS FROM HIV-INFECTED MEN.

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We have previously shown that HIV infection induces qualitative T-cell defects before the onset of CD4+ T-cell depletion. In this study the responses of T cells from HIV infected persons to different proliferative signals were investigated using monoclonal antibodies (mAb) against T-cell membrane antigens. Due to intrinsic defects, T cells from asymptomatic HIV-infected men responded poorly to activation signals via the CD3/T-cell Receptor ((TCR) complex and CD2 that are mediated by intracellular signalling routes dependent on PK-C. In contrast, T-cell proliferation induced via the alternative CD28 activation pathway was unaffected. Since, Ca^{2+} mobilisation and PK-C activation were normal, the defect in CD3/TCR triggering lies distal from PK-C activation. In a longitudinal study, it appeared that the anti-CD3 mAb responsiveness dramatically declined 12-15 months before onset of ARC/AIDS, whereas the anti-CD28 response remained relatively normal. The generation of cytotoxic T cells (CTL) in an anti-CD3 driven system was also impaired and could be restored by addition of rIL-2 and anti-CD28. An early effect of HIV infection on T-cell reactivity may disturb the balance between virus and host defense which may be a rationale for treatment of asymptomatic HIV-infected individuals with immune modifiers.

Th.C.0.3 HUMAN MONOCLONAL ANTIBODIES TO VARIANT AND CONSERVED EPITOPES OF HIV ENVELOPE GLYCOPROTEINS.

Robinson, James, Holton, D., Pacheco, S., Liu, J., and McMurdo, H. Louisiana State University Medical School, New Orleans, LA, U.S.A.

Hypervariable regions of HIV env genes appear to encode potential antigenic sites but the extent that variant envelope antigens are immunogenic in HIV infected patients has not been fully delineated. To investigate this question, we proposed to use Epstein-Barr virus (EBV) transformation of B cells from HIV infected subjects to generate human monoclonal antibodies (HMab) that might identify variant or conserved envelope antigens that immunised each patient. From two asymptomatic patients, we have produced 2 IgG HMabs that bind to gp120/160 of HIV. Both HMabs were tested by Western blot and ELISA for reactivity with gp120/160 of 9 different strains of HIV. One HMab, designated K24-3b, reacted with gp120 of 6 strains, did not react at all with gp120 of 2 strains, and showed significantly diminished reactivity with 1 strain. The other HMab, designated N70-2.3a, reacted with gp120/160 of all 9 strains. These results indicate that K24-3b recognizes a variant epitope while N70-2.3a binds to a conserved epitope. K24-3b does not appear to have neutralizing activity but has been tested against only 1 of the 9 strains; N70-2.3a has not been tested for neutralization. From the B cell donor of N70-2.3a, we also produced 3 other IgG HMabs that bind to gp120/160 but these antibodies have not been further characterized. These results demonstrate that it is possible to generate HMabs to HIV glycoproteins which will allow studies of the extent and importance of antigenic variation in HIV.

Th.C.0.5 DETECTION OF ANTI-CD4 AUTOANTIBODIES IN THE SERA OF HIV INFECTED PATIENTS USING RECOMBINANT SOLUBLE CD4 MOLECULES.

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The use of purified recombinant soluble CD4 (sT4) allowed the detection of high titers of anti-CD4 immunoglobulins in the sera of 3 out of 33 HIV-infected patients. Binding of these antibodies to sT4 was first detected by enzyme-linked immunosorbent assay (ELISA), and their reactivity was blocked in a dose-dependent manner by preincubation with sT4. The antibodies could also immunoprecipitate iodinated sT4, but even specific anti-CD4 antibodies purified on Sepharose CL4B-CNBr beads coupled to sT4 molecule, failed to recognize CD4 expressed on the surface of CD4+ lymphocytes or cell lines. A truncated soluble CD4 molecule containing only the first two amino-terminal domains of the CD4 molecule, as antigen, did not react with these sera in ELISA, nor did it block antibody binding to sT4. Both these human sera and Leu3a, a mouse monoclonal antibody (mAb) which recognizes an epitope of CD4 close to the HIV binding site, failed to compete with one another for binding to sT4. Because these antibodies did not recognize epitope(s) of the CD4 molecule close to the HIV binding site, they are not likely to be anti-idiotypic antibodies directed against anti-HIV envelope antibodies. The exact location of the recognized epitope(s), as well as the role, if any, of these antibodies in the pathophysiology of HIV infection is presently investigated.

Th.C.0.2 CHEMICALLY INDUCED CD4 MUTANTS PROVIDE EVIDENCE FOR ADDITIONAL SITES INVOLVED IN HIV-1 INFECTION AND SYNCTIA

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Objective. To identify new sites on the CD4 receptor which are involved in HIV-1 infection and syncytia formation.
Methods. CEM T cells were treated with the mutagen EMS, followed by negative selection with OKT4A + C' and positive selection of $OKT4^+$ mutants by FACS sorting. Mutants were analysed by staining with anti-CD4 reagents and tested for their ability to be infected with HIV-1 and to form syncytia following infection with gp160-vaccinia recombinant virus.
Results. Several groups of interesting mutants were isolated and cloned: (a) CD4-LOW mutants (5-10% of wild type expression) which nevertheless were susceptible to HIV-1 infection, and formed normal number of syncytia 24 hr after gp160-vaccinia infection (inhibitable by OKT4A and Leu3A mAb). (b) CD4-MED mutants (20-40% of wild type expression). Most of them behaved like wild type CEM in all functional assays. Four mutants in this group, while expressing CD4-epitopes required for HIV-1 binding (OKT4A, Leu3a, MT151), were neither infected by HIV-1, nor formed syncytia after gp160-vaccinia infection. The expression of other surface markers were like wild type CEM.
Conclusions. (a) HIV-1 infection of T cells and gp160-mediated syncytia formation are highly efficient processes requiring few CD4 receptors. (b) In addition to the previously identified gp120 binding sites on the CD4 receptor molecules, there are other regions on CD4 (or on a closely associated surface molecule) which are involved in HIV-1 syncytia formation. Biochemical and molecular approaches are currently being used in the further analyses of these CD4 mutants.

Th.C.0.4 A HYBRIDOMA PRODUCING HUMAN MONOCLONAL IgG NEUTRALIZES THE HTLVIIIb ISOLATE IN VITRO.

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Objective. To evaluate human monoclonal antibodies (HuMAb) for their ability to neutralize HIV-1 in vitro.
Methods. HuMAb were generated by fusion of the mouse myeloma cell line P3x63AgU1 with splenic lymphocytes from an HIV seropositive patient. Protein-A purified HuMAb were assayed for neutralizing activity with and without the presence of complement in an MT-2 cell survival assay and by a non-commercial p24 antigen capture assay.
Results. An IgG1, lambda-chain, HuMAb, designated S1-1, demonstrated neutralizing activity against the HTLVIIIb isolate. This HuMAb did not react with HTLVIIIb antigens in western blotting, but did react with the surface of HTLVIIIb infected cells. Neutralization of HTLVIIIb by S1-1 was observed from 60 ug/ml to 7.5 ug/ml in the presence and absence of complement. S1-1 neither enhanced infection nor did it inhibit syncytium formation. HuMAb S1-1, however, could not neutralize the HTLVIIIRF isolate.
Conclusion. We report the generation of a HuMAb, S1-1, that neutralizes HIV, does not enhance infection, and does not inhibit syncytium formation.

Th.C.0.6 ANTIBODY RESPONSE TO THE HIV-1 REGULATORY GENE PRODUCTS NEF, VIF AND VPR IN HIV-1-INFECTED SERONEGATIVE INDIVIDUALS

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Objective. To investigate whether HIV regulatory gene products might be expressed in vivo and induce a specific immune response during the serologically silent period that follows infection by the human immunodeficiency virus (HIV-1).
Methods. Seventeen HIV-1-seronegative (ELISA, Western blot), -p24/25 seric-, -viral antigen-negative individuals at risk for HIV infection were studied. Antibodies to *nef* (involved in maintenance of proviral latency), *vif* (involved in maturation of virion infectivity), and *vpr* (o unknown function), were searched by radioimmunoassay and/or Western blot using *nef* recombinant protein (95% pure); 8 synthetic *nef* peptides; 3 synthetic *vif* peptides; 2 synthetic *vpr* peptides. HIV-1 proviral DNA (gag gene) was searched by oligonucleotide hybridization, following enzymatic amplification of HIV DNA in peripheral blood mononuclear cells.
Results. Antibodies to HIV regulatory gene products were detected in 12/17 at risk individuals. This antibody response was correlated in 11 individuals with the detection of HIV-1 proviral DNA. Such latent HIV infections have now been followed for 10 and 6 months in 5 individuals. In addition, a retrospective and prospective study of HIV-1-seropositive individuals has shown 1) antibodies to *nef* 4 months before HIV-seroconversion (in 1/12 individual); 2) the persistence of antibodies to *nef* and of HIV-1 proviral DNA in a case of spontaneous complete HIV-1-seronegativation.
Conclusion. These findings suggest that HIV regulatory genes products can in some cases be expressed prior to the initiation of detectable HIV virion synthesis. They represent a basis for new diagnostic tests and could be applicable in the design of alternative vaccine strategies.

Aspects pathologiques de l'infection par le VIH
Pathological Aspects of HIV Infection

Th.C.O.7

DISTINCT HISTOLOGIC LYMPH NODE CHANGES FOLLOWING HIV INFECTION IN ADULTS

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Objective. To develop a clinically relevant classification of lymph node histopathology in HIV infection

Methods. This report is a review of histopathologic and immunohistologic findings in lymph node biopsy and autopsy specimens from patients with HIV infection seen at Massachusetts General Hospital since 1982, as well as a review of the recent literature.

Results. At least 6 major types of lymph node histopathology are seen in HIV infected patients, either alone or in combination with other types:

1. Florid reactive follicular hyperplasia ± follicle-lysis
2. Follicular involution
3. Diffuse pattern (± lymphocyte depletion ± angioimmunoblastic changes.)
4. Angiofollicular hyperplasia (Castleman-like lesion)
5. Tumors: a. Malignant lymphoma (Burkitt-like or immunoblastic)
    b. Kaposi's sarcoma (primary or secondary)
6. Specific infections

Types 3-6 are usually associated with one or more diagnostic criteria for AIDS, while types 1 and 2 may be associated with PG4ARC, and are not specific for HIV infection. Types 1 and 2 may be associated with normal lymph node CD4/CD8 populations or with CD4 depletion; CD4 depletion is often pronounced in type 3. Type 4 pattern is strongly correlated with lymphadenopathic Kaposi's sarcoma.

Conclusion. Lymph nodes in HIV infected patients may show a variety of patterns with important prognostic implications.

Th.C.O.9

IN SITU HYBRIDIZATION FOR DETECTION OF HIV GENOME

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The pathogenic mechanisms of HIV have been studied by in situ hybridization and immunohistochemistry in lymph nodes of patients at various stages of HIV infection and brains of AIDS cases with encephalitis. For in situ hybridization use was made of ^{35}S labeled (P. Biberfeld, M. Harper et al., AJP, 125(3):436-442, 1986) as well as of alkaline phosphatase (HIV SNAP™ Probe Kit, DuPont) and Digoxigenin (Genius™ Non-radioactive DNA Labeling and Detection Kit, Boehringer Mannheim) labeled probes. By immunohistochemistry the presence of HIV gag and env antigens as well as various cell markers was studied. Our findings indicate significant differences in the local replication of HIV in CNS and lymph nodes. In both tissues association of histopathological changes, HIV-replication and antigen deposition with infiltration of CD8+ cells suggested a possible effector function of these cells. The non-radiolabeled probes were clearly advantageous for screening of biopsy material and cells and also enabled simultaneous detection of viral antigens and RNA.

Th.C.O.8

DETECTION OF HIV IN LYMPH NODES

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In lymph nodes (LN) of HIV-infected persons the causative agent can be detected using electron microscope (EM), immunohistochemistry (IH) or in situ hybridization. Applying immunostaining on frozen sections gag proteins of HIV can be visualized in germinal centers (GC) of LN. This reaction is highly sensitive and specific, therefore, it can be used for diagnostic purposes. Coincident staining with gag proteins and antibody to follicular dendritic cells (FDC) shows the association of viral proteins to FDC. In correlation with these findings, EM shows intact HIV-particles along the processes of FDC. Results of in situ hybridization have also shown the presence of cells expressing viral RNA inside the GC. HIV enters the GC early during the course of infection. We have demonstrated the infection of GC both with EM and IH 6 weeks after seroconversion. Once gained access to GC, HIV can persist here for long time periods. On repeated biopsy specimens we have detected HIV up to 2 year intervals. Not only GC of LN but also those in gut associated lymphoid tissue contain HIV-proteins associated with FDC. Thus, it is very likely that FDC as antigen trapping and retaining cells are very important in the pathogenesis of HIV-infection. FDC probably capture HIV transported by lymphatics. Using EM, IH and in situ hybridization we have found evidence for spreading of HIV via lymphatics. We feel that this way of dissemination is especially important when HIV enters the body through a mucous membrane.

Th.C.O.10

BIOLOGICAL FUNCTIONS OF HUMAN MONOCLONAL ANTIBODIES TO HIV.

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OBJECTIVE: To characterize the biological functions of human monoclonal antibodies (mAb) to HIV.

METHODS: Mononuclear cells from peripheral blood of HIV-infected subjects were infected with Epstein-Barr virus and cultured in microtitre plates for one month. Wells making anti-HIV were expanded and cloned at limiting dilution. mAb from each clone were tested for specificity by ELISA, radioimmunoprecipitation, and Western blot and assayed for function as described in abstracts 2622, 4193 and 4475.

RESULTS: Of 11 lymphoblastoid lines producing mAb to HIV, mAb from 6 lines react with gp41; five react with p24. mAb to gp41 mediate antibody-dependent cellular cytotoxicity requiring 1-5 ug mAb/ml. Of the 11 mAb, only one, specific for gp41, mediates complement- and antibody-dependent enhancement of HIV infection requiring 1 ng mAb/ml. Two mAb to gp41 were coupled to the deglycosylated A chain of ricin. 50% killing of the HIV-infected T cell line, H9, occurs at 500 ng mAb/ml. 50% killing of the HIV-infected U937 monocyte cell line is achieved at 1000 ng/ml in the absence of chloroquine and at 10 ng/ml in the presence of chloroquine. None of the mAb to gp41 are neutralizing or mediate syncytium inhibition. None of the mAb to p24 are active in any of the described functional assays.

CONCLUSIONS: Human mAb to gp41 mediate a variety of biologic functions. No biological functions have, as yet, been ascribed to human mAb to p24.

Mise au point de médicaments : utilisation des molécules CD4 dans le traitement du SIDA
Drug Development: Use of CD4 Molecules in AIDS Therapy

Th.C.O.11

RETROVIRAL VECTORS EXPRESSING SOLUBLE CD4: A POTENTIAL GENE THERAPY FOR AIDS

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Objective. Development of murine retroviral vectors which express a soluble form of the CD4 antigen and demonstration of the use of these vectors to inhibit HIV-1 infection in vitro.
Methods. A translation stop codon was introduced into the human CD4 gene at amino acid 202, and the now soluble form of CD4 (sCD4) introduced into the murine retroviral vector N2. sCD4 expression was monitored by immunoprecipitation and HIV-1 inhibition was scored by assaying for p24 production.
Results. Retroviral vectors have been developed which produce a secreted form of the helper/inducer T-cell antigen, CD4. Amphotropically packaged vectors were used to transduce cells (including several transformed cell lines as well as primary fibroblast and endothelial cells) and these cells were shown to express the secreted CD4 gene product. The sCD4 produced by the viral vectors is immunoprecipitated by monoclonal antibodies against CD4 which specifically block HIV infection of helper/inducer T-cells. A direct physical interaction of vector-produced sCD4 and HIV-1 gp120 was demonstrated by coprecipitation of sCD4/gp120 with antiserum directed against HIV gp120. Further, transduced cells producing sCD4 can protect HIV susceptible cells from infection by HIV.
Conclusion. We have demonstrated that retroviral vectors can be constructed which express sCD4 and that cells transduced by these vectors can protect cells from HIV infection in culture. sCD4 retroviral vectors could potentially be used to engineer the cells of an AIDS afflicted individual, and thus these data are a model for a potential gene therapy approach for the treatment of AIDS.

Th.C.O.13

INHIBITION OF THE INFECTIVITY OF HIV-1 AND HIV-2 BY SOLUBLE rCD4: DIFFERENTIAL SENSITIVITY TO SOLUBLE rCD4.

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Objects: We examined the antiviral activity of soluble recombinant CD4 protein (rCD4) against HIV-1 and HIV-2 in vitro. We also tested the binding characteristics of HIV-1 and HIV-2 and their binding inhibition by rCD4.
Methods: Viruses: HIV-1 (HTLV-III$_B$, RF-2, HXB2D) and HIV-2 (LAV-2 and HIV-2$_{BZ}$). The antiviral activity of soluble rCD4 against HIV-1 and HIV-2 was assessed in the cytopathic effect inhibition assay using susceptible CD4$^+$ ATH8 cells. Viruses were labelled with 5,6-^{3}H-uridine; binding and binding inhibition assays were performed in CD4$^+$ H9 and MOLT3 cells.
Results: Soluble rCD4, at 1 to 5 µg/ml, exerted a complete protection of ATH8 cells exposed to 2x10^4 TCID$_{50}$ dose of cell-free HIV-1 (ED$_{50}$ against HIV-1: 0.7-1 µg/ml), while ~200 µg/ml rCD4 was required to give an ED$_{50}$ when the cells were exposed to the same TCID$_{50}$ dose of cell-free HIV-2. Moreover, when the target ATH8 cells were cocultured with HIV-1 and HIV-2-producing cells, sensitivity of the viruses to the blocking by rCD4 was also found to be different. OKT4A antibody, however, exerted a virtually similar blocking effect to both HIV-1 and HIV-2 in the cytopathic effect inhibition assay. Viral binding study revealed that HIV-2 viruses were much less susceptible to the blocking by rCD4 than HIV-1 while OKT4A and dextran sulfate blocked the binding of both viruses in an identical fashion. These data suggest differences in the stability or the structure of envelope glycoproteins in HIV-1 and HIV-2, which may have a clinical relevance in the treatment of HIV infection.

Th.C.O.15

DESIGNING CD4 IMMUNOADHESINS FOR AIDS THERAPY

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We have used parts of the sequence of CD4, the cellular receptor for HIV, to construct a novel type of antibody-like molecule, termed immunoadhesin. In these molecules the antigen-binding region (Fab) of antibody has been replaced by the gp120-binding domain of CD4. Our CD4 immunoadhesins bind gp120 and block HIV-1 infection of T cells and monocytes in a manner indistinguishable from soluble rCD4. They also possess some properties of antibodies, including long *in vivo* plasma half-life and high-affinity binding to Fc receptors. The improved plasma half-life should allow increased plasma levels, blocking virus more effectively than rCD4, and Fc receptor binding may recruit mechanisms for the elimination of virus and virally-infected cells. The antibody-like properties of these constructs, together with their theoretical capability to block all isolates of the virus, offer hope for an active defense against HIV-1.

Th.C.O.12

SPECIFIC ANTI-HIV ACTIVITIES OF A RECOMBINANT HUMAN CD4-PSEUDOMONAS EXOTOXIN HYBRID TOXIN

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Objective. To characterize various anti-HIV properties of CD4(178)-PE40, a recombinant protein containing the gp120-binding region of human CD4 linked to active regions of Pseudomonas exotoxin A.
Methods and Results. Using cell viability assays, CD4(178)-PE40 was found to selectively kill a number of human T-cell lines chronically infected with HIV-1, with ID$_{50}$ values as low as 90 picomolar. When uninfected human T-cell lines were co-cultured with small fractions of HIV-1 infected cells, the infection spread throughout the culture within 13 days, as monitored by the production of RT and by the killing of most of the initially uninfected population. By both criteria, CD4(178)-PE40 nearly completely prevented the spread of infection for up to 17 days. Control assays with CD4 derivatives lacking the active toxic regions indicated that this protection was due largely to selective killing of the infected cells, rather than to a simple blocking effect by the CD4 moiety. CD4(178)-PE40 proved active against cells expressing vaccinia-encoded envelope glycoproteins from a variety of primate immunodeficiency viruses, including divergent strains of HIV-1 as well as SIV. The hybrid toxin displayed no cytotoxic activity against human B-cell and monocyte lines expressing high levels of MHC Class II antigens.
Conclusion. These findings support the potential value of CD4-Pseudomonas exotoxin hybrid proteins as novel AIDS therapeutic agents.

Th.C.O.14

THE DEVELOPMENT OF IMMUNOTOXINS SPECIFIC FOR HIV-INFECTED CELLS.

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Objective. To determine if an immunotoxin (IT) composed of recombinant CD4 (rCD4) linked to deglycosylated ricin A chain (dgA) is capable of killing HIV-infected T cell (H9) and monocyte (U937) lines.
Methods. rCD4 was conjugated to dgA *via* a heterobifunctional cross-linker, N-succinimidyl-S-thioacetate (SATA). Ovalbumin (OVA) was also conjugated to dgA as a control. Each IT was cultured with HIV-infected or uninfected H9 or U937 cells for 36 hours and toxicity was assessed by pulsing cells with [^{3}H]-thymidine for 6 hours.
Results. The control IT (OVA-dgA) did not kill infected or uninfected H9 or U937 cells at concentrations less than 10^{-7} M. rCD4-dgA killed 50% of infected H9 cells at a concentration of 1 x 10^{-10} M (IC$_{50}$ = 1 x 10^{-10} M). rCD4-dgA was not toxic to uninfected H9 cells at concentrations less than 10^{-7} M. Similar results were obtained with infected U937 cells. rCD4-dgA killed infected U937 cells with an IC$_{50}$ of 1 x 10^{-9} M but was not toxic to uninfected U937 cells. Chloroquine markedly potentiated specific killing resulting in an IC$_{50}$ of 4 x 10^{-11} M. Specificity of killing was demonstrated by inhibiting the toxicity of rCD4-dgA by pre-incubation with rgp120, 50-fold excess free-rCD4 and monoclonal antibody to the gp120-binding site or CD4, but not by BSA or another anti-CD4 antibody directed to a different site on CD4 not involved in gp120 binding.
Conclusion. rCD4-dgA specifically kills HIV-infected lines of T cells and monocytes.

Th.C.O.16

EFFECT OF RECOMBINANT SOLUBLE CD4 IN RHESUS MONKEYS INFECTED WITH SIMIAN IMMUNODEFICIENCY VIRUS OF MACAQUES.

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Objective. To assess the therapeutic effect of recombinant soluble CD4 (rsCD4) in SIV$_{mac}$-infected rhesus monkeys.
Methods. Two normal and 4 SIV$_{mac}$-infected rhesus monkeys received 2 mg rsCD4, intramuscularly, daily for 30 days. One SIV$_{mac}$-infected monkey received a second 30 day course of treatment.
Results. Intramuscular administration of rsCD4 resulted in a peak plasma level of greater than 10% of the calculated maximum possible plasma rsCD4 level within 15 min and a plasma half life of 6 hrs. None was measurable in the CSF. The normal monkeys experienced no significant adverse reaction to the rsCD4. SIV$_{mac}$ was readily isolated from PBLs and bone marrow macrophages of the infected monkeys before starting treatment, but became difficult to isolate soon after treatment had begun. Moreover, the diminished in vitro growth of both granulocyte-macrophage and erythrocyte progenitor cell colonies from the bone marrow of these monkeys rose to normal levels during treatment. Although an anti-rsCD4 antibody response was generated in these monkeys, retreatment of an animal resulted in the same improvement in clinical parameters achieved during the first course of rsCD4.
Conclusion. rsCD4 may prove valuable in the treatment of humans infected with HIV.

Mise au point de médicaments : utilisation de l'AZT et d'autres oligonucléotides dans le traitement du SIDA
Drug Development: Use of AZT and Other Oligonucleotides in AIDS Therapy

Th.C.0.17

Differential modulation of HIV replication and AZT activity in monocyte/macrophages by GM-CSF, M-CSF, and G-CSF.

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Objective. To study the ability of granulocyte-macrophage colony stimulating factor (GM-CSF), macrophage-colony stimulating factor (M-CSF) and granulocyte-colony stimulating factor (G-CSF) to modulate HIV replication and/or the antiviral activity of AZT in monocyte/macrophages (M/M).
Methods. Elutriated M/M were exposed to 100 U/ml GM-CSF, 1,000 U/ml M-CSF, or 500 U/ml G-CSF for 5 days before challenge with HIV-1 (monocytotropic strain HTLV-III_{Ba-L} or lymphotropic strain HTLV-III_B) with/without AZT.
Anabolic phosphorylation of AZT was also studied in M/M with/without GM-CSF.
Results. GM-CSF enhances replication (up to 1,000%) of both HTLV-III_{Ba-L} and HTLV-III_B in M/M, and reduces >100% the minimum viral dose required to productively infect the M/M. M-CSF also enhances HIV replication (but less than GM-CSF), while G-CSF had no such effect. Despite increasing HIV infection, GM-CSF activates the antiviral activity of AZT and related thymidine and uridine congeners in M/M: 0.01 uM AZT induces >90% viral inhibition in GM-CSF-stimulated M/M, while 1 uM AZT is required to achieve the same effect in M/M without GM-CSF. The activity of other dideoxynucleosides not related to AZT is not enhanced by GM-CSF. Neither M-CSF nor G-CSF modulated AZT activity in M/M. GM-CSF increases the intracellular level of AZT and its triphosphorylated form in M/M, but only induced a minimal increase of thymidine-5'-triphosphate (dTTP). Thus the ratio of AZTTP/dTTP is substantially increased in M/M exposed to GM-CSF, and this may explain its enhancement of AZT activity.
Conclusion. A combination of GM-CSF plus AZT (or a related congener) may be worth exploring in patients with HIV-related disease.

Th.C.0.18

INHIBITION OF HIV REPLICATION BY NOVEL PHOSPHOLIPID DERIVATIVES OF AZT AND OTHER ANTIRETROVIRAL NUCLEOSIDES IN VITRO

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Monocyte/macrophages represent an important reservoir of HIV infection. Specific therapies to target these cells might treat HIV infection more effectively. Consequently, we synthesized phosphatidylAZT (pAZT) and AZT diphosphate diglyceride (AZTddg), new phospholipids having 5'-phosphorylated AZT as their polar head groups. Liposomal pAZT and AZTddg (Prosomes) were incubated with CEM cells infected with HIV-1. The amount of drug required to reduce by 50% the release of p24 antigen into the culture medium after three days was determined (ID_{50}). The ID_{50} values for pAZT and AZTddg were 1.3-2 and 7 uM, respectively. No cell toxicity was observed at liponucleotide concentrations of 100 to 200 uM or greater. Liposomes with no liponucleotide were ineffective. pAZT was also effective in mutant CEM cells lacking thymidine kinase (tk), demonstrating that the new AZT compound can be metabolized directly to AZT-monophosphate. AZT has no antiviral effect in these cells. Phospholipid derivatives of AZT, ddT and ddC were also effective in a plaque inhibition assay in CD4-HeLa cells and in p24 reduction assays both in U937 cells and primary human macrophages. In conclusion, phospholipids containing AZT and other dideoxynucleosides have been synthesized and shown to be effective in reducing HIV p24 production and plaque formation. These compounds are relatively non-toxic, bypass phosphorylation by cellular tk and appear to be promising candidate compounds for treatment of the monocyte/ macrophage reservoir of HIV infection.

Th.C.0.19

INHIBITION OF HIV EXPRESSION: ENHANCEMENT OF ACTIVITY OF PHOSPHOROTHIOATE OLIGODEOXYNUCLEOTIDES BY CHEMICAL MODIFICATION.

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Objective. Phosphorothioate oligodeoxynucleotides in an antisense configuration against the HIV rev mRNA showed significant inhibition against HIV-1 viral expression in chronically infected cells (Proc. Natl. Acad. Sci. 1989, in press). However, relatively high concentrations were required to inhibit viral expression. Therefore, it is reasonable to explore chemical modifications of the phosphorothioate oligomer to enhance such anti-HIV activity.
Methods. We synthesized a series of compounds by linking intercalating moieties or by modifying the bases. Compounds were tested in the viral expression inhibition assay using chronically HIV-1 infected H9 cells.
Results. Anthracycline-conjugated and acridine-conjugated antisense phosphorothioate oligomers against rev showed more potent inhibitory activities against the viral expression in chronically infected cells in comparison to unmodified phosphorothioate antisense by approximately 10 fold and 5 fold, respectively. Another modification, the use of alkyl-amino derivatives on thymidine bases, also showed an enhancement of the antiviral activity by approximately 5 fold. Therapeutic indices in these modified phosphorothioate oligomers are at least comparable to that in the unmodified antisense phosphorothioate oligomer.
Conclusion. Certain modifications of antisense phosphorothioate oligomers could result in advantages to potential therapeutic intervention against AIDS and related disorders.

Th.C.0.20

5-HALOGENO-3'-FLUORO-2',3'-DIDEOXYURIDINES ARE POTENT INHIBITORS OF RETROVIRUS REPLICATION *IN VITRO*

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The 5-halogeno (i.e. 5-fluoro-, 5-chloro-, 5-bromo- and 5-iodo) derivatives of 3'-fluoro-2',3'-dideoxyuridine (FddUrd), designated FddFUrd, FddClUrd, FddBrUrd and FddIUrd, respectively, were synthesized and evaluated for their activity against human immunodeficiency virus (HIV) and simian AIDS related virus (SRV). FddFUrd did not shown any appreciable antiretrovirus activity at subtoxic concentrations. In contrast, all three other 5-halogeno FddUrd derivatives inhibited HIV-1 and HIV-2 replication in MT-4 cells at an effective dose (ED_{50}) of about 0.2-0.7 µM. Also, HIV-1-induced antigen expression in HUT-78 cells was suppressed by the three 5-halogeno FddUrd derivatives. FddClUrd was markedly more selective in its anti-HIV activity in MT-4 cells than FddBrUrd and FddIUrd. Its selectivity index was similar to that of 3'-azido-2',3'-dideoxythymidine (AZT, retrovir). FddClUrd was also effective in inhibiting SRV-induced giant cell formation in Raji cell cultures (ED_{50} : 4 µM) but not in thymidine kinase (TK)-deficient Raji/TK^- cell cultures (ED_{50}: > 500 µM), pointing to a pivotal role of cellular TK in the metabolic activation of FddClUrd. Unlike AZT, FddClUrd did not cause a blockage of thymidylate kinase. FddClUrd was also less toxic to bone marrow cells than AZT. In conclusion, the 5-halogeno FddUrd derivatives, and in particular FddClUrd, should be further pursued for their potential in the treatment of AIDS.

Th.C.0.21

CONFORMATIONAL PREFERENCE OF ANTI-HIV NUCLEOSIDES AND DRUG DESIGN

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Objective. To study the molecular conformations of anti-HIV nucleosides for future drug design.
Methods. Molecular conformations of active as well as inactive nucleosides against HIV have been determined by X-ray crystallography.
Results. Active anti-HIV nucleosides show unusual conformational features in the glycosyl link geometry and sugar ring puckering. The active compounds have the extreme end of the range of observed anti-conformations. Ten of the eleven observations of active compounds have exceptional C3'-exo sugar conformations. The inactive nucleosides on the other hand, have C3'-endo conformations. The correlation between the extreme glycosyl link conformation and sugar ring puckering is significant.
Conclusion. These differences in conformations between active and inactive nucleosides result in a significant difference in the position and orientation of the 5'-hydroxyl group. Because the phosphorylation at 5'-position of the carbohydrate moiety is the initial and essential activation step in the mechanism of action of these compounds, these conformational differences may account for the activity difference. Furthermore, this information may allow us to design new anti-HIV agents.

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Th.C.0.22

SYNTHESIS AND IN VITRO FUNCTION OF RIBOZYMES TARGETED TO HIV-1 SPECIFIC RNA SEQUENCES

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Objective: To design and test autocatalytic RNA specific for HIV-1
Methods: We have utilized two classes of catalytic ribozymes targeted to HIV-1 RNA: one class (RBZ) is targeted to a site within the gag gene containing part of the required autocleavage site (GAAAC----GUX). The remainder of the required sequence (CUGAXGA) is supplied in trans along with flanking sequences to promote specific hybrid formation. The second class of ribozyme (GUX-RBZ) is patterned from Haseloff and Gerlach (Nature 34: 585, 1988) and contains all required sequences for auto-cleavage (except the target site GUX) along with appropriate flanking sequences to promote hybridization to a specific GUX site in the HIV-1 RNA. RBZ and GUX-RBZ were synthesized by in vitro transcription, purified by PAGE, incubated under varying conditions with the target HIV-1 RNA transcripts, and analyzed by PAGE and autoradiography.
Results: GUX-RBZ targeted to gag cleaved the HIV-1 RNA more efficiently than did RBZ. The GUX-RBZ cleavage reaction is entirely magnesium dependent, optimal at 20mM $MgCl_2$ and 45°C. GUX-RBZ is catalytically active from 22°C to 65°C and completely cleaves large molar excesses of substrate.
Conclusion: RBZs can be designed which can potentially target any GUX site in the HIV-1 genome and deserve evaluation as potential antiviral agents.

Virologie (partie 4)
Virology (Part 4)

Th.C.O.23

ESTABLISHMENT OF HUMAN ASTROCYTOMA CELL CLONE CONSTITUTIVELY EXPRESSING THE HIV-NEF PROTEIN.

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Objective. To obtain a nef stably transfected cell line to study possible interferences of the nef protein with cellular activation pathways leading to HIV reactivation.
Methods. Segments (8068/9013 and 8068/384) of the HIV-1 (LAV-1-Bru) containing the nef ORFwere cloned under the control of different viral promoters including that of human cytomegalovirus immediate early gene, major late adenovirus 5 gene and HIV-1-LTR.Such vectors were cotransfected with a neomycine resitant gene expression vector using electroporation technique in the U373 MG human astrocytoma cell line.The selection of resistant clones was performed using G 418.
Results. Nef expression during the selection process was monitored by immunofluorescence assay and northern blot analysis. Stable selection of cellular clones containing the nef gene was obtained, as shown by northern and southern blot analysis and immunocharacterisation of the protein. In a fonctionnal assay we have used a Δ-NRE (deletion in the LTR of the segment upstream position -158) LTR-CAT vector to validate the notion that a region upstream of the enhancer participate in the regulatory effects of nef on HIV-LTR.
Conclusions. The availability of human cells constitutively expressing the HIV-nef protein makes it possible to investigate the role of nef in the activation pathways leading to HIV-LTR transactivation, as it is presently done in transient assay in our laboratory using stimulation with phorbol esters, tumor necrosis factor or c-Ha-ras gene co-transfection.

Th.C.O.24

TWO WEST-AFRICAN ISOLATES OF HIV-2 WITH MARKED TROPISM FOR MACROPHAGES, ONE OF WHICH IS HIGHLY DIVERGENT AND GENETICALLY EQUIDISTANT BETWEEN HIV-2_{ROD} AND SIV_{MAC}

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Objective Biological and genetic variation of human immunodeficiency viruses type 1 is increasingly being recognized. This study was aimed at analysing the divergence within the family of HIV-2.
The HIV-2-related viruses from a Gambian dying of exclusively neurological symptoms and from an asymptomatic Ghanesian exhibited on lymphocytes a growth typical for HIV-1 strains of the biological subtype c (slow growth with eventual high particle production and little or no cytopathic effect). In contrast, on macrophages, both virus isolates grew to very high titres and induced giant syncytia.
Molecular cloning and restriction site analysis revealed genetic heterogeneity within each isolate as has previously been shown for HIV-1 (J. Med. Virol (1987) 23: 51 - 66). The strain from the neurological case displayed 13% divergence versus HIV-2_{ROD} and HIV-2_{NIHZ}. In contrast, the Ghanesian strain was found to be genetically equidistant between the known HIV-2-strains and SIV_{MAC} (23-25% divergence). Several of the proteins of this strain have a size different from HIOV-2_{ROD}.
Conclusion Our results demonstrate that HIV-2 is at least as divergent a virus family as is HIV-1. This Ghanesian isolate may represent yet another HIV-family.

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Th.C.O.25

CHARACTERIZATION OF A BIOLOGICAL VARIANT OF HIV-1, DEFECTIVE IN THE ABILITY TO MODULATE CD4.

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Objective- Infection of peripheral blood lymphocytes and CD4+ cell lines by HIV has been shown to downmodulate the,CD4 molecule from the cell surface. In order to define the viral factors that mediate this effect we attempted to derive variants of HIV-1 that were unable to reduce CD4 expression on infected cells. Methods- Sup-T1 cells, productively infected with the IIIB strain of HIV-1 were cloned by limiting dilution and cloned lines evaluated for surface expression of CD4 using monoclonal antibodies that have been shown either to compete (OKT4A) or not to compete (OKT4) with the viral envelope for binding to CD4. Envelope binding to CD4 was determined by immunoprecipitation, and NEF expression was evaluated by Western blot using a monoclonal antibody specific for the HIV-1 NEF protein. Results- Of 30 cellular clones evaluated, one clone designated A1.25, exhibited high levels of CD4 expression as determined by OKT4 but was nonreactive with OKT4A indicating that CD4 was bound to the viral envelope but not downmodulated from the cell surface. These cells were 100% infected as determined by IFA and produced high levels of RT in culture supernatants. The increased .CD4 expression seen in the A1.25 line resulted from a change in the virus, since Sup-T1 or CEM cells that were infected by the A1.25 virus also remained strongly reactive with OKT4. Both the mature external envelope and envelope precursor molecules of the A1.25 virus were able to bind and coprecipitate with the CD4 molecule. Interestingly, although a 27 kD doublet corresponding to the NEF gene product could be detected by Western blot in cell lysates of the uncloned HIV-1 infected Sup-T1 cells, no NEF protein was observed in the A1.25 cell line. Conclusion- These studies demonstrate that binding of HIV envelope and envelope precursor molecules to CD4 can occur without CD4 modulation. Although the absence of NEF expression in the A1.25 infected cells is consistent with the proposed role of this protein in modulating CD4, we have shown that other isolates of HIV-1, which contained site-directed mutations in the NEF gene, are still able to modulate CD4 in the absence of the NEF protein. Infectious molecular clones of the A1.25 virus have been obtained and an analysis of their molecular and biological properties should be helpful in identifying specific viral determinants that affect CD4 expression.

Th.C.O.26

MURINE MONOCLONAL ANTIBODIES TO A SYNTHETIC PEPTIDE OF HIV-1 HAVE NEUTRALIZING AND FUSION BLOCKING ACTIVITIES.

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We have developed a series of murine monoclonal antibodies (MAbs) to a region of the 120kD envelope glycoprotein of HIV-1 which has previously been implicated as a site for virus neutralization. The antigen employed was a synthetic peptide containing 15 amino acids, representing amino acid residues 308-322, RIQRGPGRAFVTIGK, a hypervariable region of env gp120 (HTLV-3B isolate). Five of the MAbs have reactivity with gp120 in Western blots, four of these block fusion of HIV-1(3B) infected cells with uninfected cells with one also blocking fusion of a number of HIV-1 isolates including MN. At least two show reactivity in immunofluoresence assays with both fixed and live cells, and one has been found to neutralize HIV-1(3B) in vitro. These MAbs have been fine mapped using different synthetic peptides and each MAb has been found to have a different reactivity profile. Reactivities with peptides representative of aa's 308-322 of different HIV-1 strains appear to be predictive of the reactivitities of those MAbs with those actual isolates in various biological assays. For example the one MAb which reacts strongly with aa's 308-322 of the MN isolate (both by direct binding in ELISA and in peptide inhibition of binding of the MAb to aa's 308-322 of 3B) was the only MAb that blocked fusion of the MN infected cells with uninfected cells and that showed significant binding to MN infected cells as determined by FACS.

Th.C.O.27

INHIBITION OF HIV PRODUCTION BY INFECTED CELLS USING MONOCLONAL ANTIBODIES TO CD4

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Objective : to investigate the role of CD4 in differents steps of virus - cell interaction : virus binding and entry, virus particle release or virus production and/or syncitia formation.
Methods : Using monoclonal antibodies to CD4, directed to differents epitopes of the V1 domain or other domains of the CD4 molecule (OKT4-A, 13B8.2, BL4), we have tried to block these differents steps of virus - cell interaction in 3 differents protocols established to study separatly each step. 6 strains of HIV1 or HIV2 have been studied either on CEM cell line or PHA stimulated PBL.
Results : Virus entry was inhibited by OKT4-A, but not by 13B8.2, or BL4, however this inhibition was not observed with all the strains studied.
More surprisingly, an inhibition of virus production was observed when cells were immediatly after infection and continuously cultured with 13B8-2, but not OKT4-A, or BL4.
These inhibition was a delay in virus release, viral strain dependent (from 6 to 38 days). While under protection, viral antigens are still detected in treated cells. The recovered virus from protected cells was different from the starting infectious virus.
Conclusion : Monoclonal antibodies to the V1 domain of CD4 are not only able to block virus entry and infectivity, but moreover, they can inhibit virus production. The inhibitory role of the antibodies in these 2 steps of virus - cell interaction is viral strain dependent.
Preliminary results are suggesting a direct inhibition at the level of the viral particle release from the cell, by the monoclonal antibodies to CD4.
Taken together, the results are suggesting a role for CD4 not only in virus binding and entry but moreover, a role for CD4 in virus particle release from the infected cells.

Th.C.O.28

HIV ISOLATES FROM ASYMPTOMATIC MEN ARE BIOLOGICALLY AND GENETICALLY DIFFERENT FROM THOSE ISOLATED FROM AIDS PATIENTS

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Objective. To compare in vitro infectivity, replication properties and genomic structure of random and longitudinally obtained HIV isolates from asymptomatic men and AIDS patients.
Methods. HIV isolates were examined for their in vitro infectivity of CD4+ H9 cells, and DNA and RNA synthesis by hybridization with an HIV probe. Viral protein synthesis was measured by the radioimmunoprecipitation. The viral genomic structure was compared by restriction endonuclease analysis of high M.W. cellular DNA.
Results. Most of the HIV isolates from asymptomatic men, but not from AIDS patients, failed to infect CD4+ H9 cells and PHA-stimulated PBL. However, in asymptomatic HIV seroconverters who developed AIDS, longitudinal HIV isolates at all stages of infection could infect H9 cells; in contrast, longitudinal isolates from men who remained asymptomatic did not infect H9 cells. HIV isolates from AIDS patients exhibited increased production of virus particles and intracellular viral DNA, RNA and protein as compared with isolates from asymptomatic men. Isolates from asymptomatic men produced very little gp120, vif, and nef proteins as compared to isolates from AIDS patients. Certain restriction endonuclease patterns, such as Bgl II, were quite distinct for isolates from asymptomatic men as compared to AIDS patients.
Conclusion. HIV isolates from asymptomatic men are biologically and genetically distinct from those of AIDS patients. Such differences may be related to the various clinical outcomes of HIV infection.

Vaccins : étude de l'immunisation à l'aide des glycoprotéines du VIH
Vaccines: Immunization Study Using HIV Glycoproteins

Th.C.0.29 EPITOPES RECOGNIZED BY THE NEUTRALIZING ANTIBODIES OF AN HIV-1 INFECTED INDIVIDUAL

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Objective. To determine the extent to which broadly neutralizing antibodies raised by an HIV-1-infected individual recognize the principal neutralizing epitope of the envelope protein gp120 (amino acids 296-331).
Methods. Broadly neutralizing serum from an antibody-positive, asymptomatic donor was subjected to affinity chromatography on immobilized peptides corresponding to the neutralizing epitope of three viral isolates. Effluent and eluate fractions were assayed for inhibition of HIV-mediated cell fusion and for neutralization of each of the three isolates.
Results. Most of the antibodies that neutralize one isolate were absorbed by peptides corresponding to its 296-331 envelope sequence. By contrast, most of the antibodies that neutralize the other two isolates were not absorbed by the immobilized peptides.
Conclusions. Infected humans seem to raise a type-specific neutralizing response against the principal neutralizing epitope of one isolate. Broad neutralization appears to result from the recognition of other epitopes as yet unidentified.

Th.C.0.30 NEUTRALIZATION OF IN VIVO HIV-1 INFECTIVITY MEDIATED BY IN VITRO NEUTRALIZING ANTIBODY

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Objective. To determine if an association exists between the ability of antibody to neutralize HIV infectivity in vitro and its ability to prevent HIV infection in vivo.
Methods. Titrated chimpanzee challenge inocula of HIV-1 (isolate HTLV-IIIb) were individually incubated in vitro with (1) virus- neutralizing IgG from an HIV-seropositive chimpanzee, (2) a specific neutralizing monoclonal antibody (0.5e), (3) non-neutralizing IgG from an HIV-seropositive human, (4) IgG from an uninfected chimpanzee. Both neutralizing antibody preparations were directed against the gp120 major neutralizing determinant. Each virus-antibody mixture was inoculated into a susceptible chimpanzee.
Results and Conclusions. The polyclonal neutralizing IgG inhibited in vivo HIV infection by the criterion of specific anti-HIV antibody development in the challenged animal. Similarly, the monoclonal neutralizing antibody decreased the infectiousness of the challenge virus. No effect was noted with either the non-neutralizing anti-HIV IgG or the control IgG. A correlation appears to exist between the ability of antibody to neutralize HIV infectivity in vitro and its ability to inhibit HIV infection in vivo.

Th.C.0.31 STUDIES OF HYPERVARIABLE REGION DELETION MUTANTS OF HIV-1 GP120

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Objective. To determine the role of hypervariable regions in the structure , function, and immunogenicity of HIV-1 gp120.
Methods. Sequences encoding the five major hypervariable domains of the gp120 region of the envelope gene were deleted using site-directed mutagenesis. These deletions encompassed amino acids (aa) 131-154 (V1), aa 156-198 (V2), aa 300-332 (V3), aa 388-414 (V4), and aa 457-463 (V5). The resulting variants were produced intracellularly in yeast as nonglycosylated polypeptides and as secreted, glycosylated proteins in mammalian cells. CD4 binding of each gp120 variant was measured by radioimmune precipitation of gp120 variants and recombinant, soluble CD4. Purified yeast-derived variants were used to hyperimmunize test animals. ELISA titers versus the immunizing antigen and virus neutralization titers against HIV-SF2 and HIV-BRU were determined using standard techniques.
Results. Denatured, nonglycoslyated yeast-derived wild type gp120 did not bind to CD4, while purified or unpurified mammalian cell-derived glycosylated gp120 bound CD4 as well as gp120 from virus-infected cells. Mammalian cell-derived deletion variants of any or all of the three hypervariable sequences in the C-terminal half of gp120 (V3, V4, V5) resulted in CD4 binding that was at least 100-fold reduced relative to wild type gp120. In contrast, deletion of the variable sequences in the N-terminal half of the protein (V1, V2) did not perturb CD4 binding. In immunogenicity studies, denatured, nonglycosylated gp120 polypeptides deleted in one to three hypervariable regions, including deletion of variable region V3, elicited type-specific neutralization in guinea pigs and goats. However, the nonglycosylated protein with deletions of all five hypervariable regions failed to generate neutralizing activity, although it elicited high titer antibody responses.
Conclusion. Hypervariable regions play a major role in the immunogenicity of nonglycosylated versions of gp120 and may influence the structure of glycosylated gp120 and its binding to CD4.

Th.C.0.32 ANTIBODY DEPENDENT CELLULAR CYTOTOXICITY (ADCC) FOLLOWING VACCINATION WITH A RECOMBINANT HIV-1 GP160 VACCINE

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Background: Sera from asymptomatic HIV-1 infected patients are more likely to mediate ADCC than sera from AIDS patients. Thus, stimulation of serum ADCC activity may be a desirable goal in the development of an AIDS vaccine.
Objective: To measure ADCC activity in sera obtained from persons in an rGP160 (MicroGeneSys) vaccine trial.
Methods: We tested sera from four adult vaccinees who developed antibody to GP120 on Western Blot after three doses of 40μg or 80μg of rGP160, and one placebo recipient whose Western Blot remained negative for anti-HIV-1 antibody. Target cells were HIV-1 infected and uninfected 12D7 cells (a variant of the CEM T-cell line) which were labeled with $[^{51}Cr]$ and incubated with vaccinee sera and control Western Blot positive sera from HIV-1 infected patients at dilutions of 1:5 to 1:40. PBL from normal healthy adults served as effector cells at an E:T ratio of 50:1. Percent ADCC was measured as antibody dependent minus antibody independent lysis.
Results: Sera from one vaccinee demonstrated a transient increase in percent ADCC; this vaccinee received 80μg doses of rGP160. None of 3 other vaccinees nor the placebo vaccinee manifested significant percent ADCC during the study.
Conclusion: We conclude that rGP160 at the two dose levels tested did not induce significant persisting antibody which mediated ADCC.

Th.C.0.33 SAFETY AND IMMUNOGENICITY OF HIV-1 RECOMBINANT GP 160 VACCINE CANDIDATE IN NORMAL VOLUNTEERS.

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Objective: To assess the safety and immunogenicity of two dosages of an HIV envelope glycoprotein (rgp160) vaccine in normal volunteers.
Methods: Recombinant HIV-1 glycoprotein (rgp160), prepared using a baculovirus vector (MicroGeneSys) was studied in 72 normal volunteers in a multicenter study, employing a double-blind, controlled experimental design. 18 subjects received 40 ug of rgp160, 18 received 80ug of rgp160, 18 received hepatitis B vaccine, and 18 received placebo. 3 intramuscular immunizations were employed (days 0, 30, 180). Subjects were followed for clinical and laboratory toxicities for up to 1 year. Serum antibody responses were determined by Western blot (WB), ELISA, and neutralization (Nt) assays.
Results: 39 females and 33 males participated, and 67 subjects received all three immunizations. Rgp160 was well tolerated, and there were no differences in acute reactions among the groups. There were also no differences in WBC, T4, T8, platelet counts or Hb levels among the groups. Serum antibodies to gp120 detected by WB were first noted at day 44 in 4/17 subjects at the 40ug dose, and in 8/17 at 80ug. At day 194, 14/17 at the 40 ug dose and 13/17 at the 80ug dose were seroreactive by WB. Antibody reactivity to gp160 and gp41 was seen less frequently. ELISA antibodies appeared generally later and less frequently than WB antibodies. Studies of Nt antibodies are currently underway.
Conclusion: This rgp160 vaccine candidate is well tolerated and non-toxic in normal volunteers, and induced high rates of serum antibody responses as detected by WB.

Th.C.0.34 T CELL RESPONSES TO HIV IN HUMANS IMMUNIZED WITH RECOMBINANT VACCINIA VIRUS CONTAINING HIV ENVELOPE

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Objective: To study T cell responses to HIV antigens and vaccinia (Vac) virus in a Phase I vaccine trial with a recombinant vaccinia virus containing the HIV gp160 gene (HIVAC-1e).
Methods: 30 subjects were vaccinated and then boosted 8 weeks later with either wild-type Vac or HIVAC-1e. T cell *in vitro* proliferative responses to a panel of antigens were determined pre- and at 4-week intervals post-vaccination. *In vitro* stimuli were several HIV antigen preparations including UV-psoralen inactivated HIV, live HIV, and gp160; immunogens including Vac, HSV, CMV, tetanus toxoid, and Candida; and mitogens including PHA, Con A and PWM.
Results: T cell responses and serum neutralizing antibody to Vac were detectable pre-vaccination in all 28/30 subjects previously immunized to Vac, including 13/15 recipients of HIVAC-1e. Vaccination with HIVAC-1e significantly boosted the T cell response to Vac in 7/13,and this correlated with a 4-fold rise in the serum antibody titer. The 2 HIVAC-1e recipients with no detectable immunity to Vac pre-vaccination both developed strong *in vitro* proliferative responses and serum antibody titers to Vac following priming. The second inoculation of Vac or HIVAC-1e at week 8 minimally augmented the proliferative T cell responses of the 30 subjects to Vac.

Of the 13/15 HIVAC-1e recipients with pre-existing immunity to Vac, 5 developed low and/or transient responses to one of the HIV antigen preparations. By contrast, the 2 HIVAC-1e recipients naive to Vac developed strong persistent proliferative responses to HIV antigens post-vaccination. No significant HIV responses were detectable in Vac recipients. The responses to non-HIV antigens and mitogens were not affected by vaccination with either Vac or HIVAC-1e.
Conclusion: Vaccination of individuals lacking pre-existing immunity to Vac with a recombinant Vac expressing gp160 elicits strong T cell proliferative responses to HIV, and studies are in progress to define the CTL responses in these individuals. Individuals previously vaccinated demonstrate persistent immunity to Vac and are variably primed to HIV antigens by vaccination, and studies to further characterize and augment these responses are being performed.

Oncologie
Oncology

Th.C.0.35 THE IMMUNOGLOBULINS (Igs) EXPRESSED BY AIDS-ASSOCIATED B CELL LYMPHOMAS (AL) CONTAIN SHARED IDIOTOPES (SIds) AND ARE REACTIVE WITH HIV ANTIGENS.

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Objective. The Ig idiotypes of AL were analyzed using a panel of anti-idiotype antibodies (AIAbs).
Methods. A panel of 19 AIAbs specific for lymphoma SIds was tested for reactivity against AL and non-AIDS B cell lymphomas. Idiotypes expressing SIds were isolated from AL and tested for HIV reactivity.
Results. Five AIAbs were found to cross-react with AL as shown below.

AIAb	AIDS-High Grade	Non-AIDS High Grade	Low Grade
S2-33	12/24 (positive cases/total)	0/13	8/155
S30-47	2/10	0/13	4/155
B4/11	1/10	1/13	0/129
L50-19	1/10	0/13	0/155
S37-48	1/10	0/13	6/149

The AIAb S2-33 reacted with 50% of AL tested. In total, these 5 AIAbs reacted with at least 17/24 (70%) of AL. These AIAbs reacted with only 1/13 non-AL (high grade lymphomas) and 12% of low grade lymphomas. Id was rescued from two AL and found to react with HIV gp120 and p65 respectively.
Conclusion. AL express Igs which have SIds and HIV binding activity.

Th.C.0.36 ANAL HPV INFECTION AND CYTOLOGIC ABNORMALITIES IN HIV-INFECTED INDIVIDUALS

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Objective. Anal cancer may be up to 25 times more common in homosexual males than age-matched heterosexual controls and patients with AIDS may be at particularly high risk. Similar to its role in cervical cancer, human papillomavirus (HPV) may play a role in the development of anal cancer. The goal of this study was to determine the prevalence of anal HPV infection as well as cytologic abnormalities which may represent precursors to anal cancer. Methods. Sixty-eight male patients underwent insertion of a swab to the anorectal junction for cytology, followed by a second swab for HPV DNA hybridization studies. HPV DNA typing on these specimens was performed using RNA:DNA hybridization with a screening mixture of HPV 6,11,16,18,31,33 and 35 RNA probes. Results. Twenty-nine smears (43%) were abnormal using cytologic criteria similar to those in use for cervical intra-epithelial neoplasia and condyloma; 15 (22%) samples showed anal intra-epithelial neoplasia (AIN) 1, 5 (7%) samples showed AIN 2, and 9 (13%) samples showed condyloma. Forty-five of the 68 specimens (66%) were found to be HPV DNA-positive. Of the patients with abnormal cytology, 79% were positive for HPV, whereas 57% of the patients with normal cytology were positive for HPV DNA ($p<.05$). Preliminary studies grouping the samples positive for HPV into types 6/11, 16/18 or 31/33/35 indicate that type 16/18 was detected in 50% of the positive samples, 31/33/35 in 40% and 6/11 in 17%, with double infection in some specimens. Conclusion. Anal HPV infection and cytologic abnormalities were very common in homosexual men with AIDS and ARC. Although HPV DNA was detected in a large number of males without cytologic abnormalities, a significant association between AIN/condyloma and HPV infection was found. It is not yet known if AIN represents a true precursor of anal cancer and therefore the significance of these findings is not yet known; prospective follow-up studies are in progress.

Th.C.0.37 A COMMON CELL SURFACE IMMUNOGLOBULIN IDIOTYPE IN HIGH-GRADE LYMPHOMAS AND IN PRELYMPHOMATOUS REACTIVE LYMPH NODES IN HIV-INFECTED INDIVIDUALS.

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Objective: To determine the role of viral-associated antigen interaction with B-cell idiotypes in the pathogenesis of AIDS-associated non-Hodgkin's lymphoma (A-NHL).
Methods: Immunoperoxidase staining of frozen tissue sections, indirect immunofluorescence, immunoglobulin gene rearrangement analysis by Southern blotting.
Results: An IgM murine monoclonal anti-idiotypic antibody (S2.33) directed against an epitope unique to a low grade follicular lymphoma bound to 1) an immortalized EBV-negative Burkitt's lymphoma B-cell line (10C9), 2) an immunoblastic lymphoma (IBL), 3) several AIDS-associated B-cell lymphomas (see R. Miller, et al., abstract, this meeting), and 4) a large proportion of B-lymphocytes in reactive follicular hyperplastic lymph nodes from 3 HIV-infected individuals (one individual subsequently developed a high grade IBL). The Burkitt's lymphoma was monoclonal, whereas the IBL and the follicular hyperplastic nodes were polyclonal. Affinity purified IgM secreted by the 10C9 cell line bound to an HIV-infected T-cell line, but did not bind to an HTLV-I infected or uninfected T-cell line.
Conclusion: These findings of a shared idiotype on both monoclonal and polyclonal B-cell populations isolated from HIV-infected individuals suggests a monospecific process occurring during the evolution of A-NHL. Since the 10C9 lymphoma idiotype is directed against antigens on HIV-infected cells, the pathogenesis of A-NHL may include antigen-dependent steps.

Th.C.0.38 PRESENCE OF EPSTEIN-BARR VIRUS BY IN-SITU HYBRIDIZATION IN NON-HODGKIN'S LYMPHOMAS OF AIDS PATIENTS

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Objective. The majority of non-Hodgkin's lymphomas (NHL) occurring in AIDS patients are high grade malignant lymphomas of immunoblastic or small, non-cleaved cell type. The latter bear histologic similarities to African Burkitt's lymphoma where EBV is thought to play an etiologic role. We searched for an association of EBV with NHL of various histologic types in AIDS patients.
Methods. In-situ hybridization was performed on formalin or B5 fixed paraffin embedded tissues from 13 AIDS patients with NHL using biotinylated portions of the EBV genome (Bam H1 fragments K, A, V and Y/H) and colorimetric detection.
Results. EBV signal was demonstrated in the nucleus and cytoplasm of the neoplastic cells from 9 of the 13 NHL; 6/6 diffuse small noncleaved cell type (Burkitt's lymphoma), 2/4 diffuse large cell type, 1/2 diffuse large cell immunoblastic lymphoma, 0/1 low grade lymphoplasmacytoid lymphoma.
Conclusions. Our data show a consistent association of EBV with the small noncleaved lymphomas in AIDS. In other histologic varieties EBV was associated in about half of the cases. This association warrants further investigation into the etiologic role of EBV in AIDS related lymphomas.

Th.C.0.39 *DIFFERENCES BETWEEN BURKITT'S AND NON-BURKITT'S HIGH GRADE LYMPHOMAS (HGL) ASSOCIATED WITH HIV INFECTION.*

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From 1.87 to' 9.88, 102 HGL were recorded in the HATR: Burkitt's lymphomas (BL) 39, Non-Burkitt's lymphomas (NBL) 63 (immunoblastic 28, Large cell or predominantly large cell 33, histiocytic 2); route of HIV infection : Male homosex 61, IVDA 11, both 5, heterosex (Europe plus Africa) 11, others and not available 14. Initial characteristics of BL and NBL are given in the Table.

	Available	*BL*	*NBL*	*P Value*
All Patients	*102*	*39*	*63*	*-*
Sex M/F	*102*	*36/3*	*59/4*	*NS*
Age Min/Max	*99*	*20/72*	*19/73*	*NS*
Median		*40*	*38*	
Stage I-IV/Extra-Nod	*101*	*38/1*	*38/4*	*0.00004*
HIV+/AIDS	*96*	*33/4*	*33/26*	*0.0006*
CD4 Cell/ul Min-Max	*59*	*21-1125*	*0-288*	*0.02*
Mean		*291*	*121*	

We conclude that there are significant differences between BL and NBL for clinical presentation (stage I-IV VS extra-nodal only) and BL occurs earlier than NBL in the course of HIV infection. Etiopathological implications of these differences will be discussed taking into account both B and T cell disorders of HIV disease.

Th.C.0.40 HIV-RELATED TUMORS: A REPORT OF 435 CASES FROM GICAT (Gruppo Italiano Cooperativo AIDS & Tumori).

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Objective. To evaluate the epidemiology and natural history of HIV-related tumors in Italy. Methods. Through questionnaires sent to infectious disease specialists, hematologists and oncologists, the GICAT has since 1986 been collecting data on HIV-related tumors. Results. As of Sept. '88, 435 HIV-related tumors were recorded: 198 KS (9% of AIDS cases), 116 high grade NHL (6% of AIDS cases), 20 other NHL, 52 HD and 49 other tumors. In Italy intravenous drug abusers (IVDA) represent 67% of AIDS cases. The Table summarizes the main data regarding KS, high-grade NHL and HD:

	N°	MAIN GROUP	INCIDENCE	PECULIAR FINDINGS
KS	190	Homosexual men 65% IVDA 20%	Increased	Advanced stages↑↑; GI involvement↑ poor outcome
NHL high grade	116	IVDA 65%	Increased	Burkitt↑↑;CNS↑↑; extranodal↑ ; rare oral & anal involvement; poor outcome
HD	52	IVDA 85%	Probably increased	MC & LD↑; extranodal↑ ; Stages III & IV↑; poor outcome

Conclusion. In this IVDA-based series: 1) at least 15% of AIDS is associated with tumors; 2) the number of malignant lymphoma approaches that of KS; 3) KS among AIDS patients is less common (9%) than in countries where homosexual men are the main group affected by AIDS. However KS is not rare among IVDA with characteristics similar to those of homosexual men; 4) HD is associated with atypical and aggressive course; 5) oral and anal involvement of NHL as well as oral and anal cancers are very rare.

Le rôle des macrophages et des lymphocytes comme réservoirs du VIH-1
Role of Macrophages and Lymphocytes as Reservoirs of HIV-1

Th.C.O.41 ENTRY OF HIV INTO CELLS

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Objective. To determine whether the CD4 molecule, which serves as an attachment protein (receptor) for HIV, also functions in the HIV internalization event.
Methods. Conditions for saturating cells with HIV and for synchronizing the penetration event were developed as were assays to detect CD4 internalization and HIV penetration. Mutations were introduced into the cytoplasmic segment of CD4 rendering cells that express these mutant CD4 molecules incapable of phosphokinase C-induced CD4 internalization.
Results. Tracking CD4 during HIV penetration failed to detect CD4 internalization. Induction of CD4 internalization did not enhance HIV infectivity nor did inhibition of CD4 internalization prevent HIV infection. Cells expressing CD4 mutant molecules that are incapable of internalization were, nevertheless, infectable by HIV.
Conclusion. HIV penetration does not require internalization of its receptor, CD4.

Th.C.O.42 ROLE OF MACROPHAGES IN PATHOGENESIS OF HIV

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Both in vivo and in vitro studies clearly indicate that cells of the mononuclear phagocyte lineage play a key role in the pathogenesis of AIDS. To facilitate a more detailed analysis of HIV-1 interactions with cell types of this lineage, a cell culture system using normal monocyte/macrophages (MM) from peripheral blood has been developed. We have previously shown that MM are highly susceptible and permissive hosts for "fresh" HIV-1 isolates recovered from various tissues of virus-positive individuals. Utilizing this MM cell culture system, we will present data demonstrating that (a) cells of the mononuclear phagocyte lineage are principal sites of HIV-1 replication early in the course of the virus infection, (b) "freshly" recovered (not propagated in permanent cell lines) HIV-1 isolates are dual (MM and T cell) tropic, (c) in vitro-infected MM exhibit functional alterations similar to those observed in AIDS patients and (d) the most efficient HIV-1 transmission from MM to T cells occurs during specific antigen presentation.

Th.C.O.43 SURFACE RECOGNITION STRUCTURE FOR HIV

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The surface recognition structure for HIV is the CD4 molecules which binds to the gp120 component of the HIV envelope with a high affinity (10^{-9}M). This property is conserved amongst all isolates of HIV-1, SIV and HIV-2, although the affinity may be lower in the latter. This remarkable attraction of the envelope for such an important immunological ligand as CD4 may well explain the development of an acquired immunodeficiency without invoking direct cytopathic effect by the complete virus. Masking of the CD4 epitope by envelope may prevent antigen presentation and other CD4 dependent immunological functions, as well as leading to clonal deletion of activated CD4 cells by cytotoxic cells. These hypotheses may be investigated using soluble CD4 and soluble gp120. The detrimental effect of soluble gp120 in immunological response assays, and the beneficial effect of soluble CD4 in *in vitro* and *in vivo* virological systems suggests that soluble CD4 may have beneficial therapeutic effects even at doses much less than those required to have an antiviral effect *per se*, simply by inactivating soluble gp120 and free virus. Vaccine strategies based on gp120/CD4 have been examined using anti-CD4 monoclonal antibodies which may induce an internal image response mimicking the gp120 binding site on CD4 and therefore bind and neutralise a broad range of HIV isolates. These studies have now been extended to further characterise the anti-idiotypic response, the role of adjuvants and the response of the human immune system to anti-CD4 monoclonal antibodies.

Th.C.O.44 CYTOKINE INDUCTION OF HIV EXPRESSION

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We have previously established an in vitro model system for the study of the induction of expression of HIV in latently or chronically infected promonocytic (U-1) and T lymphocyte (ACH-2) cell clones. We have used these systems to demonstrate the induction of HIV expression in these cell lines by certain cytokines. Specifically, tumor necrosis factor (TNF)-alpha was capable of inducing HIV expression in both U-1 and ACH-2 cells. Other cytokines such as interleukin (IL)-6 and granulocyte-macrophage colony stimulating factor (GMCSF) were able to induce HIV expression in U-1 but not in ACH-2 cells. In addition, there was significant synergy between TNF-alpha and IL-6, and TNF-alpha and GMCSF in the induction of HIV expression in the U-1 cell line. The pathways of induction consisted of a transactivating mechanism whereby a DNA-binding protein was shown to selectively bind to the NFkB site of the HIV LTR. Most recent experiments have demonstrated an autocrine/paracrine loop involving the induction of HIV expression by TNF-alpha which in synergy with PMA can regulate its own expression. Furthermore, we have demonstrated that cytokine induction of HIV expression involves the direct or indirect activation of phosphokinase C (PKC) and that inhibitors of PKC can inhibit HIV expression. These model systems will be used to further delineate the precise mechanisms of HIV expression and, perhaps, the control of expression of HIV in infected cells.

Vaccins : utilisation d'un modèle animal pour l'étude des vaccins anti-VIH
Vaccines: Use of Animal Model to Study Anti-HIV Vaccines

Th.C.0.45 Immunization of Rhesus Macaques with Inactivated SIV Fails to Protect Against Mucosal or IV Challenge.

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Objective: To determine if immunization of rhesus macaques with an inactivated whole Simian Immunodeficiency Virus (SIV) vaccine protects against mucosal or IV challenge with live SIV.
Methods: Eight juvenile rhesus received 4 immunizations (2 mg total viral protein) of psoralen UV light inactivated SIV_{mac} with MDP adjuvant. Eight controls received adjuvant only. The humoral immune response before and after challenge was monitored by western blot and neutralization assays. The animals were challenged IV and by genital mucosa with 10-100x the minimal animal infectious Odse ($\leq$ 1TCID/50) of live SIV_{mac}. Viremia was assayed by cocultivation of PBMC with CEM x 174 cells and the number of infected cells was roughly quantitated by limiting dilution assay.
Results: The vaccinated monkeys made an adequate immune response as judged by immunoblot and neutralization assays and by comparison to our previous results with D-retrovirus vaccines. However, at 2 and 6 weeks after challenge with live SIV, by either IV or genital mucosal routes, virus was readily isolated from the PBMC of all 8 vaccinated rhesus and all 8 controls. The number of infected cells was not significantly different in the two groups.
Conclusion: Immunization of rhesus macaques with an inactivated SIV_{mac}-MDP vaccine failed to protect against viremia following challenge with live SIV_{mac} by the IV and genital mucosal routes.

Th.C.0.46 HIV IMMUNIZATION AND CHALLENGE OF HIV SEROPOSITIVE AND SERONEGATIVE CHIMPANZEES.

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Objective: To determine the characteristics of the serologic response of HIV seropositive and seronegative chimpanzees to HIV immunization and to virus challenge.

Methods: Three adult chimpanzees (two seropositive and one seronegative) were inoculated I.M. (primary and 2 booster doses) with a gamma irradiated non-infectious HIV immunogen emulsified in incomplete Freund's adjuvant (IFA). Approximately 13-15 months after the initial immunization, these chimpanzees and an untreated control animal were challenged I.V. with 10 chimpanzee infectious doses of HIV. Western blots, ELISA's and tests for neutralizing antibody and for virus by co-cultivation of PBL were performed.

Results: The two previously HIV infected seropositive chimpanzees, A-86C and A-3, exhibited an anamnestic response to the first dose of immunogen; the initially seronegative animal, A-36, manifested a primary- and secondary-type response after the first and second doses, respectively. After challenge, A-86C and A-3 exhibited no evidence of infection virologically or serologically. In contrast, A-36 became virus positive after challenge and responded anamnestically to infection with a rise in anti-p24 antibody titer from 1:16,000 to 1:256,000. The control chimpanzee, A-189a, also became virus positive and exhibited only a primary-type antibody response to the virus infection (anti-p24 titer from negative to 1:8000).

Conclusions: 1) The resistance to reinfection observed in A-86C and A-3 suggests that the induction of immunity to infection by potentiating a noninfectious immunogen may be an attainable goal. 2) The anamnestic response following challenge observed in A-36, in contrast to the primary-type response to infection observed in A-189a, raises the possibility that induction of immunity to disease, through vaccine-induced immunolgic memory, may be achieved even if infection is not prevented.

Th.C.0.47 IMMUNOGENICITY OF POTENTIAL HIV VACCINES IN CHIMPANZEES

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Objective. To test the safety, immunogenicity and efficacy of potential HIV vaccines in chimpanzees.
Methods. Chimpanzees were immunized with multiple injections of vaccinia virus recombinants expressing gp160env and p25gag, followed by inactivated HIV formulated with Syntex adjuvant (SAF). Humoral and cellular HIV specific immunity was assessed.
Results. One animal, that had antibody (Ab) titers in the range of 1:100,000 (Western blot and ELISA) and sustained T-cell proliferative responses to purified HIV gp160, was challenged with 32 $TCID_{50}$ of the $LAV\text{-}1_{BRU}$ isolate injected I.V. Infectious virus was recovered from the animal's PBLs starting at 2 weeks after challenge, thus demonstrating lack of protection. A tenfold anamnestic response was observed in ELISA titer, followed by progressive appearance of Ab to pol, nef, and vif. Neutralizing Ab titers, however, remained low or below detection, even during 7 subsequent months. Two unchallenged animals that had undergone a parallel immunization course were repeatedly boosted with gp160 in SAF, with no significant increases in ELISA or neutralizing Ab titers.
Conclusion. A vaccination regimen involving a live recombinant vaccine, inactivated HIV and gp160 env induced good cell-mediated and humoral immunity, but only poor neutralizing activity, indicating that better presentations of virus neutralization epitopes must be devised to elicit protective immunity.

Th.C.0.48 Simian Immunity to HIV-1 Candidate Vaccines

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The first HIV vaccine approved for clinical trial status by the U.S. FDA was that produced in a baculovirus-insect cell expression system by MicroGeneSys. We have studied the antibody response of 12 rhesus monkeys initially inoculated with various doses of the gp160 recombinant envelope protein. Immunoblot and neutralization assays on these monkey sera have shown a persistent, albeit, attenuated response one year after the final gp160 boost of 500 ug dose. A final boost of gp160 to two monkeys showed a characteristic anamnestic response as measured by immunoblot and neutralization assays. Ten animals had received boosters with a 3 dose regimen of a new p24 (gag) recombinant protein. This induced the anticipated immunoblot reactivity and also complemented the *in vitro* neutralizing capability due to gp160. The monitoring of the long term persistence of antibody (including neutralizing) is ongoing.

Th.C.0.49 VACCINATION WITH LIVE RETROVIRUSES: THE NATURE OF THE PROTECTIVE IMMUNE RESPONSE.

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Objective. To determine the nature of the protective immune response in animals vaccinated with a live, pathogenic retrovirus.
Methods. Adult female BALB/c mice were inoculated with live Rauscher Murine Leukemia virus (RLV) at time 0. Four hours after virus exposure, the animals were given post-exposure prophylactic therapy with 3'-azido-3'-deoxythymidine (AZT or Zidovudine) in combination with recombinant human interferonαA/D for 20 d. At the end of therapy, these animals were free of viremia and disease. On day 25, they were challenged with live RLV in the absence of antiviral therapy. Three weeks later, > 90% of these animals were found to be free of viremia and disease. Splenocytes from these immune animals were injected into syngeneic naive recipients either directly or after removing B cells or monocytes by passage through nylon wool columns, or after removal of various T-cell subsets. One hour after adoptive cell transfer, the recipients were challenged with live virus and left untreated for 3 weeks at which time they were sacrificed. Their spleens were weighed and analyzed for the presence of virus by immunoblot analysis.
Results. A dose of 4×10^7 unfractionated immune T cells was sufficient to protect naive recipient mice from virus infection and disease. Removal of cytotoxic immune T cells led to a drastic reduction in the number of recipient animals resistant to viral challenge. Passive serotherapy was not protective.
Conclusion. Live RLV, pharmacologically attenuated by combination therapy with AZT and recombinant human interferonαA/D, can elicit a protective immune response which is most likely due to the action of immune cytotoxic T cells.

Th.C.0.50 DEVELOPMENT OF AN HIV SUBUNIT VACCINE

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Objective. To develop an effective HIV subunit vaccine able to protect against infection by diverse HIV isolates.
Methods. Recombinant HIV vaccine candidates including the entire envelope, gp160, have been produced from several different HIV-1 isolates in *E. coli* and in insect cells and synthetic peptides of the envelope have been made. Animals including chimpanzees were immunized and the neutralizing antibody response was measured.
Results. The principal neutralizing epitope within gp160 was mapped to a hypervariable region of gp120(aa 308-331). Antibodies to this region neutralize free HIV and prevent CD4 cell fusion. Antibodies to this epitope delay HIV infection of chimpanzees (E. A. Emini, et al.). Antibodies to this epitope do not prevent binding of gp120 to CD4 and therefore neutralize HIV via a post-binding step. We are PCR sequencing this region from many isolates to uncover common elements. Chimpanzees immunized with gp160 formulated in ISCOM particles demonstrate neutralizing antibody titers comparable to those elicited by infectious HIV.
Conclusion. An immunogen, composed of either a cocktail or a hybrid polypeptide, incorporating this epitope from several HIV-1 strains may elicit protective immunity to many isolates. The ISCOM may be a useful adjuvant to present these immunogens.

Mise au point de médicaments et vaccins
Drug Development and Vaccines

M.C.P.1 DIFFERENTIAL VIRAL GENE EXPRESSION AND THEIR EFFECT ON THE BIOLOGICAL PROPERTIES OF CLONES OF AN HIV-1 INFECTED CELL LINE

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Objective: Analyze the biochemical and biological properties of HTLV-III$_{451}$ (6D5/451) which secretes both gp120 and gp160 in the extracellular medium.
Methods: Obtain single cell clones of 6D5/451 cells and examine their morphology by electron microscopy and ability to form syncytia with CD4 positive cells. Using metabolically labeled cells the expression of viral proteins was also analyzed.
Results: Three interesting clones secreting functional gp120 and gp160 in the medium were obtained. The first clone expressed viral reverse transcriptase (RT) and had both mature and immature virus particles. The second clone had mostly immature virus, expressed no RT or p24 and had only Pr^{53gag} in the cells. Both the clones formed syncytia when mixed with CD4 positive cells. The third clone expressed only gp120 and gp160 but did not form syncytia with CD4+ cells. All three clones had integrated full length genome when examined by restriction enzyme analysis.
Conclusion: Even minor changes in the genome of HIV-1 can lead to a preferential expression of the viral gene products which influence the biological properties of the infected cells.

M.C.P.2 PROTECTIVE VACCINE AGAINST FELINE LEUKEMIA VIRUS USING A RECOMBINANT ANTIGEN

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Objective. To produce a feline leukemia virus (FeLV) recombinant subunit vaccine.
Methods. The genetic information coding for the polypeptide portion of subgroup A FeLV glycoprotein gp70 was cloned into a PL-based expression vector. This polypeptide (rec-env) was expressed in E. coli and purified. Kittens were immunised three times with 100 ug rec-env, 20 ug purified saponin adjuvant, and aluminum hydroxide and challenged with 1 X 10^5 infectious FeLV particles.
Results. Vaccination induced neutralization titers ranging from 32-64 for subgroup A FeLV as well as cross-neutralization of subgroups B and C, anti-FOCMA titers of 125, and antibody affinity maturation during the course of immunization. A memory response was observed in vaccinates upon challenge. Control animals developed chronic viremia and pronounced lymphadenopathy within a month of challenge whereas vaccinated animals were nonviremic or developed a low transient viremia and were protected against disease.
Conclusion. A recombinant subunit vaccine based on subgroup A gp70 induces protection against FeLV.

M.C.P.3 CLINICAL EVALUATION OF EXPERIMENTAL AIDS VACCINES

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The process of conducting clinical trials of AIDS vaccines poses significant scientific and logistical challenges including strategies for recruitment of volunteers, confidentiality, vaccine induced seroconversion, and other difficult ethical dilemmas. In order to accelerate the development of a safe and effective AIDS vaccine, the Vaccine Research and Development Branch of the AIDS Program, NIAID has established a multi-center cooperative clinical trials network. The AIDS Vaccine Clinical Trials Network consists of an AIDS Vaccine Selection Committee, and the NIAID AIDS Vaccine Evaluation Group (composed of AIDS Vaccine Evaluation Units, Data Coordinating and Analysis Center, Data and Safety Monitoring Board, Core Immunology Laboratory, and Central Repository). The capacity to clinically evaluate multiple AIDS vaccine approaches simultaneously has been instituted, and two candidate AIDS vaccines are currently being tested utilizing comprehensive core protocols. Ancillary research studies are also being done to ensure that maximum safety and immunogenicity data on each candidate vaccine is compiled. Guidelines and minimum criteria for candidate vaccines entering into Phase 1 and 2 clinical trials will be discussed, along with a detailed review of approaches developed to address the issues unique to the clinical evaluation of AIDS vaccines.

M.C.P.4 HUMORAL AND CELLULAR IMMUNE RESPONSE TO RECOMBINANT HIV-HEPATITIS B SURFACE ANTIGEN PARTICLES.

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Objective. To evaluate the immunogenicity of HBsAg particles carrying HIV1 envelope determinants.
Methods. Rhesus macaques were immunized with recombinant HIV-HBsAg particles purified from transfected mammalian cells.
Serum from vaccinated animals was evaluated for antigenic potency and for the ability to neutralize HIV1 infectivity in vitro.
Peripheral blood lymphocytes were tested for their ability to proliferate in response to stimulation with purified, non disrupted HIV1.
Results. Using a HBsAg particle carrying a fragment of HIV gp120 enveloppe protein (AA384-472) comprising the CD4 binding site, we obtained neutralizing antibody against HIV1 and a T cell response against both parts of the fusion protein (HBsAg and HIV).
Conclusion. HBsAg particles seem to be a good carrier for the presentation of HIV epitopes and enable us to induce in vaccinated macaques neutralizing antibodies and an helper T cell response against a functional domain of gp120 envelope protein.

M.C.P.5 PRODUCTION AND CHARACTERIZATION OF A HUMAN-MOUSE CHIMERIC MONOCLONAL ANTIBODY (Cβ1) AGAINST HIV

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Objective. To determine the anti-HIV functions of a human-mouse chimeric monoclonal antibody(Cβ1) in vitro.
Methods. A murine hybridoma (54'CB1) cells which produced a type specific neutralizing monoclonal antibody (0.5β) were used to produce human-mouse chimeric antibody. Both V_H and V_k genes were cloned from 54'CB1 cells and linked to human Cr1 and C_k genes respectively. These chimeric genes were transfected with P3-X63 cells. After appropriate selection chimeric antibody producing clone (Cβ1) was obtained. Chimeric Cβ1 antibody was purified from culture supernatant by staphylococcal Protein A-Sepharose.
Results. The binding and neutralizing activities of Cβ1 antibodies were similar to those detected with 0.5β. No antibody dependent enhancement of HIV-infection was detected with 0.5β and Cβ1 when U937 cells were used as target cells in an HIV infection assay. Complement dependent cytolysis of HIV-infected cells and antibody dependent cellular cytotoxicity against HIV-infected cells were observed in the presence of chimeric Cβ1. By contrast, murine 0.5β failed to mediate these activities.
Conclusion. These results may facilitate the use of human-mouse chimeric monoclonal antibodies against HIV-infections.

M.C.P.6 MAPPING THE NEUTRALIZING EPITOPE OF HIV-1 ENVELOPE PROTEIN

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Objective.We showed previously that the principal neutralizing domain of HIV-1 envelope protein of IIIB isolate represented by a 24 amino acid peptide called RP135 is located within a disulfide loop (amino acids 296-331) We have attempted to locate the neutralizing epitope more precisely inside the loop.
Methods. A series of small peptides corresponding to different parts of the loop were synthesized. Sera were raised against these peptides and each was tested for fusion inhibition and neutralization activities.
Results. Only peptides related to the "tip" of the loop containing the sequence glycine-proline-glycine were capable of raising neutralizing antibodies. We show peptides of the size of 8-10 amino acids are sufficient in size to elicit neutralizing activities. We have also raised antibodies against a hybrid peptide of 15 amino acids which was shown to neutralize two viral isolates.
Conclusion. Sera raised against small peptides (8-10 amino acids) corresponding to the tip of the principal neutralizing domain of gp160 are capable of neutralizing the virus.

M.C.P.7 *IN VIVO* IMMUNISATION AGAINST HIV PROTEINS USING GAG SYNTHETIC PEPTIDES: PRELIMINARY RESULTS.

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Objectives. As T immunogenic peptides have been shown to be constituted of rare Self motives, we tried to boost the immune response to HIV 1 proteins with five of them, located in conserved regions of HIV's GAG polyprotein.
Methods. Five GAG synthetic peptides, selected for their absence in Self-protein sequence data bank, and which are conserved among 13 HIV isolates, have been inoculated into three animal species (Mouse, Rabbit, Baboons). The animals received two subcutaneous injections of glutaraldehyde polymerised peptides: the first was performed in complete Freund adjuvant emulsion, and the second in a calcium phosphate precipitate. They were then challenged with heat inactivated HIV 1 protein (LAV 1 isolate) by footpad injection in mice or IV in Baboons and Rabbits. Clinical and immunological responses (western blot), were followed and compared to those of controls, which had only received HIV proteins injection.
Results. Monkeys presented febrile, and long lasting lymphadenopathies begining 21 days after the challenge, but no antibodies to HIV 1 proteins were detected by western blot analysis. Although rabbits did not show any clinical or serological signs, mice developped ulceronecrotic lesions on back, at site of peptides inoculation, wich was different than the HIV proteins injection locus. Controls behave with no abnormal clinical symptoms.
Conclusions. Four of these peptides have been reported elsewhere to be recognize in vitro by HLA A-2 restricted T cytotoxic cell line specific for HIV. Considering the pathology observed we then speculate on the activation of T cell population in this protocol. If the necrotic ulcerations established in this ten mice lot are reproductible, mice could provide a model for T epitope screening, on the assumption that they do stimulate T cell populations. These peptides could then be used as immune response boosters in vaccine developpment toward AIDS.

M.C.P.8 HIV-1 RECOMBINANT gp160 VACCINE RECIPIENTS DEMONSTRATE gp160-SPECIFIC LYMPHOCYTE PROLIFERATION PRIOR TO WESTERN BLOT REACTIVITY.

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Objective. To characterize cellular responses to HIV rGP160 vaccine.
Methods. As part of the NIAID multicentered AIDS vaccine evaluation program, we enrolled 12 volunteers in a phase 1 randomized, double-blind, placebo-controlled trial of baculovirus-expressed recombinant HIV-1 envelope glycoprotein gp160 (rGP160; MicroGene Sys). Six subjects received rGP160, 3 Hep-B vaccine, and 3 placebo at 0, 1, and 6 months. We performed lymphocyte proliferation assays (LPA) using cryopreserved peripheral blood mononuclear leukocytes obtained at day 56 (28 days post first booster). The rGP160 and a control consisting primarily of the major contaminating baculovirus glycoprotein were used as antigens.
Results. Background baculovirus proliferation was eliminated in 11/12 subjects at a concentration of 0.1 mcg/ml in dose response assays. Higher antigen concentrations produced generalized stimulation and did not distinguish the vaccine recipients from controls. At 0.1 mcg/ml, all 6 rGP160 recipients had stimulation indices (SI)>2.5 (5/6 had SI >3.5). The SI was <2.0 in all 6 subjects who did not receive rGP160. Western blot (WB) assays were performed on day 56 sera and were positive for only one GP160 recipient at that time. Sequential LPA on this subject disclosed: SI=1.0 prior to vaccination, SI=4.8 at day 28 (immediately pre-booster and two weeks prior to initial positive WB), and SI=15.9 three months post-first booster. The other 5 rGP160 recipients also developed WB reactivity 2-4 months after demonstrated reactivity in LPA.
Conclusion. The HIV-1 rGP160 vaccine induces cellular immune recognition, as illustrated by lymphocyte proliferation, prior to detection of antibodies by Western blot.

M.C.P.9 USE OF POLYMERASE CHAIN REACTION FOR DIRECT DETECTION OF HIV-1 IN CLINICAL SAMPLES

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Objectives: The Polymerase Chain Reaction assay was used for the direct detection of HIV-1 nucleic acid sequences in peripheral blood lymphocytes (PBL's) from high risk male homosexuals, blood donors who tested positive for HIV-1 by ELISA, babies born to HIV seropositive mothers, and from normal control individuals.
Methods: The DNA was extracted and HIV-1 specific sequences were amplified by PCR using specific primers for the gag and env regions. Control amplifications were performed using primers for ß-globin. All samples were tested by ELISA and Western Blot assays. Some samples were also tested by co-cultivation with PHA stimulated PBL's from normal donors.
Results: All culture positive samples tested (about 40 patient samples) were also PCR positive. However, 10 out of 31 high risk individuals who were antibody and culture negative were positive by PCR. Six of these 10 individuals subsequently seroconverted to HIV-1. Almost all (340/343) antibody positive adult individuals tested were also PCR positive. Three samples, however, (all of which belonged to the high risk male homosexuals group) were repeatedly negative or only borderline positive by PCR for both gag and env. All babies born to seropositive mothers were HIV-1 antibody positive, presumably due to the presence of maternal antibody. Approximately 60% (56/94) of these babies were PCR positive, while the rest were negative. All 67 normal donors tested were negative by PCR.
Conclusion: PCR provides an extremely sensitive test for the direct examination of HIV-1 in PBLs. This assay is capable of detecting HIV infection in high risk individuals, even before they seroconvert, and of confirming Western Blot indeterminate samples. In addition, PCR may be a useful tool for examining babies born to seropositive mothers, where the presence of antibody does not necessarily imply infection. The PCR method is much faster, cheaper and far more sensitive than cocultivation for the direct detection of HIV in clinical samples.

M.C.P.10 GP160 ISCOMS: A CANDIDATE HIV VACCINE.

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Objective. To formulate a candidate HIV vaccine for the prevention of AIDS.
Methods. Iscoms were formed using gp160 (vaccinia) and gp160 (baculo) according to Morein et al. (1984).Immune response was analyzed in an indirect ELISA using defined recombinant technology products and peptide as antigens. These antigens were gp160 (vaccinia), PB1 (part of gp120) and RP 135 (a synthetic peptide).Neutralization test was done according to Nara et al.(1987). ADCC was done according to Ljunggren et al. (1987) CD4 binding essay was done according to Lundin et al.(1987).
Results. Iscoms containing gp160 from HIV, elicited high antibody titers in mice, rabbits and guinea pigs after two immunizations. The animal sera were tested for syncytial inhibition, ADCC activity and for CD4 blocking capacity. All sera were negative in ADCC. Blocking of gp120 binding to CD4 positive Jurkat cells was shown by mouse sera at a range of serum dilutions of 1/50 to 1/1250. Syncytial inhibition titers against the homologues isolate IIIB were in the order of 1/4 to 1/128 and cross neutralization titers were in the range of 1/4 to 1/16 using the heterologues isolate RF.
Conclution. The gp160 iscoms gave rise to high antibody titers in mice, rabbits and guinea pigs. These iscoms elicited neutralizing antibodies in mice towards the homologues isolate IIIB as well as for the distantly related HIV isolate RF indicating the possibility of inducing group specific neutralization.

M.C.P.11 CLINICAL AND VIROLOGIC RESPONSES TO A RECOMBINANT VACCINIA HIV-1 GP160 VACCINE (HIVAC-1e)

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Objective. To describe and compare the clinical and virologic responses of healthy HIV-negative men after receipt of recombinant HIV-1 gp160 vaccine (HIVAC-1e) and vaccinia(V) vaccines.
Methods. 29 men (age 24-46) with history of V immunization (25>10 years ago) were randomized to receive HIVAC-1e or V (ful) by intradermal scarification in initial(I) doses of 10^7 (low,L), 10^8(medium, M), or 10^9(high,H) pfu/ml with a booster(B) of M or H 8 weeks later; 1 V naive man got HIVAC-1e at 10^7(I) and a L B 8 weeks later.
Results. HIVAC-1e or V virus was isolated from the I vaccination site in 1/1 V-naive, and 5/10, 9/10 and 9/9 L, M, and H dose subjects. In M and H recipients, mean duration of I shedding was 6.3 days for HIVAC-1e and 4.7 days for V(P=NS). After B, 8(50%) of HIVAC-1e and 6(43%) of V recipients shed virus from the site for 1.0 and 0.8 days, respectively(P<0.01 for I vs B). Restriction enzyme analysis of 1st and last day HIVAC-1e lesion isolates from 2 subjects showed them to be identical to the vaccine strain. 26 of the 29 persons with a history of previous V had V neutralizing antibody titers at enrollment. The baseline GMT for HIVAC-1e recipients was 38.2 and rose to 121 after I and 108 after B. For V recipients, the respective GMT's were 32, 82.4 and 82.5. 61% of subjects had a 4-fold rise in V neutralizing titer after I dose vs 0 after the B. V seronegatives shed virus longer than V seropositives. No toxicity was seen with either vaccine. Ab to HIV envelope(env) proteins were detected in 3/16 HIVAC-1e recipients; 2 V-seronegatives and 1 V-seropositive developed Ab to gp41 and gp120. Three of 4 HIVAC-1e subjects who shed virus for >14 days developed HIV env Ab compared to 0/12 who shed for <14 days.
Conclusion. This trial demonstrates the safety and genetic stability of this HIV-1 gp160 vaccinia recombinant vaccine. The clinical and virologic responses to vaccination were similar between HIVAC-1e and V. The development of env Ab appears related to the duration of HIVAC-1e replication in skin; which is inversely related to the presence of pre-existing V neutralizing antibodies. The lack of local viral replication after B suggests that other forms of subunit vaccines should be evaluated for boosting.

M.C.P.12 KINETICS, MAGNITUDE AND DURATION OF ANTIBODY RESPONSES IN HIV-1 RGP160 VACCINEES.

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Objective. To characterize the kinetics, magnitude and duration of serum antibody responses of healthy adults participating in a multicentered phase 1 safety and immunogenicity trial of baculovirus expressed gp160 (rgp160) of HIV-1 (VaxSyn HIV-1 MicroGeneSys, Inc.).
Methods. 33 HIV seronegative voluneers were vaccinated at 0, 1 and 6 months with 40 or 80 ug rgp160 (N=24) or a control preparation (N=9). Coded blood specimens obtained from volunteers before and at 0.5, 1, 1.5, 2, 4, 6, 6.5, 7 and 9 months after vaccination were tested for IgG antibody responses by Biotech/Dupont Western blot (WB), Abbott HIV EIA, and noncompetitive solid phase enzyme immunoassay (EIA) using rgp160 as antigen. The specificity of rgp160 EIA was confirmed by a blocking assay.
Results. The rgp160 EIA was the most sensitive assay for detecting serum antibody responses in rgp160 vaccinees. Of 23 vaccinees with antibody responses by any assay, 96% were detected by rgp160 EIA, 91% by WB, and 39% by Abbott HIV EIA. The agreement between the rgp160 EIA and WB results was 91% compared to 58% for the rgp160 EIA and Abbott HIV EIA. The specificity of the tests was 100% each for the rgp 160 EIA and WB and 90% for Abbott HIV EIA.

The kinetics and magnitude of antibody responses in sera of vaccinees were characterized by the rgp160 EIA. Of the 22 vaccinees detected by rgp160 EIA, 17% had a significant rise in antibody titer after the first, 73% after the second, and 100% after the third vaccination. After the second and third vaccinations, the level of antibody increased 3.6-fold and 6.3-fold above the prevaccination level. By 9 months after the initial vaccination (3 months after the third dose), the level of antibody had declined but remained elevated above prevaccination levels.
Conclusion. The rgp160 EIA was more sensitive than the WB or Abbott HIV EIA, and detected serum IgG antibody responses to rgp160 in 22 of 24 vaccinees. This EIA made it possible to quantitate the magnitude of anamnestic responses to the second and third doses of vaccine and to determine the duration of responses over the 9-month period after vaccination.

M.C.P.13 EVALUATION OF A SYNTHETIC HIV-1 P-17-BASED CANDIDATE AIDS VACCINE, HGP-30

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Objective: To evaluate the safety, immunogenicity and efficacy of a synthetic subunit vaccine based on an HIV p17 peptide analogue (HGP-30)
Methods: The synthetic peptide HGP-30 (Naylor et al, PNAS, 84, 2951, 1987) was conjugated to keyhole limpet hemocyanin (KLH) and injected with various adjuvants at different doses in a variety of animal species. The presence of antibodies were detected by ELISA (HGP-30 specific) and Western blot (p17 specific). Neutralization activity was evaluated as inhibition of in vitro virus replication and/or virus induced syncial formation with different HIV-1 strain.
Results: Immunization of animals with HGP-30-KLH gave antibodies to HGP-30 as detected by ELISA, to p17 by Western blot and which on challenge with whole or disrupted virus enhanced the production of antibodies to p17. High titer antibodies for p17 effectively neutralized various strains of HIV in in vitro assays. Similar results were obtained with monoclonal antibodies which recognize HGP-30. The proposed candidate subunit vaccine, has proven safe in a number of animals species including chimpanzees.
Conclusion: A synthetic subunit vaccine based on HGP-30 representing immuno dominant epitope of HIV-p17, produces antibodies in animals which recognize HIV p17, neutralize HIV infection in vitro and prime the animal to respond to native HIV p17. Based on these studies a phase-1 clinical trial will soon be initiated in England.

M.C.P.14 CELLULAR IMMUNITY IN HIV-1 RGP160 VACCINEES.

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Objective. To evaluate cell mediated immune responses in healthy adults who participated in a phase I safety and immunogenicity trial of recombinant gp160 (rgp160) of HIV-1 (VaxSyn HIV-1, MicroGeneSys, Inc.).
Methods. Twelve volunteers at low risk and without evidence of HIV-1 infection were vaccinated at 0, 1, and 6 months with one of the following: 40 ug rgp160 (N=3), 80 ug rgp160 (N=3), Recombivax HB (N=3), or placebo (N=3). All 6 rgp160 vaccinees had detectable antibody to gp120 or 160 by Western blot after the third vaccination. Blood drawn before and at 0.5, 1, 1.5, 2, 4, 6, 6.5, and 7 months after initial vaccination was tested by the following in vitro assays of cellular immune function: lymphocyte subset analysis, natural killer (NK) cell lytic activity, antibody dependent cellular cytotoxicity (ADCC), proliferative response of peripheral blood lymphocytes to rgp160 and to mitogens (PHA, CON A, PWM) and pokeweed mitogen-induced Ig synthesis. Responses of the rgp160 vaccine group were compared to those of the control group (recipients of Recombivax HB or placebo).
Results. The rgp160 group had higher absolute lymphocyte counts but there was no difference in the percent representation of lymphocyte subsets (CD3, CD4, CD8, CD19) between the two groups. Proliferative responses to all mitogens were normal but lower in the rgp160 group. Spontaneous Ig synthesis in vitro was not different between the groups while PWM induced IgG and IgM synthesis was higher in cells from the rgp160 group. Response to rgp160 in vitro showed that individuals from both groups could be stimulated into proliferative cycles although cells from some of the rgp160 vaccinees proliferated to a much greater degree. NK and ADCC activity were similar in the two groups.
Conclusion. The rgp160 vaccine, which induced specific antibody formation in vivo to gp120 or 160, appeared to have no adverse effects on CMI. Cells from the rgp160 vaccinees responded to rgp160 in vitro and to PWM activation in vitro to synthesize greater amounts of Ig. The rgp160 antigen caused a small degree of normal lymphocyte activation.

M.C.P.15 EXPRESSION OF RECOMBINANT PARTICLES WHICH DISPLAY AN HIV/P24 T-CELL EPITOPE FUSED TO THE HBV/HBc ANTIGEN

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Objective: The importance of viral internal core or *gag* proteins in regulating the immune response to envelope epitopes has recently been demonstrated with hepatitis B virus (Milich *et al.*, *Nature*, 1987). Based on those studies we have sought to evaluate the role of the *gag* related antigens of HIV in the regulation of the immune response (T-dependent and T-independent) to themselves and to HIV gp120/160. In order to pursue these studies, we designed and expressed recombinant proteins expressing both HIV *gag* and HBc determinants.
Methods: A proposed T and B cell epitope from the C-terminus of the HIV/ P24 *gag* region (Coates *et al*, *Nature* 1987) was selected for insertion upstream from a recombinant clone expressing HBV core antigen in the form of particles. The HIV *gag* sequence was prepared as a synthetic oligonucleotide sequence and inserted upstream from the HBc sequence in the PstI-BamHI region of the multicloning site within the HBc construct.
Results: The recombinant fusion protein was expressed in *E. coli* and the antigenic specificity determined by ELISA assay and Western blot analysis. These analyses revealed a single protein species at 24,000 m.w., the size predicted for the P24/HBc fusion protein. This protein was reactive with anti-HBc and anti-P24 antibodies, generated in rabbits.
Conclusion: Recombinant vectors have been engineered capable of expressing a fusion protein which consists of HBc and HIV *gag* sequences. The fusion protein forms particles which, by electron microscopic examination, are similar to HBc particles. These HIV/HBV particles are being used to evaluate the role of *gag* T-cell determinants in the immune response to HIV.

M.C.P.16 RECOMBINANT VACCINIA VIRUSES THAT COEXPRESS HIV OR SIV ENV AND GAG-ENCODED PROTEINS PRODUCE RETROVIRAL PARTICLES

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Objective. To evaluate the formation of retroviral particles by vaccinia recombinants that express gag, env + gag, or env + gag + pol genes from HIV-1 or SIV.
Methods and results. The formation of free, defective, retroviral particles produced by monovalent and multivalent vaccinia recombinants that express HIV-1 or SIV polypeptides was assayed by several techniques, including electron microscopy and sucrose gradient centrifugation. We have demonstrated that vaccinia recombinants that coexpress env and gag genes give rise to the formation of enveloped retroviral particles that are secreted into the growth medium, while recombinants that express gag proteins alone yield immature, non-enveloped particles.
Conclusion. Recombinant vaccinia viruses that express one or more HIV-1 antigens have been proposed as candidate vaccines against AIDS. The production of enveloped retroviral particles by multivalent vaccinia recombinants suggests that they may have greater potential for eliciting an immune response effective against early events in HIV-1 infection.

M.C.P.17 TYPE-SPECIFIC NEUTRALIZING ANTIBODIES TO HIV-1 IN RABBITS IMMUNIZED WITH VACCINIA/HIV-1 RECOMBINANT VIRUSES

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Objective: To analyze humoral immune responses in rabbits immunized with vaccinia vectors expressing envelope genes from two strains of HIV-1.
Methods: NZW Rabbits were innoculated intravenously with $5x10^7$ pfu of vaccinia vectors which expressed either HIV-1 envelope genes (HTLV-III B or HTLV-III RF) or the gH gene of equine herpes virus as a control. Rabbits were boosted with $5x10^7$ pfu of the same vector 6 weeks after the initial innoculation. Antibody titers were determined by Western Blot analysis (HIV) or ELISA (Vaccinia). Neutralizing antibodies were determined using a syncytia inhibition assay with both III B and RF strains of HIV.
Results: All rabbits developed strong antibodies to both Vaccinia virus (titers to 1:409,600 by week 2) and to HIV-1 envelope antigens (titers to 1:10,240 by week 6). The major antibody response was to gp160 and gp120 with antibodies to gp41 appearing later and at lesser titers. Significant levels of neutralizing antibodies to HIV (≥1:64) developed by week 5 post innoculation. These neutralizing antibodies were type-specific and remained so even after boosting. Previous studies using vaccinia/HIV-1 env recombinant viruses in chimpanzees failed to elicit detectable neutralizing activity (Hu et al., Nature 328:721), though antibody responses in those studies were mainly directed to gp41.
Conclusion: Rabbits immunized with recombinant vaccinia/HIV-1 viruses develop significant type-specific neutralizing antibodies to HIV-1.

M.C.P.18 HYPERICIN: EFFICACY OF A NEW AGENT AGAINST HIV IN VITRO.

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OBJECTIVE: To examine the effect of hypericin (HY), an aromatic polycyclic dione, against HIV in vitro.
METHODS: (a) Different concentrations of HY were incubated overnight with 1,000 to 10 tissue culture infective doses (TCID) of recent isolates of HIV-1 and phytohemagglutinin-stimulated normal human blood mononuclear cells (PHA-BMC), washed, cultured with interleukin 2 and monitored for the production of particulate reverse transcriptase (RT) or core antigen p24. In other expts: (b) PHA-BMC were infected first and then treated with HY for 2 hrs. and cultured, (c) PHA-BMC were pretreated with HY, washed, infected and monitored or (d) free HIV was exposed to HY, and examined for infectivity and particulate RT.
RESULTS: HY inhibited the production of HIV by PHA-BMC as assessed by RT and p24 when: a) HY and HIV were added together, b) cells were preinfected and then pulsed with HY, c) cells pretreated and then cultured with HIV in the absence of free HY, d) free HIV was incubated with HY for 2 hrs. and then added to PHA-BMC. This inhibition was most marked with 100 TCID or less, and at HY 10-60 μgm/ml, often resulted in complete inhibition of RT and p24 through 12 days of culture. These concentrations of HY do not inhibit antigen-stimulated proliferation of normal BMC.
CONCLUSION: Short exposures of cells or HIV to HY at nontoxic levels inhibit the formation of infectious HIV by mechanisms that are not yet clear. This data on HY and HIV, together with our observation that HY inhibits lethal retroviral infections in mice at levels nontoxic in vivo, indicates that HY should be developed as a potential anti-HIV agent for humans.

M.C.P.19

FUNCTIONAL ANTIBODY RESPONSE IN PERSONS IMMUNIZED WITH BACULOVIRUS-DERIVED GP160

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Objective. To determine the functional serological response of vaccinees in the extramural NIAID sponsored trial of the MicroGeneSys baculovirus-derived gp160 candidate AIDS vaccine.
Methods. Neutralization (NT), complement-mediated antibody dependent enhancement (C'-ADE), and anti-fusion activity were measured in a cytopathic effect assay system based on neutral red uptake by viable MT2 target cells. NT is a measure of cell-free virus inactivation by serum; C'-ADE, done in parallel with the NT assay by adding complement to the system, measures the reduction in NT activity and is verified by detecting more rapid HIV replication, HIV specific protein synthesis, and syncytium formation; anti-fusion measures serum inhibition of cytopathic effect resulting from infected cell(H9/HTLV-IIIB)-to-target cell fusion in vitro. Volunteers were immunized on day 0, 30, and 180 with either 40 mcg or 80 mcg of gp160.
Results. Sera from all vaccinees at day 60 and sera from Vanderbilt vaccinees at days 210 and 270 had no evidence of NT, C'-ADE, or anti-fusion activity at any time point despite western blot positivity in many of the sera.
Conclusion. It is not known whether the inability to measure functional antibody activity in the sera of vaccinees is a function of the magnitude or quality of the antibody response.

M.C.P.20

HLA DR PEPTIDE INHIBITS HIV 1 INDUCED SYNCYTIA

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The binding of human immunodeficiency virus (HIV) to CD4$^+$ cells might be enhanced if the envelope bound to several sites on the same molecule or to several different molecules. Because class II molecules are important in the presentation of antigens and bind both the T cell receptor (TCR) and CD4 molecules, we determined whether the HIV-1 envelope protein exhibited sequence similarity with DR molecules. Five regions with sequence similarity were found and examined for their ability to inhibit syncytia formation between H9/HIV cells and uninfected CD4$^+$ cells. Peptide 141-155 inhibited the release of ^{51}Cr from H9/HIV cells after addition of uninfected CD4$^+$ cells. The inhibition was seen at very high peptide concentrations (200μg/well) and achieved 60% levels. This peptide blocked the binding of monoclonal anti-CD4 (Leu3a) in one of 4 donors. This region, 254-268 in gp120, is highly conserved among HIV isolates and the region, 141-155, in the DR_β molecule is also highly conserved between haplotypes. Mutation of this region in HIV-1 has been previously associated with loss of infectivity (Willey et al, J. Virol. 62:139, 1988) and rabbit antibodies directed toward this region have neutralizing activity in vitro (Ho et al, Science 239:1021, 1988). Humans infected with HIV apparently fail to respond to this region in vivo. In addition, both mice and chimpanzees are unresponsive to this region when immunized with intact DR2. Immunization with the peptide, however, does induce a response. This region may, therefore, be essential in the design of an HIV-1 vaccine, but caution is suggested because of the possibility of induction of harmful anti-self DR responses.

M.C.P.21

RECOMBINANT ADENOVIRUS INDUCES ANTIBODY RESPONSE TO HIV gag IN MICE.

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Objective. Construction of recombinant adenovirus vectors capable of expressing individual human immunodeficiency virus (HIV) polypeptides in infected cells and their use to assess antigenicity and as potential vaccines.
Methods. Recombinant adenovirus vectors capable of expressing HIV gag (p55 and p24), and env (gp160) were constructed by inserting HIV structural genes into human adenovirus type 5 with or without foreign promoters. Expression of recombinant vectors was assessed using immunoprecipitation and western blotting. Mice were infected with these vectors and examined for the production of antibody and the generation of cytotoxic T lymphocytes (CTL) to HIV proteins.
Results. Recombinant adenovirus vectors expressed HIV gag in a variety of human cells including EBV-transformed human B cell lines. Infection of mice with Adgag resulted in the production of antibody to HIV gag. We are currently using these vectors to determine the role of individual HIV gene products in induction and serving as targets for both murine and human anti-viral CTL.
Conclusion. We have successfully constructed recombinant adenovirus vectors capable of expressing HIV gag and generating immune responses in mice.

M.C.P.22

HUMAN T-CELL CLONES DEFINE DISTINCT EPITOPES WITHIN THE V3 REGION OF HIV-1 GP120

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Objective. To identify epitopes within the HIV-1 envelope which are recognized by T-cells from seronegative individuals.
Methods. Peptides representing the V_3 region of HIV-1 gp120 were used to stimulate T-cell reactivity in primary cultures of peripheral blood mononuclear cells (PBMC) from seronegative donors. T-cell clones were derived, phenotyped, and examined for specificity against a panel of peptide constructs. Clones were analysed for cytolytic activity against autologous targets bearing peptide antigens.
Results. The HTLV-III$_B$ RP135 peptide was found to be a potent stimulator of primary T-cell reactivity in vitro whereas the HTLV-III$_{RF}$ analogue (RP139) was far less stimulatory and the HTLV-III$_{MN}$ peptide (RP142) lacked any detectable activity. Using hybrid peptides, the multiple CD4$^+$ T-cell clones were found to belong to 3 different specificity groups, each capable of recognizing a subdeterminant within the V_3 region of gp120. Representative clones from each of these groups had demonstrable cytolytic activity.
Conclusion. T-cells from HIV-1 seronegative donors recognize determinants within the V_3 region of gp120. Unlike the single epitope recognized by mice, human T-cells appear capable of distinguishing multiple sites. Lastly, the V_3 region of gp120 may be important not only for production of neutralizing antibodies, but also for eliciting virus-specific T-cell reactivity in potential vaccinees.

M.C.P.23

PLAQUE REDUCTION ASSAY TO DETECT HIV NEUTRALIZING ANTIBODIES IN SERA FROM HUMAN VACCINEES

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Objective. To describe a neutralization (Nt) assay which employs vaccinia virus recombinant (VVR) infected CD4$^+$ HeLa cell monolayers.
Methods. HeLa cell monolayers + or - for HIV CD4 receptors were established in multi-well plates and upon reaching confluency (24 hrs) were infected at 100 PFU/10^6 cells with: 1) VVR expressing GP160 env protein, 2) VV,3) VVR or VV treated with sera from individuals vaccinated with recombinant GP160 (rGP160) vaccine (Microgenesys) and 4) VVR or VV treated with preimmune sera from vaccinees. Concomitantly sera were assayed for neutralizing antibodies using inhibition of syncytia formation induced by HIV strain IIIB in MOLT 3 cells.
Results. Infection with VVR but not VV produced plaques by day 3 in CD4$^+$ HeLa cell monolayers but not in CD4$^-$ cell monolayers. Plaques resulted from syncytia formation and subsequent sloughing of balooned cells. HIV membrane antigens were demonstrated on the surface of cells at the periphery of plaques by immunofluorescence. In both assays sera from vaccinees inoculated with 3 80ug doses of rGP160 did not exhibit neutralizing activity, in spite of the fact that post vaccine sera exhibited positive ELISA and reactivity to GP160 using Western blots.
Conclusion. A plaque assay employing VVR and CD4$^+$ HeLa cells has been used to examine sera for neutralizing antibodies among rGP160 vaccinees.

M.C.P.24

QUANTITATIVE ASSESSMENT OF SERA INHIBITION OF HIV/RECEPTOR BINDING

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Objective. Vaccination against HIV is expected to induce antibodies with a variety of biological activities. Antibodies that inhibit HIV/receptor binding, as well as those that neutralize infectivity, are expected to be protective. Our goal was to develop a sensitive assay to assess sera inhibition of HIV/receptor binding.
Methods. Using an EPICS C flow cytometer (EPICS Division of Coulter Electronics, Hialeah, FL), we first established the relative fluorescence intensity of each of the 256 channels of the 3-decade log scale of our instrument. Using beta-propiolactone inactivated HIV (Nishanian, et al., J. Immunological Methods 107:261, 1988), virus binding to T-cells was detected using an anti-HIV serum and FITC-goat anti-human Ig.
Results. When antibodies to gp120 were incubated with the HIV prior to adding the HIV to the T-cells, inhibition of HIV binding was observed with some sera, while enhancement of HIV binding was observed with other. This activity could be precisely quantitated, permitting accurate assessment of minor differences in the biological properties of different sera.
Conclusion. This method will be valuable for assessing the immune response of vaccinated persons, and is being used to map the epitopes of the virus that are involved in binding (see abstract by David Ho, et al., this Conference).

M.C.P.25 CROSS REACTIVITY OF GOAT SERA GENERATED AGAINST FIVE HIV-DERIVED GP 120 RECOMBINANTS AND SYNTHETIC PEPTIDES

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Objective: To determine the binding specificity of goat sera generated against C-terminal fragment of gp 120 (PB-1) and amino acid 301-324 loop sequences derived from five HIV isolates (3B, RF, MN, WMJ2, and SC).

Methods: Three different Elisa formats (peptide antisera/peptide antigens, peptide antisera/PB antigens, and PB-1 antisera/PB-1 antigens) were utilized to determine the cross reactivity patterns of the sera with the antigens.

Results: Antisera generated against MN and SC were highly cross reactive. This cross reactivity pattern was retained regardless of the antigen and antisera used and could not be predicted from the amino acid seqences of the five variants. Furthermore, it was established that the PB-1 fusion domains and the peptide KLH-carrier protein were not contributing to the cross reactivity.

Conclusion: The study demonstrates a strong cross reactivity of MN and SC. The cross reactivity could not be predicted from the linear sequences of the five peptides and the five PB-1's. Correlation of this cross reactivity with that of HIV-infected human sera and virus neutralization is discussed.

M.C.P.27 SIV VACCINE DEVELOPMENT SURVEILLANCE

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Use of macaques infected with SIV has become an important disease model for the development of a vaccine for human AIDS. A proliferating variety of approaches (synthetic peptides, recombinant peptide regions, subunit approaches, live expression vectors with different gene products, killed and live attenuated SIV) are under development and being utilized by numerous groups, all destined for evaluation of safety and immunogenicity in the animal and, ultimately, for protection from SIV challenge. To further complicate the picture, immunologically distinct isolates of SIV are being used, some biologically cloned, some genomically cloned, and others uncloned. Some projects are in early stages, while others are well underway. As an aid to information dissemination, facilitation and coordination of these efforts, the Vaccine Branch of the NIAID AIDS Program maintains surveillance of initiation and overall progress in these experiments. A summary of research approaches and findings will be presented.

M.C.P.29 COMPARISON OF IMMUNE RESPONSES IN MICE IMMUNIZED WITH NATIVE HIV-2 ENVELOPE GLYCOPROTEIN OR CORRESPONDING IMMUNOSOME

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Objective Investigate the role of HIV antigen presentation on the first step of immune reaction (macrophages mobilization) as well as on later events such as T-lymphocytes proliferation and antibody synthesis.

Methods HIV-2-Immunosomes (HIV-2-IMS) were prepared by anchoring purified envelope glycoprotein into the phospholipidic bilayer of liposomes. The immune responses to HIV-2 purified gp140/125, or corresponding Immunosome, have been determined by the level of Interleukin I (IL-1) production by adherent peritoneal exudate cells (PEC), T-lymphocyte proliferation upon in vitro restimulation with the immunizing antigen, and by antibody synthesis evaluated by ELISA, IFA, neutralization of cell-free viruses and syncytia formation inhibition.

Results Mice Immunized with HIV-2-IMS developed both higher antibody response and neutralizing titers against HIV-2 than mice immunized with equal amounts of envelope glycoprotein. Similarly, IL-1 production was higher in mice immunized with HIV-2-IMS. In addition, upon in vitro restimulation, enhanced IL-1 production was observed only in mice primed and restimulated with immunosomes. T-lymphocyte proliferation, determined by 3H TdR incorporation, followed the pattern of IL-1 production.

Conclusion These observations indicate that the physical presentation of an antigen may be critical not only for their uptake by macrophages, and simultaneous release of IL-1, but also for the subsequent events in the cascade of immune responses, suggesting the potential application of liposomes as carrier for purified HIV antigen in designing an AIDS vaccine.

M.C.P.26 IMMUNOGENICITY OF HIV *env* GLYCOPROTEINS IS DEPENDENT ON PROPERTIES OF THE GLYCOCONJUGATE

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Objective. Recombinant glycoproteins derived from the HIV-*env* gene are under evaluation as antigens in vaccines against AIDS. The importance of the structure and size of the glycoconjugate for eliciting a protective immune response is obscure. As a first approach to elucidate this matter we present data on the immunogenicity in mice of two *env* glycoproteins, which have been modified by treatment with glycosidases.

Methods. Gp120 (A), purified from HIV-1^{IIIB} infected H9 cell culture medium (Pyle STW et al. AIDS Res 1987;3:387-400.) and gp 160v (B), expressed in Vero cells from the HIV-1^{IIIB} *env* gene in a vaccinia virus vector, were incorporated into ISCOMs and treated with 1) buffer (non-modified control), 2) neuraminidase, 3) endoglycosidase-H or 4) glycopeptidase-F. The 8 antigen preparations were analyzed by EM, SDS-PAGE and immunoblot and injected, at a dose of 1ug (animal group A1-A4, B1-B4) or 0.1ug (group b1-b4) into mice (10 animals per antigen and dose) at two occasions, 4 weeks apart. Blood was withdrawn from the tail veins at intervals up to 8 months after the first immunization and the serum individually analyzed by ELISA for titre against gp160v and several related peptides.

Results. The serological immune response to the non-modified and modified glycoproteins differ with respect to relative antibody titre, timing and type of ELISA. As a general the modified proteins gave raise to a lower total titre than the non-modified glycoprotein.

Conclusion. The carbohydrate moieties are important for defining antigenic epitopes. It remains to be shown wether this has bearing on protective epitopes.

M.C.P.28 ZAIRIAN HIV-1 VARIABLE AND HYPERVARIABLE ENVELOPE FRAGMENTS

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Objective To compare the heterogeneity, in Zairian asymptomatic carriers and atypically seropositive individuals, of amplified DNA fragments from envelope and gag regions.

Methods and results. DNA extracted from periferal blood mononuclear cells has been used for PCR amplification of envelope and gag regions. We have found that the PCR, if carried out under condition designed to avoid non specific amplification, results in a large number of false negatives.

PCR results (asymptomatic carriers)

location	amplified sequence	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
env	8-368	+	-	+	-	+	+	-	+
env	682-1021	-	+	-	+	+	+	+	-
env	1760-2093	+	-	-	-	-	-	-	-
gag	1551-1665	+	-	+	+	+	+	+	-
gag	856-1046	+	-	-	+	-	-	-	-

A modified PCR technique, involving lower annealing temperatures, has successfully amplified fragments of these variable envelope regions. The DNA fragments have been purified and reamplified using the PCR technique and enough DNA obtained for direct sequencing/sequencing of cloned fragments. The results are important in relation to the development of envelope based vaccines.

M.C.P.30 AN IMMUNODOMINANT EPITOPE OF THE HIV GP 160 ENVELOPE GLYCOPROTEIN RECOGNIZED BY CLASS I, MHC IMMUNIZED HUMANS

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Objective : A single peptide corresponding to residues 308-322 of Rattner et al (1) sequence accounted of the murine CTL activity (2) measured using stimulator cells expressing the entire gp160 protein. Because CTL may be important for preventing direct cell to cell transmission of HIV we investigated the epitope specificity of the anti HIV CTL in immunized humans.

Methods : Volunteers, primed by rV expressing gp160 protein received boosts constituted by gp160 determinants. These PBL were stimulated in vitro by irradiated autologous cells carrying gp160 signals in a mixed lymphocyte culture. Effector PBL were assayed for specific cell mediated cytotoxicity by chromium release test, using EBV transformed B cells initially infected with rV or pulsed with P18.

Results : Our results show that immunized populations are CTL responders. Our data found that the peptide P18 may represent a good antigenic signal for specific CTL recognition. Moreover, they respond to a single site represented by a 15 residue synthetic peptide of T cell epitope and are seen by CD 8 CTL in association with class I (MHC) molecule.

Conclusion . This epitope which occurs in a highly variable segment of the envelope protein may be immunodominant in humans and of clinical importance in vaccine development.

(1) Rattner et al. Nature, 313, 277-284, 1985
(2) Takahashi et al. PNAS, 85, 3105-3109, 1988

M.C.P.31 MAPPING OF T- AND B- CELL EPITOPES OF HIV-1 nef PROTEIN IN IMMUNIZED CHIMPANZEES.

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Objective. As an approach to vaccination, the immunogenicity and fine specificity of HIV-1 $p27^{nef}$ (p27) regulatory protein for T and B cells were assessed using synthetic peptides.
Methods. Chimpanzees were repeatedly immunized with soluble purified p27 produced in E. Coli, associated with other recombinant HIV-1 proteins (gp160, p18), and mixed with MDP as an adjuvant. Four animals had been previously inoculated with recombinant vaccinia expressing different HIV-1 proteins, 2 of them having thus received p27. Two were naive. PBL proliferative specific responses (PR) (^{3}H-Thymidine incorporation) and serum antibody reactivity (ELISA) were sequentially tested against p27 and a set of synthetic peptides spanning the entire nef sequence.
Results. Independently of previous immunizations, PR to p27 was strong and sustained in 1 animal (mean SI = 9.2), moderate in 2 (mean SI = 5.7 and 5.9), weak in 2 (mean SI = 2.7 and 3.1), and negative in 1 (mean = 1.7). Anti-p27 antibody titers ranged from 1 : 1600 to 1 : 6400 in the sera of the 3 animals whose lymphocytes had the strongest PR. The dominant epitope recognized by PBL of these chimpanzees was located in the C- terminal region of p27 when peptides were compared for their capacity to induce PR. In parallel, one of the 3 major linear epitopes recognized by the corresponding sera was located closely, indicating that the last 40 amino-acids of p27 comprise both major T- and B- cell epitopes.
Conclusion. Beside demonstrating that $p27^{nef}$ presents dominant epitopes recognized by T and B cells on its C- terminal region, these data provide a means to explore the pathophysiological value of the immune response to nef product, and its possible usefulness for vaccination purposes.

M.C.P.32 DEMOGRAPHIC CHARACTERISTICS AND FREQUENCY OF EXCLUSIONARY CRITERIA IN A POPULATION VOLUNTEERING FOR HIV IMMUNIZATION.

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Objective: To define the population volunteering for an AIDS vaccine study (rGP160 MicroGeneSys) and to determine the frequency of occurrence of exclusionary criteria in such a population.
Methods: 166 volunteers were interviewed and examined. Blood was collected for routine laboratory testing as well as T cell counts, HIV ELISA (EIA), Western Blot (WB) and p24 Ag.
Results: 85 males (mean age 22.2, range 18-42) and 81 females (mean age 23.9, range 17-50) volunteered. 130/166 (78%) were university students. Most had learned of the study from news media (55%) or friends/workplace (37%). The most common causes for exclusion were the presence of indeterminant WB (26.5%) or a change of mind after the initial interview (24%). Other causes were abnormal CBC and Diff (7.2%), elevated ALT (3.6%), +HBab (3.6%), abnormal UA (3.4%), recent STDs (3.0%), T4 <400 (1.9%), abnormal CXR (1.7%), recognized high risk behavior (1.7%), +RPR (1.2%), promiscuity (1.2%), failure to meet age criteria (1.2%), unable to be available for entire study (1.2%), abnormal physical exam (0.6%) and +p24 ag (0.6%). No volunteers had +EIA. 14.5% had more than one reason for exclusion.
Conclusion. Even in a community with low prevalence for HIV, a large majority of healthy heterosexual volunteers can be expected to be ineligible for enrollment in HIV vaccine trials. An average of 4.8 volunteers were screened for each of 12 vaccinees chosen.

M.C.P.33 AN AUTOMATED MICROTITER TEST SYSTEM FOR THE DETECTION OF HIV-1 AND HIV-2 NEUTRALIZING ANTIBODIES

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Objective. Establishment of a microassay for the measurement of HIV-neutralizing antibodies using monolayer cells.
Methods. Incubation of human fetal lung cells (clone LC5) with HIV-1 or HIV-2 in microtiter plates and demonstration of cytoplasmatic viral proteins after two to three days using the indirect immunoperoxidase staining (IP). Demonstration of neutralizing capacitiy of sera in an colony-reduction assay. Use of an automated workstation (BIOMEK 1000) for the performance of the neutralization assay.
Results. The incubation of LC5 cells with HIV results in the formation of IP-positive colonies two to three days after infection. The colonies can be counted very easily and their number correlates to the amount of infective units in the inoculum. Preincubation of HIV with neutralizing sera prior to infection results in a distinct reduction of colonies. In comparison to endpoint test systems, this assay is more sensitive and the neutralizing capacity of sera can easily be quantified (titer determination).
Conclusion. The use of monolayer cells in combination with IP represents a reliable and easily to quantify test system for the detection of HIV neutralizing antibodies, which can be completely automated. This test system is fast, very sensitive, requires minimal handling of infectious virus and is thus suitable for the screening of large numbers of sera.

M.C.P.34 NOVEL APPROACH TO PURIFICATION OF HIV p24PROTEIN BY CLEAVAGE FROM HYBRID Ty VIRUS-LIKE PARTICLES

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Objective: To develop a rapid method of purifying a component of a fusion protein

Method and Results: The coding sequence for HIV-1 p24 was cloned into a Ty:VLP vector. The resulting fusion protein assembles inot virus-like particles due to the presence of the yeast Ty p1 protein. This is linked to p24 via the recognition sequence of the blood clotting factor Xa. The VLPs can be readily purified in milligram quantities. The p24 component can then be cleaved from the particles with activated factor Xa. A rapid method has been developed for the subsequent purification of p24 from the cleavage mixture. This technology has also been used for the purification of other proteins including HIV TAT and NEF.

Conclusion: A simple and effective method has been developed for the purification of the p24 component of a fusion protein. This is a generic method applicable potentially to any protein of interest.

M.C.P.35 HIV VACCINE DESIGN: EXPLOITATION OF Ty VIRUS-LIKE PARTICLES

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A protein encoded by the yeast retrotransposon Ty can be used as a carrier for recombinant antigens. HIV antigens (gp120, gp41, p24, p17, reverse transcriptase, TAT) have been incorporated into specialised expression vectors for high level production in yeast. These antigen coding sequences include those for complete proteins and selected regions.

All of the Ty-HIV fusion genes are transcribed and translated into fusion proteins that assemble into hybrid virus-like particles (VLPs). The formation of VLPs is conferred by the self-assembly properties of the Ty protein. The hybrid VLPs contain about 300 copies of the fusion protein and hence about 300 copies of the added antigen. The non-Ty component is presented on the outer surface of the particles and induces the production of HIV-specific antibodies.

The ability of various of these polyvalent antigens to induce virus neutralising antibodies and cellular responses is currently being evaluated in rodents and non-human primates.

M.C.P.36 RHESUS MONKEYS IMMUNIZED WITH RECOMBINANT VACCINIA VIRUSES CONTAINING HIV-1 ENVELOPE GENES DEVELOP ANTIBODIES REACTIVE WITH ENVELOPE OF DIVERGENT HIV-1 STRAINS.

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Objective: To study HIV-1 specific antibody (Ab) responses in rhesus monkeys immunized with recombinant vaccinia viruses containing the gp160 envelope genes of HIV-1 strains IIIB or RF.
Methods: Groups of 4 rhesus (Rh) monkeys were immunized with either $2X10^{8}$ PFU of a TK- deletion mutant of vaccinia virus (VAC) or recombinant vaccinia virus containing the HIV-1 IIIB (VAC-IIIB) or HIV-1 RF (VAC-RF) gp160 envelope gene, at weeks 0 and 9. Sera were collected at three week intervals for measurement of HIV-1 envelope reactive Ab. Serological assays were performed by Western blotting (WB) 1:10 dilutions of sera against commercial HIV-1 (strain IIIB) strips, and by whole virus (IIIB) ELISA and recombinant HIV-1 (LAV) gp160 ELISA at serum dilutions of 1:5 to 1:40.
Results: All Rh showed primary but not secondary takes. Ab results were:

	IMMUNIZING VACCINE (RESPONDERS/VACCINATED)		
ASSAY & STRAIN OF ORIGIN	VAC	VAC-IIIB	VAC-RF
HIV-IIIB WB gp120/160	0/4	4/4	3/4
HIV-IIIB WB gp41	0/4	0/4	3/4
HIV-IIIB ELISA (GMT)	0/4	3/4 (20.0)	3/4 (25.2)
HIV-LAV r-gp160 ELISA (GMT)	0/4	4/4 (24.0)	3/4 (15.8)

Conclusion: VAC-IIIB or VAC-RF induced broadly reactive Ab to HIV env. Only VAC-RF induced Ab to gp41, suggesting greater expression of the complete gp160 by VAC-RF or the immunodominance of an HIV-RF gp41 peptide sequence. Testing for Ab at 1:100 would have failed to detect Rh seroconversion.

M.C.P.37

SALIVARY ANTIBODIES TO HIV ANTIGENS IN AN AIDS VACCINE TRIAL.

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The development of HIV-specific secretory antibodies may be a desirable outcome in individuals receiving an AIDS vaccine. We investigated parotid and whole saliva samples from 5 volunteers who received a recombinant HIV-1 envelope glycoprotein (rgp160) vaccine (MicroGeneSys) for the presence of HIV-specific antibodies. Ten healthy, adult` volunteers received intramuscularly either 3 doses of rgp160, hepatitis B vaccine, or a placebo preparation on days 0, 30, and 180. Individuals receiving the rgp160 received either 40 or 80 ug at each vaccination. Saliva samples were collected on ice from the volunteers on days 0, 28, 60, 120, 194, and 270. HIV-specific antibodies were assayed using immunoblots (Epitope, Inc.). Blots were incubated with the saliva samples, then with a biotinylated anti-human immunoglobulin antibody and finally with a streptavidin-biotin horseradish peroxidase complex. To date, all volunteers were negative for HIV antibodies by ELISA (Abbott) in their serum. By Western blotting, serum antibodies to HIV envelope were demonstrated in 2 individuals, one who received the low dose vaccine and one who received the high dose. We evidenced antibodies to gp160 in day 194 whole saliva collected from one of these individuals. Stimulated parotid saliva collected on this date and all others did not contain detectable HIV-specific antibodies. Mean total IgA levels of the volunteers with stimulated flow were 5.5 mg% ±3.1 and 3.0 mg% ±1.4 for whole and parotid saliva respectively, as detected by ELISA. The finding of HIV-specific antibodies in whole saliva following vaccination may indicate that development of secretory immunity is possible.

M.C.P.38

RETENTION OF PURIFIED HIV-1 GP120 BY ALHYDROGEL.

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Objective. The duration of the humoral immune response in chimpanzees vaccinated with HIV-1 gp120 formulated in Alhydrogel suggests that gp120/alhydrogel complexes may be short-lived in vivo. In order to explore this possibility, we determined the effect of serum on gp120/Alhydrogel complexes.

Method. Radiolabelled HIV-1 gp120 was adsorbed to Alhydrogel and the resulting complexes were separated from non-adsorbed gp120 by centrifugation. The gp120/Alhydrogel complexes were resuspended in distilled water and aliquots were added to normal human serum or distilled water. Retention of gp120 was determined by pelletting aliquots at various times and determining the amount of radioactivity in the pellets and supernatants.

Results. HIV-1 gp120 is readily adsorbed by Alhydrogel and is stable for long periods of time when resuspended in distilled water. However, once added to serum, approximately half of the complexes immediately dissociate, and less than 20 percent of the gp120 remains complexed after 24 hours.

Conclusion. HIV-1 gp120/Alhydrogel complexes in serum are short-lived, in vitro, and may explain the short-lived humoral responses in chimpanzees. Additional adjuvants need to be evaluated for use in HIV-1 gp120 AIDS vaccine experiments.

M.C.P.39

REPLICATION OF HIV UNDER SINGLE GROWTH CYCLE CONDITIONS: A MODEL FOR STUDYING THE EFFECT OF ANTIVIRAL DRUGS.

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Objective. To describe an experimental model of HIV infection for testing antiviral drugs. Methods. C8166 cells were infected with 5-10 $TCID_{50}$/cell and then seeded in the presence or absence of antiviral drugs. At various time points cultures were collected and intracellular or extracellular virus was back titrated in fresh C8166 cells by standard limiting dilution method (0.5 Log ratio, 4 replicates per dilution), scoring syncitia formation after 4 days. Results. A single growth cycle of HIV has been established showing that replication is completed in 20 hr and that at each time point, the titer of intracellular virus is 2 Logs higher than the extracellular one. This model allows us to determine directly the effect of antiviral drugs in terms of infectious virus yield reduction rather than of production of indirect parameters of viral growth (RT, p24), or c.p.e.. Conclusions. HIV replication is not as slow as previously established. Availability of a simple and dependable test to directly measure infectious virus may overcome uncertainities and ambiguities connected with indirect evaluation of viral growth by RT or p24 antigen determination. By using this model we have been able to show synergism between zidovudine and dideoxycytidine

M.C.P.40

INDUCTION OF ANTIBODY TO HIV-1 ENVELOPE PROTEINS BY p24 CORE T EPITOPES.

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Objective. To investigate the possible involvement of HIV-1 p24 T epitopes in helping the generation of antibody responses to viral envelope proteins.

Methods. Previously we have located 5 T epitope-containing regions in a synthetic 104 residue long peptide corresponding to the sequence of the C terminal half of HIV-1 p24. Groups of BALB/c mice were individually primed subcutaneously with 50 ug of each of these T epitope-containing peptides in Freund's incomplete adjuvant and boosted with 50 µg of a synthetic chimeric peptide. Chimeric molecules used were a 138 mer peptide consisting of the 104 residue peptide linked to an envelope peptide which has been described to contain at least one B epitope, and another 42 residue peptide containing a selected p24 T epitope linked to the same envelope sequence. Antisera were collected 12 days post challenge and examined for their reactivity against HIV protein using Western blotting.

Results. Antibody against envelope proteins was detected in mice primed with the 104 mer or individual T epitope-containing peptides and boosted with the 138 mer. Anti-envelope responses were also found in T epitope primed mice which were boosted with the 42 mer chimeric peptide containing the same T epitope.

Conclusion. It appears that some T epitopes of p24 core protein can regulate antibody responses to the envelope protein.

M.C.P.41

T CELL EPITOPES IN A CHEMICALLY SYNTHESIZED 104-MER CORE PROTEIN (p24) OF HUMAN IMMUNODEFICIENCY VIRUS (HIV-1)

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Objective. To locate T cell epitopes of the terminal half of p24 of HIV-1.
Methods. A 104-mer peptide corresponding to the amino acid sequence of the C-terminal half of p24 of HIV-1 was synthesized using an automated ABI 430-A peptide synthesizer and t-BOC chemistry. The long peptide was used to generate murine peptide-specific T cell lines. The lines were then tested for their ability to proliferate to whole virus and native core proteins of HIV-1. A set of 14-23 mer peptides containing predicted T cell areas and a second set of 15 residue overlapping peptides were then individually tested to stimulate proliferation of the 104-mer specific T cell lines in order to locate the T epitopes. Peptides that induced in vitro proliferation of the lines were also tested to generate in vivo help in the production of antibody reactive to synthetic peptide, recombinant and natural core proteins.
Results.The murine 104-mer specific T cell lines were of the helper phenotype and proliferated to the antigen in a MHC-restricted manner. The lines also responded to the whole virus and native p55. Five T epitope containing regions were defined in the 104-mer. Murine antibodies raised against the T epitope containing peptides recognized the synthetic protein, recombinant core proteins and viral p55 of HIV-1.
Conclusion·The 104-mer peptide shares both T and B epitopes with viral core proteins and,is therefore suitable for studies in HIV proteins.

M.C.P.42

DIPYRIDAMOLE HAS ACTIVITY AGAINST HIV-1 AND POTENTIATES THE ANTIVIRAL EFFECTS OF AZT AND OTHER DIDEOXYNUCLEOSIDES IN MONOCYTE/MACROPHAGES

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Objective. To report: 1) an inhibitory effect of dipyridamole (DPM) on HIV-1 replication in monocyte/macrophage (M/M) cultures, and 2) a potentiation by DPM of the anti-HIV effects of azidothymidine (AZT) and dideoxycytidine (ddC) in M/M.
Methods. M/M cultures were prepared from peripheral blood monocytes purified either by adherence to plastic or by centrifugal elutriation. The cells were infected with $HIV/HTLV\text{-}III_{Bal}$/1985, and p24 antigen production was measured at intervals by ELISA.
Results. The ID_{50} values of AZT and ddC decreased by at least 5-fold in the presence of 2-10 µM DPM. With 0.4-0.08 µM DPM, the ID_{50} of AZT appeared to decrease by about 2- to 3-fold. No toxicity of DPM for M/M was seen at concentrations < 10 - 20 µM, as assessed by cell counts and by the functional criterion of superoxide generation (with or without stimulation by PMA). DPM did not potentiate AZT toxicity for human bone marrow progenitor cells in a CFU_{GM} assay.
Conclusion. DPM is widely used in the treatment of cardiovascular diseases because of its platelet anti-aggregant and vasodilator activities. Since M/M are major reservoirs for HIV-1 *in vivo*, our findings suggest the possible utility of DPM in combination chemotherapy of HIV infections. However, clinical efficacy and safety cannot be predicted on the basis of *in vitro* studies such as these.

M.C.P.43 LOW RESPONSE RATES TO HEPATITIS B VACCINE IN INACTIVE DRUG-ADDICTS

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Objective: to evaluate the immune response to vaccine against hepatitis B virus (HBV) in former drug users. Methods: fifty-five former drug-addicts (DA, median age 25 yrs) were vaccinated against HBV with a yeast recombinant HBV vaccine (Engerix B-SKF) at 0,1 and 6 months intervals. 17 patients (a) had no HBV markers, 15 (b) had anti-HBc only, 23 (c) had anti-HBc and anti-HBs less than 10 IU/l. 25 DA were symptomless anti-HIV carriers with 217-1766 cells (median 578) and 52% response rates to skin tests (Multitest-Merrieux). 11 staff members and 30 healthy controls, age matched with DA, with no HBV markers or anti-HIV were also vaccinated. Results: response rates to vaccination were as follows:

Patients		7th mo		12th mo		24th mo	
		No(%)	GMT*	No(%)	GMT*	No(%)	GMT*
DA	a	13 (76)	1125	11 (77)	253	3 (43)	667
	b	1 (7)	0	1 (7)	0	1 (17)	0
	c	16 (70)	116	10 (53)	107	5 (31)	77
Staff pers.		11 (100)	4077	9 (82)	1662	8 (89)	609
Controls		29 (97)	2526	28 (93)	1226	-	-

(*geometric mean titer)

Conclusions: DA poorly responded to vaccination. Significant covariates for non-responders were isolated anti-HBc ($p<0.001$), HBV-DNA ($p \leqslant 0.05$) and anergy to skin tests ($p \leqslant 0.02$), suggesting that hyporesponsiveness to hepatitis B vaccine in DA may be multifactorial.

M.C.P.45 STUDY DESIGN ISSUES IN SIV VACCINE TRIALS

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The development of the SIV model for HIV infection and disease has created many opportunities for evaluating vaccine strategies for AIDS. Indeed, several pilot studies have already been performed. The limited availability of primates, however, necessitates the development of efficient designs for SIV vaccine trials. The purpose of this presentation is to discuss the central decision points in the rational design of SIV vaccine trials, the implications of these choices, and the quantitative tools necessary to make appropriate choices in study design. Specific issues will include: (1) How to avoid missing a potentially promising result; (2) how to decide about the necessity for controls; and (3) how selecting appropriate endpoints can influence the quality and timeliness of data from these trials. These discussions will focus on the use of existing study designs for screening chemotherapeutic agents (particularly those that address the scarcity of experimental subjects) when deciding on the design of SIV vaccine trials. The goals of this presentation are to provide detailed analyses of study design issues for SIV vaccine trials and to suggest methods for increasing the efficiency, quality, and speed of these trials.

M.C.P.47 GENERATION AND ANALYSIS OF RECOMBINANT VACCINIA VIRUSES THAT EXPRESS SIV POLYPEPTIDES

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Objective. To generate and evaluate prototype recombinant vaccinia-based vaccines for the prevention of AIDS in a non-human primate model system based on simian immunodeficiency virus (SIV)

Methods and Results. Recombinant vaccinia viruses containing the env, gag, and pol genes of SIVmac251, in monovalent and multivalent conformations, were constructed by standard methods of *in vivo* recombination. The recombinant viruses were analyzed for expression of the inserted genes using a variety of assays. Each of the recombinants synthesized the expected, appropriately modified polypeptide products at levels reflective of the strength of the vaccinia promoters used to direct their expression. Mice were inoculated with each recombinant, and the immune responses to vaccinia virus and to SIV were measured by several assays, including ELISA, Western blot analysis, and neutralization assays. All of the recombinant viruses elicited antibody responses to the expressed SIV antigens as measured by Western blot analysis; the recombinants that expressed env or env + gag also elicited SIV neutralising responses. The latter recombinants are currently being evaluated in rhesus macaques.

M.C.P.44 IMMUNE RESPONSE OF RABBITS AND CHIMPANZEES TO INACTIVATED WHOLE VIRUS CONCENTRATES OF HIV-1

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Objective: To assess the immune response directed against inactivated whole virus concentrates of HIV-1 designated for a challenge experiment in chimpanzees.

Methods: Concentrates of HIV-1/HTLV-III$_B$ were prepared by continuous flow Sucrose gradient centrifugation containing 10^8 TCID$_{50}$/ml and more than 10^{11} physical viral particles/ml. After formaldehyde inactivation these concentrates were combined with different adjuvants and used to immunize rabbits and chimpanzees.

Results: After three immunizations excellent humoral immune responses against all viral core antigens and moderate responses against env antigens were observed in rabbits along with neutralizing antibodies and delayed type hypersensitivity responses to env and core antigens. First results indicate that chimpanzees respond stronger to these viral antigens than rabbits do.

More detailed and latest results will be presented at the congress. Challenge experiments in chimpanzees are planned for the near future.

M.C.P.46 CLINDAMYCIN PLUS PRIMAQUINE IS EFFECTIVE FOR PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA IN RATS

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Objective. To evaluate the efficacy of the combination of clindamycin (CM) and primaquine (PQ) for prophylaxis of *Pneumocystis* (PC) pneumonia in rats.

Methods. Female Sprague Dawley rats weighing between 120 and 140 grams were given dexamethasone, 1.2 mg/L for 4 days prior to transtracheal inoculation with PC and continuously through 7 weeks of prophylaxis. CM was given either continuously in water 50 mg/kg/day or by gavage once per day at 225 mg/kg. PQ was given by gavage once or twice per week at a dose of 2.0 mg/kg. Untreated controls and controls receiving trimethoprim/sulfamethoxazole (TMP/SMX) 50/250 mg/kg/day in water were included.

Animals were evaluated for PC infection by determining numbers of PC in Giemsa or methenamine silver stained impression smears of lung and graded 0-5+ on a logarithmic scale. Some rats died of other infections and only those surviving to the end of the study were evaluated.

Results. The combination of CM in water plus PQ once or twice a week by gavage prevented development of PC pneumonia in rats such that the mean Giemsa score for treated rats was 1.3 as compared to a mean score for untreated of 4.2, CM alone of 3.7, PQ alone of 3.4 and TMP/SMX 1.0. The combinations of PQ by gavage plus CM by gavage were less effective (mean score 3.7) than those of CM in water plus PQ by gavage.

Conclusion. Previous studies in rats and early clinical trials have shown that CM/PQ is effective for therapy of PC pneumonia. CM/PQ is effective for prophylaxis of PC pneumonia in rats and clinical trials should be considered.

M.C.P.48 THE SEARCH FOR A CANDIDATE VACCINE AGAINST AIDS · PROGRESS REPORT III

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Objective : to prepare an immunizing protocol generating a group specific anamnestic immune reaction against HIV similar to the one obtained by the candidate vaccine prototype using for priming rVaccinia expressing HIV gp160 and boosting with fixed autologous cells initially infected with the rVaccinia.

Methods : Immunizing determinants from the HIV env gp 160 as major and gag and pol proteins as accessory antigens. Treatments were first selected by in vitro assays for cell mediated immunity, then tested in Cercos for safety and immune response prior to use in human volunteers. Each series of 4 - 6 human volunteers received a predetermined protocol.

Follow up : Immune reaction - Humoral response : (a) Elisa, Western-Blot, (b) neutralizing Ab tested in T_4 cells (c) protective, or enhancing Ab tested in monocyte /macrophage cells ; Cellular response : P.B.L. proliferative index and specific cell mediated cytotoxicity - In addition the integrity of the immune system is assayed by T_4/T_8 cell count and IL_2 production by blood mononuclear cells.

Results : protocols using gp 160 epitopes as immunizing reagents induced humoral or/and cellular immune responses. An appropriate candidate vaccine easy to handle and protective (not enhancing) is indeed required to set up a clinical trial in a large group of high risk individuals in order to evaluate the level of protection against AIDS.

Zagury D. et al : Immunization against AIDS in humans. Nature, 326, 249-250, 1987 - Zagury D. et al : A group specific anamnestic immune reaction against HIV-1 induced by a candidate vaccine against AIDS. Nature, 332, 728-731, 1988

M.C.P.49

Inhibition of de novo HIV infection in monocyte/macrophages by agents which block the binding of HIV-1 gp120 to CD4.

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Objective. To evaluate the ability of OKT4A or recombinant soluble CD4 (rCD4) to inhibit HIV replication in cells of monocyte/macrophages (M/M) lineage. Methods. Peripheral blood M/M prepared by various separation techniques (in some cases cultivated in medium with 100 U/ml GM-CSF), and U937, a monocytoid line, were exposed to HIV-1 (monocytotropic strain $HTLV-III_{Ba-L}$ or $HTLV-III_{B}$) in the presence or absence of OKT4A or rCD4 (provided by Genentech). Results. Fresh M/M had relatively low amount of surface CD4 (10-35% weakly CD4+ by FACS). In most cases the amount of CD4 increased as the cells were permitted to mature for 5 days (55% CD+). U937 cells were >98% CD4+. Despite these differences among M/M populations, OKT4A inhibited HIV replication in all M/M by >98% for up to 30 days after viral challenge, even at the lowest concentration tested (0.06 ug/ml). rCD4 at 5 ug/ml inhibited HIV replication in all M/M populations by >98%. Also, 1 ug/ml rCD4 inhibited HIV by 75% in mature M/M and in GM-CSF-exposed M/M, while somewhat less inhibition was achieved in fresh M/M. $HTLV-III_{B}$ replication was >98% inhibited in U937 by 0.1 ug/ml rCD4 and 1 ug/ml OKT4A. No consistent HIV suppression was found with OKT4C (a monoclonal antibody directed to a different epitope on CD4) or with a control murine IgG2a Ab. rCD4 inhibited HIV replication by 90% if added to M/M within 3 days after viral challenge, while OKT4A lost its antiviral effect if added >24 hours after viral exposure. Conclusions. OKT4A and soluble CD4, which block CD4-gp120 binding, are highly effective inhibitors of infection of blood-derived M/M by HIV, providing evidence that CD4 is the principal if not sole receptor for HIV in M/M.

M.C.P.51

HELA CELLS STABLY EXPRESSING HIV ENV AND TAT AS TOOLS FOR STUDYING STRUCTURE, FUNCTION AND CANDIDATE INHIBITORS OF THESE KEY HIV GENE PRODUCTS.

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Objective. To stably express the env and tat gene products of HIV in HeLa cells, and to use such expressor cell lines to isolate these gene products for structure/function analysis. Methods. A DNA fragment containing the tat, rev and env genes from the HIV-1 infectious clone pHXBc2 was cloned into the retroviral shuttle vector pZIPneoAU3. The resulting plasmid penvAU3 was transfected into human cells, and transformants (HeLa env⁺tat⁺ clones) were selected in G-418 containing medium. Results. Stable expression of HIV env was demonstrated by immunoprecipitation with AIDS patient antisera which showed clear bands of molecular weights 160, 120 and 41 kD after lentil lectin chromatography. HIV env expression in these HeLa cell clones has been demonstrated for over 6 months. A functional assay for env based on syncytium formation was performed as follows: Hela env⁺tat⁺ cells were cocultivated with indicator HeLa T4⁺ containing the chloramphenicol acetyl transferase (CAT) gene under the transcriptional control of the HIV LTR (kindly provided by Drs. B. Felber and G. Pavlakis). Transactivation of the CAT gene was observed after cocultivation of indicator cells with HeLa env⁺tat⁺ but not with wild type HeLa cells. This transactivation was inhibited by OKT4A antibody. Likewise, inhibitors of glycoprotein processing such as castanospermine or its analogues inhibited CAT transactivation. Conclusions. The virus-free expression of the HIV tat and env will allow analysis of structure, function and inhibition of these gene products in a biohazard-free system.

M.C.P.53

USE OF AZT AS A CHEMOPREVENTIVE AGENT: EFFICACY AND TOXICITY IN MURINE RETROVIRUS INFECTIONS.

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Objective. To determine if AZT therapy can protect susceptible populations from retrovirus infection. Methods. AZT was administered to C57BL/6 or NFS/N mice prior to challenge with LP-BM5 or Cas-Br-M MuLV respectively. Results. 1) Treatment with AZT (1 mg/ml in drinking water, 4 weeks) protected newborn NFS/N mice from a single challenge with Cas-Br-M but was not able to prevent maternal-fetal transfer of LP-BM5 MuLV from infected C57BL/6 mothers. 2) AZT treatment of adult C57BL/6 mice suppressed LP-BM5 replication: upon removal of AZT, viral replication and disease was observed in a significant percentage of the treated mice. 3) Hematocrits fell dramatically in mice treated with high levels of AZT. 4) The hematopoietic toxicity was dose dependant, hyperplasia and elevations in spleen and bone marrow BFU-E were observed in mice treated by continuous infusion, indicating that AZT alters erythropoiesis in the absence of detectable anemia. Conclusion. The effectiveness of AZT as a chemopreventive agent depends upon the elimination of reservoirs of infection and the management of hematopoietic toxicity.

M.C.P.50

USE OF NUCLEIC ACID HYBRIDIZATION FOR HIV SUSCEPTIBILITY TESTING

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Objective. Many antiviral compounds for Human Immunodeficiency Virus (HIV) infection are being studied using time consuming and tedious in vitro methods. We have developed and evaluated a new technological approach for antiviral susceptibility testing using a rapid and simple method for specimen processing known as "wicking". This technology has been adapted to successfully test the susceptibility of HIV to zidovudine (AZT). Methods. CEM cells (2×10^5) were infected with HIV (LAV-1) at approximately 850,000 reverse transcriptase units (RTU). After 1 hr adsorption the cells were washed x 3 and RPMI 1640 + 10% calf serum with AZT (5uM-0.01 uM) was added. Cells were incubated for 6 days, at which time the media was removed and cells were lysed with the RNA wicking agent (DHI). Hybridization of the wicks was carried out at 42°C for 2 hrs with an iodinated ss DNA probe containing 3.0 kb of the HIV clone pBENN#5. After a 1 hr wash at 50°C the wicks were counted in a gamma counter. Results. The Inhibitory Dose (ID50) for AZT by this method was ≤0.01 uM. This result was reproducible and paralleled RT assays and p24 Ag assays. Conclusion. We conclude that nucleic acid hybridization by wicking offers a method to study the effect of antiviral agents on the intracellular RNA of HIV. This technique should prove very useful for the rapid screening of antivirals and the study of resistance in clinical isolates.

M.C.P.52

RECOMBINANT GRANULOCYTE COLONY STIMULATING FACTOR (r-metHuG-CSF) AND RECOMBINANT ERYTHROPOIETIN (r-HuEPO) MAY ABROGATE THE NEUTROPENIA AND ANEMIA OF AIDS AND MAY ALLOW FOR RESUMPTION OF ZIDOVUDINE (AZT) IN PATIENTS WITH AIDS

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Objective. To see if combined r-metHuG-CSF/rHu-EPO therapy can correct neutropenia and anemia in patients with AIDS and allow for the resumption of full or higher doses of AZT. Methods. Phase I/II Open Label Trial of r-metHuG-CSF/r-HuEPO/AZT in patients with AIDS/severe ARC. Patients with absolute neutrophil counts (ANC)< 2500/mm³ and hemoglobin (Hb)< 11.5 gm/dl (off all marrow suppressive drugs including AZT > 3 weeks) were treated with r-metHuG-CSF one daily subQ dose until a ANC of >6000 was achieved and maintained for 2 weeks. r-HuEPO (TIW) was added and increased until an increment of 1.5 gm. of Hb. over baseline was observed. Patient groups were then given 1000 mg., 1500 mg. or 2000 mg. of AZT per day. Results. Eleven of 24 patients have been enrolled. Of these, eight have completed the r-metHuG-CSF alone phase with a mean increase of 20,449 ± 9130 neutrophils. Four have completed the combined r-metHuG-CSF/r-HuEPO phase with normalization of their hemoglobin values (13.9 ± 0.6) and have resumed full dose AZT (1000 mg/d). One patient died unexpectedly and another was withdrawn for noncompliance during this phase. Both r-metHuG-CSF and r-HuEPO have been well tolerated. Toxicities were mild transient bone pain responsive to tylenol (5 pts.), and hypokalemia and/or hypophosphatemia in pts. with poor nutritional status and chronic diarrhea. Analysis of limiting dilution plasma and lymphocyte cocultures for HIV and p24 antigen levels showed no significant alterations in viral expression prior to resuming AZT. Conclusions. Recombinant-metHuG-CSF and r-HuEPO may abrogate the neutropenia and anemia of AIDS, is well tolerated and may allow the resumption of full dose AZT in AIDS patients without altering HIV expression. This combined therapy maybe of benefit to AZT intolerant AIDS pts.

M.C.P.54

PHOSPHORYLATION OF 3'-AZIDO-2',3'-DIDEOXYURIDINE, 3'-AZIDO-3'-DEOXYTHYMIDINE, AND THYMIDINE IN UNINFECTED AND HIV-1 INFECTED CEM CELLS

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Objective. To compare the anabolic phosphorylation of 3'-azido-2',3'-dideoxyuridine (AzddU; CS-87), 3'-azido-3'-deoxythymidine (AZT), and thymidine (dThd) in cell culture. Methods. Uninfected and HIV-1 infected CEM cells were incubated with [³H]-labeled AzddU, AZT, or dThd. A 60% methanol extract was prepared and HPLC-analyzed using a Synchropak AX-100 column. Alkaline-soluble and stable preparations were also analyzed to determine the amount of drug incorporated into RNA and DNA. Results. A 3-hour pulse-labeling of uninfected CEM cells indicated that AZT may be more rapidly phosphorylated than AzddU. No such difference was seen at 24 hr incubation. Both AzddU and AZT accumulated high levels of monophosphates with AZT-MP levels being at least 2-5 times higher (8-20 pmoles/10^6 cells). AzddU consistently generated a 5-10 times lower level of triphosphates than did AZT, which may explain the observed differences in HIV-inhibitory effects in cell culture. Pulse-labeling with 1 µM of either drug, however, generated triphosphate levels well above the reported K_i-values for HIV-1 reverse transcriptase. For AzddU and AZT, over 99% of total radioactivity was found in the methanol-soluble extracts and about 0.1% in the alkaline-stable preparations. The corresponding distribution of dThd was 20% and 80%, respectively. HIV-1 infection increased the amount of total radioactivity found in both the alkaline-soluble and alkaline-stable preparations from about 0.1 % to about 1% for AzddU and AZT. Conclusion. Although AzddU and AZT produced similar phosphorylation patterns, significantly lower levels of mono- and triphosphates of AzddU were found which may explain its lower activity and toxicity *in vitro*.

M.C.P.55 EFFECT OF DEHYDROEPIANDROSTERONE (DHEA) IN LYMPHOCYTES AND MACROPHAGES INFECTED WITH HIV-1

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Objective. Since the spectrum of activity of DHEA and structural analogues against human retroviruses has not been reported, several *in vitro* studies were performed to determine the degree of antiviral selectivity and mechanism of action of these drugs.
Methods. The inhibition of HIV-1 multiplication in the various cells was determined by reverse transcriptase assay of disrupted virions obtained from culture medium or by a p24 assay. The methodologies have been described in detail (see *Antimicrob. Agents Chemother.* 33:115, 1989; 32:1784, 1988; 30:491, 1986).
Results. The ability of DHEA and 3'-azido-3'-deoxythymidine (AZT) to inhibit the replication of HIV-1 was examined in human peripheral blood mononuclear cells (PBMC). Reverse transcriptase (RT) activity associated with virus and the amount of HIV-1 p24 antigens in the supernatant were used to assess the antiviral activity. Using the former assay, the median effective concentrations for DHEA and AZT were 17 μM and 0.0014 μM, respectively. Results obtained by an enzyme immunoassay were similar. DHEA-sulfate was markedly less active than DHEA. In contrast, 16α-bromoepiandrosterone was more potent and also more toxic than DHEA. The specific antiviral activity of DHEA was confirmed in CEM cells. Although this steroid was still effective when added up to 3 days after infection, late treatment was not as effective as early treatment. DHEA did not have a direct virucidal effect on infectious virus. In contrast to the 5'-triphosphate of AZT and other known antiretroviral agents, DHEA did not inhibit HIV-1 RT enzymatic activity when tested up to 100 μM. Acute infection of normal human macrophages was also inhibited by DHEA at 10-100 μM. Multiple-drug effect analyses were used to quantitatively determine the interaction of AZT and DHEA in human PBMC infected with HIV-1 at a ratio of 1:1,000 and 1:4,000. Analyses of the cell culture data indicated mostly an antagonistic interaction. At therapeutic levels, no apparent toxicity to uninfected cells was observed.
Conclusion. Our studies indicated that DHEA was a modest selective inhibitor of HIV-1 replication in human lymphocytes and macrophages. The mechanism(s) involved in the antiviral activity of DHEA and its sulfated form must be on sites other than the HIV-1 RT. *In vitro* results revealed that the combination of AZT and DHEA may decrease the efficacy of AZT or exacerbate virus replication.

M.C.P.56 IN VITRO ACTVIVATION OF PERIPHERAL MONONUCLEAR CELLS OF HIV-INFECTED PATIENTS BY ZINC

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OBJECTIVE: Study of the effect of zinc on the in vitro proliferation of mononuclear blood cell from HIV-infected patients and healthy controls.
METHODS: $ZnCl_2$- and mitogen-induced in vitro proliferation on peripheral mononuclear cells was determined by incorporation of radioactive thymidine, zinc serum levels by atomic absorption spectrometry. The frequence of zinc reactive cells was studied by limited dilution techniques.
RESULTS: The optimal mitogenic effect of zinc was observed with a concentration of 0.05 mmol/l (normal zinc serum level: 0.011-0.0176 mmol/l) and after a median incubation time of 6 days.
In comparison to standard mitogens the mean mitogenic activity of zinc in 21 healthy controls was 65 % of the activity of ConA, 43 % of PHA and 213 % of PWM.
The zinc induced in vitro proliferation was correlated to the Walter-Reed-Classification in 30 HIV-infected patients. A normal proliferation (more than 50 % of a normal control) showed 4/4 persons in WR1, 13/16 patients in WR2. In WR3-WR6 the proliferation in all 10 patients was diminished (< 50% of control).
Reduced serum levels of zinc were detected in 9/28 HIV-infected patients and in 1/16 controls.
The frequency of zinc reactive mononuclear cells in 5 healthy controls amounted to 1/4096 (1/2048-1/8192).
CONCLUSION: Zinc has a potent mitogenic activity on mononuclear cells which is decreasing with progressive immunodeficiency.
Further study about the mechanism of Zinc-induced activation of lymphocytes is necessary to define the value of a therapeutic zinc substitution.

M.C.P.57 OCULAR DIFFUSION OF DHPG AFTER SYSTEMIC ADMINISTRATION : ANIMAL STUDY AND APPLICATION TO A CLINICAL CASE

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Objective : DHPG (Ganciclovir, Cymevan®) has shown therapeutic effects in the treatment of cytomegalovirus retinopathy in AIDS patients. Pharmacokinetics and ocular diffusion of DHPG into anterior and posterior eye segments was determinated after IV infusion of DHPG in rabbits.

Method: 10 mg/kg bolus of DHPG was administered to 9 New-Zealand albino rabbits (2,5±0,1 kg) and blood was sampled at different time during 6 hours. Drug penetration into aqueous and vitreous humors was evaluated after sacrifice by sampling at the 6th hour. In a patient receiving DHPG 10 mg/kg/d (b.i.d.) for the treatment of a viral retinitis, and vitrectomized, blood and vitreous humor were sampled at the 5th hour after the last administration of DHPG (5 mg/kg).
Drug levels were determinated by reversed phase HPLC (C 18 - mobile phase = potassium dihydrogen phosphate 0,02 M, sodium heptan sulfonate 0,005 M / acetonitrile, 97,5 : 2,5, v/v, 1 ml/min) with a spectrophotometric detection at 265 nm.

Results :

	C max (mg/l)	T1/2 h	Clp ml/min	Vd l/kg	Biological fluids concentrations at the 6th hour (mg / l)		
					Plasma	Aqueous H.	Vitreous H.
Mean	9,02	1,50	49,9	1,64	0,21	1,51	0,99
S.E.M.	1,26	0,41	17,1	0,26	0,13	0,63	0,28

In the patient, plasmatic and vitreous DHPG levels were respectively of 6,5 mg/l and 0,3 mg/l.

Conclusion: The DHPG ocular pharmacokinetics seems to validate the treatment of CMV retinitis by systemic DHPG administration (DI_{50} of human CMV being 0,2-2,5 mg/l). In addition, intravenous administration would be much more convenient than intravitreous administration.

M.C.P.58 POTENTIAL OF AUTOCATALYTIC SELF-CLEAVING RNAs AS ANTI-HIV AGENTS

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Certain naturally occurring plant viruses, linear satellite RNAs and newt satellite RNA (Epstein and Gall (1987), Cell 48: 535) (ribozymes) undergo self-catalyzed cleavage in the final step of a rolling circle RNA replication mechanism that generates unit-length (+)RNA or (-)RNA. A single ribozyme contains all the structural information necessary for self-cleavage. This property of self-cleavage is imparted by consensus sequences (GU(X)nCUGA(U/A)-GAG(X)nCGAAAC) derived from three distal regions of the molecule; a tertiary ("hammerhead") conformation is believed to bring these reactive groups into close proximity prior to autocatalytic cleavage. Other autocatalytic motifs distinct from the hammerhead have been described. Importantly, the consensus domains and secondary structure required for hammerhead cleavage can be achieved using separate target substrate and ribozyme antisense strands (Uhlenbeck (1987), Nature 328:596). Thus, an appropriately designed ribozyme antisense strand can combine with a specific target substrate containing a minimally conserved consensus target sequence and result in cleavage of the target strand. HIV-1 genomic RNA and mRNA's have been found to contain conserved sequences that are potential substrates for cleavage by appropriate ribozyme antisense sequences. Delivery of ribozyme antisense sequences to HIV-infected cells by viral vectors represents a novel potential anti-HIV strategy. This ribozyme strategy,which will be outlined, may have broad implications for the treatment of a variety of infections and other diseases in addition to AIDS and its sequela.

M.C.P.59 IMPACT ON AIDS CLINICAL TRIALS OF THE USE OF NON APPROVED THERAPIES

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There is growing use by people with HIV related illness of non approved therapies. Some (such as aerosol pentamadine for PCP prophylaxis, disulfiram and naltrexone) are FDA approved for other uses and are available by prescription. Others (such as Dextran Sulfate, AL 721, DHEA) are obtained by patients through buyers clubs, with or without their physicians recommendations. There is growing evidence that many patients in clinical trials which preclude the concomitant use of these drugs are nonetheless taking them without so informing the investigators. This pattern has serious implications for validity of data obtained in such trials and therefore for FDA decisions. In addition, well controlled trials of these substances, some of which seem promising are becoming more difficult as patients are not willing to risk receiving a placebo of a drug which they can obtain elsewhere. Possible remedies for this problem are explored and discussed. They include: (1) Modification of trial design in some studies permitting the continuation of non approved drugs as long as they have been in continuous use for at least 3 months and are not discontinued during the trial. The use in such trials of larger sample sizes and multivariate analysis to factor out the effects of non approved drugs. (2) The use of placebo controls in trials of these available drugs only in asymptomatic seropositive patients, with the use of progression in biological markers rather than development of AIDS as criteria for efficacy. (3) The substitution of dosage comparisons for placebos in the study of these drugs (as in the current U.S. trials of aerosol pentamadine). (4)The study of large populations in community settings to evaluate possible effects of the "naturally" occurring patterns of non approved drug use. (5) Consideration by the FDA (or an FDA advisory panel) of modifications in standards of proof of efficacy for drugs that are already FDA approved for other purposes and for drugs with demonstrably low toxicity.

M.C.P.60 PRELIMINARY RESULTS FROM AN ON-GOING PROSPECTIVE EVALUATION OF FOSCARNET IN THE TREATMENT OF AIDS-ASSOCIATED CYTOMEGALOVIRUS RETINITIS

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Objective. To evaluate the efficacy, toxicity, and pharmacodynamics of a new agent for the treatment of CMV retinitis in AIDS, FOSCARNET.
Methods. Eight patients with previously-untreated AIDS-associated CMV retinitis and 12 patients with CMV retinitis previously treated with ganciclovir with either treatment failure or disqualifying drug toxicity were enrolled in a prospective clinical trial of foscarnet (Astra) using an intermittent, pump-controlled infusion technique at a 14-day induction dosage of 60 mg/kg every 8 hours, adjusted for creatinine clearance. These 20 patients were stratified into two protocols, (01) for previously-untreated patients, and (02) for patients having had prior ganciclovir therapy. Protocol (01) included both induction and maintenance phases, while the (02) protocol consisted of only an induction phase so that time to recurrence could be measured. Sequential indirect ophthalmoscopy with fundus mapping and wide-angle standardized fundus photography were utilized to assess clinical response.
Results. One of 14 eyes (7%) in (01) demonstrated total cessation of viral activity clinically at the end of induction; 12 eyes (87%) stabilized, and 1 eye (7%) progressed by ophthalmoscopic criteria. One of 21 eyes (5%) in (02) deactivated, 16 eyes (76%) stabilized, and 4 eyes (19%) progressed. Visual acuity remained within 2 Snellen lines of the pre-treatment level in 93% of the (01) patients and in 100% of the (02) patients. CMV cultures of buffy coat reverted from positive to negative in 83% of initially-positive patients at the end of induction, while HIV p24 reverted from positive to negative in 67% of the 9 patients initially having detectable p24. Mean time to recurrence in (02) was 13 days. Elevation of serum creatinine above 2.8 occurred in 4 of the 20 patients. Six patients experienced significant nausea, and various transient neurological disturbances occurred in 10 of the 20 patients. AZT therapy was continued during foscarnet induction in 5 patients; only 1 demonstrated significant depression in hematological parameters, however AZT could be continued even in this patient.
Conclusion. Our continuing experience with foscarnet in this projected 120-patient clinical trial indicates considerable efficacy in treating CMV retinitis. We are developing various means of minimizing side-effects of this promising antiviral agent. Concurrent anti-HIV activity of foscarnet in CMV retinitis patients adds significant interest to the project.

M.C.P.61

SHORTENING THE RESEARCH AND DEVELOPMENT TIME FOR NEW AIDS DRUGS: THE PRE-IND PROGRAM AND PROACTIVE CLINICAL GUIDANCE AT FDA'S DIVISION OF ANTIVIRAL DRUGS.

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The U.S. Food and Drug Administration (FDA) Division of Antiviral Drug Products (DAVDP) is responsible for the regulation of pharmaceuticals indicated for the treatment of AIDS and AIDS-related disorders in the U.S. The primary role of DAVDP scientists and physicians is to expeditiously review the nonclinical and clinical efficacy and toxicity data in Investigational New Drug Applications (INDs) and New Drug Applications (NDAs). However, to facilitate the rapid preclinical and clinical research and development of new AIDS drugs so that promising new therapies will be available without delay, DAVDP has created two programs for providing detailed guidance to drug developers during all phases of drug development, from the earliest preclinical studies, throughout clinical trials, to market approval. These programs focus on making the DAVDP reviewer's expertise in drug development available to pharmaceutical firms and individual investigators worldwide. The goal of the Pre-IND Program is to focus the drug developer's preclinical development program on those specific studies necessary to rapidly complete the preclinical work-up of promising new AIDS drugs, and move the drugs into well-designed clinical studies as quickly as possible. The purpose of the Proactive Clinical Guidance is to help the sponsor optimize the design of clinical trials to produce the most useful data possible upon which marketing approval can be based. The AIDS drug-review process in DAVDP will be described, and contact points for the Programs will be provided. Major problems seen in the development of AIDS drugs and viable solutions to facilitate drug development will be discussed.

M.C.P.62

Low Dose Naltrexone in the Treatment of AIDS: Long Term Follow-up Results

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Objective. To evaluate the long term results of the treatment of AIDS with low doses (1.75 mg qhs) of naltrexone, an opiate antagonist.
Method. Thirty-eight patients with AIDS were treated in a 3 month placebo controlled trial of naltrexone, after which the placebo patients were switched to naltrexone and both groups followed on naltrexone since.
Results. During the placebo controlled period the treatment group showed significantly fewer O.I.s and a significant drop in their markedly elevated levels of αIFN. Twenty-five of the 38 patients while on naltrexone eventually showed a drop in αIFN levels from means of 160 i.u. to 11.75 i.u., over a 4 to 12 month period (called "responders"). The 13 patients whose interferon did not drop ("non-responders") all died within 9 months. Of the responder group 21/25 had survived at 12 months and 19/25 at 18 months. At 39 months 10 of the 25 responders are still alive, 4 years after AIDS diagnosis. Only one of these 10 has suffered an O.I. in the course of the trial. The other 9 are all working full-time and are essentially symptom free 4 years after AIDS diagnosis and 39 months after starting naltrexone. The mean T4 level in this group has not dropped during the trial. The responders also showed an increase in lymphocyte proliferative responses to PHA and have shown no decline in responses to CMV antigen. p24 antigen levels and anti p24 antibodies will be presented as well.
Conclusion. Low dose naltrexone may be a useful immunomodulating agent in AIDS related illness with 40% of responding patients with AIDS showing long term survival.

M.C.P.63

ANTI-HIV-1 ACTIVITY, TOXICITY AND PHARMACOKINETICS OF TOTALLY NOVEL NUCLEOSIDE ANALOGS

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Objective: To test a number of nucleoside analogs in which the 3'-carbon of the pentose is replaced by an S or O atom.
Methods: Cpds. were assayed for anti-HIV-1 activity (RT, p24 Ag, cell viability) in T-cell lines (H-9, MT-4) and a monocyte/macrophage cell line (U-937).
Results: The lead cpd. NGPB-21 (base = cyt, 3' = S) had a therapeutic index ≅ 1000 (sim. to AZT) and, unlike AZT, had no cell toxicity at therapeutic concs. Also, NGPB-21 was very active in the HIV-1 infected U-937 cell line. Rats given NGPB-21 at 100 mg/kg p.o. daily for 14 days showed no inhibition of body growth, and had normal organ wts. (liver, spleen, testis, kidney) and hematologic profile. Rats given NGPB-21 at 200 mg/kg p.o. readily absorbed the drug and had peak blood levels at 1.5 hr. and $t_{1/2} \cong 1.0$hr. Another cyt analog (DDIII30A) in which 3' = O and the sugar-base linkage is in the unnatural α-configuration showed a favorable therapeutic index in vitro.
Conclusion: NGPB-21 and DDIII30A are novel nucleosides showing high potential as anti-AIDS drugs.

M.C.P.64

ISOLEUCINE ESTER OF ZIDOVUDINE (IAZT) AS A PRO-DRUG WITH ENHANCED EFFICACY AGAINST HIV-1.

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Objective. To develop a pro-drug of zidovudine (AZT) with increased therapeutic index in an attempt to overcome the dose-related toxicity (anemia and neutropenia).
Methods. Among various approaches of developing pro-drugs, we have successfully inserted an amino acid, isoleucine, at the 5'-OH function of AZT by esterification. Peripheral blood lymphocytes (PBL) from seronegative donors were employed to determine cellular drug uptake, cytotoxicity and anti-HIV-1 activity. Murine bone marrow cells were used to determine toxicity by ^{3}H-thymidine incorporation. Preliminary pharmacokinetic studies were conducted in rabbits.
Results. Cellular uptake studies in PBL demonstrated that ^{3}H-IAZT achieved approximately 60% greater intracellular concentration than ^{3}H-AZT within 2 hr. IAZT was significantly less toxic than AZT at various concentrations to murine bone marrow cells as measured by uptake of ^{3}H-thymidine. The ED$_{50}$ concentration to inhibit the production of HIV-specific p24 antigen was 0.035 μM for IAZT whereas AZT required twice the amount of 0.07 μM level. Preliminary pharmacokinetic experiments in rabbits demonstrated a 2-compartment model in plasma with a β-elimination $T_{1/2}$ of 105 min for AZT and 187 min for IAZT.
Conclusion. These results demonstrated that IAZT has a higher therapeutic index than AZT as an anti-HIV-1 agent.
(Supported by NIAID grant No. AI-25909)

M.C.P.65

THE CARBOCYCLIC ANALOGUE OF OXETANOCIN G INHIBITS THE REPLICATION OF CYTOMEGALOVIRUS AND HERPES SIMPLEX VIRUSES IN VITRO.

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Objective. To evaluate the in vitro antiviral activity of the newly synthesized (±)-9-[2',3'-bis(hydroxymethyl)-1'-cyclobutyl]guanine (A-69992) against human cytomegalovirus (HCMV) and herpes simplex viruses type 1 and type 2 (HSV-1 and HSV-2).
Methods. The antiviral activity of A-69992 against HSV-1 and 2 was determined in Vero cells using a virus induced cytopathogenic effects (CPE)-inhibition assay. The minimum drug concentration which reduced the microscopically observed CPE by 50% (ID$_{50}$) was calculated by regression analysis, and drug toxicity was determined in uninfected control cells. Ara-A and acyclovir were tested concomitantly. Activity against HCMV was determined in a virus yield reduction assay in human diploid embryonic lung (MRC5) cells. After 6 days, drug cytotoxicity was quantitated by the ability of viable host cells to reduce the tetrazolium salt (MTT), and the relative yield of infectious virus from the drug treated and untreated cultures was determined by plaque assay in MRC5 cells. Ganciclovir was tested concomitantly.
Results. The following ID$_{50}$'s were determined for A-69992 and acyclovir (virus, ID$_{50}$ (ug/mL) for A-69992, ID$_{50}$ for acyclovir): HSV-1(E-377), 0.57,0.43; HSV-2(MS), 1.00, 1.80; HSV-1(BW 10168 TK deficient), 4.06, 13.03; HSV-2(BW9787 TK deficient), 0.79, 12.65. A-69992 was partially cytotoxic to Vero cells at 100 ug/mL, while acyclovir showed no cytotoxicity at 225 ug/mL. At a nontoxic concentration of 32 ug/mL, A-69992 reduced the yield of infectious HCMV in MRC5 cells from $10^{4.27}$ PFU to below the detection limit ($<10^{0.5}$ PFU). At the lowest concentration tested, 1.0 ug/mL, the yield of infectious virus was reduced 14 fold. At the highest concentration tested, 320 ug/mL, the drug cytotoxicity was 24%. By comparison, ganciclovir appears to be about 10 times as potent as A-69992 in this system.
Conclusion. A-69992 exhibits selective in vitro antiviral activity against HSV-1, HSV-2, and HCMV at concentrations as low as 1 ug/mL, and it is more potent than acyclovir against TK deficient strains of HSV. These observations, and those of Hayashi et al ("Carbocyclic Oxetanocin Analogues that Inhibit Replication of Human Immunodeficiency Virus in T-Cells and Monocytes/Macrophages In Vitro"), may be of value in developing a new drug therapy for AIDS.

M.C.P.66

INHIBITION OF HUMAN IMMUNODEFICIENCY VIRUS INFECTIVITY BY CHLOROQUINE.

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The effect of chloroquine, an anti-malarial drug known to affect cellular exocytic pathways, was studied in two retroviral systems: Human Immunodeficiency Virus (HIV-1) and avian reticuloendotheliosis virus (REV-A). With chloroquine treatment of virus infected cells (HIV-1/H9 and REV/cEMC), significant size reduction of the cell and virus associated surface glycoproteins, gp90 of REV-A and gp120 of HIV-1, was observed. In the case of HIV-1, extracellular virions derived from treated cells contained very little gp120. Infectivity and reverse transcriptase assays carried out with HIV-1 demonstrated that by chloroquine treatment virus yield was reduced and noninfectious virions were released. The data suggests that inhibition by chloroquine is most likely due to interference with terminal glycosylation in the trans-Golgi network. Studies are in progress to determine the effect of chloroquine on HIV-1 and its relatives produced by other cell types e.g. monocytes/macrophages and to evaluate whether chloroquine and its existing analogs or newly synthesized related weak bases could be useful either alone or in combination with other drugs to attack various stages of the virus life cycle.
(Research supported in part by the National Cancer Institute, DHHS, under contract NO. NO1-CO-74101 with Bionetics Research, Inc.)

M.C.P.67 NEUTRALIZATION OF HIV-1 BY ANTI-IDIOTYPIC ANTIBODIES

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Objective. To evaluate the ability of anti-CD4 monoclonal antibodies to elicit anti-idiotypic antibodies that are capable of binding to and neutralizing HIV.
Methods. Macaque monkeys were immunized (IV) with purified 0KT4A Mab and 6 months later with OKT4F (10 day injection protocols). The anti-CD4 antisera were assayed for anti-idiotypic antibody by competition ELISAs and for internal image (CD4-like reactivity, i.e. binding to HIV) using a commercial HIV antibody detection kit. To determine HIV neutralizing titers *in vitro*, MT-4 cells, preincubated with serially diluted antisera in 96-well microtiter plates, were exposed to H9/HIV clarified supernatant for 2 hrs at 4°C. Cultures were incubated for 7 days and developed colorimetrically with MTT.
Results. At the end of the OKT4A immunization protocol, anti-idiotype and anti-HIV titers appeared immediately. Neutralizing antibody titers were detected 5-14 days *post* immunization. Following OKT4F, anti-HIV and neutralizing titers were found to be slightly higher.

SERA	ANTI-OKT4A TITER	ANTI-OKT4F TITER	ANTI-HIV TITER	NEUTRALIZING TITER
Prebleed	<1:100	<1:100	<1:100	<1:10
2wk *post* OKT4A	1:1200	ND	1:400	1:40
6mo *post* OKT4A	1:3200	ND	1:100	1:20
2wk *post* OKT4F	1:3200	1:12800	1:1600	1:80

Conclusion. Anti-idiotype antibodies were raised in response to anti-CD4 monoclonal antibodies which were able to bind and neutralize HIV, *in vitro*.

M.C.P.68 PHOSPHONOFORMATE INHIBITS FELINE RETROVIRUS INFECTION IN CATS

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Objective. To determine in vitro and in vivo efficacy and toxicity of phosphonoformate (PFA) against feline leukemia virus (FeLV).
Methods. PFA-induced inhibition of FeLV infection feline lymphoid cells (3201) was determined by reverse transcriptase (RT) assay. Pharmacokinetics studies were performed in young and adult cats. For prophylactic studies, six cats received 1000 mg/kg/day PFA as a continuous IV infusion for 1 day prior to and 4 weeks post-FeLV challenge. Six control cats received 120 U/kg/day heparin in saline. Six cats served as challenge controls. Histomorphometric determinations were performed on the distal radius of young and adult cats given 1000 mg/kg/day PFA and on age-matched control cats.
Results. FeLV infection of 3201 cells was inhibited by >90% at 64 uM PFA as measured by RT activity. Young cats exhibited a higher (2X) plasma clearance of PFA than adult cats, which was attributed to enhanced bone accumulation. Mean oral bioavailability was 35%. Continuous IV infusion of PFA (1000 mg/kg/day) prevented FeLV viremia in 4 of 6 cats. Six of 6 untreated challenge controls became viremic by 3 weeks post-inoculation. Plasma biochemical changes demonstrated in PFA treated cats compared with sham-operated controls included: increases in calcium and decreases in phosphorus, alkaline phosphatase and calcitriol. Bone histomorphometry revealed rickets-like lesions in young cats and osteomalacia in adult cats given 1000 mg/kg/day of PFA for 14 days.
Conclusion. PFA prevents FeLV infection in vitro and in vivo. High doses of PFA induce rickets in young cats and osteomalacia in adult cats.

M.C.P.69 PHARMACOKINETICS, TOXICITY AND PROPHYLACTIC ANTIVIRAL ACTIVITY OF PMEA IN FELINE RETROVIRUS INFECTED CATS

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Objective. To determine the pharmacokinetics, toxicity and prophylactic antiviral activity of 9-((2-phosphonylmethoxy)ethyl)-adenine (PMEA) in feline leukemia virus infected cats.
Methods. Pharmacokinetics and bioavailability of PMEA was determined in 6 cats at three doses. In prophylactic studies, 3 different dosage regimens of PMEA (100, 25 or 12.5 mg/kg/day) were evaluated for toxicity and antiviral activity in vivo. In all prophylactic studies PMEA was administered by continuous IV infusion beginning one day prior to FeLV challenge. Toxicity was evaluated as part of the prophylactic testing.
Results. PMEA administered at doses greater than 12.5 mg/kg/day continuous IV infusion, were toxic to severely toxic, causing death in 3 of 7 animals treated. The most prominent clinical feature in these animals was hemolytic anemia. A dosage of 12.5 mg/kg/day PMEA administered by continuous IV infusion for 3 wks prevented or delayed the onset of infection in 6 of 6 challenged animals. Moderate anemia was evident in these animals at the end of 3 wks of treatment. By comparison 7 of 7 control cats developed chronic viremia by 3 wks post challenge. All PMEA treated cats remain FeLV negative after 5 wks post challenge.
Conclusion. Though moderately toxic in cats at a dose of 12.5 mg/kg/day continuous IV infusion for 3 wks, PMEA was highly effective as a prophylactic treatment for preventing FeLV infection of cats for the period so far observed. Lower dosage regimens are currently being evaluated.

M.C.P.70 PHOSPHATE TRIESTER DERIVATIVES OF AZT AS INHIBITORS OF HIV

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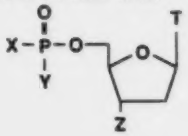
Introduction. A series of 20 phosphate triester derivatives of AZT have been tested against HIV-1 (HTLV III, RF strain) in the C8166 CD4+ T-cell line. These pro-drugs have been designed as membrane soluble compounds in order to overcome some of the limitations shown by AZT and other nucleoside analogues; such as kinase dependance, metabolic instability and poor membrane penetration. It has been found that asymmetrically substituted phosphates of AZT are active antiviral agents especially when one phosphate moiety is an amino-linked amino-acid, and the other is an alkyloxy chain.
Results. Depending upon the nature of the substituents large differences in the antiviral effect are observed. In the compounds below changes in the alkyloxy chain (X) and the amino acid (Y) gives a range of activities (IC_{50}) from 3 - 100 uM. Studies to investigate the nature of the block in HIV replication are in progress.

UCL No	X	Y	Z	IC_{50}(uM)
UCL 11	MeO	MeValNH	N3	3
UCL 12	MtO	MeValNH	N3	10
UCL 23	EtO	MeLeuNH	N3	30
UCL 24	EtO	MeIleNH	N3	100



M.C.P.71 FLUCONAZOLE TREATMENT OF ESOPHAGEAL CANDIDIASIS IN AIDS PATIENTS.

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Aims of the study: To assess the efficacy and safety of Fluconazole in the treatment of esophageal candidiasis in AIDS patients.
Results: 36 patients (25 male and 11 female) were included. Mean age was 28 years (range: 19-55). There were 30 IV drug abusers, 5 homosexuals and 1 heterosexual contact. In all cases, esophageal candidiasis was confirmed by endoscopy, biopsy and/or culture. Therapeutic regime: 200 mg (1st day) followed by 100 mg daily p.o. for 4 weeks. Endoscopy control was carried out at the end of the treatment. A follow up visit 1 month after treatment was scheduled. Careful drug surveillance was performed in all patients. Therapeutic evaluation was performed in 33 patients, although only 31 completed treatment. The study was carried out over a ten month period (February-December 1988). During this time 8 patients died; 4 in the protocol stage and a further 4 after completing treatment, all of these due to other opportunistic infections.
Clinical and mycological cure was achieved in all patients; in most, clinical picture resolved within a week. In 2 patients an esophageal relapse ocurred 1 month after treatment. Re-treatment with Fluconazole achieved cure again. In a further 9 patients asymptomatic oropharingeal fungal colonization was observed. No gastrointestinal, hematological, renal or cutaneous toxicity was observed. Elevations of liver enzymes: discrete (15 patients), moderate (1 patient) and severe (1 patient), the latter leading to drug discontinuation, were recorded. Increases of alkaline phosphatase without hyperbilirubinemia (29%) was the most commonly observed adverse effect; however, it has to be taken into account that most patients had coexisting opportunistic infections and/or received potentially hepatotoxic concomitant therapy.
Conclusions: 1) Fluconazole has shown to be an effective and safe treatment of esophageal candidiasis in AIDS patients. 2) A shorter treatment may be efficacious in this condition. 3) An effective prophylactic regime with Fluconazole in these patients would be most desirable.

M.C.P.72 RECOMBINANT SOLUBLE CD4 AS A VEHICLE TO DELIVER RICIN TO HIV-ENVELOPE EXPRESSING CELLS

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Objective: To assess the effectiveness of recombinant soluble CD4-blocked ricin conjugate (rsT4-bR) as a potential drug for the elimination of HIV-envelope expressing cells, in vitro.
Method: Intact ricin was covalently modified such that it retains ricin's ability to efficiently penetrate intracellular and plasma membranes but can no longer bind to cells through its natural binding sites. Blocked ricin (bR) was then covalently linked to rsT4 and the conjugate was tested in a number of in vitro assays. Cytotoxicity and specificity of killing were tested on gp160 expressing CHO cells and HIV-infected human T cells. Binding efficiency of rsT4-bR to gp120 was assessed in an EIA using recombinant gp120 (rgp120).
Results: rsT4-bR conjugate retained the capacity to bind to gp120 in an EIA. The cytotoxicity of the rsT4-bR conjugate was specific to HIV-envelope expressing cells; gp120 expressing CHO cells were effectively killed between 10^{-9} and 10^{-11}M rsT4-bR. Unmodified rsT4 completely blocked the rsT4-bR mediated killing. Untransfected CHO cells and CHO cells expressing a non-related recombinant protein were not affected at these concentrations. Experiments with HIV-infected human T cells confirmed these observations.
Conclusion: We demonstrated that blocked ricin conjugated to recombinant soluble CD4 selectively kills HIV-envelope expressing cells, in vitro, at concentrations that are achievable in vivo.

M.C.P.73 EFFECTS OF DIDEOXYNUCLEOSIDES ON THE CELL CYCLE

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Objective. Antiviral dideoxynucleosides (ddN) are toxic to normal animal cells, though this varies with cell type and drug used. Mechanisms of cellular toxicity are not known. Here we report studies of the effects of dideoxynucleosides on the progression of cultured lymphoid cells through the cell cycle.
Methods. Cell cycle parameters were measured by cytofluorography using human B-lymphoblast 6410, human T-lymphoblast MOLT-4, human promyelocytic leukemia HL-60, and mouse leukemia L1210 cells. ddN concentrations were 1 mM. ddN were growth inhibitory in all but one case; dideoxythymidine (ddT) was not toxic to MOLT-4 cells. Thymidine (TdR) and methotrexate (MTX) were used as controls.
Results. Treatment of 6410 cells resulted in the following changes: Azidothymidine (AZT), TdR and dideoxyguanosine (ddG) increased the proportion of S-phase cells, MTX increased G1 cells, while dideoxycytidine (ddC) and ddT had minor effects. In MOLT-4 cells, AZT increased S-phase cells, MTX increased G1 cells, while TdR, ddC, ddT and ddG had minor effects. In HL-60 cells, AZT, ddT and ddG increased S-phase cells, TdR and MTX decreased S-phase cells, while ddC had little effect. In L1210 cells, ddC, ddT, ddG and AZT increased S-phase cells while MTX and TdR increased G1 cells.
Conclusions. Individual ddN have different effects on the cells cycle. The effects of individual ddN vary with the cell type. The effects of ddN on the cell cycle differ from those of TdR and MTX.

M.C.P.74 IN VIVO ANTI-RETROVIRUS AND ANTI-CYTOMEGALOVIRUS ACTIVITY OF 9-((2-PHOSPHONYLMETHOXY)ETHYL)ADENINE (PMEA).

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Objective. In vivo evaluation of the acyclic nucleotide analogue PMEA for the treatment of retrovirus and cytomegalovirus infections.
Methods. PMEA was prepared on a multigram scale in 35% overall yield via a six-step synthetic sequence. Rauscher murine leukemia virus was used to study the antiviral activity of PMEA compared with AZT against retrovirus infection in vivo. The antiviral effect of each compound was shown by inhibition of splenomegaly caused by viral infection. PMEA was also evaluated in vivo in a murine CMV infection model. Mice were treated i.p. with PMEA or ganciclovir (DHPG) at 6, 24, or 48 hours post-infection for five days. Antiviral efficacy was demonstrated by an increase in the survival time of treated animals compared with untreated and placebo-treated controls.
Results. Although PMEA was slightly less potent than AZT in vitro against HIV and murine retroviruses, PMEA was more effective than AZT in vivo in the treatment of R-MuLV infection in mice: at a dose of 40 mg/kg/day for 30 days, PMEA gave 85% inhibition of splenomegaly vs. 67% for AZT. PMEA also provided significant protection against murine CMV, giving 93% survival (vs. 33% for untreated animals) when administered 6 h post-infection at a dose of 100 mg/kg/day. Even when this treatment was delayed for 48 h, 67% of treated animals survived. DHPG provided a similar effect at 33 mg/kg/day.
Conclusions. The broad-spectrum in vivo antiviral activity of PMEA warrants the further investigation of its potential in the chemotherapy of retrovirus and cytomegalovirus infections.

M.C.P.75 COMPARATIVE INHIBITORY EFFECTS OF SULFATED POLYSACCHARIDES ON GIANT CELL FORMATION INDUCED BY CO-CULTIVATION OF CD4-POSITIVE CELLS WITH PERSISTENTLY HIV-1-INFECTED CELLS

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Objective. In the scope of our attempts to develop an effective chemotherapy for AIDS, various compounds were examined for their inhibitory effects on HIV-1-induced giant cell (syncytium) formation, which may be an important mechanism of the depletion of CD4-positive cells in AIDS patients.
Methods. MOLT-4 cells were cultured with an equal number of chronically HIV-1-infected HUT-78 cells (HUT-78/HTLV-III_B) for 24 h in the presence of various concentrations of the test compounds, and the number of giant cells was counted.
Results. Sulfated polysaccharides such as dextran sulfates (MW > 5000), pentosan polysulfate, fucoidan, mannan sulfate and λ-carrageenan were potent inhibitors of giant cell formation (ID_{50}: 2-20 μg/ml). However, low-molecular-weight dextran sulfates (MW < 3000), dermatan sulfate and heparin showed little or no inhibition. Carboxylate polymers, such as polyacrylic acid and chlorite-oxidised oxyamylose (COAM) also failed to inhibit giant cell formation. Whereas azidothymidine was not inhibitory, suramin inhibited giant cell formation.
Conclusion. Several sulfated polysaccharides were found to be potent inhibitors of HIV-1-induced giant cell formation *in vitro* and should be further pursued as candidate anti-AIDS drugs.

M.C.P.76 NEUTRALIZATION OF HIV-1 BY ANTI-IDIOTYPIC ANTIBODIES

Leturcq, Didier*; Winslow, B.*; Johnson, P.* *; and Thornton, G.*.
*R.W. Johnson Pharmaceutical Research Institute,La Jolla,CA,USA,
** Georgetown University, Rockville,MD,USA.

Objective. To evaluate the ability of anti-CD4 monoclonal antibodies to elicit anti-idiotypic antibodies that are capable of binding to and neutralizing HIV.
Methods. Macaque monkeys were immunized (IV) with purified 0KT4A Mab and 6 months later with OKT4F (10 day injection protocols). The anti-CD4 antisera were assayed for anti-idiotypic antibody by competition ELISAs and for internal image (CD4-like reactivity, i.e. binding to HIV) using a commercial HIV antibody detection kit. To determine HIV neutralizing titers *in vitro*, MT-4 cells, preincubated with serially diluted antisera in 96-well microtiter plates, were exposed to H9/HIV clarified supernatant for 2 hrs at 4°C. Cultures were incubated for 7 days and developed colorimetrically with MTT.
Results. At the end of the OKT4A immunization protocol, anti-idiotype and anti-HIV titers appeared immediately. Neutralizing antibody titers were detected 5-14 days *post* immunization. Following OKT4F, anti-HIV and neutralizing titers were found to be slightly higher.

SERA	ANTI-OKT4A TITER	ANTI-OKT4F TITER	ANTI-HIV TITER	NEUTRALIZING TITER
Prebleed	<1:100	<1:100	<1:100	<1:10
2wk *post* OKT4A	1:1200	ND	1:400	1:40
6mo *post* OKT4A	1:3200	ND	1:100	1:20
2wk *post* OKT4F	1:3200	1:12800	1:1600	1:80

Conclusion. Anti-idiotype antibodies were raised in response to anti-CD4 monoclonal antibodies which were able to bind and neutralize HIV, *in vitro*.

M.C.P.77 INHIBITION OF HIV REPLICATION IN CELL CULTURE BY ANTI-SENSE RNA EXPRESSED FROM RECOMBINANT MURINE RETROVIRUSES

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In principle, antisense nucleic acids offer an appealing approach to the rational design of anti-viral therapies of high selective toxicity. Antisense genes delivered by retroviral vectors offer some theoretical advantages over the use of synthetic oligonucleotides although it will be many years before they will be therapeutically useful. In addition, such recombinant vectors can be used to analyse the mechanism of antisense action and to analyse fundamental areas of HIV biology. Accordingly, we have inserted fragments derived from the region around the first coding exon of *tat/rev* of the HIV provirus in the antisense orientation into murine retrovirus vectors and have investigated the effect of the transduced antisense genes upon the replication of HIV in susceptible cell lines.

In order to analyse defined sub-fragments of this region, we have inserted additional Sat1 sites at position 5436 in one case and 5582 in another. The antisense genes thus far analysed are as follows: AR2, 602bp spanning the *tat* and *env* splice acceptor sites and the initiation of translation of *tat*, *rev* and *env*; AR5, 114bp, splice acceptor and *tat* initiation; AR6, 70bp, *tat* initiation.

The HIV-susceptible cell lines tested so far are the myelomonocyte-like U937 and the T4-derived Jurkat. We have challenged the transduced cell lines together with their "wild-type" counterparts to CEM cell-derived HTLVIIIB at approximate multiplicities of infection (m.o.i) of 5:1 and 1:100 and monitored the production of HIV using the Dupont p24 antigen assay kit. The results show that anti-sense genes can reduce levels of HIV replication substantially in the short term. For example, in the Jurkat cell line, AR2, AR5 and AR6 reduce viral replication by 67%, 61.4% and 83.3%, respectively, at 7 days post-infection. However, virus eventually escapes from antisense inhibition of replication, with levels of inhibition declining to 48%, 28.5% and 64.6% in the second week post-infection.

We believe that the antisense RNA, expressed from an SV40 promoter, is present in sufficient quantity to inhibit the expression of viral transcripts to a substantial extent in the absence of Tat and Rev. However, when these regulatory gene products accumulate as a result of the low level of residual virus gene expression, the strength of the HIV promoter in the LTR increases and sense transcripts appear in quantities that are too great for inhibition by the fixed quantity of antisense RNA. Curiously, antisense genes that include the AR6 region, such as AR2 and AR5, are less efficient inhibitors of replication. Possibly, secondary structures incompatible with hybridization are adopted by longer RNAs.

M.C.P.78 MEGAKARYOCYTES OF HIV-SEROPOSITIVE INDIVIDUALS EXPRESS VIRAL RNA

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Objective: To elucidate the pathogenesis of thrombocytopenia associated with HIV-1 infection. Although immune mechanisms are usually held responsible for low platelet counts this does not provide a complete explanation. Inconsistencies include: 1) lack of compensatory megakaryocytosis, 2) some benefit from platelet transfusions, 3) a rise in platelet count shortly following treatment with AZT when the level of circulating antibodies or immune complexes are unlikely to have changed. Therefore, a direct effect of HIV on megakaryocytes (MK) was investigated. Methods: Megakaryocytes of 60 HIV-seropositive individuals were studied ultrastructurally and MK of 10 patients were subjected to in situ hybridization using a S-labelled HIV RNA probe. Results: While no intact virus particles were seen, the structural alterations in HIV-MK were distinctive from those in HIV-negative ITP or any myelodysplastic syndromes. There was marked blebbing of the peripheral zone and cytoplasmic vacuoles containing membrane processes. Numerous denuded MK nuclei were also found in marrows of patients with normal platelet counts. The megakaryocytes of 10/10 paptients examined by in situ hybridization unambiguously expressed viral RNA. Conclusion: Although immune mechanisms play a role in HIV-related thrombocytopenia, direct infection of megakaryocytes with the virus appears to be responsible for low platelet production.

M.C.P.79 INHIBITORY EFFECT OF SULFATED AMPHOTERICIN B ON THE PROLIFERATION OF HIV IN VITRO

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Amphotericin,B methyl ester(AME),a water-soluble derivative of amphotericin B, showed inhibitory effect on HIV. However,the cytotoxicity of AME was relatively high. Newly synthesized sulfated amphotericin B(SA), which was expected to show low toxicity and anti-HIV effect, was examined in vitro.

SA at the concentration of 8μg/ml completely suppressed the HIV-induced cytopathic effect in MT-4 cell line which carried HTLV-Ⅰ. Furthermore, antiviral effect was also observed when SA was only present at absorption period of HIV. Proliferation of HIV was also suppressed in peripheral blood mononuclear cells(PBMC) infected with freshly isolated HIV. The cytotoxicity of SA was low (50% cytotoxic dose for MT-4 cells and PBMC was 2mg/ml). When MOLT-4 and MOLT-4/HIV cells were co-cultured, multinucleated giant cells appeared. At the concentration of SA more than 30μg/ml, the formation of giant cells was inhibited. SA at the concentration of 200μg/ml inhibited 80% of reverse transcriptase activity of HIV.HIV was exposed to SA for 2h. At concentration of 20μg/ml, SA reduced infectivity of HIV to 1/10.

These anti-HIV effect of SA was considerd to be caused by the inhibition of HIV binding to the cells and reduction of infectivity of HIV.

M.C.P.80 INHIBITION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV-1) REPLICATION BY SYNTHETIC OLIGO-DNA DERIVATIVES

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A number of approaches are currently being investigated for treatment of human immunodeficiency virus (HIV) infected patients with acquired immunodeficiency syndrome (AIDS). We have used antisense oligonucleotides to selectively block virus replication by competitive hybridization (Zamecnik et al., PNAS 75:280, 1978). We have investigated three classes of phosphate backbone modified oligodeoxynucleotides viz. methylphosphonate, phosphorothioate and various phosphoramidates for their antiviral activity. The inhibition of HIV-1 expression in presence of antisense oligonucleotides was carried out by infecting H9 or MOLT-3 cells with HIV-1 (HTLV-III$_B$ or HTLV-III$_{cc}$). Studies were carried out by simultaneous addition of virus and antisense oligonucleotides to cells in culture. After four days, the cells and supernatants were examined for the level of HIV expression by counting syncytia (MOLT-3 cells), viral antigens expression and cell viability. The sequences tested were complementary to splice acceptor and donor sites of HIV RNA. Inhibition of up to 100% of HIV-1 replication was observed at 3 to 5 μM concentration of these oligonucleotides. Acute toxicity studies in mice and rats show a relatively low level of toxicity. These studies suggest that phosphate backbone analogs of oligonucleotides are potent inhibitors of HIV-1 replication and could be potentially useful in the treatment of AIDS.

M.C.P.81 ASSESSMENT OF THE THERAPEUTIC ACTIVITY OF PHOSPHONYLMETHOXYETHYL ADENINE (PMEA) AND AZIDOTHYMIDINE (AZT) IN A MURINE MODEL OF ACQUIRED IMMUNODEFICIENCY DISEASE

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The murine model of acquired immunodeficiency disease (MAIDS) was used to evaluate the therapeutic potential of two nucleoside analogues, phosphonylmethoxyethyl adenine (PMEA) and azidothymidine (AZT). The antiviral activity of PMEA was compared to AZT in mice receiving drug either immediately following infection or at later times in disease progression. Both AZT (oral, 30 mg/kg) and PMEA (parenteral, 25 mg/kg) were effective in preventing the development of disease when administered daily beginning on the day of infection. In contrast, neither drug alone was effective in modifying disease outcome when administered several weeks after viral infection. This was not, however, the case when alpha interferon was used in combination with PMEA. Disease outcome was modified when infected mice were put on a continous regimen of PMEA (25 mg/kg) and alpha interferon (5×10^7 U/kg).

A number of humoral and cellular immune functions were severly depressed 60 days after LP-BM5 infection. Immunocompromised mice were highly susceptible to acute (lethal) infection with HSV-1, while age-matched immunocompetent littermates were not. PMEA was as effective as acyclovir in the treatment of HSV-1 infections in immunosuppressed mice. The data suggest that the in vivo antiretroviral activity of PMEA is comparable to AZT. An important advantage of PMEA is its usefulness in the therapy of opportunistic herpesviral infections.

M.C.P.82 INHIBITION OF HIV REPLICATION BY ALPHA INTERFERON

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Objective. To investigate the mechanism of inhibition of HIV replication by interferon alpha in vitro.

Methods. T cells were infected with HIV and treated with Wellferon; or chronic producing cells were treated with Wellferon. Virus production was assayed by reverse transcriptase activity and p24 concentration. Cellular extracts were assayed by western blot and p24 ELISA; cells were examined by electron microscopy.

Results. In the C3 line , the EC_{50} was 5.5 U/ml, and EC_{90} was 274 U/ml. We attempted to determine if high concentrations of intracellular particles were accumulating by assaying extracellular RT and p24 levels, the intracellular p24 and viral protein levels, or by EM. In cells treated with IFN, the RT and p24 levels decreased proportionally, whereas the intracellular p24 levels remained nearly constant. Western blots of cellular protein showed only at most a 2X decrease in viral proteins; the amount of processing of precursor to p24 and p17 did not change in the presence of interferon. By EM, the cells treated with 512 U/ml showed almost no virus budding into extracellular spaces; however, no intracellular particles could be seen.

Conclusion. Thus, inhibition of this human retrovirus by alpha interferon does not appear to involve decreased processing of viral proteins or intracellular core formation.

M.C.P.83 EXPERIMENTAL AZIDOTHYMIDINE (AZT) PULSE THERAPY LEADS TO ADEQUATE AND PROLONGED LEVELS OF INTRACELLULAR AZT-TRIPHOSPHATE (AZT-TP)

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Objective. Our earlier studies showed that single daily AZT pulse exposure effectively inhibits HIV-1 and HIV-2 replication in vitro. We have now evaluated intracellular AZT anabolism both in pulse and continuous therapy schedules.

Methods. Based on earlier dose finding studies using a newly developed in vitro model, duplicate cultures with peripheral blood mononuclear cells were either exposed to 10 uM AZT (+45 uCi/nmol ^{3}H-AZT) for 60 min. or to 1 uM AZT (+^{3}H-AZT) for one day. After 24 hr in culture, cellular extracts were analyzed by paired ion HPLC, and radioactivity was assayed by liquid scintillation counting. Furthermore, hypothetical simulation of human AZT plasma levels after a single daily oral dose of 1 g AZT was performed using a computer model (Burroughs Wellcome, UK).

Results.

Treatment		Azidothymidine (pmol/10^6 cells) Monophosphate	Diphosphate	Triphosphate
24h	1 uM AZT	33	0.4	0.9
1h	10 uM AZT	18	1.0	2.0

Mathematical simulation of a single oral dose of 1 g revealed plasma levels of 10 uM or higher for 60 min.

Conclusions. Single day in vitro pulse therapy leads to adequate intracellular levels of AZT-TP thus explaining the observed anti-HIV effect of this regimen. The effect of a single daily oral dose of 1 g should be exploited in clinical trials.

M.C.P.84 EXPRESSION OF AUTHENTIC AND ENZYMATICALLY ACTIVE HIV1 AND HIV2 PROTEASES IN *SACCHAROMYCES CEREVISIAE*.

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Genetic analysis of the HIV genome has revealed a 99 amino acid protease encoded at the 5' end of the *pol* gene which is essential for the processing of *gag* and *gag/pol* polyprotein precursors. The proteases encoded by the HIV1 and HIV2 genomes are 47.5% identical in their amino acid sequences. Functional and structural studies of these viral proteins require reagent quantity levels of the authentic enzyme which can be achieved by heterologous expression of the cloned gene. An expression system employing the ADH2/GAPDH promoter was used to overexpress both retroviral proteases intracellularly and extracellularly in yeast. For external localization of the enzymes, two different DNA fragments were fused to DNA encoding the *S. cerevisiae* alpha factor signal/leader sequence. These viral fragments encode either the mature 99 amino acid protease or a precursor containing additional residues at the N and C termini of the protease in order to monitor self-processing. For internal localization, retroviral sequences encoding the protease were fused to the C-terminus of human superoxide dismutase. Expression of mature HIV1 and HIV2 proteases was demonstrated for all systems by immunodetection in yeast supernatants or cellular extracts. Self-processing activity was confirmed by amino acid sequence analysis of the mature enzyme. The HIV1 protease has been purified and structural studies have been initiated. Extracellular localization of the protease has permitted rapid purification to homo-geneity using a two step purification scheme. From 20 liters of media 1 mg of protein can be purified. This protease is active on both native and synthetic peptide substrates. Both the HIV1 and the HIV2 protease correctly process HIV1 *gag* polyprotein precursor. Results indicate that yeast cells provide an efficient expression system for the overproduction of active forms of HIV1 and HIV2 proteases.

M.C.P.85 IMMUNOLOGIC EFFECT AFTER SINGLE DOSE ATVOGEN (AMPLIGEN) IN HEALTHY VOLUNTEERS

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Objective. To evaluate the degree and time course of immunologic stimulation after a single 200 mg intravenous (i.v.) dose of atvogen, a mismatched double-stranded RNA, in healthy volunteers.
Methods. This was a randomized, double-blind, inpatient study in four healthy volunteers. Subjects served as their own controls, randomized to one of two treatment sequences, atvogen or placebo followed 7 days later by placebo or atvogen. We measured α- and γ-interferon, 2'-5' oligoadenylate synthetase (25AS), neopterin, T cell subsets (CD3, CD4, CD8, Leu7, Leu 11, Leu 19), natural killer cell (NK) activity and lymphocyte proliferation (LP) after exposure to soluble antigens (CMV, tetanus toxoid, pokeweed mitogen).
Results. No symptomatic, clinical or laboratory changes were noted in either drug or placebo periods. Neither α- or γ-interferon were measurable during the 5 days following atvogen infusion. Biochemical markers of interferon action, specifically 25AS and neopterin, and T cell subsets were not significantly different after atvogen dosing compared to placebo. Neither the NK nor LP assays showed any differences in response between atvogen or placebo treatments.
Conclusions. Atvogen induces no immunologic enhancement in the parameters measured after a single 200 mg i.v. dose in healthy volunteers.

M.C.P.87 THE ANTIVIRAL EFFECT OF DEXTRAN SULFATE (DXS) IS HIV STRAIN DEPENDENT

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Objective. To study the anti-HIV activity of DXS using different isolates.
Methods. The anti-HIV effects of DXS (8K, 40K, 500K) were investigated using a syncytium-inhibition (MT-2 cell) assay. The peripheral blood HIV strains studied were: HIV-1 [IIIB (lab strain), TM (wild-type), WMF 3D (clone)] and HIV-2 [ROD (clone)]. Syncytium-forming units, cell viability, and IIF (cellular p24 Ag) were utilized as measures of HIV expression. The input concentration of HIV was standardized by limiting dilution and sensitivity to AZT. Combinational effects of DXS and ddNUs (AZT, ddA, ddC) were analyzed and a fractional inhibitory index calculated.
Results. The higher the MW of DXS, the more potent the anti-HIV effect. The ID50 was greater than 1mg/ml for all DXS. The ED50 of DXS was HIV strain dependent [ED50 (ug/ml) range: IIIB (5-22), TM (56-360), WMF 3D (18-62), ROD (17-45)]. The anti-HIV effects of DXS (8K) and ddNUs were synergistic. However, the combination of DXS (500K) and ddNUs were synergistic (therapeutic range of DXS) or antagonistic (sub-therapeutic range of DXS) when using HIV-1 TM.
Conclusion. The anti-HIV activity of DXS is strain and MW dependent. The combination of DXS and ddNUs may yield synergistic/antagonistic effects. (Supported by IVAX Corp. and NIH UO1-AI25696).

M.C.P.89 EXPRESSION AND CHARACTERIZATION OF CHIMERIC PROTEINS CONTAINING HUMAN CD4 LINKED TO HUMAN IMMUNOGLOBULIN HEAVY CHAIN CONSTANT REGIONS

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Objective. To express and characterize the properties of chimeric proteins composed of human CD4 and human immunoglobulin G (IgG) heavy chain constant regions for the potential therapeutic use of these proteins as new targeted anti-HIV agents.
Methods. The chimeric proteins were produced using a vaccinia virus-based expression system and tested for the binding properties to various ligands and antibodies against each domain.
Results. Three types of chimeric proteins with different lengths (1-109, 1-178, and 1-372) of the CD4 extracellular region linked to human IgG1 heavy chain constant regions were designed and expressed in CV-1 and RPMI8226, a human myeloma cell line secreting a Ig light (lambda) chain. The chimeric proteins expressed in both cell lines bound to the HIV-1 gp120, OKT4A (anti-CD4), an anti-human IgG(Fc) polyclonal antibody, and Protein A-agarose. The chimeric proteins which were expressed in RPMI8226 formed complexes with the lambda chain synthesized by the host cell line.
Conclusion. The CD4-IgG1 chimeric proteins had the expected binding properties of the domains used for their construction. The chimeric proteins when co-expressed with human Ig light chains formed complexes which might have structures analogous to that of natural immunoglobulin molecules.

M.C.P.86 STUDIES ON ANTI-HIV ACTIVITY AND METABOLISM OF 2',3'-DIDEOXYGUANOSINE (ddG)

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Objective. To study the anti-HIV activity and metabolism of ddG.
Methods. The anti-HIV activity of ddG was determined by a syncytium-inhibition assay using MT-2 cells and by the inhibition of reverse transcriptase activity in H9 HIV-infected cells. In drug uptake studies, cells were exposed to [3H]ddG for predetermined periods. Cells were isolated by centrifugation through an oil layer and the intracellular radioactivity was determined. In metabolism studies, drug treated cells were extracted with aqueous methanol and the extracts were analyzed by anion exchange and C18 reverse phase HPLC procedures.
Results and Conclusions. Data indicate that ddG is equipotent to ddA or ddI in its anti-HIV activity. Guanosine and dGuo did not reverse the anti-HIV activity of ddG, whereas 8-aminoGuo failed to enhance. In drug exposed cells, the intracellular radioactivity increased over time and reached a plateau at 5 minutes. Addition of an excess of Guo or dGuo reduced the uptake of ddG by 25-40%. Metabolic studies indicate that ddG enters the cell and is catabolized to guanine which is further anabolized to GMP, GDP, and GTP. Under the experimental conditions employed, we were unable to detect the formation of [3H]ddGTP. These observations raise the question regarding the importance of this metabolite's role in the anti-HIV activity of ddG. (Supported by IVAX Corp. and NIH UO1-AI25696).

M.C.P.88 IN VITRO ACTIVITY OF RIBAVIRIN IN ACUTE AND COCULTIVATED HIV INFECTION OF HUMAN PERIPHERAL BLOOD MONONUCLEAR CELLS

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Objective. To determine if ribavirin inhibits HIV replication in vitro in acutely infected normal or cocultivated patients PBMC.
Methods. Acute infection: PHA-stimulated normal donor PBMC ($1x10^6$cells/ml) were pretreated with ribavirin (2,10,20,40ug) or ddC(0.02,0.2,2.0,4.0ug) x 18 hours in IL-2 medium and then infected with HIV. Cocultivated infection: HIV-infected PBMC from 5 patients were cocultivated with PHA-stimulated normal donor PBMC pretreated with either drug x 18 hours in IL-2 medium. Assays for antigen capture (ELISA) and cell viability (MTT) were performed either daily or at days 3-4, 7 and 9-12.
Results. Acute infection: Maximum antigen concentrations (MAC) were achieved by day 5 in culture whereas 39 and 84% of MAC occurred at day 3 and 4 respectively. Virus inhibition (%VI) and cell viability (%CV) at various days in culture were as follows:

		day 3		day 4		day 7		day 10	
Drug (ug/ml)		%VI	%CV	%VI	%CV	%VI	%CV	%VI	%CV
Ribavirin	2	15	87	13	—	0	69	7	72
	10	34	100	36	—	0	69	7	80
	20	62	97	58	—	0	60	6	84
	40	71	86	72	—	2	59	7	67
ddC	0.02	40	93	55	—	2	98	4	100
	0.2	68	100	84	—	73	100	67	100
	2.0	80	100	95	—	94	86	91	100
	4.0	82	93	91	—	90	91	93	100

Cocultivated infection: Mean days to first positive culture in cocultures with no drug was 5.6 days compared to 5.6 and 7.0 days in cocultures containing 20 and 40ug ribavirin respectively. Cocultures remained negative for greater than 17 days in the presence of 2ug ddC.
Conclusions. When compared to ddC the in vitro activity of ribavirin in acutely infected human PBMC was only partial at high doses and was absent in cocultivated PBMC.

M.C.P.90 ANALOGS OF 3'AMINO-3'DEOXYADENOSINE INHIBIT HIV-1 REPLICATION

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Objective: Several different nucleoside analogs have been demonstrated to inhibit retroviral RNA-dependent DNA polymerase activity in preference to cellular DNA-dependent DNA polymerases. This study analyzed the anti-HIV-1 activity and host cell toxicity of 3'amino deriviatives of 3'deoxyadenosine.
Results: Puromycin aminonucleoside (PANS), PANS 5'monophosphate, and 3'amino-3'deoxyadenosine triphosphate all inhibited HIV-1 replication in acutely infected cells at concentrations at least 10-fold lower than those which inhibited cell growth. No antiviral effects were seen with N6-dimethyl adenosine, adenosine, or puromycin. In chronically infected cells, no antiviral activity of PANS could be detected. The effect of PANS was demonstrated at an early step in HIV-1 replication, most likely reverse transcription.
Conclusions: 3'Amino nucleoside analogs are a novel class of inhibitors of HIV-1 replication which require further analysis in cell culture and animal studies.

M.C.P.91

SULFATED SUGARS INHIBIT HIV. Myra McClure*, Denise Whitby*, Rachanee Cheingsong-Popov**, Jonathan Weber**, Donald Davies**, and Robin A. Weiss*. *Institute of Cancer Research, Fulham Road, London UK; **Royal Postgraduate Medical School, Hammersmith Hospital, Du Cane Road, London W12 ONS, UNITED KINGDOM

Objectives: To test sulfated polysaccharides for evidence of antiviral activity.

Methods: The effect of drugs on HIV infection was assessed by syncytium formation, RT and p24 antigen synthesis on lymphocytic and monocytic cells and on CD4-transfected HeLa cells.

Results: The compounds will be defined and data presented to show that:

(a) The degree of sulfation is important for antiviral function.

(b) Two compounds, one of which has been newly synthesised, inhibit by 10,000 fold on the C8166 infectivity assay a wide range of HIV-1 isolates.

(c) HIV-2 was inhibited by one compound, but not as strongly.

(d) There is low cellular toxicity and no adverse effect on protein metabolism or T-cell function.

(e) The drugs themselves appear to have a mitogenic effect on PBL.

M.C.P.92

CSF FROM PATIENTS WITH EARLY HIV INFECTION PRODUCES NEURONAL CELL KILLING IN VITRO: PREVENTION BY PEPTIDE T

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Objective: To test for the presence of gp120-like neuronal killing activity in CSF from seropositive patients and the ability of peptide T to prevent CSF- induced neurotoxicity.
Method: Twenty-eight cerebrospinal-fluid samples from neurological controls and HIV-infected individuals were tested (blind to the investigator) in murine hippocampal cultures. HIV+ individuals had been referred for neuropsychological evaluation and 83% were in Walter Reed Stages 1-3. All individuals received a comprehensive neuropsychological and neurological evaluation at the time of the spinal tap and 6 months later. CSF samples were diluted 100,000-fold and incubated for five days in the presence and absence of peptide T. Previous studies have shown that the envelope protein of the HIV, gp-120, is potently neurotoxic in this developing neuronal culture. VIP neuropeptide, peptide T and monoclonal antibodies against mouse CD4, prevented gp120-induced neuronal cell death (Brenneman et al. *Nature* 335:639-42, 1988).
Results: CSF from 9 out of 18 HIV-infected individuals showed significant (>20% of control) *in vitro* neuronal killing activity which was blocked by peptide T. Only one multiple sclerosis case out of 10 neurological controls had significant neuronal killing .
Conclusion: The ability of CSF to potently kill neurons in culture is associated with HIV+ individuals. Peptide T prevented CSF-induced toxicity *in vitro*. These data are consistent with our previous suggestion (Brenneman et al. *Drug Development Research* 15:361-369, 1988) of the causal role of gp120 in neuropsychiatric/neurological deficits of HIV.

M.C.P.93

SYNTHESES OF NEW SUGAR-FLUORINATED GUANOSINE ANALOGUES AS POTENTIAL ANTI-HIV AGENTS

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Presented by Guedj, Roger, Université de Nice, France

Objective. Purine nucleosides fluorinated in the sugar moiety have been not very investigated owing to the difficulty in their synthesis. Here we report the synthesis of hitherto unknown fluorinated analogues of guanosine and their evaluation as potential anti-HIV agents.
Methods. The synthesis of 9-(3-deoxy- and 2,3-dideoxy-3-fluoro--β-D-xylofuranosyl)guanine (1) and (2) was accomplished by a multi-step approach involving prior preparation of a suitably protected fluorosugar. 3'-Deoxy-3'-fluoroguanosine (3) was prepared by reacting the corresponding nucleoside of *xylo* configuration with (diethylamino)sulfurtrifluoride. *The* mixture of 9-(3-deoxy-3-fluoro-β-arabinofuranosyl)guanine (4) and 9-(2--deoxy-2-fluoro-β-D-xylofuranosyl)guanine (5) was obtained by ring opening of the lyxo epoxide of guanosine.
Results. The compounds 1-5 were evaluated in HIV infected MT4 cells. Only the mixture of 4 and 5 was found to inhibit significantly viral replication.

M.C.P.94

POPULATION PHARMACOKINETIC BEHAVIOR OF ZIDOVUDINE (AZT) IN PATIENTS WITH ARC.

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There is little published information on the disposition of AZT. That which is available has been generated in populations of patients with AIDS. Past experience with other compounds has shown that the disposition of a drug is often changed dramatically by the disease status of the population in which it is administered. As we were performing a large, multicentered, randomized, double blind evaluation of AZT in patients with ARC with >200 and <500 CD4 cells, we decided to evaluate the pharmacokinetics of AZT in this population. Blood was obtained for AZT assay on a scheduled and random basis from all study participants, maintaining the blind. Serum AZT concentration was determined by HPLC. Seventy-seven patients had more than one serum specimen with assayable AZT, with a total of 277 specimens suitable for analysis. In order to deal with this information in the most mathematically correct fashion, point estimates of population pharmacokinetic parameters were sought using the program NONMEM (non-linear mixed effects modelling). A one compartment open model with first order absorption and first order elimination from the central compartment was employed. Total Clearance (TC), Volume of Distribution (V) and Absorption Rate Constant (Ka) were the estimated parameters. A proportional error model was employed for all identified parameters. Mean (SE) TC for the population was 142 (9) L/h/70kg. Corrected for a bioavailability (F) of 0.63, this value becomes 89.5 L/h/70kg, identical to the value obtained in patients with AIDS. Mean (SE) V was 342 (23) L/70kg, a value much larger than that identified in AIDS patients, even when corrected for F (215 L/70kg). The Ka was very large, with a broad 95% confidence interval, implying rapid absorption, but poor parameter identifiability. Estimates of intraindividual variation (eta) were not robust, but did not impact on the estimation of the system parameters above. The population approach worked well in this patient care situation. The larger volume of distribution noted is probably a function of studying healthier patients with larger lean body masses. More importantly, because it is extremely difficult to obtain good pharmacologic information on drug disposition in the clinical setting (AZT Phase I trials typically enrolled only 3-5 patients /dose level), the population modelling approach needs to be more broadly employed as newer agents for therapy of HIV and HIV-related disease are evaluated.

M.C.P.95

ANTI-RETROVIRAL ACTIVITY OF AN AQUEOUS EXTRACT OF HYDROCOTYLE ASIATICA

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Objective. To study the anti-retroviral effect of an aqueous extract of the Indian Ayurvedic medicinal plant, Hydrocotyle asiatica.
Methods. An aqueous extract of dried powdered Hydrocotyle asiatica (HA) was prepared by vortexing followed by sterile filtration . HA extract was diluted 1:200 to 1:800 by addition to tissue culture medium. The effects of HA on HIV-1 infection were studied by use of a syncytia formation assay in SupT1 cells, plaque formation in MT4 cells and kinetics of virion production and cytotoxicity in MT4 cells and PBLs. The effects on murine leukemia viruses (MuLVs) were studied for MoMuLV and HaSV in NIH 3T3 cells .Viral yield was assayed by determination of reverse transcriptase production, and for HaSV, production of focus-forming units (ffu).
Results. A 1:200 dilution of HA resulted in a greater that 90% reduction in HIV-1 induced syncytia formation in SupT1 cells and a similar inhibition of plaque formation in MT4 cells. In suspension cultures, HA treatment resulted in a 2-3 day delay in the appearance of HIV induced cytopathic effect and cell death in MT4 cells. No comparable delay of cytotoxicity was observed in PBLs. In studies of MuLV infection, HA resulted in an 85-95% decrease in viral yield as monitored by RT production and similar decreases in the production of HaSV ffu. Studies of the mechanism of anti-viral effect in the MuLV system showed that HA was not directly virucidal and did not inhibit virus adsorption. Pretreatment of cells followed by removal of HA did not inhibit MuLV suggesting that HA was not acting as an interferon inducer.
Conclusions. An aqueous extract of Hydrocotyle asiatica appeared to inhibit the replication of HIV-1 and MuLVs in several different assay systems. The degree of anti-HIV effect varied in different cell types thus further mechanistic studies and biochemical characterization of active components will be required before its potential usefulness can be ascertained.

M.C.P.96

ACTIVATION OF THE ANTI-HIV AGENT 2',3'-DIDEOXY-2',3'-DIDEHYDROTHYMIDINE (D4T) BY HUMAN PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMC) IN CULTURE.

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Objective. To compare metabolism of D4T with AZT in resting and phytohemagglutinin (PHA)-activated human PBMC.
Methods. PBMC were prepared by sedimentation of fresh whole blood in a LeucoPREP cell separation tube. PHA-stimulation (5 µg/ml) was for 72 h, and the PHA was then washed out. After incubation with 2 µM radiolabeled D4T or AZT, cells were washed and extracted with 60 % methanol, and the extracts were fractionated by anion exchange HPLC.
Results. In resting PBMC incubated with 2 µM compound for either 24 or 48 h, cell-associated D4T and AZT were both detected at close to the extracellular concentration, but no phosphorylated forms of either compound were observed (detection limits of 1 and 20 nM for D4T and AZT, respectively). In activated PBMC at 24 h, 55 % of the phosphorylated D4T was present as the triphosphate. Its intracellular concentration was estimated at 100 nM, which is above the Ki for HIV reverse transcriptase. By contrast, the only phosphorylated form of AZT detected was the monophosphate (about 27,000 nM) and the di- and triphosphates were below the limit of detection (20 nM).
Conclusion. These results demonstrate a significant difference between the metabolism of D4T and AZT in stimulated PBMC. This may translate to a different, and possibly better, toxicity profile in vivo.

M.C.P.97 THREE DRUG SYNERGISTIC INHIBITION OF HIV-1 REPLICATION BY RECOMBINANT SOLUBLE CD4 (rsT4), ZIDOVUDINE (AZT), AND RECOMBINANT INTERFERON-ALPHA-A (rIFN-α-A).

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Objective. To assess the interactions of rsT4, AZT, and rIFN-α-A in combination against HIV-1 replication in vitro.
Methods. We evaluated rsT4 (a soluble viral receptor) in combination with AZT (a reverse transcriptase-RT-inhibitor) and rIFN-α-A (an agent which may affect viral assembly and release). H9 cells were exposed simultaneously to HIV-1 and various concentrations of each agent, either alone or in 2- or 3-drug combinations. Drug interactions were evaluated by the median-effect principle and the isobologram technique.
Results. HIV-1 p24 antigen production (ng/ml) on days 10-11:

Expt. no.	Inf. Control	rsT4 0.08 µg/ml	AZT 0.64 µM	rIFN-α-A 32 U/ml	2-Drug Combinations			3-Drug Combination
					rsT4 & AZT	AZT & rIFN-α-A	rsT4 & rIFN-α-A	
1	2935	2780	2790	1980	1690	620	426	123
2	2130	326	1890	460	87	52	60	21

Similar results were obtained at different times and by utilizing other assays (RT activity and virus yield).
Conclusion. Combinations of rsT4 (0.02-0.32 µg/ml), AZT (0.16-2.56 µM), and rIFN-α-A (8-128 U/ml), as 2- or 3-drug combinations, inhibited HIV-1 synergistically. The 3-drug regimen provided more complete suppression than the 2-drug regimens without additive toxicity in vitro.

M.C.P.99 DIFFERENTIAL SENSITIVITY OF BONE MARROW DNA POLYMERASES ALPHA AND DELTA TO INHIBITION BY DIDEOXYNUCLEOTIDES

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Objective: To examine the sensitivity of bone marrow DNA polymerases alpha and delta to inhibition by dideoxynucleotides.
Methods: DNA polymerases were highly purified from rabbit bone marrow as previously described. Standard DNA polymerase assays using either activated DNA or synthetic primer/template combinations and different reaction conditions were used to examine the effect of ddCTP and ddTTP.
Results: Under conditions of magnesium activation DNA polymerase alpha was resistant up to 200 uM ddNTP, however DNA polymerase delta was 50% inhibited at 80 uM of either ddCTP or ddTTP. Under conditions of manganese activation alpha and delta were both 50% inhibited by 5 uM ddNTP. Kinetic analysis demonstrated a competitive pattern with respect to the corresponding dNTP. Activity of the 3' to 5' exonuclease associated with delta did not alleviate the inhibitory effect of the ddNTP.
Conclusions: The sensitivity of DNA polymerase delta under conditions of magnesium activation may have bearing on the bone marrow toxic effect of ddNTPs. Both DNA polymerases are believed to function in DNA replication and current evidence suggests a coordinate action of delta synthesizing the leading strand and alpha the lagging strand. Relatively minor inhibition of DNA polymerase delta may uncoordinate cellular DNA replication.

M.C.P.101 RANDOMIZED PHASE II TRIAL OF RECOMBINANT TUMOR NECROSIS FACTOR (rTNF) AND RECOMBINANT INTERFERON-GAMMA (rIFN-GAMMA) IN PATIENTS WITH ARC

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Objective: To determine if TNF worsens or decreases the progression of HIV infection.

Methods: While some have reported that TNF inhibits HIV replication others have reported enhanced replication in chronically infected cells treated with TNF. To evaluate this we randomly assigned 30 patients with ARC to receive either TNF only (10 mcg/m^2), IFN-gamma (10 mcg/m^2) + TNF (10 mcg/m^2), or IFN-gamma only (10 mcg/m^2) for a 16 week period. Data available on 16 patients indicate the following: side effects included fever (100%), grade I mild constitutional symptoms (100%), and local reactions (100%). No significant hematologic, hepatic, renal, or coagulation abnormalities were observed and only one patient discontinued therapy because of side effects. T cell subset determination did not change significantly during therapy. HIV was isolated from peripheral blood lymphocytes (PBLs) in all patients prior to therapy while none became persistently negative, the frequency of HIV isolates from PBLs decreased from 92% before therapy to 84% during therapy. Plasma viremia was 56% prior to therapy and decreased to 29% during therapy.

Conclusion: This study demonstrates that TNF alone or in combination with IFN-gamma does not appear to hasten the progression of HIV infection either clinically or virologically. Further studies are required to determine if either of these compounds alone or together have biologic in vivo antiviral activity.

M.C.P.98 COMPARATIVE PHARMACOKINETICS OF 3'-AZIDO-2',3'-DIDEOXYURIDINE (AZddU) AND 3'-AZIDO-3'-DEOXYTHYMIDINE (AZT) IN MONKEYS

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Objective. To characterize and compare the pharmacokinetics and bioavailability of AZddU and AZT in uninfected rhesus monkeys.
Methods. Monkeys were administered AZddU or AZT as follows; 60 mg/kg intravenously, 60 mg/kg orally, 200 mg/kg orally and 33 mg/kg subcutaneously. Serial blood samples were obtained. Cerebrospinal fluid and urine samples were taken 1h after dosing. Nucleosides were assayed by HPLC.
Results. After AZddU total clearance averaged 0.91± 0.051 L/h/kg and volume of distribution was 0.89± 0.14 L/kg. After AZT total clearance and volume of distribution were 1.57 L/h/kg and 1.07 L/kg, respectively. Oral absorption of AZddU and AZT was virtually complete (F> 0.90) after 60 mg/kg, however, bioavailability of both nucleosides was markedly lower (F< 0.50) after 200 mg/kg. The nucleosides appeared to be well absorbed after subcutaneous administration. AZddU and AZT penetrate the cerebrospinal fluid with CSF: serum concentration ratios ranging between 0.05-0.25 1h after drug administration.
Conclusion. The similar pharmacokinetic characteristics and lower toxicity of AZddU compared to AZT suggest that clinical trials of AZddU are warranted.

M.C.P.100 RECOMBINANT GRANULOCYTE COLONY STIMULATING FACTOR (r-metHuG-CSF) INCREASES NEUTROPHIL NUMBER AND FUNCTION BUT DOES NOT ALTER HIV EXPRESSION IN PATIENTS WITH AIDS.

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Objective. To see if r-metHuG-CSF can improve neutrophil function and number in AIDS patients without altering HIV expression.
Methods. Phase I/II Open Label Trial of r-metHuG-CSF/r-HuEPO/AZT in patients with AIDS/severe ARC. Patients with absolute neutrophil counts (ANC)< 2500/mm^3 and hemoglobin (Hb)< 11.5 gm/dl (off all marrow suppressive drugs including AZT > 3 weeks) were treated with r-metHuG-CSF once daily at 3 mcg./kg subQ until an ANC of >6000 was achieved and maintained for 2 weeks.
Results. Eleven of 24 planned patients have been enrolled. Eight have reached >6000 ANC, maintained for >2 weeks and are evaluable. The other 3 patients have reached >6000 ANC but have not been on >2 weeks.

	Pre G-CSF	Post G-CSF	P value
Absolute Neutrophils	1021 ± 600	21,470 ± 9130	< 0.001
Total WBC	1875 ± 790	23,600 ± 9115	< 0.001
CD4 cell number	10.4 ± 6.3	22.8 ± 14.7	< 0.05
HIV p24 antigen	225 ± 454	247 ± 391	> 0.05

With one exception, normal neutrophil function (S.aureus phagocytosis and intracellular killing) was observed in all pts. before and during r-metHuG-CSF. One pt. had a discrete intracellular killing defect which normalized on r-metHuG-CSF. Analysis of limiting dilution plasma and lymphocyte cocultures showed no significant alterations in viral expression.
Conclusions. r-metHuG-CSF significantly increases neutrophil number and function in AIDS patients without altering HIV expression. r-metHuG-CSF shows promise in abrogating the neutropenia of AIDS.

M.C.P.102 A LONG-LIVED CD4 CARRIER IN CIRCULATION. RED BLOOD CELLS WITH CD4 RECEPTORS INSERTED IN THEIR MEMBRANE.

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The CD4 receptor is associated with intact human erythrocyte membranes after a short-time incubation at low pH (1-2 min, pH lower than 5, 37°C). Epifluorescence microscope observations showed that after incubation of red cells with fluorescein isothiocyanate (FITC) labeled anti CD4 monoclonal antibodies (Leu 3a) the erythrocyte membrane and subsequently formed ghost membranes were fluorescent. Immunoelectron microscopy showed 10 nm gold beads associated with CD4 bearing erythrocyte membranes after incubation with anti-CD4 antibodies and then with gold beads coated with immunoglobulin G antibodies. The insertion of CD4 in RBC membranes proved stable, in vitro at 37°C for 24 hrs and the life span of RBC subjected to the acid-insertion did not change as compared to normal RBC in mouse and in man.
CD4$^+$-RBC were shown to attach gp120 and quantitation of the number of CD4 molecules per RBC needed for effective attachment to gp120 was realized. HIV-1 interacts with CD4$^+$-RBC showing in freeze etching EM micrographs the appearance of "foot prints" on the CD4$^+$-RBC membrane, reminiscent of those observed after interaction of influenza virus with RBC. Thus, a long-lived CD4 carrier is obtained with the potential of a scavenger in the circulation of free HIV-1, cilating gp120 antigen and gp120-expressing, HIV-infected T4 cells.

M.C.P.103

TREATMENT OF AIDS ASSOCIATED TUMORS WITH RECOMBINANT DNA GRANULOCYTE-MACROPHAGE COLONY STIMULATING FACTOR (GM-CSF). Tirelli Umberto*, Saracchini S*, Lazzarin A.**, Sorio R.*, Mazzanti P.***, Monfardini S.* * Centro di Riferimento Oncologico, Aviano, Italy; **L. Sacco Hospital, Milan, Italy; ***Essex-Schering, Milan, Italy.

Objective. To evaluate GM-CSF in HIV-related malignant tumors. Methods. Since November 1988 we are evaluating in an open label single patient compassionate exemption case GM-CSF (Schering), in patients with HIV-associated tumors and neutrophil counts < 1000/mm³ after chemotherapy and/or AZT. GM-CSF was administered in doses of 3-5mg/kg/day in a 6 hour iv. infusion for 5 days. Six patients have already been treated, 3 with Kaposi's sarcoma (KS), 2 with Hodgkin's disease and 1 with non-Hodgkin's lymphoma (NHL) with bone marrow toxicity after chemotherapy and/or AZT. Results. In 3 patients, 2 with KS and 1 with NHL, WBC counts increased rapidly since the second day of infusion as for Table:

N° Pts	WBC/mm³day 1	day 2	day 3	day 4	day 5
1	300	700	1 500	4 200	8 000
2	1 300	2 900	2 300	3 500	4 300
3	700	1 800	2 400	4 900	4 000

Mild side effects such as flu-like symptoms, were observed in most patients. There is no clear evidence of worsening of HIV-disease during GM-CSF treatment. Conclusion. Our data indicates that GM-CSF may increase the WBC counts in leukopenic patients receiving chemotherapy and/or AZT for HIV-related malignancies. Supported by a CNR-AIDS grant.

M.C.P.104

IN VITRO INHIBITION OF HIV REPLICATION BY GLUCOSYL PHOSPHOLIPID DERIVATIVES OF NUCLEOSIDE ANALOGS
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Objective.Glucosyl phospholipid derivatives of nucleosides were synthesized in order to improve their trans membrane passage.They have been compared to AZT and DDC for their ability to inhibit HIV replication in vitro.
Methods. The compounds were synthesized by the Unite de Chimie Organique,Institut Pasteur. Anti HIV effects and cytotoxicity of these derivatives (at concentration ranging from 0,2 μM to 25 μM) were evaluated in CEM-Cl13 cells.Assays were done in 96-well plates,using a method developed in our laboratory.Cells were kept in culture for 22 days.After 7 days and every 3 or 4 days,50 % cytotoxic dose (CD 50) and 50 % antiviral effective dose (ED 50) were evaluated by using the MTT absorbance method.HIV replication was monitored by measurement of reverse transcriptase (RT) activity in cell supernatants.
Results. 11 compounds were shown to inhibit HIV-induced cytopathogenicity until 7 days in culture.Table indicates results obtained with 4 compounds,including AZT and DDC,that inhibited HIV-induced cytopathogenicity for 22 days.Viral production,monitored by RT activitymeasurement,was also inhibited,at least for the higher non toxic concentrations of these compounds.

Days in culture		D7		D11		D19		D22	
		CD50	ED50	CD50	ED50	CD50	ED50	CD50	ED50
Compound	DDC	7	< 0,2	0,4	-	< 0,2	-	<0,2	-
	6651	11	< 0,2	3	< 0.2	3	< 0.2	3	0,8
	6715	> 25	< 0,2	> 25	< 0.2	> 25	0.7	> 25	0.9
	AZT	> 25	< 0,2	23	< 0.2	> 25	< 0.2	23	0.45

Conclusion. 1 glucosyl (compound 6715) phosphodiester derivative of pyrimidine nucleoside showed long term anti HIV activity.Further investigations are in progress.

M.C.P.105

ROLE OF HIV ANTI-SENSE RNA IN HIV REPLICATION
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Objective. The analysis of the ability of anti-sense RNA transcribed from a transfected anti-sense HIV DNA to inhibit HIV replication in cell culture. HIV infection of HIV-sensitive cells, previously infected with the anti-sense recombinant retrovirus, may help define the possible role of anti-sense RNA in the inhibition of HIV replication.
Methods. We have molecularly cloned an HIV variant from an Italian AIDS patient and subcloned it in the anti-sense orientation in retroviral vectors under the control of MLV LTRs (pLJ vector) or SV40 (MSV vector) promoters.
Results. Preliminary sequencing indicates nearly 90% of homology between our HIV isolate and the BH10 reference clone, so that a correct intracellular hybridization of anti-sense RNA with the viral RNA of a superinfecting HIV is likely to occur. After transfection of the anti-sense pLJ construct in the retroviral packaging line PA317, we have isolated >40 G418-resistant clones. Co-cultivation with CEM-ss performed shortly after transfection before the isolation of the G418-resistant clones has lead to the isolation of a CEM G418-resistant population.

M.C.P.106

ORGANIC GOLD COMPOUNDS ARE EFFECTIVE AGAINST HIV 1 REVERSE TRANSCRIPTASE.
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Objective. To show that simple glucose or mannose analogues, which are potent glycosylation inhibitors, could be modified by the addition of gold so that they became powerful inhibitors of reverse transcriptases *in vitro*.
Methods. Preliminary screening methods have demonstrated that certain hexose analogues were potent glycosylation inhibitors of gp120 *in vitro* (CEM cells). These compounds were not effective against HIV-RT. 1-Aurothioglucose (AuT) and various Au-containing aliphatics were prepared. These were effective against HIV1-RT in cell lysates. To determine the molecular mode of action, we examined the effect of these inhibitors at different steps of the DNA polymerization process, directed by reverse transcriptases (enzyme-template complex formation, chain initiation and chain elongation). Product analysis was performed using a chain elongation assay with [^{32}P] primer, both with non-specific and HIV templates.
Results. AuT was the most effective against both HIV and AMV-RT with an apparent K_i of 3 μM for HIV-RT and 20 μM for AMV-RT. AuT acted on the free RT and on the RT-template complex. The active elongation complex was also inhibited by AuT. An aliphatic compound with four carbons and the same prosthetic group was fifty to one hundred times less active than AuT. Analogues lacking Au were not active against either RT.
Conclusion. 1-Aurothioglucose is an highly effective compound which inhibits the initiation and elongation of DNA chains by HIV and AMV-RTs. Unlike nucleoside analogues, this compound does not require cellular phosphorylation to be active and may be useful in the treatment of AIDS and related diseases.

M.C.P.107

ACID-STABLE 2',3'-DIDEOXYPURINE NUCLEOSIDES WITH THE POTENTIAL FOR IMPROVED ANTI-AIDS ACTIVITY IN THE CENTRAL NERVOUS SYSTEM
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Objective. To prepare orally active, acid-stable dideoxypurine nucleosides with partition coefficients in the range log P = -0.5 to +2.5 in order to maximize blood-brain-barrier penetration.
Methods. All of the dideoxypurine nucleosides prepared contain a 2'-fluoro atom in order to stabilize their glycosylic bonds to the acidic conditions which orally administered drugs experience. Compounds are synthesized and evaluated for their ability to protect ATH8 cells from the cytopathogenic effects of HIV. Partition coefficients are calculated. Metabolic studies are performed using both isolated enzyme and cellular systems.
Results. 2',3'-Dideoxy-2'-fluoroarabinofuranosyl purine nucleosides have been designed to evaluate the hypothesis that the partition coefficient of a compound can be correlated with its CSF to plasma ratio and that this information can be used to determine optimum compounds for CNS penetration. 2'-F-dd-ara-A is just as active and potent as ddA in protecting ATH8 cells from HIV and is slightly more lipophilic (log P -0.1 and -0.2 respectively). The corresponding deaminated product, 2'-F-dd-ara-I, is equally active but is less lipophilic (log P ca. -1.0). In order to circumvent deamination and the production of hydrophylic products, the simplest member of this series, 2'-F-dd-nebularine (log P ca. +1.0), was prepared but was found to be inactive. Other compounds in this series have been synthesized and are being evaluated.

M.C.P.108

A NOVEL COMPOUND THAT INHIBITS REVERSE TRANSCRIPTASE
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Objective. We tried to develope new drugs for treatment of AIDS.
Methods and Results. We tested about 500 compounds for anti-HIV activity and found an effective compound. Screening was done using T cell line(MT-2) and HIV-1. This novel compound is a derivative of 4H-quinolizine and its code is KAV-397. KAV-397 suppressed proliferation of HIV-1 in T lymphocyte cell line. When T cells(MT-4) were infected with HIV-1 and co-cultured with KAV-397(4-12 μg/ml)they proliferated without cytopathic effect for 7 days at the same growth rate of uninfected cells. KAV-397 suppressed reverse transcriptase activity of HIV-1. Inhibition of the reverse transcriptase was observed from the concentration of 1 μg/ml in a dose dependent manner. Analyses of mode of action of KAV-397 revealed noncompetitive inhibition of the reverse transcriptase. Further, we tested efficacy of KAV-397 in vivo using mouse retrovirus system. C57/B10 mice were infected with MuLV(LP-BM5) and 5 weeks after infection spleen cells were tested for response to mitogens(PHA and LPS). AZT in drinking water(0.3 mg/ml) was administered to positive control group. KAV-397 was administered intraperitoneously(30 and 100 mg/Kg/day). AZT treatment was effective but KAV-397 had little effect on the immunosuppression induced with LP-BM5. These results indicated limitting efficacy of KAV-397. We are now studying the effect of this compound on other retroviruses.
Conclusion. This compound has possibility of being one of new drugs for treatment of AIDS.

M.C.P.109 CHRONICALLY INFECTED MONOCYTE-MACROPHAGES (Mφ) ARE MARKEDLY LESS SENSITIVE TO ZIDOVUDINE (AZT), FOSCARNET (FOS) AND ALPHA INTERFERON (IFN) WHEN COMPARED TO ACUTELY INFECTED Mφ.

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Objective: Mφ are thought to provide a major reservoir of HIV in vivo. We therefore studied the efficacy of representative antiretroviral drugs in both acutely and chronically HIV-infected mφ.
Methods: Mφ isolated from peripheral blood of HIV seronegative donors were infected in vitro with HIV-DV (multiplicity of one). Antiretroviral was added either at time of infection (acute) or 10-15 days following infection when 25% of mφ contained HIV p24 by cytofluorographic analysis (chronic). Control cultures contained no drug. Inhibition of HIV replication was assessed by measurement of HIV antigen (Abbott ELISA) in culture supernatant and cell lysates, and HIV RNA analysis by slot-blot.
Results: AZT, FOS and IFN markedly inhibited HIV replication in acutely infected mφ; (>90% inhibition with ⩾0.01 ug/ml AZT and ⩾100 ug/ml FOS, 88-99% with 1000 U/ml IFN). Comparable inhibition was seen in synthesis of both extracellular and intracellular HIV antigen, with accompanying suppression of HIV RNA. Chronically infected mφ were markedly less sensitive to these compounds even at high concentration; (<50% inhibition with AZT 50 ug/ml, FOS 100 ug/ml, IFN 1000 U/ml). Slot-blot analysis showed no diminution of RNA in chronically infected mφ.
Conclusion: Acutely infected mφ are susceptible to antiretrovirals; chronically infected mφ (which probably constitute the main in vivo reservoir for HIV) are several orders of magnitude more resistant.

M.C.P.110 COMPUTERIZED QUANTIFICATION OF SYNERGISM/ANTAGONISM OF ANTI-HIV AGENTS

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Objective. To introduce and illustrate computerized simulation of synergism/additivism/antagonism of two or more anti-HIV-agents using the median-effect principle of Chou and Talalay (Adv.Enz.Regul.22:27-55, 1984).
Method. Computer software "Dose-Effect Analysis with Microcomputers" by J. Chou and T.-C. Chou, Elsevier-Biosoft, Cambridge UK, 1986, has been upgraded and used for studying anti-HIV drug interaction in terms of synergism or antagonism for IBM PC, AT, or XT. In addition to automated construction of isobolograms, F_a-CI plot and F_a-CI table for two drugs, the new feature includes, F_a-log(CI) plot, dose-reduction index (DRI), selectivity index (SI), and three-drug combinations.
Results. Using small number of measurements with reverse transcriptase, P_{24} antigen, virus yield and IFA, the following questions about synergism can be studied: 1) the potency of drug(s); 2) the shape of dose-effect curve (m); 3) the variability of data (r); 4) how much synergism? ; 5) the doses at which synergism occurs (D); 6) the effect levels at which synergism occurs (f_a); 7) the optimal dose combination ratio for maximal synergy (ODCR); 8) schedule dependency; and 9) selectivity index (SI) for anti-HIV/cytotoxicity ratio.
Conclusion. Usefulness of MEP and the software have been demonstrated [e.g. Antimicrob. Agent Chemother. 31:168, 1987 (AZT+IFN); 33:53, 1989 (AZT+CAS); Science 235:1376, 1987 (AZT+RBV); and J.Inf.Dis. 158:378, 1988 (ddC+IFN)].

M.C.P.111 POSSIBLE PROTECTIVE EFFECT OF DEHYDROEPIANDROSTERONE (DHEA) AND/OR DHEA-SULFATE (DHEA-S) IN HIV INFECTION

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Objective. Since DHEA has been reported to have immunomodulatory/antiviral activity, we studied 1) the relationship between endogenous DHEA-S levels (DHEA is rapidly converted *in vivo* to DHEA-S) and HIV infection and 2) the *in vitro* effect of DHEA on HIV-infected macrophages.
Methods. DHEA-S was measured by RIA and HIV antibody assayed by two ELISA techniques (positive [+] results confirmed by Western blot) in coded serum samples obtained from 5 groups of men who were age-matched within 3 years. *In vitro*, human macrophages exposed to HIV (one $TCID_{50}$ unit/cell) for 1 hour were cultured with various DHEA dilutions. Supernatants were assayed for p24 antigen at 9 days and % inhibition of p24 compared to untreated controls.
Results. Group I (24 HIV- homosexuals who sought medical advice regarding a possible AIDS diagnosis) had a mean (±SD) serum DHEA-S level of 5.97 (±3.01) ug/ml, compared with Group II's (24 healthy HIV+ homosexuals) mean level of 2.20 (±1.33) ug/ml (p<.0001), Group III's (24 HIV+ ARC patients) mean of 2.12 (±1.35) ug/ml (p<.0001), Group IV's (24 HIV+ AIDS patients) mean of 2.51 (±1.74) ug/ml (p<.0001), and Group V's (48 HIV- healthy blood donors) mean of 3.19 (±1.58) ug/ml (p=.0002). *In vitro*, 50% inhibition of macrophage HIV p24 expression occurred at DHEA concentrations of 3-30 ug/ml.
Conclusion. At-risk HIV seronegative homosexual men had a significantly higher serum DHEA-S level than age-matched HIV+ men or healthy HIV- blood donors. DHEA also modestly inhibited HIV replication *in vitro* in human macrophages. DHEA/DHEA-S may have a protective effect in HIV infection.

M.C.P.112 SOMATOSTATIN ANALOG INHIBITS HIV-1 REPLICATION IN A HUMAN MONOCYTIC CELL LINE.

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Objective: Sandostatin is a long-acting somatostatin analog used to treat the diarrhea of AIDS patients. Because this diarrhea could directly involve the HIV-1 retrovirus, we have investigated the anti-viral potential of Sandostatin in monocytes.
Methods: Five different concentrations of Sandostatin (Sandoz; SMS 201-995), ranging from 10^{-6} M to 10^{-14} M were tested on the U-937 monocytic cell line. In one protocol, cells received drug for 24 hours prior to infection with the HTLV-III_B strain of HIV-1. Alternatively, cells were treated with drug at the time of infection and thereafter pulsed daily or every three days. Viral replication was assessed by each of indirect immunofluorescence, reverse transcriptase assay and antigen capture (p24) assay.
Results: Somatostatin inhibited HIV-1 replication by up to 85% in acutely-infected U-937 cells. This inhibition was not dose-dependent at the range of drug doses used. Similar levels of inhibition were obtained regardless which treatment protocol was employed.
Conclusion: The long-acting somatostatin analog, Sandostatin, is effective against HIV-1 replication in a human monocytic cell line. These results reinforce the multiple potential of this analog as a therapeutic drug in AIDS patients.

M.C.P.113 ANALYSIS OF THE EFFECT OF ACETAMINOPHEN ON ZIDOVUDINE PHARMACOKINETICS IN HIV INFECTED PATIENTS

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Objective. To determine if acetaminophen (A) affects the pharmacokinetics of zidovudine (Z) in HIV infected patients.
Methods. HIV infected patients being treated with zidovudine were entered into a 2 phase trial of oral Z alone followed by concomitant oral Z/A administration. Patients abstained from food for 12 hours prior to the morning 200mg Z dose. In both phases Z levels were obtained at trough, .25, .5, .75, 1.0, 1.25, 1.5, 2.0, 2.5, 3 and 4 hours after the dose. In the Z/A phase, A (650mg) was initiated 48 hrs prior to [Z] analysis given every 6 hrs and 2.5 and 0.5 hrs prior to Z administration.
Results.

		Patient A	Patient B	Reported
Peak Time (hr)	Z	0.5	0.3	
	Z/A	0.5	0.3	0.5 - 1.5
Peak (mcg/ml)	Z	1.67	1.31	
	Z/A	1.14	0.91	0.05 - 1.46
Half Life (hrs)	Z	1.2	0.8	
	Z/A	1.0	0.5	0.78 - 1.93
AUC (mM/L x hr^{-1})	Z	8.47	2.83	
	Z/A	6.22	1.39	

Conclusions. Observations from preliminary data from two patients have not demonstrated an acetaminophen interaction with zidovudine's pharmacokinetic processes of absorption, distribution or elimination.

M.C.P.114 COMPARATIVE EVALUATION OF THREE THYMIDINE ANALOGS (D4T, FDDT AND AZT) ACTIVE AGAINST HIV

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Objective: To evaluate the pyrimidine nucleoside analogs d4T and FddT as potential anti-AIDS drugs.
Methods: The anti-HIV effect of the title nucleosides was studied in HIV infected CEM cell line. The corresponding 5′-triphosphates were prepared and Ki′s with HIV RT established both with RNA and DNA oligonucleotide templates. In vitro cell toxicity of d4T, FddT and AZT was compared in CEM cells as well as in the human bone marrow progenitor cells (granulocyte-monocyte colony forming units and erythrocyte burst forming units). In vivo toxicity of d4T, FddT and AZT was evaluated in a 30 day mouse toxicity study at 100 - 1000mg/kg/day. Histopatological and hematological changes in the mice were examined at the end of the study.
Results: 1-(2,3-Dideoxy-β-D-glycero-pent-2-enofuranosyl)thymine (d4T) and 1-(2,3-dideoxy-3-fluoro-β-D--ribofuranosyl)thymine (FddT) were found to be potent in vitro inhibitors of the HIV multiplication. In vitro and in vivo toxicology studies point to profound toxic effects of FddT at most evaluated doses.

TABLE

Compound	ID_{50}(µM)	$TCID_{50}$(µM)	Ki(µM)	$GM\text{-}CFU_{50}$(µM)	E-BFU(µM)
d4T	.15-.33	90	.03-1	100	10
FddT	.007-.1	51-73	.26	10	1
AZT	.16-.45	29-54	.004-.02	1	6.7

Conclusions : D4T and FddT are potent inhibitors of HIV in vitro with d4T exhibiting much lower toxicity in vitro and in vivo. These data form a basis for further evaluation of d4T as a drug against HIV infection.

M.C.P.115 ANTI-HIV-1 ACTIVITIES OF ANTHRAQUINONE DERIVATIVES IN VITRO

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Objective. As a part of our efforts to discover novel anti-HIV agents, a series of anthraquinone derivatives have been screened against HIV-1.
Methods. Peripheral blood mononuclear cells were infected with HIV-1 and cultured in the presence and absence of various concentrations of compounds. Six days later the reverse transcriptase activity was determined as a measure of antiviral activity.
Results. In order to determine the structure-activity relationships, various anthraquinones substituted with OH, NH2, SO3Na, halogens, aromatic, amines, etc., were evaluated against HIV-1. Among these, poly-phenolic and/or poly-sulfate substituted anthraquinones were found to be most potent, such as 1,2,5,8-tetrahydroxyanthraquinone(EC50=3.29µM), 1,2,4-trihydroxyanthraquinone(EC50=3.44 µM), 3,4-dihydroxy-9,10-dioxo-2-anthracenesulfonic acid (EC50=3.48 µM). Amino or halogen substituted anthraquinones exhibit low activity. None of the active compounds were toxic at 100 µM. Hypericin, an anthraquinone dimer exhibited a potent anti-HIV-1 activity (EC50=0.44 µM) in this screening system.
Conclusion. A new class of anti-HIV agents with modest activity has been identified. Further study of structure-activity relationships and the mechanism of action are warranted. (Supported by USPHS Grant AI 26055, AI 25899 and the Veterans Administration)

M.C.P.116 AZIDOTHYMIDINE(AZT)-ALPHA-INTERFERON(IFN) COMBINATION THERAPY REDUCES P24 ANTIGENEMIA.

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We report an ongoing phase II dose-escalating/de-escalating trial of IFN in combination with AZT in patients with p24 antigenemia (>45 pg/ml) and AIDS, ARC, or a CD4 count <250/mm^3. Patients with opportunistic infections (OIs), lymphoma, or progressive Kaposi's sarcoma are excluded. All patients must be p24 Ag(+) after at least 6-8 weeks of AZT monotherapy to be eligible. Patients are followed with monthly physicals, CD4 counts, and plasma p24 Ag and B$_2$-microglobulin levels. So far 9 patients have been followed for 7 to 32 weeks of therapy with 600-1200 mg/d of AZT and 1.25-7.5x10^6 u/m^2 of IFN s.c. 3x/wk. A mean reduction in plasma p24 Ag of 45% has been seen in 8 of 9 patients, at a median of 7 weeks. In the 4 followed more than 8 weeks on IFN, a mean reduction in p24 Ag of 58% occurred at a median of 17 weeks. Higher initial CD4 counts predicted greater % reductions in p24 Ag. CD4 counts fell and B$_2$-microglobulin levels rose on therapy. Side effects required IFN dose modification in 6 of 9 patients. In 40 patient-months, no severe OIs occurred. In all 4 patients followed for more than 8 weeks, an initial decline in p24 Ag at 8-15 weeks was followed by a rise toward pre-treatment values at 19-27 weeks. This rise correlated with a fall in %CD4 to below 10%.

We conclude that AZT-IFN therapy is associated with an initial reduction in p24 Ag, a very low incidence of OIs, and a moderate frequency of side effects requiring dose modification. Correlation of a late rise in p24 Ag with a fall in CD4% suggests that early antiviral effects of IFN may be overcome by later immunosuppressive effects.

M.C.P.117 CASTANOSPERMINE ANALOGS AS POTENT INHIBITORS OF HUMAN IMMUNODEFICIENCY VIRUS (HIV)

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The objective of the present investigation was to develop potent inhibitors of glycosidases as potential anti-HIV agents. Several analogs of the known inhibitor, castanospermine (CAST), were synthesized and evaluated for their inhibitory effect on glycosidases and for antiviral activity against Moloney murine leukemia virus (MOLV) in the XC plaque assay. The IC$_{50}$ values of these inhibitors against the enzyme and MOLV ranged from 0.8 - 50 µg/ml and 0.05->10 µg/ml, respectively, compared to 10 and 1.2 µg/ml for CAST. The most effective analog was 6-O-butyryl CAST with an IC$_{50}$ of 0.05 µg/ml against MOLV. A good correlation between inhibition of glycosidase and MOLV replication was observed. The active analogs were further evaluated against HIV-induced syncytial formation in HeLa T^{+} cells and against productive infection in JM cells infected with HIV 1 (GB8 strain). The analogs showed IC$_{50}$'s between 0.3 - 27 µg/ml in the HeLa T^{+} assay, compared to CAST at 11 µg/ml. These compounds also showed good activity (IC$_{50}$ = 0.15 - 6.7 µg/ml) in JM cells. In both of these HIV assays, the 6-O-butyryl analog was the most effective, (IC$_{50}$ = 0.15 µg/ml) compared to CAST (10 µg/ml). These data and cytotoxicity studies indicated a therapeutic index of >2000 for the 6-O-butyryl CAST compared to 500 for CAST. These observations were further confirmed by investigation of the 6-O-butyrate against Friend leukemia virus infection in mice. CAST and the 6-O-butyryl analog, when administered at a dose range of 50-200 mg/kg/day i.p for 14 days, reduced the splenomegaly by 0-15% and 60-81%, respectively. These observations demonstrate the potential of the novel glycosidase inhibitors as chemotherapeutic agents in AIDS.

M.C.P.118 ANTI-HIV REVERSE TRANSCRIPTASE AND ANTI-HIV ACTIVITIES OF PC6

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Previously we have shown that PC6, a partially purified extract from cones of pinus parvifloria Sieb et Zucc, inhibited HIV-1 replication in CEM, H-9 and U937 cells. Here we show that PC6 has anti-HIV-1 reverse transcriptase (RT), anti-AMV-RT activities. Addition of PC6 to the reaction mixture of the RT assay inhibited HIV-1-RT and AMV-RT activities. Gel-retardation assay showed that PC6 did not bind to DNA or the template. Competition assay revealed that PC6 directly impact on HIV and AMV RTs. The anti-RT active component(s) in PC6 could be removed by an affinity column of CEM cells. Sequential Tris-glycine (0.1M, pH 3.0 and 0.1M, pH 8.0) elution did not recover the anti-RT component(s), but the eluate contained anti-HIV activity. The replication of HIV in CEM cells was inhibited after exposure of the infected cells to the eluate (3µg/ml). Thus, PC6 contains 2 active components: an anti-RT component and an anti-HIV component that had no impact on HIV-RT. Further purification of these active components in PC6 is in progress.

M.C.P.119 EFFECT OF CHLOROQUINE ON HIV1 INFECTION OF MONOCYTES

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Objective : Ultrastructural analysis of HIV infection of monocytes.
Methods : Monocytes were isolated from normal donor blood samples by Hypaque-Ficoll sedimentation and sepracell, then incubated with virus in presence or in absence of chloroquine (120 micromoles for a period of 6 hours or 50 micromoles overnight). Cytological study was performed with electron microscopical techniques.
Results : The treatment of HIV infected monocytes by chloroquine resulted in the formation of intracellular vacuoles containing virions in various stages of degradation similar to those observed in SFV infected cells treated with lysosomotropic agents (1) and in HSV infected cells expressing a glycoprotein that interferes with the fusion reaction of virion envelope with the cell membrane (2). By contrast such intravacuolar accumulations of virions were not observed in HIV infected monocytes not treated by the drug.
Conclusion : These preliminary data suggest that chloroquine may affect the penetration of HIV into the cytoplasm of monocytes.

(1) Helenius et al, 1982, J. Gen. Virol. 58, 47-61.
(2) Campadelli-Fiume et al. 1988, J. Virol. Jan, 159-167.

M.C.P.120 CELLULAR PHARMACOLOGY OF ANTI-HIV AGENTS AZIDOTHYMIDINE (AZT) AND 2',3'-DIDEHYDROTHYMIDINE (D4T) IN HUMAN T CELLS

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Objective. AZT is the first effective agent in the treatment of AIDS. However, bone marrow toxicity and anemia is a severe adverse effect of AZT therapy. This toxicity has been linked to depletion of deoxynucleoside triphosphate (dNTP) for DNA synthesis. This study compared the metabolism and inhibitory effects of AZT and that of its analog D4T in human T cells CCRF-CEM.
Results. The concentration of the drugs required to inhibit cell growth by 50% (EC$_{50}$) was significantly lower when the cells were exposed to AZT and D4T for 24 h (EC$_{50}$=40 and 25 µM, respectively) than 48 h (EC$_{50}$=125 and 55 µM). Inhibition of DNA synthesis induced by either drug did not correlate with dNTP depletion in cells. The 5'-phosphate of AZT (AZTMP) was the major metabolite (>99%) reaching 300-fold greater cellular concentration than that observed with D4T at equimolar concentration of the two drugs. Cells incubated with 25 µM AZT accumulated >1 mM AZTMP after 4 h while both AZTDP and AZTTP plateaud at about 5 µM. After this period there was a rapid decrease in AZTMP accumulation to one third its initial level by 24 h, while both AZTDP and AZTTP appeared stable. D4T is a poorer substrate than AZT for the cellular kinase but produced considerably higher level of the analog triphosphate in CEM cells at equimolar concentration of the two drugs.
Conclusion. These results do not support the notion that depletion of dNTPs is a primary cause for the toxicity of AZT or D4T and suggest that the analog triphosphate levels are the important determinants of cellular sensitivity to these drugs. (Supported by NIH grant CA43296, CA21765 and by the American Lebanese Syrian Associated Charities.)

M.C.P.121 ANTI-HIV ACTIVITIES OF A NOVEL NUCLEOSIDE OXETANOCIN AND ITS DERIVATIVES

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Objective. Oxetanocin (OXT-A) is a nucleoside containing a 4-membered sugar and adenine. We modified OXT-A at the sugar or base moiety and examined effects of OXT-A and its derivatives on life cycle of HIV. Methods. 1)Oxetanocins: OXT-A is produced by B. Megatherium. Its derivatives were produced chemically or enzymatically. 2)Infectivity assay by IFA: MT-4 cells were infected with HTLV-III$_B$. Four days later, the expression of HIV antigen in MT-4 cells was examined by IFA. 3)Syncytium assay: Molt-4 cells and Molt-4/HTLV-III$_B$ cells were cocultured for 22 hours and the number of syncytia formed was counted. 4)Southern blot assay: MT-4 cells were infected with HTLV-III$_B$ at m.o.i. 15-30. After incubation for several hours, DNA was extracted from the cells. 5)HIV RT assay: HIV RT was assayed using poly(dT)-oligo(dA) or poly(rA)-oligo(dT) as a template-primer. Results. Oxetanocins inhibited the expression of HIV antigen in MT-4 cells after de novo infection and the synthesis of viral DNA at non-cytotoxic concentration, but not syncytium formation. Triphosphate form of OXT-A inhibited HIV RT activity. Some of derivatives changed at the sugar moiety had much stronger anti-HIV activities than OXT-A. Conclusion. Oxetanocins exerted anti-HIV activities by inhibiting the synthesis of proviral DNA. This inhibition was suggested to be due to formation of oxetanocin triphosphates in the cells.

M.C.P.122 COMPUTER ASSISTED STRUCTURE-ACTIVITY CORRELATIONS OF POTENTIAL ANTI-HIV DRUGS

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Objective: to avoid duplication in synthesis of novel compounds, to indicate more productive research directions, and to disseminate that information in an international forum. Methods: data retrieval from our computerized data base which contains information on published active and inactive anti-HIV compounds was used to analyze structure-activity relationships among more than 300 pyrimidine and purine nucleosides and their carbocyclic and acyclic analogs. Results: the sugar moiety has been the subject of modifications including degree of saturation, configuration, and acyclic or carbocyclic replacement, while modifications have been made to substituents on the pyrimidine or purine ring systems. Active pyrimidine nucleosides have a preference for a 3'-azido or fluoro substituent in the exo configuration, in the presence of a 5-methyl substitution. A 2',3'-double bond, while enhancing the anti-HIV activity of certain nucleosides, did not enhance activity among other related nucleosides. A 3'-fluorine enhances activity, while a 3'-Cl, Br or I gave inactive compounds. The only active acyclic nucleosides reported so far have a phosphonate group in the aliphatic side chain. Only a few aza and deaza-2',3'-dideoxynucleosides have been reported and all have been inactive. A comparison of the in vitro activity of a series of nucleosides in different cell lines (MT-4, ATH8,PBM, MuLV) will be presented. Conclusion: structure activity correlations can be used to effectively avoid duplication of chemical syntheses, and to indicate more productive directions for AIDS drug development research.

M.C.P.123 DISCOVERY AND DEVELOPMENT OF THERAPIES FOR AIDS AND ITS SEQUELA

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Objective. Through the AIDS Program, the NIH has established programs to assist international efforts to identify and develop novel therapies for HIV infection and associated opportunistic infections (OIs). Methods. The Developmental Therapeutics Branch, AIDS Program, NIAID was established in 1987. Major thrusts include the National Cooperative Drug Discovery Group (NCDDG) Program for the Treatment of AIDS (NCDDG-AIDS) and the new NCDDG Program for the Treatment of OIs (NCDDG-OI). These collaborative agreements foster interactions between academic, industrial and government scientists and pool diverse talents and resources to discover new potential therapies. Initiatives to complement these efforts include an animal models program for evaluating potential therapies and immunomodulators and the NIH AIDS Research and Reference Reagent Program. Results. The NCDDG program has been recognised by academia and industry as an innovative and comprehensive model by which the government may assist basic and applied research efforts to discover new potential therapies. This program has been highly successful, already having identified 3 new compounds that will enter clinical trial and that will by discussed. Conclusions. These broad-based efforts permit AIDS Program staff to assess current approaches and identify areas that require additional effort. A better understanding of these resources, programs and future initiatives on the part of investigators worldwide will facilitate expansion of this international effort and stimulate the discovery and development of better therapies for AIDS and the OIs associated with AIDS.

M.C.P.124 INHIBITORY EFFECTS OF UNSATURATED PHOSPHOLIPIDS ON HIV PRODUCTION IN VITRO

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Plant phosphatidylinositol (PPI) containing two or more sites of unsaturation in the sn-2 fatty acid is cytotoxic to many tumor cell lines in culture (e.g. multidrug resistant tumor cells, IC_{50}=1-2μM) which may be due to interference with certain signal transduction pathways.[3] Because the production of human immunodeficiency virus (HIV) requires activation of cells, we examined several phospholipid formulations for their ability to inhibit HIV production from HIV-infected T cell tumors in vitro. PPI, phosphatidylcholine, and phosphatidylethanolamine with the same unsaturation pattern exhibited similar anti-HIV activity as assessed by the production of p24 antigen (IC_{50}=16-20mM). Phospholipids containing fully saturated fatty acids did not have anti-HIV effects. After 4 days in culture, the active compounds also caused reduction in ^{3}H-thymidine incorporation at concentrations above 25μM due to a reduction in numbers but not viability of cells. The reduction in ^{3}H-thymidine incorporation in the infected cells was at least 2-fold greater than the effect on uninfected cells. The compounds failed to inhibit syncytia formation between infected and uninfected CD4^{+} cells suggesting that the mode of action was not to inhibit HIV binding to susceptible cells. The mechanisms responsible for the reduction in HIV production are not clear, but it may be that HIV severely alters certain metabolic activation pathways in infected cells and continued production of HIV is contingent upon the proper functioning of these signal transduction pathways.

M.C.P.125 FURTHER STUDIES ON THE POTENT ANTIVIRAL SYNERGISM OF CARBOVIR AND AZT AGAINST HUMAN IMMUNODEFICIENCY VIRUS (HIV) IN VITRO.

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The marked antiviral synergism of the carbocyclic analog of 2',3'-dideoxy-2',3'-didehydroguanosine (Carbovir) and 3'-azido-3'deoxythymidine (AZT; Retrovir) combination against human immunodeficiency virus (HIV) replication in MT-2 cells was reported earlier (Shannon et al., IV Intl. Conf. on AIDS, Stockholm, Sweden, 1988). We have further characterized and optimized the effects of these potent anti-HIV drugs when used in combination. Additional experiments have confirmed the potent synergistic activity of Carbovir + AZT combinations, have established the optimal ratio of the two drugs for maximum effectiveness, and have compared the synergistic efficacy of the two-drug combination in different cell lines. Using the Chou and Talalay equations for the analysis of multiple drug effects, it was established that the optimal combination ratio is 1:0.032 (Carbovir:AZT). The median-effect plots indicate that the two drugs are mutually nonexclusive. FA-CI plots and conservative isobolograms indicate synergism at all levels. The antiviral selectivity of the optimal Carbovir + AZT combination was examined quantitatively and it was found that the anti-HIV effect is achieved with less-than-additive cytotoxicity. Data will be presented on the synergistic inhibition of HIV production in H9 cells by Carbovir + AZT combinations using reverse transcriptase levels and p24 gag protein expression as the endpoints.

M.C.P.126 QUANTITATIVE ANALYSIS OF HIV-1 EXPRESSION USING MAGNETIC PARTICLE RNA-RNA HYBRIDIZATION: APPLICATION TO ANTI-HIV DRUG SCREENING.

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Objective. To demonstrate the utility of an unique hybridization assay for the quantitative detection of RNA transcripts of the human immunodeficiency virus-1 (HIV-1) *pol* gene. Methods. HIV-1 infected cells *in vitro* were quickly prepared by solubilization in the chaotropic salt, guanidine thiocyanate (GuSCN). GuSCN lysates were mixed with specific HIV-1 probes: poly(dA) oligomer capture probes and a [^{125}I]CMP RNA detector probe. Viral nucleic acid target-probe complexes were bound to, or captured by oligo(dT) magnetic particles and repeatedly cycled by washing, eluting and recapturing, effectively reducing nonspecific background levels. Results. CR10, or H9 cells, infected with the HIV-1N1A, or HTLV-IIIb isolate, respectively, were treated with azidothymidine (AZT) or dideoxycytidine (DDC) and HIV RNA levels were measured, as well as HIV antigen by immunofluorescence (IF). The results for the IIIb isolate are shown:

days postinfection		μmolar AZT				μmolar DDC				no drug
		100	10	1.0	0.01	1000	100	10	0.01	
Day 2	RNA (pg/2x10^5 cells)	6	10	11	15	0	2	2	22	88
	% cells IF positive	0	0	0	0	0	0	0	0	4
Day 4	RNA (pg/2x10^5 cells)	4	7	12	31	0	0	1	37	440
	% cells IF positive	0	0	0	3	0	0	0	1	54

Conclusions. The data demonstrate the sensitivity of an unique nucleic acid hybridization assay for both the rapid and quantitative determination of intracellular levels of HIV-1 RNA, and its use in anti-viral drug screening.

M.C.P.127 PHARMACOKINETICS OF RECOMBINANT SOLUBLE CD4 (sT4) IN CYNOMOLGUS MONKEYS FOLLOWING INTRAVENOUS ADMINISTRATION

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Objective. To characterize the pharmacokinetics of recombinant soluble CD4 (sT4) protein in cynomolgus monkey to assist in the design of initial sT4 clinical trials.
Methods. SK&F sT4 and ^{125}I-labeled SK&F sT4 were administered as a single 300 ug/kg bolus intravenous dose in 4 conscious male cynomolgus monkeys. Blood samples were collected up to 6 hours post-dosing and analyzed for plasma TCA precipitable radiolabel, plasma sT4 concentration by a gp120 domain specific Leu3A ELISA (as a measure of sT4 functional activity), and total sT4 antigen by a non-specific polyclonal anti-sT4 ELISA in plasma.
Results. Following administration of SK&F sT4, the plasma concentration time profiles based on Leu3A and non-specific ELISA were similar, and displayed two elimination phases. Based on Leu3A ELISA, the mean $t_{1/2}\alpha$ was 17.24 min and mean $t_{1/2}\beta$ was 66.56 min. The mean ± SD plasma systemic clearance (Cls) and volume of distribution at steady state (VDss) were 1.80 ± 0.19 ml/min/kg and 53.8 ± 9.8 ml/kg, respectively. The mean AUC in the α-phase represented the majority (93.3%) of the total AUC from time zero to infinity. Consequently, most of the sT4 was eliminated in the α-phase. Based on polyclonal anti-sT4 ELISA, the mean $t_{1/2}\alpha$ was 16.75 min and mean $t_{1/2}\beta$ was 69.03 min. Elimination of plasma TCA precipitable radiolabel was also biphasic, with a $t_{1/2}\alpha$ of 13.3 min and a prolonged $t_{1/2}\beta$ of 169.2 min. The %AUC of TCA precipitable radiolabel in the β-phase was 76.5%. Plasma sT4 concentrations measured by either ELISA accounted for 80-100% of TCA precipitable radiolabel during the initial 30 min post dose, but represented less than 3% of TCA precipitable radiolabel by 180 min. The VDss was similar to the plasma volume of monkeys, suggesting that extravascular distribution is kinetically insignificant. Results also suggest that SK&F sT4 is metabolized rapidly to inactive molecules that have longer circulating half-lives than the parent molecule.
Conclusions. Although sT4 has a relatively small systemic clearance in cynomolgus monkey, it also displays an extremely small volume of distribution which together result in a short biological half-life. These studies suggest that the sT4 half-life in man may also be very short, and continuous infusion would be required to establish and maintain a desired blood concentration during sT4 treatment.

M.C.P.128 STRONG SYNERGISTIC ANTI-HIV ACTIVITY OF A PURINE AND A PYRIMIDINE NUCLEOSIDE ANALOG, ddI AND d4T

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Objective. Assessment of potentially effective nucleoside combinations is essential for the development of successful anti-HIV therapies. Our objective was to evaluate the in vitro effects of combinations of dideoxydidehydeothymidine (d4T) and dideoxyinosine (ddI), both selective anti-HIV drugs, with respect to their anti-HIV effect and cytotoxicity.
Methods. CEM cells (lymphoblastoid T cell line) were infected with HIV, and exposed to varying concentrations of d4T, ddI and their combinations. After six days in culture, supernatants are analysed for p25gag viral protein. The toxicity is determined in uninfected CEM cells by ^{3}HTdR incorporation. The results are expressed as virus effective dose (ED_{50}), toxic dose (TD50), selectivity index ($SI=TD_{50}/ED_{50}$), and combination index (CI). The CI values of <1, $=1$, and >1 indicate synergy, additivism and antagonism respectively (Chou, J., and T.C. Chou, Elsevier Science Publishers, 1986).
Results. The ED_{50} for d4T, ddI and d4T+ddI were 5, 32 and 0.2 uM. The TD_{50} values for d4T and ddI were >100 uM, while d4T+ddI was 730 uM. The combination indices for d4T+ddI were CI_{ED50} was 0.024, and CI_{TD50} was 2.2. These results indicate that the d4T+ddI combinations act synergistically to inhibit the HIV replication. The same drug combination is not synergistic in case of toxicity against CEM cells ($CI>1$).
Concluison. Our data show that the combination of d4T and ddI synergistically inhibit the HIV, while the same combination shows no synergistic toxicity against CEM cells. Since both d4T and ddI are potential new anti-HIV agents for in vivo use, these resulcs have important clinical implicaitons.

M.C.P.129 THE CONSTRUCTION AND CHARACTERIZATION OF IMMUNOTOXINS SPECIFIC FOR HIV-INFECTED CELLS.

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Objective. The purpose of this work was to prepare three conjugates (immunotoxins) between recombinant CD4 (rCD4) and deglycosylated ricin A chain (dgA) that vary in the linkage between the two components and then to compare their structure, biological activity and *in vivo* behavior.
Methods. The conjugates were constructed with N-succinimidyl-S-thioacetate (SATA), N-succinimidyl-oxycarbonyl-A-methyl-A-(2-pyridyldithio)toluene (SMPT), or N-succinimidyl-(4-carboxy-cyclohexyl-methyl)-maleimide) (SMCC).
Results. All three conjugates have a Mr of 80 Kd and contain a single rCD4 and a single dgA molecule. The affinity constant of the rCD4-dgA conjugates for recombinant gp120 (rgp120) was approximately half that of the initial rCD4 (2 x $10^{8}M^{-1}$). Both conjugates prepared with a disulfide bond between rCD4 and dgA (SATA and SMPT) were equally toxic to HIV-infected H9 cells *in vitro* and 1000-fold less toxic to uninfected cells. The rCD4-dgA constructed with a thioether bond between the rCD4 and dgA (SMCC) was not toxic to HIV-infected cells even though it could bind to rgp120. In mice, the rCD4-SATA-dgA conjugate showed reduced nonspecific uptake in the liver and spleen as compared to rCD4-SMPT-dgA, but more rapidly accumulated (and presumably cleared) in the kidney than the SMPT-derived conjugate.
Conclusion. The results suggest that the rCD4-SATA-dgA would be the conjugate of choice for further development as a potential therapeutic reagent to treat HIV infection.

M.C.P.130 PHASE I STUDY OF 2'3'DIDEOXYINOSINE(ddI) ADMINISTERED TWICE DAILY TO PATIENTS WITH AIDS/AIDS RELATED COMPLEX

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Objective: To determine the maximum tolerated dose (MTD) and pharmacokinetics of ddI in patients with AIDS or AIDS related complex (ARC).
Methods: In a phase I trial, ddI is being administered IV for 2 weeks and po for 8-15 weeks to patients with AIDS or ARC at escalating dose levels. Initial doses were 0.4 mg/kg IV q12h followed by 0.8 mg/kg po q12h, and have currently been escalated to 3.0 mg/kg IV and 6 mg/kg po, with additional escalations being planned until the MTD is reached. Clinical, pharmacokinetic, and laboratory parameters are being followed, including serial HIV cultures, serum p24 antigen and lymphocyte markers.
Results: 12 patients have been studied for 2-15 weeks, including 3 at the 3 mg/kg IV dose. ddI has been well tolerated at all dose levels without adverse clinical effects. There have been no significant effects on Hb, WBC, liver function tests, BUN or platelets, except for 1 subject at the initial dose level who developed thrombocytopenia, possibly related to ddI. Of patients followed for at least 10 weeks, 2/6 had an increase in CD4 cells/ml, from 106 to 160 and from 237 to 513, and one had a serum p24 antigen decrease from 215 pg/ml to 134. At 1.0 mg/kg IV and 2.0 mg/kg po, the Cmax was 980 and 812 ng/ml. The Tmax was 0.82 hrs after oral dosing.
Conclusion: Up to doses currently administered, ddI appears to be well tolerated in terms of both clinical and laboratory parameters. Comparable plasma concentrations are achieved when twice the IV dose is given orally. Additional dose escalations to reach the MTD are underway.

M.C.P.131 DEVELOPMENT OF AN IN VITRO HUMAN MONOCYTE-DERIVED MACROPHAGE (MDM)-BASED SYSTEM FOR DRUG SCREENING AGAINST HIV-1

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Objective. To develop a human MDM-based system for assessing in vitro anti-HIV-1 activity of candidate drugs for the treatment of HIV infection.
Methods. MDM-enriched populations of peripheral blood leukocytes from HIV-seronegative donors prepared by elutriation or adherence were seeded in 24- or 96-well plates, preincubated for 1 hour in the presence of 10-fold dilutions of experimental drugs, and infected with a monocytotropic HIV-1 isolate (HIV_{Ada}). Culture supernatants were serially assessed for p24 antigen by ELISA-capture.
Results. AZT, phosphonoformate (PFA), and 3'-fluorothymidine (3'-F-TdR) strongly inhibited HIV-1 infection in MDM.

Compound	ED_{50} range (uM)
AZT	0.015-0.139
PFA	5.27-11.63
3'-F-TdR	0.026-0.088

No cytotoxicity attributable to the drugs was observed.
Conclusions. In vitro anti-HIV-1 activity of experimental drugs may be rapidly assessed in this human MDM-based system. HIV-1 infection of MDM is inhibited by concentrations of these drugs reported effective in T-lymphocyte cultures.

M.C.P.132 POLYVINYL ALCOHOL MEMBRANE PERMEABILITY CHARACTERISTICS OF ZIDOVUDINE

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Zidovudine (Retrovir) is an anti retroviral drug that is active against human immunodeficiency virus (HIV). It is a thymidine analogue that interferes with the HIV viral RNA dependent DNA polymerase and thus inhibits viral replication. In order to function in this way the drug must be constantly available for incorporation by the virus. Tissue culture studies have suggested that low levels (0.13ug/ml) of Retrovir are effective in blocking replication of HIV. These studies have also demonstrated toxic effects to bone marrow cell lines at levels of 1.25ug/ml. The drug is rapidly metabolized and excreted resulting in a serum half-life of about 1 hour. In order to sustain levels throughout the day relatively large oral or intravenous doses must be given. This method of drug delivery has the potential for toxic peak and subtherapeutic trough drug levels. There is no evidence that periodic pulsing of drugs that act as blockers of viral replication is necessary or helpful. An ideal type of delivery system would achieve a sustained therapeutic level which does not reach toxic or fall below effective levels. We have been investigating the permeability characteristics of Retrovir through polyvinyl alcohol (PVA) membranes. PVA membranes were prepared from 2% (w/v) PVA and then heat treated at 200 C for 2 hours to alter the permeability characteristics of the membrane. Diffusion cell studies demonstrate zero order release of Retrovir through heat treated PVA membranes. We believe that a PVA membrane based delivery system may be useful for obtaining therapeutic, non-toxic levels of Retrovir in AIDS patients.

M.C.P.133 EFFECT OF ORGANIC ARSENICALS ON PRODUCTIVE INFECTION OF HIV.

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Objective. To study the anti-HIV effect of oxophenarsine and other structurally related organic arsenical compounds.
Methods. Various concentrations of arsenical drugs were added to the culture medium after infection of H9 cells or PHA-stimulated lymphocytes with HIV. Production of HIV was monitored by the antigen capture test. The effect of drugs on the production of HIV from persistently infected H9 cells was monitored not only by the antigen capture test, but also by reverse transcriptase and infectivity assays.
Results. Oxophenarsine, a trivalent arsenical compound, in concentrations as low as 0.035 ug/ml, inhibited in vitro infection of blood lymphocytes and H9 cells by HIV. The drug also blocked the production of HIV from lymphocytes of seropositive men cocultivated with PHA-stimulated normal donor lymphocytes and depressed the production of HIV from the persistently infected H9 cell line. Zidovudine, the only FDA-approved anti-HIV drug, had no antiviral effect in cells persistently infected with HIV. Seven other pentavalent organic arsenicals whose structures are very similar to oxophenarsine were also tested for their in vitro anti-HIV properties. Of these seven compounds, one compound had identical organic structure as oxophenarsine except that it carried pentavalent, instead of trivalent, arsenic. However, none of these seven drugs had an anti-HIV effect in H9 cells.
Conclusion. Oxophenarsine is a potent anti-HIV drug. Oxophenarsine is a U.S. FDA approved drug for the treatment of syphilis. It was used extensively before the discovery of penicillin. Presence of trivalent arsenic in oxophenarsine may be crucial for its anti-HIV property.

M.C.P.135 CARBOCYCLIC OXETANOCIN ANALOGUES THAT INHIBIT DE NOVO REPLICATION OF HUMAN IMMUNODEFICIENCY VIRUS IN T-CELLS AND MONOCYTES/MACROPHAGES IN VITRO.

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Objective. Two newly synthesized carbocyclic oxetanocin analogues, ±9-[2',3'-bis(hydroxymethyl)-1'-cyclobutyl]adenine (cA) and ±9-[2',3'-bis(hydroxymethyl)-1'-cyclobutyl]guanine (cG), were tested for activity against the infection of human immunodeficiency virus (HIV) in vitro.
Methods. In an HIV cytopathic effect inhibition assay, target $CD4^+$ T-cells were exposed to HIV-1 or HIV-2, cultured with/without drugs, and the viable cell number was determined. The expression of p24 gag protein and proviral DNA synthesis were also assessed.
Results. Both compounds, cA and cG, were found to be capable of protecting T-cell lines against the infectivity and cytopathic effect of HIV-1; inhibiting the expression of p24 gag protein; and suppressing the proviral DNA synthesis in vitro at concentrations 50-100μM. These compounds also inhibited the in vitro infectivity of HIV-2. Moreover, both cA and cG virtually completely suppressed the p24 gag protein expression in monocytes/macrophages exposed to monocytotropic HIV-1 at a concentration of 0.5μM. It was noted, however, that cA and cG exerted a substantial toxicity against target T-cells as well as normal periphearl blood mononuclear cells at around 100μM. The anti-HIV activity of cG was readily reversed by 2'-deoxyguanosine, but that of cA was hardly reversed by 2'-deoxyadenosine or 2'-deoxycytidine.
Conclusion. Our observations should provide new structure/activity relationships for carbocyclic nucleoside analogues which may be of value in developing a new class of experimental drugs for the therapy of HIV-related diseases.

M.C.P.137 PHASE I STUDY OF THE ADMINISTRATION OF RECOMBINANT SOLUBLE CD4 (rCD4) BY CONTINUOUS INFUSION TO PATIENTS WITH AIDS OR ARC

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Objective. To investigate the toxicity, clinical effects, serum levels, immunologic effects, and virologic effects of rCD4 given by continuous infusion to patients (pts) with AIDS or ARC.
Methods. 12 patients with AIDS or ARC were administered rCD4 by continuous infusion for 15 days (after a 24 hr test infusion). 3 pts each received 1, 10, 30, or 100 μg/kg/day.
Results. No toxicity was observed other than phlebitis in 2 pts at their IV sites. Serum rCD4 levels were as follows: 1 μg/kg/day - 0.9 to 2.9 ng/ml; 10 μg/kg/day - 10 to 22 ng/ml; 30 μg/kg/day - 23 to 30 ng/ml; (other results pending). No antibodies to CD4 were detected in patients who received 1 to 30 μg/kg/day (other results pending). No changes were observed in the total WBC. No consistent changes were observed in the T4 cells, T4/T8 ratio, *in vitro* T cell proliferation to soluble antigen (Ag) , skin test reactivity, or serum HIV p24 Ag in patients receiving 1, 10, or 30 μg/kg/day rCD4. However, 2 of the 3 patients receiving 100 μg/kg/day had rises in their T4 cells (from 69 to 152 T4 cells and from 147 to 223 T4 cells/mm3 respectively). One of those 3 patients had detectable serum p24 Ag at entry: this fell from 401 to 245 pg/ml while on rCD4. Additional patients are now being studied at higher doses of rCD4 and for longer periods of time.
Conclusion. Because of the lack of observed toxicity and the suggestion of possible anti-HIV activity at the highest dose tested, additional testing of rCD4 by continuous infusion at 100 μg/kg/day and higher doses is warranted. From a theoretical point of view, continuous infusion may deserve special attention as a technology for administering rCD4.

M.C.P.134 NOVEL GLUCOSIDASE INHIBITORS AS ANTI-HIV AGENTS

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Objective. To evaluate the effect of novel glucosidase inhibitors, deoxynojirimycin(DNM) derivatives, on the replication of HIV-1.
Methods. DNM derivatives were newly synthesized,and were assessed the inhibitory effect on giant cell formation by Molt-4 cells and Molt-4/HIV-1 cells. The infectivities from Molt-4/HIV-1 or U937/HIV-1 cultured in the presence of drugs were also determined by using MT-4 cells. The envelope glycoproteins from Molt-4/HIV-1 treated with drugs were analysed .
Results. Some DNM derivatives showed the inhibition of HIV-induced giant cell formation at concentrations that were not cytotoxic. ND900 or ND1025 inhibited giant cell formation at about 10-fold lower concentration than DNM did. The infectivities of HIV-1 from Molt-4/HIV-1 or U937/HIV-1 were remarkably reduced in the presence of ND1025. In Molt-4/HIV-1 cells,ND1025 inhibited the processing of envelope glycoproteins. The electrophoretic mobility of virion-associated glycoproteins in the culture supernatant were also affected by ND900 or ND1025.
Conclusion. These synthetic DNM derivatives have potent anti-HIV activities in vitro. Effect of these sugar analogues is likely to depend on the inhibition of the envelope glycoprotein processing.

M.C.P.136 NEW ANALOGUES OF 2',5'-OLIGOADENYLATE WITH IMPROVED ANTI-HIV-1 ACTIVITY *IN VITRO*.

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Objective. To screen structural, stereochemical and combination structural/stereochemical 2',5'-oligoadenylate (2-5A) and 3',5'-oligoadenylate (3-5A) analogues for anti-HIV activity.
Methods. Cell toxicity and *in vitro* anti-HIV-1 activity were determined in an MT-2 cell, microtiter cytopathic effect assay utilizing virus obtained from cultures of H9/HTLV-IIIa cells. Inhibition of reverse transcriptase (RT) activity was determined using a Triton X-100 activated viral lysate.
Results. A trimer of 2',5'-adenylate having the hydroxyl moiety replaced with a hydrogen atom at the 3' position of the middle residue (i.e., 3'-deoxyadenosine or cordycepin) demonstrated potent (compared to AZT) concentration-dependent antiviral activity at 4-32 uM without toxicity to the cells. This trimer also exhibited concentration-dependent inhibition of HIV RT. Other analogues exhibited various degrees of activity or were inactive in these assays.
Conclusions. The extent of 5'-phosphorylation, length of oligomer, type of internucleotide linkage, and the presence or absence of deoxyadenosine and stereoconfiguration are all critical factors for anti-HIV activity of this class of compounds.

M.C.P.138 METRONIDAZOLE (M) TRICHOMONIASIS (T) ERADICATION AS POSSIBLE POTENT IMMUNITY RESTORING PROCEDURE IN AIDS.

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Duesberg's firm convinction about nonviral cause[1] of AIDS is in complete accordance with recently exposed[2] AIDS conception of subepithelial T as the most frequent,but since now neglected initiator and/or supporter of immunosuppression.
Regarding the existence of cross-immunity by all three known trichomonal species (Trichomonas vag.,Tr.intestinalis and Tr.oralis),it seemed to us logically to suppose that,if the host get freed from the pressure of trichomonal antigens on its immune apparatus,it will be easier to resist to other antigens.Because of that,we have determined T4/T8 by 7 patients with symptomatic genital T before and after M therapy.
As positive effect of M shouldn't be attributed to repression of anaerobic bacteries,patients without noticeable focuses with such bacteries had been chosen.
An positive effect have been realised,i.e.increasing of that indicator of immune status.Similar positive effects of M on immune status had been noticed by experimental animals[3] but without dete about eventual (intestinal) trichomoniasis of animals.
Regarding frequent T,supra- or infra-epithelial locations (taking together all human species), as well as their very large antigenic repertoire,we think that those strong immunogenic agenses can be at least partners to viruses in etiopathogenesis of AIDS.Accordingly,and undependently of possible dilemma what primary and what secondary immunosuppressive AIDS agent,authors think that careful use of M,with consequent T eradication,may have restorative efect on immune status of AIDS patients and risk groups.

1)Duesberg,P.:HIV is not cause of AIDS.Science,29.July 1988,p.514,2)Krvavac,Š.:Trichomonas species as dominant immunopathogenic agent of AIDS.IXth Eur.Immun.Meeting,Rome 14-19 IX 1988,p.23; 3)Shroit,I.G.et al.:Influence of metronidazole on the course of experimental anaerobic streptococcal pneumonia.J.Microb Epid Immunol 1986,4;21

M.C.P.139 A USEFUL IMMUNOTHERAPY IN AIDS.

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In a clinical study made in Africa upon 90 patients-AIDS or ARC, 26 had at least one year of immunotherapy at the end of 1988. This immunotherapy is using different products: nucleic Acids, cyclosporin and an anti heavy gamma chain. The particularity of this treatment (Tt) is the use of very small doses of each product. The results are compared with those of a group without any immunotherapy. In both groups, the O.I. are treated by the classical medication. No one patient in the study is or has been on AZT, or other specifical anti AIDS medication.

The results are:

		Africans(noTt)	Africans on Tt	Personal European cases (4)
diarrhea (1)		40	6	-1
Fever (1)		13	5	2
Infections (1)		55	13	14
Biology (2)	absolute T4	-4	191	51
	T4/T8	23	40	61
Weight (3)		-14	+3	+1

(1) Frequency of diarrhea, fever, infections in %.
(2) In % expressed macimal relative enhancement of T4 and T4/T8
(3) Middle evolution of the weight, in Kg/year.
(4) Group added in order to compare the biological data with those of the AZT studies. When compared with the clinical studies, on AZT, the biological results of the european group are reaching the same level of efficacy.

Key words: immunotherapy, small doses, cyclosporin, nucleic Acids, anti heavy gamma chain.

M.C.P.140 A MODEL OF AIDS-VIRUS DISINFECTION

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A virus disinfection was observed by the author in 1930-39 in water buffalo (Bubalus bubalus, Linn.) in Kosevci, Bulgaria, that all those animals who ate wild sour-apples did not get the infection caused by the ultr-virus aphthae (Aphthae epizooticae). Later, the author applied above observations as model on rats bearer ascites Novikoff (Hepatoma) tumor (3rd Asian Cancer Conference (Abs. 143), p. 126, 1977.

In these investigations as model disinfectors alkaline Bulgaros 26L-a (0.1M NaOH), acidic Bulgaros 26L-b (0.1MHCl), and acidic Bulgaros 26L-c (0.1M H_2SO_4) on normal white Wister female rats were used as follows: (a) three rats were injected Sc with a single dose of Bulgaros 26L-a (0.1M NaOH) 1ml/100g.b.wt.; (b) five rats were injected Sc with Bulgaros 26L-b (0.1M HCl) 1.5ml/100g.b.wt.; and (c) five rats were injected Sc with Bulgaros 26L-c (0.1M H_2SO_4)1.5ml/100b.wt. The concentrations of above disinfectors were well tolerated by the recipients and after 24h. all rats were sacrificed and their heart and liver were examined and they were like normal. The results showed that Bulgaros 26L-a-c might be applied as disinfectors against various viral and bacterial infections. Copyright 1989 by Luben G. Angeloff.
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M.C.P.141 CONCENTRATION DEPENDENT DUAL EFFECTS OF THE MONOLAURYL ESTER OF SUCROSE (L.S.) ON THE ANTIFUNGAL ACTIVITY AND ABSORPTION SPECTRA OF AMPHOTERICIN B (AmB).

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Objective. To develop a system for AmB drug delivery.
Methods. Comparison of effects of a mild detergent, L.S. oq AmB-induced decrease in cellular K^+ retention and viability of Saccharomyces cerevisiae and Cryptococcus neoformans cells with L.S. effects on AmB physical state as reflected by absorbtion spectra.
Results. L.S. at concentrations 0.008% to 0.03% enhanced the toxic effects of AmB on the two fungi. In contrast, concentrations 0.06% to 2.5% inhibited AmB effects. We analyzed changes in AmB absorbtion spectrum induced by L.S. at these two concentration ranges by comparing ratios (R's) of AmB absorbance at 409nm, the wave length characteristic of non aggregated (monomeric) AmB, to absorbance at 328nm, the wavelength characteristic of aggregated AmB. Low concentrations of L.S. caused a decrease in R. and the higher L.S. concentrations increased in R.
Conclusion. L.S. had concentration dependent dual effects on antifungal action of AmB which correlated with shifts in the physical states of AmB between its monomeric and aggregated forms. Since the inhibitory concentrations of L.S. on the antifungal effects of AmB were about 1000 times greater than those reported previously for inhibition of AmB toxicity to mammalian cells, this suggests that L.S. may be useful as a vehicle for improvement of AmB delivery. Moreover, increase in AmB toxicity induced by low concentrations of L.S. suggests the possibility that synergistic interactions between fatty acid esters, and polyene antibiotics may have therapeutic value.

M.C.P.142 SEROLOGIC AND IMMUNOLOGIC PARAMETERS IN A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF AMPLIGEN ADMINISTERED TO SUBJECTS WITH HIV INFECTION

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As part of a multicenter trial of intravenously administered AMPLIGEN (mismatched, double-stranded RNA) we enrolled 25 HIV-seropositive subjects (asymptomatic or early ARC) and followed them for up to 36 weeks. Blood was taken at the start of study and at weeks 4, 12, 24, and 36. At study end it was found that 12 patients had been given placebo and 13 had received AMPLIGEN 400 mg twice weekly. There were no statistically significant differences between groups with respect to soluble CD8, soluble IL-2 receptor, beta-2 microglobulin, and neopterin.

	AMPLIGEN (n=13)				PLACEBO (n=12)			
WK	sCD8 (U/ml)	sIL 2R (U/ml)	B2-M (ug/ml)	Neopt (ng/ml)	sCD8 (U/ml)	sIL-2R (U/ml)	B2-M (ug/ml)	Neopt (ng-/ml)
00	985±093	1385±069	4008±414	3.6±0.4	638±064	1292±116	2583±372	3.0±0.2
04	930±090	1396±062	3358±270	4.3±0.5	785±080	1246±099	3114±355	3.8±0.4
12	979±115	1369±072	3815±398	5.5±0.8	760±078	1230±110	3127±416	3.7±0.5
24	838±186	1159±134	4179±533	4.2±0.9	645±068	1178±117	3000±358	3.3±0.4
36	863±067	1294±152	4580±752	5.3±1.9	795±119	1287±141	3575±392	3.3±0.5

There were no statistically significant differences with respect to circulating immune complexes (measured by the inhibition of immune adherence), erythrocyte complement C3b receptor (E-CR1) activity, and direct Coombs' test.

M.C.P.143 TREATMENT OF THERAPY-RESISTENT ORO-PHARYNGEAL CANDIDIASIS WITH FLUCONAZOLE IN HIV-1-INFECTED PATIENTS

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Objective. To evaluate the effectivity of fluconazole, an experimental azole antifungal agent is effective in therapy of therapy-resistent oro-pharyngeal candidiasis in HIV-1-infected patients.
Methods. 20 patients with therapy-resistent oro-pharyngeal candidiasis were treated with fluconazole at daily doses of 50-100 mg for 21 days. Patients were weekly examined for clinical symptoms as well as side effects and haematological and organ toxicity of the drug. Mycological assessment included microscopical examination and culture (cfu/ml) of mouth washings.
Results. Resolution of symptoms and signs was obtained in the first week of treatment in 18/20 patients. Partial improvement was observed in another 2/20 patients. Mycological assessment showed a significant reduction of candida cultures of mouth washings. In 60% of the patients the culture tests became negative at end of therapy whereas in 40% of patients more than 10^2 cfu/ml were found. More than 60% of the patients had a clinical relaps four weeks after stopping the experimental therapy with fluconazole. No alteration of liver tests nor nephrotoxicity was observed.
Conclusion. Fluconazole was shown to be a highly effective drug in the treatment of therapy-resistent oro-pharyngeal candidiasis in HIV-1-infected patients. A continuous therapy seemed to be necessary to avoid clinical relaps. Optimal dosage remain to be defined in further studies.

M.C.P.144 INHIBITION OF HIV-REVERSE TRANSCRIPTASE BY A KAMPO MEDICINE, SHO-SAIKO-TO

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Objective. To describe the *in vitro* inhibitory effect of a well-known kampo medicine (Chinese drug), Sho-Saiko-To, on the activity of HIV-reverse transcriptase.
Methods. Reverse transcriptase activity was measured *in vitro* with $(rA)_n \cdot (dT)_{12-18}$ as the template·primer and [^{3}H]dTTP as the triphosphate substrate, and the effect of the drug was evaluated by adding various concentrations of Sho-Saiko-To.
Results. The activity of HIV-reverse transcriptase was inhibited by more than 70% in the presence of 200 μg/ml Sho-Saiko-To. The inhibition was dose-dependent, and the drug inhibited the enzyme activity by 90% at 500 μg/ml which is a clinically attainable concentration. Of the seven ingredients of Sho-Saiko-To, the extract from radix of a plant, Scutellariae, was found to have strong inhibitory effect on the reverse transcriptase activity at concentrations less than 50 μg/ml. In contrast to reverse transcriptase, cellular DNA polymerases α, β and γ were much less sensitive to inhibition by this drug, supporting the fact that Sho-Saiko-To is non-toxic to the host cells.
Conclusion. Sho-Saiko-To is promising as a candidate for antiretroviral agent.

M.C.P.145 VIRAL INHIBITION THERAPY AGAINST AIDS (VITA)

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Objective. *Gene "manipulation" of stem cells leading to the development* of an HIV-resistant immune system.
Methods. Various retroviral vectors expressing antisense or sense RNAs to HIV-1 were constructed. The vector particles were used to infect CD4$^+$ lymphocyte- and macrophage-derived cell lines. These transformants will soon be challenged by HIV-1 and the virus production will be monitored.
Results. The ability of various vectors expressing sense or antisense RNAs to interfere with the HIV-1 multiplication will be reported. The use of antisense RNA is only one way to interfere in the life cycle of HIV-1. Other vectors to express various proteins interfering with the HIV-1 life cycle are under way. The best of these vectors conferring resistance to HIV-1 will be used to transform human bone marrow stem cells.
Conclusion. If a stem cell could be made resistant to HIV-1, then upon maturation and development it will lead to the reconstitution of an HIV-1 resistant immune system. Both T-lymphocytes and macrophages, the primary targets of HIV-1 infection, derive from the bone marrow stem cells. The introduction into these stem cells of retroviral constructs expressing RNA or protein molecules conferring resistance against HIV-1 infection provides a potential therapeutic approach towards the development of an HIV-1 resistant immune system.

M.C.P.147 MENAQUINONE (BACTERIAL VITAMIN K) INHIBITS HIV-1 INDUCED SYNCYTIA FORMATION BUT NOT HIV-1 REPLICATION

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OBJECTIVE: To determine if napthoquinone (Vitamin K series) compounds can affect HIV-1 induced syncytial formation and/or replication.
METHODS: Physiological non-toxic concentrations of phylloquinone menadione and menaquinone-7 (MK-7) were added to cultures of MT-2 and Hut-78 cells infected with three different clinical isolates of HIV-1. AZT was utilized as a comparative compound. The effect of these chemicals were evaluated by inhibition of syncytial formation, and viral antigen production (Reverse Transcriptase assay and indirect immunofluorescence).
RESULTS: Remarkably, MK-7 a bacterially produced Vitamin K at concentrations between 5 and 1 ug per ml, inhibited syncytia formation in MT-2 infected cells similar to AZT at 5 to 1 ug/ml. Similar inhibition of syncytia formation was also observed in HIV-1 infected Hut-78 cells, however, while AZT effectively limited HIV replication, MK-7 had no effect whatsoever on virus production.
CONCLUSION: Further studies are warranted on the effects of menaquinone induced inhibition of syncytia formation especially in light of the findings that concurrent effects of HIV antigen and virus production are not affected in these cells. If syncytia formation is indeed an important factor in HIV pathogenesis then the understanding of the mechanism of inhibition of syncytia formation by MK-7 may prove a valuable way of limiting HIV-1 spreading in vivo.

M.C.P.149 AIDS : IS A SAFE VACCINE READILY AVAILABLE ?

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Objective : Finding the best and safest method to obtain a marketable AIDS vaccine.
Method : Analysis of present vaccine strategies to obtain an AIDS vaccine. Development of a new concept in order to obtain a new kind of vaccine.
Result : Largely two main strategies for developing an AIDS vaccine are now being pursued. The first one starts with the antigen, usually synthetic fragments of HIV (gp 120, gp 160, etc...) obtained by genetic engineering.
The second one consists of developing an antiidiotypic vaccine using selected monoclonal antibodies (mAbs) to the CD4 receptor. Both strategies intend to obtain specific antibodies or cellular immunity to HIVs.
However, because of competition and crossreactivity between HIV and the physiological ligand for the CD4 receptor, namely MHC II, blocking HIVs with a classical vaccine will at the same time block MHC II binding to CD4 and interfere with normal macrophage to T cell interaction causing immunosuppression.
To overcome these difficulties, a new type of "vaccine" consisting of monoclonal antibodies, liposomes and adjuvant intending to safely mimic HIV infection and stimulate NK cells (non MHC restricted immune response) is being considered.

Conclusion : A new concept for an AIDS vaccine based on stimulation of NK cells is presented.

M.C.P.146 EFFECT OF PEPSIN TREATMENT ON THE HIV ENVELOPE AND CORE ANTIGEN

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Objectives. Previously (Ujhelyi et al., AIDS 1,161,1987) we worked out a method for measuring the amounts of anti-core and anti-env antibodies hidden in circulating immune complexes. The method is based on the pepsin digestion of isolated immune complexes. In order to clarify whether HIV antigens are destroyed during this treatment, the pepsin sensitivity of purified recombinant env and core antigens was investigated. Methods. Purified p24 and gp41 recombinant antigen preparations were dialysed against an acetate buffer, pH 3.9, digested with pepsin for 16 h at 37°C (enzyme/substrate ratio: 1 to 5) and neutralized. Antigenecity of the core preparations was measured by the Abbott antigen assay and Western blot whereas that of the env preparations was estimated using a new antibody-inhibition assay. Results. Core preparation was found to be extremely pepsin-sensitive. By contrast, the antigenecity of the purified env preparation was not destroyed but dose-dependently increased after pepsin treatment. Conclusion. The different sensitivity to pepsin digestion of HIV antigens may point to a difference in their sensitivity to other proteases influencing the in vivo processing of the antigens.

M.C.P.148 *THE EFFECTS OF TRADITIONAL MEDICINE(SHO-SAIKO-TO:SST) ON PERIPHERAL MONONUCLEAR CELL (PMC) FROM AIDS & ARC PATIENTS*

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Objective:We have studied effects of SST on blastformation assay in PMC from patients with AIDS(n=40) and ARC(n=44), and healthy heterosexuals(HH,n=20)
Methods:PMC were cultured with or without each mitogen(PHA,Con A,PWM) in the presence or absence of SST (20ug/ml). Proliferation was measured by ^{3}H-thymidine uptake after 96 hrs incubation.
Results:Table shows proliferation response(PR,Ave.in cpm) of 3 groups with or without SST. Each patient group was further subdivided into a responder and nonresponder group based on positive or absent response to the combination of SST and PWM. As previously reported, major decreases in PR were observed in response to PWM only for ARC and AIDS. SST enhanced proliferative activity itself in all 3 groups and enhanced PR to PWM in 34/44 ARC and 22/40 AIDS. It is of interest that the greatest enhancing response of SST on PWM-PR was observed in PMC's from ARC, and occurred maximally in those exhibiting the combination of (i)lowest PR to PWM and (ii)normal PR to Con A. The percentage increases observed for the same combination in AIDS, on the other hand, were only similar to that seen in HH controls.

	Total			Mitogen & SST(%)			Responder/Nonresponder	
	HH	ARC	AIDS	HH	ARC	AIDS	ARC	AIDS
No.	20	44	40				34/11	22/18
No Mitogen	966	358	237	+30	+18	+13	323/477	294/168
PHA	23675	16201	8512	-15	-16	-12	16045/16733	9470/7341
Con A	13153	11525	3664	-18	-17	-19	11652/11091	4514/2626
PWM	5644	850	675	+13	+47	+8	733/1248	721/617

Conclusion:Our results suggest that SST is able to stimulate monocyte-T4 cell -B cell network system and/or suppress T8 cell function.

M.C.P.150 AFRICAN TRADITIONAL MEDICINE AND AIDS

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African Traditional Medicine is the use of herbs and parts of animals and birds. Traditional Medicine is the oldest known method of healing the sick. Most people in Africa have no alternative than traditional medicine.

The Western trained Medical Doctors and Traditional Healers should be partners in progress to find a common solution for the health of mankind. There should be provision of the traditional healer with a place in the AIDS NETWORK. Traditional healer is to educate the rural dwellers to know who has AIDS and how to avoid AIDS. My group consists of traditional medicine experts has started research into the preventive and cure for the killer disease - AIDS by using herbs and other ingredients. By GOD's Will there would be a positive result. AIDS is one disease which all races of humanity should cooperate to fight.

No time in the history of mankind have creatures as small as the AIDS virus caused so much grief and sorrow to so many people.

Immunologie de base
Basic Immunology

T.C.P.1

MEASUREMENT OF AFFINITY MATURATION IN HIV-1 INFECTED CHIMPANZEES, *Richard T Coughlin*, P. Bulger*, V.G. Masison*, D.J. Marciani* and J. Eichberg**, *Cambridge BioScience Corporation, Worcester, MA, USA, **Southwest Foundation for Biomedical Research, San Antonio, TX, USA.*

Objective. To quantitate the kinetics of affinity maturation in HIV-1 infected animals.
Methods. Over 20 sera for each of the three HIV infected chimps were obtained over a two year period. A modification of the method (Pullen, 1986) was used to measure the avidity of chimp sera for a rec. env. peptide and compared with conventional EIA on the same antigen.
Results. All three chimps showed an abrupt increase in titer starting 2-3 weeks after challenge. The titer reached a maximum between 50 and 100 days and then either declined or remained constant. Avidity increased steadily in all three animals over the two years. A plot of EIA titer vs avidity over the entire observation period revealed no significant correlation (r=0.02). When compared with a panel of HIV positive human sera, the EIA titers of the chimps at one year were slightly elevated but the avidity was significantly higher than the mean of the human sera.
Conclusion. EIA titer is an inappropriate measure of the antibody avidity. Infected chimps showed a steady increase in affinity for the envelope over two years. Chimps eventually produced higher avidity sera for the envelope than did a random selection of HIV-1 infected humans.

T.C.P.2

TYPE SPECIFIC CTL RESPONSE TO THE HIV-1 ENVELOPE GENE PRODUCTS

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Objective. To determine group vs. type specificity of CTL directed at the HIV-1 envelope protein.
Methods. Peripheral blood mononuclear cells from HIV-1 seropositive individuals were cloned via limiting dilution in the presence of a CD3-specific monoclonal antibody (mAb) and recombinant IL-2. Developing clones were tested for cytolytic activity against autologous or allogeneic EBV-transformed B cell lines infected with HIV-vaccinia recombinant vectors in a 4 hour ^{51}Cr release assay. Ab competition assays were conducted by incubating target cells with mAb prior to the addition of effector cells.
Results. An HIV-1 envelope-specific CTL clone, designated 63D45, lyses target cells expressing the HTLV-IIIB envelope or the HTLV-IIIMn envelope up to 70% above control at an effector: target ratio of 2.5:1, but does not lyse target cells expressing the HTLV-IIIRF envelope. Lysis is restricted by the HLA class I antigen B8, and is abrogated by monoclonal antibodies to CD3 or CD8, but not CD4.
Conclusions. HIV-1 envelope-specific, HLA Class I restricted CTL are part of the host immune response to HIV-1 infection. This demonstration of a type-specific response to the HIV-1 envelope is an important consideration in design of subunit vaccine strategies.

T.C.P.3

AZT INHIBITS LPS-INDUCED SECRETION OF IL-1 BY CULTURED NORMAL HUMAN MONOCYTES.

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The failure of 3'-azido-3'-deoxythymidine (AZT) to inhibit HIV replication in human macrophages is not dependent on the inability of the drug to permeate the cell membrane. Little is known however on the consequences of intracellular accumulation of the drug on monocyte function. The effect of AZT on the ability of unstimulated and LPS-stimulated human mononuclear adherent cells (MNC) to produce Interleukin-1 (IL-1) was investigated in vitro. MNC from normal donors were cultured in serum-free conditions with increasing amounts of Neisseria meningitidis LPS (0.01-10 µg/5 x 10^5 cells) for 24 h. AZT alone did not induce IL-1 production in cultured MNC. AZT did not interfere with the ConA comitogenic thymocyte assay for IL-1 activity in LPS-stimulated cultures. AZT inhibited the extracellular release of IL-1 activity in a dose-dependent manner although it dit not affect significantly the induction of cell-associated IL-1 activity by LPS. The latter finding correlated with the lack of effect of AZT on the induction of cell-associated IL-1 alpha antigen by LPS, as assessed by radioimmunoassay. Thus, AZT specifically inhibits the release of functional IL-1 beta by LPS-stimulated monocytes which may endow the molecule with anti-inflammatory properties.

T.C.P.4

ENHANCEMENT OF LYMPHOCYTE-MEDIATED, HIV SPECIFIC ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY BY BIOLOGIC RESPONSE MODIFIERS

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Objective. To examine antibody-dependent cellular cytotoxicity (ADCC) mediated by peripheral blood mononuclear cells (PBMC) obtained from HIV-infected subjects, and enhancing effect by biological response modifiers (BRM) Picibanil (OK432 streptococcal preparation, Chugai, Japan) and interleukin 2 (IL-2).
Method. PBMC from homosexual men with known duration of HIV infection and from HIV seronegative controls were examined for ADCC activity against HIV-infected CEM.NKR cells (cell line resistant to natural killer activity) in a 4 hr ^{51}Cr-release assay. PBMC were precultured with Picibanil or IL-2 for 16 hr and then tested for ADCC activity. Serum from an HIV-seropositive homosexual man with ADCC activity was used as the source of antibody.
Results. HIV-specific ADCC activity of PBMC from HIV-seropositive homosexual subjects was significantly decreased in relation to duration of infection. The ADCC response was found to be significantly associated with numbers of CD4$^+$ T cells, and CD16$^+$ and Leu 19$^+$ NK cells. Additionally, ADCC activity of PBMC from HIV-seropositive and seronegative subjects increased 2-fold after pretreatment with Picibanil or IL-2. We are currently studying mechanisms of the enhancing effect of Picibanil pretreatment on ADCC activity.
Conclusion. Although PBMC from HIV-seropositive subjects can mediate ADCC, the response is impaired in association with duration of HIV infection. BRM-pretreated PBMC exhibited significantly greater ADCC activity than did untreated PBMC.

T.C.P.5

CD4+ AND CD8+ CYTOTOXIC T LYMPHOCYTE-MEDIATED LYSIS OF MACROPHAGES EXPRESSING HIV ANTIGENS

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Objective. To characterize cytotoxic T lymphocyte (CTL) lysis of macrophages expressing HIV antigens.
Methods. Autologous macrophages cultured in vitro for 6 days were either infected with recombinant vaccinia viruses (rVV, courtesy of Dr. B. Moss) containing HIV genes or coated with HIV, and used as target cells in a ^{51}Cr-release assay. Freshly-isolated PBMC or PBMC cultured for 6 days with UV-inactivated HIV plus IL-2 from HIV seropositive, asymptomatic individuals were depleted of CD16+ NK cells and used as effector cells.
Results. Antigen-stimulated CTL mediated a 28.5% mean virus-specific lysis of rVV-infected macrophages expressing env or gag antigens, which was several fold greater than lysis mediated by freshly-isolated, CD8+ effectors. Antigen stimulation activated HIV-specific, CD4+ CTL, in addition to augmenting CD8+ CTL. When macrophages were coated with either HIV III_B or HIV_{RF}, freshly-isolated effectors mediated a 6.5% mean virus-specific lysis; PBMC stimulated with HIV antigen demonstrated 8.8% mean lysis. PBMC from HIV seronegative subjects did not exhibit these responses.
Conclusions. Macrophages infected with rVV-env, rVV-gag, or whole HIV were lysed by CD8+, in vivo circulating CTL. An enhanced cytotoxic response occurred when PBMC were stimulated with HIV antigen, which activated CD4+ CTL. These results agree with our previous work (J. Immunol., 142(4), 1989) using herpes simplex virus-infected macrophages, and suggest that both CD4+ and CD8+ CTL are important in host immune response to HIV.

T.C.P.6

DIFFERENTIAL KINETICS OF HIV INFECTION OF BLOOD MONOCYTES AND MACROPHAGES IN VITRO AND EFFECTS OF SUBSEQUENT FUNCTIONS

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Monocytes and macrophages are important sites of HIV infection, especially in brain and bone marrow. The state of differentiation and surface to which these cells adhered in vitro had a major effect on kinetics of HIV infection and function of the infected cells. HIV infection of recently adherent CD4 positive blood monocytes and five day adherent CD4 negative macrophages with three fresh monocytotropic HIV isolates showed two different kinetic patterns. HIV antigen and RT levels in infected monocyte cultures remained high for 3-4 weeks before detachment and necrosis of the cells occurred. Infection of macrophages (without M_CSF stimulation) generated much lower HIV levels and in 2 of 4 cultures these declined to undetectable over two weeks leaving persisting viable macrophages. 72% of monocytes and 8% of macrophages were infected at one week (by in situ hybridization). Anti-Leu 3a (CD4) monoclonal antibody almost totally blocked HIV infection of monocytes but had an incomplete or no effect on macrophage infection, suggesting the presence of an alternate receptor. Incubation of selected human anti HIV antisera with CD4 negative macrophages before infection with HIV had variable effects. Some sera had high neutralizing titres (1/100 - 1/1000) whereas others produced significant enhancement only when the effect of neutralization was discounted by preincubation with monoclonal antibody to anti FcRI. HIV infection of the blood monocytes but not macrophages inhibited presentation of herpes simplex or tetanus toxoid antigen to immune autologous T lymphocytes. A humoral heat stable inhibitory factor released by HIV infected monocytes has been identified and is being characterised.

T.C.P.7

IMMUNOTOXINS PREPARED FROM HUMAN MONOCLONAL ANTIBODIES COUPLED TO DEGLYCOSYLATED RICIN A CHAIN KILL HIV-INFECTED LINES OF T CELLS AND MONOCYTES

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OBJECTIVE: To determine whether immunotoxins (ITs) composed of human monoclonal antibodies (mAb) and Ricin A are capable of killing lines of HIV-infected T cells (H9) and monocytes (U937).
METHODS: Two human IgGk mAb specific for gp 41 were derived from EBV-transformed B cells from the blood of HIV-infected patients. mAb were coupled to deglycosylated Ricin A chain (dgA) via a heterobifunctional cross-linker. Either IT or human IgG-dgA was cultured with HIV-infected or uninfected H9 or U937 cells for 36 hr. and toxicity was assessed by pulsing cells with ^{3}H-thymidine for 6 hr.
RESULTS: While IgG-dgA did not kill infected H9 or U937 cells at concentrations less than 10^{-7} M, both ITs killed 50% of infected H9 cells at 1.5×10^{-9} M. Similarly, both ITs killed 50% of infected U937 cells at 5×10^{-9} M. Addition of chloroquine to U937 cultures markedly potentiated specific killing of HIV-infected U937 cells resulting in an IC_{50} of $4\text{-}6 \times 10^{-11}$ M. The specificity of killing was established by showing that both ITs could be blocked by rgp160 but not by rgp120 or human IgG. Neither IT was cytotoxic for Class II$^+$ Daudi cells at concentrations below 10^{-7} M.
CONCLUSIONS: ITs composed of human mAb to gp41 and deglycosylated Ricin A specifically kill lines of HIV-infected human T cells and monocytes.

T.C.P.8

SELECTIVE INFECTION OF MACROPHAGE SUBSETS IN THE LUNG BY HIV

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It is recognised that alveolar macrophages are a heterogeneous population. Subsets of this population can be distinguished by phenotypes using monoclonal antibodies. In HIV+ individuals the proportions of virus infected alveolar macrophages identified by the expression of viral proteins is seen to be a small proportion (2-10%) of total macrophage like cells in bronchoalveolar lavage (BAL). This study sets out to determine whether infection of alveolar macrophages is restricted to one phenotypically distinct subset or is indiscriminate. Sequential immunocytological techniques detecting viral proteins and discriminate antigens of macrophage subsets can be performed on cell spreads obtained from BAL of AIDS patients presenting with pneumonitis. Probes to gp120, P24 and P17 proteins will be used in conjunction with McAbs. EBM11 (detects all macrophages), RFD1 (identifying dendritic cells), RFD7 (identifying mature phagocytes), and UCHM1 (identifying monocytes). The distribution of gp120, P24 and P17 antigen expression on each of the populations of cells will be described. The proportions of each phenotypically distinct subset of macrophages expressing viral proteins will be quantitated by performing cell counts. Results presented will reveal whether there is a selective infection of a particular subset of cells and/or whether HIV infection alters macrophage antigen expression. As previous studies have shown a relationship between cell phenotype and function, this study will also reveal whether HIV infection might alter the functional capacity of alveolar macro phage populations.

T.C.P.9

NORMAL CAPACITY OF MONOCYTES FROM AIDS PATIENTS FOR UPTAKE AND GROWTH INHIBITION OF *MYCOBACTERIUM AVIUM-INTRACELLULARE*.

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Mycobacterium avium-intracellulare (MAI) is the most frequent cause of late disseminated infection in patients (pts) with AIDS. Interactions of monocytes (MN) from AIDS pts with MAI have not been reported. We examined phagocytosis and inhibition of MAI growth in an *in vitro* model. MN from 11 AIDS pts [3 with disseminated MAI (AIDS-DMA)], and 13 healthy volunteers were precultured for 2 days and infected with 2 AIDS and 2 non-AIDS associated MAI strains. Uptake of MAI as detected by counting intracellular acid-fast bacilli was similar between AIDS pts, AIDS-DMA, and healthy controls. Intracellular growth of MAI was examined by a colony forming unit assay after 0, 4, and 7 days of culture. MN from AIDS pts were more effective in inhibiting intracellular growth of MAI at day 7 as compared to healthy donors for one of the AIDS-associated strains ($p<.05$). Intracellular growth was comparable for the remaining strains. Pretreatment of MN with IFN-gamma for 2 days before infection decreased MAI uptake in both the AIDS and healthy groups ($p<.05$ for each strain). Culturing infected MN with IFN-gamma 300 U/ml augmented MAI killing at 4 and 7 days by 30-50% for both AIDS pts and healthy donors ($p<.05$ for 3/4 strains tested). Healthy controls, AIDS-DMA, and AIDS pts showed comparable effects of INF-gamma. Since MN from AIDS pts exhibit normal interactions with MAI, disseminated disease can be attributed to an absence of modulating effects of CD4 lymphocytes. The demonstrated *in vitro* activity of IFN-gamma in culture with MN from AIDS pts provides a rationale for its use in immunoadjuvant therapy.

T.C.P.10

DEFINITION OF A SUBSET OF CD4$^+$ LYMPHOCYTES SELECTIVELY INFECTED WITH SIV/Mne USING THREE COLOR IMMUNOFLUORESCENCE AND PCR.

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In previous work, we found that macaques infected with a simian immunodeficiency virus (SIV) isolated from Macaca nemestrina (SIV/Mne) have a selective depletion of CD4$^+$ T cells expressing high levels of the CD44 class of adhesion molecule (CD44^{hi}); in addition, we determined that productive infection of SIV could be activated in CD44^{hi} CD4$^+$ cells taken from infected animals, but not in CD44^{low} cells, and that the CD44^{hi} subset was differentially susceptible to SIV infection in vitro (Gallatin et al., PNAS, in press, 1989). However, these subsets differ in their response to the mitogens necessary to activate and detect virus in vitro. Therefore, we adapted PCR technology for directly identifying SIV in lymphocytes without the need for cell culture. We amplifed a 950 bp sequence in the gag region and found SIV sequences per se were restricted to the CD4$^+$ CD44^{hi} subset. Next, the target of SIV infection was more precisely defined using three color flow cytometry with fluorochrome-tagged mAb to CD45R and DNA dyes. In addition to finding SIV in CD4$^+$ cycling cells, we have also consistently detected viral sequences in CD4$^+$ CD44^{hi} CD45R$^-$ cells which are not in S/G2. The possibility that this latter subset, which has a memory T cell phenotype, is an important reservoir for latent infection, is being explored. In parallel, using PCR technology to detect viral DNA and RNA sequences, we are exploring the kinetics and host cell requirement for early SIV expression in CD4$^+$ subsets.
(Supported by NIH grants RR00166 and CA40272 and by a grant from the American Foundation for AIDS Research.)

T.C.P.11

PILOT STUDY OF ANTI-LEU3A IN HIV-1 SEROPOSITIVES

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Objective: The CD4 antigen is a receptor for all isolates of HIV. Murine anti-idiotypic antibodies to anti-CD4 monoclonal antibodies inhibit the formation of syncytia in HIV-infected lymphocyte cultures. Anti-Leu3a(L3A) is an anti-CD4 antibody that blocks the binding of gp120 to CD4. This study is aimed to assess the safety of immunising HIV seropositive individuals with L3A, and to measure anti-idiotypic antibody responses.
Method: Four HIV+ volunteers (Walter-Reed stages 3 or 4) received 6 i.m. injections of 1 mg of L3A over a period of 10 weeks. They were monitored for 6 months post-treatment for acute toxicity, alteration of clinical status and routine haematological and biochemical parameters. Antibody responses to L3A were measured. T-cell immunophenotyping was performed before each injection and at monthly intervals during follow-up, and at 1 and 24 hours after injection in the first 3 patients.
Results: All patients have completed treatment and two have completed follow-up. There were no adverse reactions to injection or significant changes in routine laboratory parameters or total CD4+ lymphocyte counts. All patients made anti-Fc and anti-idiotypic antibodies to L3A, detectable at titres between 1/100 and 1/10,000. This was not associated with an increase in HIV neutralization titre, assessed by the syncytium inhibition assay.

T.C.P.12

INTERACTION OF HIV AND THE COMPLEMENT SYSTEM

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Objective: As several animal retroviruses have been shown to directly activate the complement system and to be lysed by human serum, we investigated the interaction between HIV and the complement system.
Methods and results: Purified HIV I was incubated with human serum and cleavage of the alpha chain of C3 and thus activation of the complement system was revealed using an immunoblotting technique. Recombinant envelope gp 160 was able to activate complement, too.In both cases activation required Ca and Mg indicating the predominant role of the classical pathway. HIV-infected cells were incubated in human serum and deposition of C3 was detected in an immunofluorescence assay and immunoblotting technique using an anti-human C3d antibody. In this case complement activation still occurred in the absence of Ca and thus via the alternative pathway.
Conclusion: These results show that HIV as well as HIV-infected cells activate the complement system via the classical and alternative pathway, respectively.
Supported by L.B.I., State of Tyrol, BMFT

T.C.P.13 ANTIBODY-BINDING EPITOPES OF HIV-1 ENVELOPE GLYCOPROTEINS

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Computer analysis and reports from the literature were used to select epitopes of HIV-1 envelope glycoproteins (ENVgp) as potential targets for recognition by antibodies. Sera from study subjects were analyzed by ELISA for antibodies that bound synthetic peptides which constitute these epitopes. Our results show that many ENVgp peptides react with low levels of antibodies in the sera of some HIV-infected individuals but only a very limited number of these sites are immunodominant. Two predicted immunodominant epitopes of HIV ENVgp, $ENVP_{466}$ (amino acids 466-481) and $ENVP_{497}$ (amino acids 497-509), were recognized by antibodies in the sera of most (>60%) HIV-infected individuals. The frequency of individuals with detectable serum antibodies to $ENVP_{466}$ or $ENVP_{497}$ did not differ among HIV-infected asymptomatic individuals and patients with AIDS or ARC. Purified antibodies to $ENVP_{497}$ had only very weak neutralizing activity against infectious HIV isolates. These results suggest that one dominant type of antibody response to HIV's gp120 has minimal protective effects. Antibody levels to one synthetic peptide epitope ($ENVP_{297}$) of HIV ENVgp (amino acids 297-308) were significantly higher ($p<0.002$) in patients with AIDS than in HIV-antibody positive (HIV Ab+) asymptomatic individuals, suggesting that antibodies to this epitope may be important in the pathogenesis of HIV infections. The identification and stimulation of immune responses to selected epitopes of HIV antigens using synthetic peptides may be useful in the design of vaccines to prevent or treat HIV infections.

T.C.P.14 MECHANISMS OF LYMPHOCYTE DYSFUNCTION IN HIV INFECTED PATIENTS

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It is clear from the literature that some HIV infected seropositives fail to respond to soluble antigens such as tuberculin and tetanus toxoid. T cell unresponsiveness to soluble antigens could arise from failure to trigger T cell functions such as proliferation and lymphokine release through the T3-Ti antigen receptor complex. To explore this possibility, we followed the response of peripheral derived mononuclear cells in three groups of patients - healthy seropositives, healthy seronegatives and ARC patients - to respond to anti T3 by proliferation and to secrete lymphokines such as tumour necrosis factor (TNF) α, β and gamma interferon (y-Ifn). The data shows that all patients respond to anti T3 as well as PHA and PMA in proliferation and lymphokine assays, suggesting that their T cells can be triggered through the T cell receptor complex. Interestingly cells from healthy seropositives and ARC patients made 3-10 times higher levels of TNF α and y-Ifn than healthy seronegatives upon activation with PHA + PMA or anti T3 suggesting that their cells may be activated in vivo. This data will be presented along with studies on proliferation to soluble antigens such as tuberculin and to gag p24, and with data on the effects of TNF α, β and y-Ifn on normal T cell function.

T.C.P.15 INHIBITION OF CD3 SIGNALLING BY gp120 IS ASSOCIATED WITH CD4 MODULATION AND ALTERED G PROTEIN-REGULATED CALCIUM GATING

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Objective. To study the effects of gp120 on CD4 and CD3 expression, and on the signal transducing function of CD3.

Methods. Lymphocytes and Jurkat cells were incubated with 10^{-8} M gp120 for up to 48 hr. Periodically aliquots were analyzed for CD4 and CD3 expression with FITC-labelled anti-T4 and anti-T3 antibodies. At the same time points intracellular calcium (Ca) was quantitated with the fluorescent probe indo-1 AM following stimulation with anti-T3 antibody (1 ug/ml).

Results. Stimulation by anti-T3, or direct G_{α} activation by mastoparan resulted in Ca increase up to 530 nM. Gating of extracellular Ca accounts for 40% and 95% of the anti-T3 and mastoparan response respectively, determined by EDTA. Exposure to gp120 for up to 24 hr resulted in a progressive decrease in Ca response, of 50% and 90% compared to controls, for anti-T3 and mastoparan respectively. The Ca response returned to control levels by 48 hr. Surface expression of CD4, but not CD3, was decreased by incubation with gp120. Loss of CD4 from the cell surface peaked at 24 hr, with re-expression occuring by 48 hr.

Conclusions. Gp120 induces anti-T3 unresponsiveness and loss of CD4 in a similar time course. Effects on CD3 signalling appear to occur as a result of alteration in G protein signal transduction involved in Ca gating. The relationship between loss of CD4 and CD3 unresponsiveness has not been determined. These results may in part explain the mechanism for the observed defects in T cell antigen receptor signalling in HIV-1-infected cells.

T.C.P.16 IDENTIFICATION OF A POTENT SYNTHETIC HIV-1 IMMUNOGEN COMPRISING GAG-P24 TANDEM T- AND B-CELL EPITOPES

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Recent studies indicate that gag gene products may play a crucial role in the immune response against HIV infection: 1) as clinical progression to AIDS is associated with a reduction in the level of circulating antibodies to gag p24; 2) antibodies raised against p17 peptide is capable of inhibiting HIV-1 infection in vitro.

Using conventional structure prediction algorithms for T-cell and B-cell epitopes, we have identified and chemically synthesized several gag peptides vaccine candidates. In particular, an unconjugated HIV-1 p24 peptide (25-mer) containing both B- and T-cell epitopes in tandem was injected into mice in incomplete Freund's adjuvant and found to be capable of inducing a strong antibody response against p24 and its precursor p55 as judged by immunoblotting. In addition, the peptide presented in the appropriate MHC context was shown to be highly stimulatory for p24 specific murine T-cell clones.

T.C.P.17 HIV INFECTION OF BONE MARROW STROMAL MACROPHAGES

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A common clinical manifestation of Acquired Immune-deficiency Syndrome (AIDS) is pancytopenia, associated with a distinctive histopathology of the bone marrow (BM). These profound abnormalities in AIDS BM suggest an alteration in cellular composition or function of BM stromal cells. We have examined BM from five AIDS patients and determined that this BM population contains 1.0 to 8.9% HIV positive cells with anti-p24 antibody using the immunoperoxidase staining technique. BM cells from HIV positive and negative individuals were cultured for 7 days, during which time the nonadherent cells were removed leaving only the BM stromal population. The adherent stromal cells were composed of 30 to 40% macrophages and 10-20% fibroblasts as determined by the appropriate antibodies. Thirty to 40% of the stromal population were pleomorphic cells with abundant cytoplasmic processes, most likely dendritic cells. In stromal cultures of HIV positive individuals, p24 staining was associated with macrophages, in contrast to BM from HIV negative individuals which exhibited no staining. Furthermore, 95% of the stromal cells from HIV positive patients expressed Class II antigens, while only 40 to 50% of the HIV negative control BM cultures expressed this antigen. These data indicate that in AIDS BM, a subpopulation of macrophage stromal cells are HIV positive, and there is an increased expression of Class II antigens in this population.

T.C.P.18 A RAPID METHOD FOR DETECTION OF AMPLIFIED HIV DNA USING A HIGHLY SENSITIVE CHEMILUMINESCENT DNA PROBE SYSTEM (HPA)

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Objective. To apply the Hybridization Protection Assay (HPA) to the detection of amplified HIV DNA.

Methods. HPA utilizes DNA probes directly labeled with acridinium ester and a simple homogeneous assay format with no separation steps. Hybridized probe is differentiated by a highly specific chemical hydrolysis reaction which selectively degrades acridinium ester label associated with unhybridized probe. Target sequences in the 10^{-16} to 10^{-17} mole range can be detected in <30 minutes. HIV-1 DNA was amplified by 30 cycles of standard PCR using gag-region primers described by Ou et al. (Science 239:295, 1988).

Results. Amplifications containing as few as 10-20 copies of input HIV-I DNA gave signals significantly above background, even when only 10% of the reactions were analyzed.

Conclusion. Since target amplification has become an important technique in determining the presence of HIV, a rapid and sensitive detection method is needed. Other techniques, including visualization after gel electrophoresis and hybridization in solution or to immobilized targets, require many steps and hours to days to complete. HPA offers important advantages in wide spread screening for HIV in studies involving epidemiology, diagnosis and treatment.

T.C.P.19

THE ROLE OF HIV-INDUCED IL 6 PRODUCTION IN B CELL ACTIVATION IN AIDS.

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B cells in HIV-infected persons are hyperactive, showing increased immunoglobulin (Ig) production and an increased percentage of B cells bearing activation markers. B cells are not infected by HIV, and the source of their activation is under debate. It is our experience that there is no direct binding to or activation of B cells by HIV, suggesting an indirect effect. IL 6, also known as B cell stimulatory factor-2 (BSF-2), is a terminal differentiation factor for B cells, and is produced by normal peripheral blood mononuclear cells (PBMNC) in response to HIV. Our studies of PBMNC from HIV-infected patients show a significant increase in spontaneous IL 6 production over normal individuals.

PBMNC from HIV-infected patients or healthy uninfected controls were isolated and placed into culture without stimulation. Culture supernatants (SN) were harvested at 24 or 48 hours, and 10 days. [IL 6] was determined in the 24/48 hour SN and plasma samples in a proliferative assay for IL 6 using the MH60.BSF2 cell line and/or an ELISA. 10 day [Ig] were determined by ELISA.

There is little or no detectable IL 6 in plasma from either group. In 24 hour SN, the mean [IL6] for normal individuals was 0.018 units/ml, whereas, in a group of HIV-infected patients, the mean [IL6] in 24 hour SN was 2.6 units/ml. The mean [IgG] of 10 day SN for the same two groups was 276 ng/ml and 836 ng/ml, respectively.

Preliminary studies on the mechanism of IL 6 induction have shown that high concentrations of purified recombinant gp 120 from HIV can induce IL 6 production by normal PBMNC, as does binding of anti-CD 4 antibodies.

The significant increase in IL 6 production by freshly isolated PBMNC from HIV + patients (who are also producing increased levels of Ig) suggests that overproduction of IL 6 *in vivo* in response to HIV may be contributing to the B cell activation seen in HIV-infected individuals.

T.C.P.21

MONOCYTES AND NEUTROPHILS FROM HIV-INFECTED INDIVIDUALS CONTAIN VERY LOW OR UNDETECTABLE LEVELS OF PROVIRUS AS DETERMINED BY PCR ANALYSIS.

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Objective. To evaluate the relative levels of HIV provirus in lymphocytes (L), monocytes (M) and neutrophils (N) from HIV-infected individuals.
Methods. Blood cells from ten AIDS patients and 17 asymptomatic Ab+ HIV-infected individuals were isolated on Ficoll-Hypaque. N were isolated by lysis of RBCs from gradient bottoms. M were isolated by plastic adherence. L were plastic nonadherent cells. N and M were further enriched by treatment with anti T-cell monoclonals and complement. N and M contained less than 1% T cells. L contained less than 1% M or N. DNA was isolated and HIV-specific sequences in DNA equivalent to150,000 cells were amplified by the polymerase chain reaction. DNA was amplified with the SK-38/39 primer pair and detected by P32-labeled SK-19 probe. In some samples, radioactive product was quantitated.
Results. Provirus was detected in L from 26/27 individuals. However, provirus was not detectable in 11/20 M samples and 18/27 N samples. Densitometric quantitation of amplified products indicated that the levels of provirus were in all cases significantly higher in L than in M and N. Provirus in M and N was in some cases highest in individuals whose L samples were high in provirus content suggesting that some of the M and N signal could be due to contamination by L.
Conclusion. HIV infection of tissue macrophages in vivo has been shown by others. Our results indicate that HIV infection of peripheral blood M and N is infrequent. Thus, infection of M may occur after leaving the circulation.

T.C.P.23

A CROSS-REACTIVE CYTOTOXIC T CELL EPITOPE BETWEEN HIV-1 AND HIV-2

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Objective. To test peptide analogues from HIV-2 and SIV sequences of the HIV-1 gag peptide epitope 265-279 (recognised by HIV specific CTL in association with HLA-B27).
Methods. An HIV-1 265-279 specific CTL line was tested for the ability to lyse HLA-B27 matched B lymphoblastoid target cells preincubated with or without peptide in a 4 hr ^{51}Cr release assay. Peptides were synthesized according to standard t-boc chemistry and peptide sequences were taken from the Los Alamos data bank.
Results. Results from a lysis assay are shown at a peptide conc. of 30µM.
Effector:Target ratio 30:1

Peptide	Sequence	%lysis
HIV-1 SF2	KRWIILGLNKIVRMY	69
HIV-1 Eli	KRWIIVGLNKIVRMY	60
HIV-2 ROD	RRWIQIGLQKCVRMY	56
SIVMM142	RRWIQLGLQKCVRMY	59
SIVK6w78	RRWIQLRLQKCVRMY	39
No peptide		15

Conclusion. The HIV-2 peptide is recognised by HIV-1 specific CTL.

T.C.P.20

CD8$^+$ T CELLS CAN SUPPRESS HIV REPLICATION VIA A SOLUBLE FACTOR

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Objective. To examine the role of the cellular immune system in the control of HIV replication in the latent asymptomatic phase of HIV infection.
Methods. All cell subsets were isolated using positive immunomagnetic selection procedures. The cells were stimulated with Dynabeads coated with a monoclonal antibody (MAb) specific for the T cell receptor (TCR) and cultured in medium containing recombinant IL 2. The amount of HIV in cell supernatants was measured using a HIV p24 antigen capture ELISA.
Results. HIV was reproducibly isolated from all 38 consecutive cultures of CD4$^+$ T cells from 33 HIV seropositive individuals. Addition of activated CD8$^+$ T cells inhibited the HIV replication in a dose dependant manner. This inhibitory activity could not be blocked by MAbs specific for HLA class I, CD8 or LFA 1, was exerted across semipermeable membranes and was found in the cell-free supernatants of CD8$^+$ T cells. Both allogeneic and autologous CD8$^+$ T cells showed inhibitory activity.
Conclusions. CD8$^+$ T cells can inhibit HIV replication in naturally infected CD4$^+$ T cells at low multiplicities of infection. This inhibitory activity seems to be mediated by a soluble factor.

T.C.P.22

PRESENCE OF ANTI-HIV ANTIBODIES IN GENITAL SECRETIONS

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Objective : To study the presence and the role of the local immune response to HIV in genital secretions from heterosexual individuals exposed to, or infected by, HIV.
Methods : Sera and genital secretions from 75 women and 15 men were tested by Western blot against HIV1 antigens, for the presence of IgG and IgA antibodies. The 75 women were healthy seropositive (15), healthy seronegative wives of HIV seropositive men (15), AIDS patients (15) and controls (30). Men were healthy seropositives (8), ARC (2) or AIDS (1) patients, and controls (4). Neutralisation power of genital secretion was studied by neutralisation of a competitive assay between HIV and anti-CD4 monoclonal antibodies to T4 lymphocytes.
Resluts : The semen of all seropositives had IgG antibodies to GP160 of HIV1, and 8/11 seropositives possessed IgA to GP160. Both IgG and IgA isotypes directed against all viral antigens, including GP, were present in vaginal secretions (VS) of all healthy seropositive and AIDS women. IgG and IgA were not detected in VS from women of other groups. The presence of IgA in VS established that HIV elicits a local immune response after heterosexual infection. The putative role of local antibodies in the attachement of the virus to the CD4 receptor has been studied.
Conclusion : Immune mediation by secretory IgA has proven to be efficient for certain viral diseases and could play a role in the heterosexual transmission of HIV.

T.C.P.24

ANTIBODIES WHICH RECOGNIZE BOTH CONSERVED AND VARIABLE REGIONS OF HIV-1 GP-120 ARE RESPONSIBLE FOR HIV-SPECIFIC ADCC.

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Objective: To define epitopes within the envelope glycoprotein complex gp120/gp41 of HIV-1 which are recognized by antibodies which mediate ADCC.
Methods: Multiple sera from recent seroconverters, which demonstrated type-specific neutralization against HIV isolates IIIB and RF, were tested for their ability to mediate ADCC against a B-cell line infected with recombinant vaccinia vectors expressing the envelope genes of IIIB or RF. Vaccinia vectors which expressed specific deletions within gp-120 were also used in these assays. In addition, human and mouse monoclonal antibodies to defined epitopes of gp-120 were used to map specific ADCC epitopes within the gp-120 molecule.
Results: All human sera tested to date, even those displaying a type-specific neutralizing response, demonstrated a group-specific ADCC response to IIIB and RF envelope glycoproteins indicating that conserved regions of HIV-1 envelope glycoproteins are recognized by ADCC antibodies. HIV-1-positive sera were able to mediate ADCC against cells infected with a truncated deletion vector which did not express the first, second and third variable regions of gp-120. Using monoclonal antibodies we have mapped ADCC epitopes within the conserved and the variable regions of HIV-1 gp-120.
Conclusion: Epitopes within variable and conserved regions of HIV-1 gp-120 are recognized by ADCC antibodies.

T.C.P.25

CD8+HMK1+ CELLS SUPPRESS THE HIV-SPECIFIC T CELL ACTIVITIES.

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OBJECTIVE : We have demonstrated HIV-specific cytotoxic T lymphocytes in lungs and their progressive disappearance during the course of HIV infection. The aim of this study was to detect factors or cells wich could down-regulate the anti-HIV T cell responses.

METHODS : Alveolar lymphocytes were recovered from 41 patients at various stages of the HIV disease. Their cell surface phenotype was determined and their cytolutic function was tested against 51Cr-labelled autologous alveolar macrophages and cell lines expressing HIV proteins; both standard chromium release assay and limiting dilution analysis (LDA) were performed. Various cell subsets were tested for their putative suppressor function onto HIV-specific cytolysis.

RESULTATS : In patients with advanced HIV disease, in whom no signifiant CTL acitivity could be demonstrated in bulk assayz, effector CTL specific for HIV could still be detectable by LDA. The biphasic LDA plots suggested the presence of suppressor cells IF analysis of alveolar lymphocytes revealed a progressive increase of CD8+HMK1+ cells that mirrored the regression of anti-HIV CTL activity. Selection experiments and IF cell sorting demonstrate that alveolar CD8+HMK1+ lymphocytes suppress the effector phase of anti-HIV CD8+HMK1+ lymphocytes suppressed the effector phase of anti-HIV as well as anti-HLA CTL lysis and were not HLA-restricted. The CD8+HMK1+ cells did not kill K562 cells not the HIV-specific effector CTL.

CONCLUSION : Suppressor T cells could thus explain the inefficiency of host cellular immune defenses against HIV.

T.C.P.26

AN HLA-DR+, LIGHT DENSITY, PERIPHERAL BLOOD MONONUCLEAR CELL PRODUCES ALPHA INTERFERON IN RESPONSE TO HIV

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Objective. To characterize alpha interferon (aIFN) production induced by HIV in cultures of peripheral blood mononuclear cells (PBMC).

Methods. PBMC from healthy HIV seronegative donors were enriched for different subpopulations and incubated for 16 hr at 37C with HIV-infected U937 ($U937_{HIV}$) promonocytic cells. Supernatants were assayed for aIFN by antiviral activity in human WISH cells, by neutralization with antiserum to aIFN, and by stability after treatment at low pH.

Results. Percoll gradient density and flow cytometric analyses showed that light density, HLA-DR$^+$ PBMC were responsible for production of acid-stable aIFN in response to $U937_{HIV}$ cells. Enrichment of subpopulations by depletion with monoclonal antibodies and complement indicated that these aIFN-producing cells were non-T (CD3$^-$), non-natural killer (NK) (CD16$^-$) and non-B (CD20$^-$) lymphocytes. The aIFN-producing cells were also predominantly not plastic adherent (monocytic), and did not express Leu 19 (NK cell marker).

Conclusion. PBMC which produce acid-stable aIFN in response to HIV-infected promonocytic cells are light density and HLA-DR$^+$, and are not present within the predominant populations of T, NK, B and monocytic cells. Similar subpopulations of light density, HLA-DR$^+$ PBMC have been associated with augmented lysis of virus-infected targets by NK cells, and could be related to enhanced NK cell lysis of HIV-infected promonocytic cells (Rappocciolo, et al., J. Clin. Micro. 27:41, 1989).

T.C.P.27

ANTIGEN-REACTIVE T LYMPHOCYTES ARE PRESENT IN HIV-INFECTED INDIVIDUALS WHO ARE NON-REACTIVE IN CONVENTIONAL LYMPHOCYTE PROLIFERATIVE ASSAYS.

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Objective. The lymphocyte proliferative response to soluble antigens such as tetanus toxoid has been reported to be absent after HIV infection. We examined the response to tetanus in HIV-infected individuals using conventional lymphocyte proliferative assays in comparison with limiting dilution analysis (LDA), where a frequency of tetanus toxoid specific T cells can be determined.

Methods. Bulk proliferative responses of peripheral blood mononuclear cells (PBMC) from ARC, asymptomatic and seronegative controls were assessed by the uptake of ^{3}-H thymidine after 120 hours of culture with tetanus toxoid. For the LDA, PBMC were serially diluted and cultured with tetanus toxoid and irradiated autologous monocytes for 20 hours. Antigen-reactive cells were detected by the production of IL-2 using the IL-2 dependent cell line, CTLL-20. LDA frequencies were calculated using chi square minimization.

Results. Lymphocyte proliferative responses to tetanus were detected in all control subjects, 5 of the 6 asymptomatic persons, but none of the ARC patients tested. By LDA, control individuals showed 1/9576 - 1/16,099 (62-104 per 10^6) tetanus-reactive lymphocytes, asymptomatic persons showed 1/2663 - 1/31,730 (32-442 per 10^6), and ARC patients showed 1/16,187 - 1/17,046 (59-62 per 10^6) lymphocytes. Therefore, discrepancies between proliferative and LDA responses were particularly obvious in the ARC subgroup of patients.

Conclusions. Tetanus-specific lymphokine secreting cells can be detected in HIV infected individuals by LDA even when conventional bulk proliferative responses to tetanus are absent. These results raise important questions about the interpretation of data from lymphocyte bulk proliferative assays regarding the presence or absence of immune responses. (Supported by NIH grant AIDSP, NIAID AI25924)

T.C.P.28

THE IMMUNOREGULATION OF HUMAN IMMUNODEFICIENCY VIRUS IN HUMAN SEMEN

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Objective: To characterise the humoral immune response to HIV viral specific proteins and epitopes in the male genital tract.

Methods: Ten male HIV seropositive subjects were evaluated to characterize the immune response against HIV viral proteins and epitopes in the seminal plasma as compared with matched sera. In vivo viral antigen load in the two compartments was evaluated by isolation of HIV from semen and peripheral blood, and by measurement of free p24 in seminal plasma and sera.

Results: Antibody production against viral envelope proteins are comparable in seminal plasma and sera; however, there is a marked decrease in reactivity against specific HIV structural proteins in the seminal compartment. The presence of antibodies against unique envelope epitopes is currently being evaluated. Eight of ten HIV (+) subjects had positive peripheral blood cultures for HIV; of these eight subjects, only two had positive semen cultures for HIV.

Conclusion: These differences may reflect either poor antibody production or differential viral protein expression in the male reproductive tract. This data supports the concept that the male reproductive tract is a privileged immunologic site.

T.C.P.29

RELATIONSHIP BETWEEN ANTIBODY AGAINST THE C-TERMINAL REGION OF GP120 AND MARKERS OF HIV SPECIFIC IMMUNOREGULATION.

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Objective. Characterization of the humoral immune response to the HIV-1 envelop antigens and correlation to stage of infection and ability to isolate HIV-1 from PBMC. Methods. Serum anti-envelop antibodies from 126 clinically staged patients were characterised with protein dot blot and Western blot techniques. Antibodies against gp160, gp120 and the specific epitope of gp120 (448C) were studied.

Results. A correlation was found between the presence of specific antibody (α-448C), clinical stage and inability to isolate virus. This correlation was not found with antibody titers to gp160 and gp120. Antibody to 448C was detectable in 70% (46/66) of Walter Reed Stage (WRS) 1-2, as compared to 33% (11/33) WRS 5-6. Antibody to 448C was detectable in 73% of viral isolation negative and 41% of viral isolation positive patient sera. Of sera from WRS 1-2 patients, 77% (36/47) virus isolation negative and 52% (10/19) virus isolation positive demonstrated α-448C. Of the sera from WRS 5-6 patients, 26% (7/27) virus isolation positive and 67% (4/6) virus isolation negative demonstrated α-448C.

Conclusion. These data demonstrate that 448C contains an epitope(s) which correlates with early disease and inability to isolate virus from PBMC, demonstrating a relationship between α-448C and parameters of effective viral immune regulation.

T.C.P.30

CYTOKINES ALTER SUSCEPTIBILITY OF HUMAN MONOCYTES TO INFECTION BY HIV-1

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Objective. Evaluate effects of cytokine pretreatment on the interaction of HIV with blood-derived monocytes in vitro.

Method. Monocytes from HIV-seronegative donors were isolated by centrifugal elutriation and cultured in medium with recombinant human colony stimulating factor-1 (MCSF, Cetus Corp., Emeryville CA). After 7 days, any of several recombinant human cytokines (interleukins 1,2,3, and 4; tumor necrosis factor a: GM-CSF; interferons a,B, and y) were added at 5 to 500 units/ml for 24 hours to MCSF-treated monocytes. All cultures were washed. HIV ADA, a monocytotropic HIV-1 strain, was added to pretreated and control monocytes. Culture fluids were monitored for viral p24.

Results. Viral p24 antigen was detected 2 weeks after HIV infection in all MCSF-treated control monocytes cultured without additional cytokiine pretreatment. Most cytokines had little or no effect on p24 release over this time interval. In contrast, levels of p24 antigen in culture fluids were significantly reduced by 5 to 500 units/ml GMCSF.

Conclusions. Pretreatment of human monocytes with any of several different cytokines alters infectivity of HIV for monocytes. Such in vitro testing of immunomodulators may prove beneficial in the selection of therapeutic regimens for infected individuals.

T.C.P.31

FUNCTION OF CD8 CELL SUBSETS IN HIV INFECTION

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Objective. We previously have identified specific subsets of CD8 cells that increase in individuals with HIV infection. The present study was designed to characterize the function of CD8 subsets to determine their role in the immune response to HIV.
Methods. Subjects were 20-30 HIV seropositive (HM$^+$) or seronegative (HM$^-$) male homosexuals participating in the Los Angeles Multicenter AIDS Cohort Study, or healthy heterosexuals (HT). Monoclonal antibodies were directed against Leu7(HNK-1), and OKT10(CD38). Complement lysis was used to deplete cell subsets. Cytotoxic function was assessed by lectin-dependent cellular cytotoxicity (LDCC) employing Concanavalin A and ^{51}Cr-labelled CEM target cells in a 4 hour assay.
Results. Initial experiments showed that HM$^+$ had elevated levels of LDCC (34±12% lysis) compared to HM$^-$ (24±11) or HT (20±9) controls. LDCC in HM$^-$ correlated with levels of CD8 cells bearing Leu7, whereas LDCC in HM$^+$ correlated with levels of CD8 OKT10$^+$ cells. Cell depletion experiments to more directly assess the role of CD8 subsets in LDCC confirmed that CD8 cells mediate LDCC in HM$^-$ and HM$^+$ (80-90% inhibition). Depletion of Leu7 removed > 50% of the lytic activity in HM$^-$ and an average of 35% in HM$^+$. Depletion of OKT10$^+$ CD8 cells had no effect on LDCC of HM$^-$; preliminary experiments in HM$^+$ have been variable.
Conclusion. Our data indicate that, as has been shown previously in healthy control subjects, LDCC in HM$^-$ appears to be mediated predominantly by CD8 Leu7$^+$ cells. However, despite the increased levels of CD8 Leu7$^+$ cells, this CD8 cell subset does not appear to be the major contributor to the elevated LDCC in HM$^+$.

T.C.P.32

ANTI-HIV ANTIBODY DIRECTED CYTOTOXICITY: CELLULAR AND HUMORAL DEFECTS

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Objective: To define specific defects altering the efficacy of anti-HIV-1 antibody directed cytotolysis.
Methods: The ability of freshly isolated antibody armed NK/K cells from HIV-1 infected individuals to lyse virally infected targets declines rapidly as disease progresses. To determine whether humoral factors contribute to this decline, patient(pt) sera was tested for its ability to confer cytolytic activity on normal NK/K cells, either by its direct addition to 6 hr ^{51}Cr release assays or by its pre-incubation with donor lymphocytes for two hours prior to testing. To determine the possible role of cellular defects, pt cells were tested for cytolytic activity both in the presence of and again after pre-incubation with a high titered anti-HIV-1 serum known to mediate high levels of antibody dependent cytolysis. Less than 5% lytic activity was considered indicative of a defect.
Results: Half of 80 asymptomatic patients tested showed specific humoral and/or cellular defects in anti-HIV-1 antibody directed cytotoxicity. The absence of antibodies capable of directing anti-HIV-1 specific cytolysis, occuring in 20% of pts, was the most common humoral defect identified. A second humoral defect was found in 10% of pts who had high levels of these antibodies, but were unable to arm normal NK/K cells to become cytotoxic for infected targets due to the presence of inhibitory factors in their serum. Cellular defects, identified by the inability of pt lymphocytes to mediate cytolysis even with the high titered serum, were found in 10% of the cohort. This defect was apparent in an additional 10% of pts, who showed signs of humoral defects as well. All 20 AIDS pts tested showed either a humoral or cellular defect, with 60% having a severe combined dysfunction.
Conclusion: Using multiple assays, HIV-1 infection was found to cause severe defects in antibody dependent cytolytic reactivity. The magnitude and frequency of these defects increases with disease progression and may significantly alter the effectiveness of antibody directed cytotoxicity in vivo. Through the recognition of these defects, specific restorative therapies can be better designed.

T.C.P.33

CHARACTERIZATION OF p17 PROTEIN ON PLASMA MEMBRANE OF HIV-INFECTED CELLS BY MONOCLONAL ANTIBODIES AND EPITOPE MAPPING

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Objective. To identify and characterize HIV-1 p17 protein on cell surface of HIV-infected cells.
Methods. Standard viral, monoclonal antibody and FACS techniques were used. Epitope mapping was done using overlapping hexapeptides spanning p17.
Results. Previous data suggested that neutralizing antibodies to the p17 core protein could be found in AIDS patients and that anti-p17 antibodies could neutralize HIV-infectivity in vitro. To determine the sites within p17 reponsible for this, twelve monoclonal antibodies to p17 were made. HIV-1 infected THP-1 a human monocytoid leukemic cell line, and Hut-78, a neoplastic T-cell line, were analysed by FACS for p17 binding. Four of 12 anti-p17 antibodies reacted with the cell surface of HIV-infected cells. Two anti-p17 antibodies (p17A and p17B) which inhibited viral infectivity in vitro, also reacted with the cell surface of HIV-infected cells. Epitope mapping showed that p17B recognized a peptide of amino acids 17-22 and p17A recognized two peptides from 12-19 and 100-105 in the p17 sequence. A soluble synthetic peptide from amino acids 12-22 blocked virus neutralization and binding of p17 on the cell surface by p17A while peptides containing amino acids 100-105 did not block cell surface binding.
Conclusions. The myristilated N-terminal gag protein p17 was identified on the cell surface of HIV-infected cells. Using specific p17 monoclonal antibodies, epitopes on the p17 molecule necessary for virus neutralization and recognition of cell surface bound p17 were determined.

T.C.P.34

HIV-1 STIMULATES TUMOR NECROSIS FACTOR-ALPHA RELEASE FROM HUMAN MONOCYTE/MACROPHAGES (MØ).

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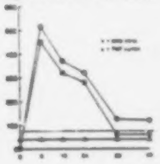
Objective: To determine if HIV-1 will stimulate the release of tumor necrosis factor-alpha (TNF) from human MØ in vitro.
Methods: HIV-1 (□) and mock (△) preparations were made by ultracentrifugation. Endotoxin in these preparations was excluded by the limulus lysate assay and by a bioassay using a mouse macrophage cell line. TNF was measured using the L-929 bioassay, and specificity was confirmed by neutralization with TNF-alpha-specific monoclonal antibody.
Results: The inoculation of normal blood MØ in vitro with endotoxin-free HIV-1 results in a burst of TNF (Fig.) in a dose-dependent manner. TNF release precedes expression of HIV-1 replication in MØ and is also observed with heat-inactivated HIV-1. The TNF induction by HIV-1 is not neutralized by addition of polymyxin B (○) and not mediated by allogeneic stimulation. Preliminary results show that purified gp120 does not induce TNF and recombinant soluble CD4 does not block TNF induction by HIV-1.
Conclusion: A component of HIV-1 can induce transient TNF release from normal blood MØ in vitro.



T.C.P.35

Comparative study of NK and ADCC activity of CD3-, CD2+,CD16+ cell lines obtained from normal seronegative and HIV seropositive subjects.

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Highly purified CD3-, CD16+ cell lines were obtained from 5 normal seronegative subjects, 5 asymptomatic HIV seropositive carriers and 5 AIDS patients.
Purification procedure consisted of negative immunoselection by panning technique with anti-CD3 and anti-CD4 monoclonal antibodies and positive selection on a cell sorter (EPICS 752) by labelling CD3, CD4 depleted populations (< 1% CD3+, CD4+) with anti-CD16 PE (Leu 11c phycoerythrin). From 99 to 100 purified CD3-, CD16+ were cultured in 96-well in MEM medium with r-IL2, in the presence of irradiated allogenic peripheral blood lymphocytes and irradiated EBV transformed B cell line (LAZ 388). After 60 days culture, cell lines were assessed for their NK activity against K 562. ADCC activity against P815 cell line previously incubated with anti-P815 antibodies and liberation of cytotoxic factors by preincubation with U-937 cell line. Preliminary results suggest that NK and ADCC activity as well as liberation of cytotoxic factors are depressed in NK cell lines obtained from HIV seropositive patients.

T.C.P.36

ROLE OF FC RECEPTORS IN THE BINDING OF HIV TO MONOCYTES

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Objective. Monocytes can be infected with HIV, however, the mechanism of the infection is unknown. Since CD4 is weakly expressed on monocytes, we explored the possibility that Fc receptors (FcR) may play a role in the binding of HIV-1 to monocytes.
Methods. Two-day adherent monocytes were removed from gelatin-coated flasks and incubated with concentrated HIV. Fluorescein (FITC)-anti-HIV and phycoerythrin (PE)-anti-CD14 were then added. For binding inhibition studies, monocytes were preincubated with anti-FcR monoclonal antibodies (Mabs) or anti-CD3 Mabs (which bind monocyte FcR). The samples were analyzed by flow cytometry, gating only on the CD14$^+$ cells.
Results. Neither anti-FcR Mab nor anti-CD3 Mabs inhibited virus binding. When the promonocyte cell line, U937, was tested, similar results were found.
Conclusion. These studies indicate that HIV does not bind to the monocyte FcR.

T.C.P.37

IDENTIFICATION OF COMMON EPITOPES OF HIV 1 AND HIV 2 BY MONOCLONAL ANTIBODIES

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26 monoclonal antibodies were prepared, directed against our HIV 2-isolate with intertypic characteristics (HIV-MDS) and tested against HIV-2 (NIHZ), HIV-2 (ROD), HIV-1 (HTLV 3B) and HIV-MDS. The tests were performed with ELISAs, RIPA, and Western Blots prepared by sucrosegradient-purified antigens as well as by recombinant envelope protein from HIV-1 (aa 350 - aa 750, DuPont). 8 of the monoclonal antibodies directed against the envelope reacted groupspecific with all virus antigens. A second group of 8 monoclonals directed against gag-pol reacted also with all virus antigens. A third group of 10 monoclonals directed against structural and non-structural virus proteins reacted typespecific just with the HIV-2 isolates. The significance of the identified epitopes for the neutralization of the virus strains has been determined.

T.C.P.38

EFFECT OF HIV ON ANTIGEN-INDUCED T CELL PROLIFERATION

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Objective. Examination of antigen-induced T cell proliferation in response to a particulate bacterial antigen (E.coli) and tetanus toxoid following infection of the cells by HIV.
Methods. In one set of experiments, monocytes (Mo) were pulsed with antigens prior to co-cultivation with autologous T cells and HIV (1x10E5-1x10E1 IU/ml). In the second set of experiments, both HIV and antigens were added to the cultures upon initiation of the incubation period. Antigen-induced T cell proliferation was measured by ^{3}H-thymidine incorporation after 7 days of incubation.
Results. A difference was found using either pre-pulsed or non-pulsed Mo concerning the antigen-induced T cell proliferative response in the presence of infectious HIV. HIV caused a dose-dependent suppression of antigen-induced T cell proliferation in the presence of the pre-pulsed Mo, e.g. T cell proliferation in response to tetanus toxoid-pulsed Mo decreased from 24.1 ± 2.8 dpm ± s.d. x 10E-3(in the absence of HIV) to 0.8 ± 0.1 dpm ± s.d. x 10E-3 (in the presence of HIV, 1x10E5 IU/ml). The simultaneous addition of antigen and infectious HIV to the Mo in the second set of experiments led to an increase of T cell proliferation, e.g. in response to tetanus toxoid, T cell proliferation increased from 25.0 ± 1.2 dpm ± s.d. x 10E-3 (in the absence of HIV) to 68.6 ± 5.7 dpm ± s.d. x 10E-3 (in the presence of HIV, 1x10E5 IU/ml). Similar data were observed with E.coli.
Conclusion. Addition of infectious HIV to co-cultures of T cells and antigen-pulsed Mo results in a decrease of antigen-specific T cell proliferation. Conversely, the simultaneous presence of T cells, Mo, antigens and HIV in the cultures leads to an increase of the antigen-induced T cell response.

T.C.P.39

HIV INDUCED, HIV SPECIFIC IN VITRO ANTIBODY RESPONSE.

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Objective : To induce specific B cell response to HIV protein or env gp160 protein.
Methods : Purified B were cultured in vitro in the presence of purified T cells or IL2, with different preparations of HIV unfractionnated protein preparation. The specific HIV response were measured by Elisa and Western Blot.
Results : No response was observed in negative donnor. In HIV positive, HIV induced a specific antibody response. Anti HIV ab were only obtained when T cell help was provided by interleukine 2 and interferon alpha but not in the physical presence of T cells. Anti HIV ab produced in cultures were predominantly directed against gp160 and or gp110. In vitro antibody production was inhibited by cycloheximide, anti env 3, mab, but inconstantly by anti CD4. The antibody response required the presence of autologous monocytes which can be replaced by interleukine 6. Allogenic monocytes are not functionnal. Identical results were observed with gp160 peptides.
Conclusion : HIV specific in vitro antibody response directed the env proteins can be induced in HIV+ patients, but not in HIV- controls.

T.C.P.40

TUMOR NECROSIS FACTOR INHIBITS ACTIVATION OF B CELLS BY HUMAN IMMUNODEFICIENCY VIRUS (HIV).

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Objective : In vitro HIV induced B cell proliferation. However the precise interactions between HIV and first steps of B cell activation and with B lymphokines are poorly understood.
Methods : We have investigated the effects of recombinant human tumor necrosis factor alpha (TNF alpha) on human B cell proliferation. Human B cells were activated by anti-mu ab, B lymphokines (12 Kd BCGF, IL2), Pokeweed mitogen (PWM) or HIV unfractionated protein preparation.
Results : TNF-alpha acts as a B cell growth factor on anti-mu activated B cells. TNF-alpha does not modify the B cell proliferation induced by anti-mu ab and lymphokines or PWM.
HIV preparation supports a moderate B cell proliferation enhanced by the 12 Kd BCGF or IL2. TNF alpha inhibits in a dose dependant manner the HIV induced proliferation. This effect is not due to a cytotoxic activity and is observed in the absence of monocytes. Interferon alpha and gamma have no inhibitory effect in the same culture conditions.
Conclusion : We conclude that TNF alpha can selectively modulate the B cell activation induced by HIV in vitro.

T.C.P.41

FcR expression in HIV-1 infected T cell Lines

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It is well known that EBV transformed B lymphoblastoid cell lines,such as RP MI 8866,express a large number of FcεR on their surface. It has been recently reported that mRNA encoding the FcεR was not detected in normal human T cells or T cell lines except HTLV-I transformed T cell line. These findings suggested to us the possibility that infection of T cells with another retroviruses HIV-1 might induce the expression of FcεR on T cells or formation of IgEbFs. We then tryied to analyse the presence of FcεR on 3 HIV infected T cell lines by cytofluorometry by using double staining with anti-CD4 or anti-CD8 and an an anti-FcεR monoclonal antibody. To detect the presence of IgEbF in the culture supernatant of these HIV infected T cell lines a rosette inhibition assay was used. Preliminary results of the HIV infected T cell lines studied indicate that only one showed a clear expression of FcεR at 3 days of culture as analysed by cytofluorometry. In contrast the presence of IGEbF was seen in 2 of the 3 lines examined. These preliminary results indicate that infection of T cells with HIV-1 could induce the expression of FcεR on T cell lines and the formation of IgE BF in the culture supernatants of the cell lines studied.

T.C.P.42

PREVALENCE OF ANTI-nef POSITIVE SERA IN HIV-INFECTED PATIENTS : MAPPING OF THE MAJOR EPITOPES OF nef PROTEIN USING SYNTHETIC PEPTIDES.

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Objective : to study the prevalence of anti nef positive sera in HIV- infected patients and to map the immunodominant epitopes using synthetic peptides.

Methods : Human sera were tested for the presence of anti-nef antibodies by RIA with recombinant ^{125}I-nef expressed in E.coli and by ELISA using synthetic peptides.

Results : Among the HIV positive sera tested by RIA 70 ± 6,5 % were found anti-nef positive. Anti-nef antibodies bound to nef with high affinity (K 0.5. = 2.2 10^{-9} M). Anti-nef positive sera were assayed on a set of synthetic peptides (ranging from 11 to 66 a.a. and spanning the total sequence of nef from HIV-1), wich showed a significant diversity of the immunodominant antigenic sites. A strong immunoreactivity was observed with either N-terminal or C-terminal regions meaning a heterogeneity of the humoral responses against nef.

Conclusion : these results provide a means for an early diagnosis of HIV infection based on the detection of anti nef antibodies using synthetic peptides.

T.C.P.43

INCREASED SERUM LEVELS OF SOLUBLE IL-2 RECEPTORS (sIL-2R) IN HIV INFECTION. CORRELATION STUDIES AND CLINICAL SIGNIFICANCE

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Objective. To gain further insights into the cell origin(s) and clinical significance of elevated sIL-2R in HIV infection.
Methods. sIL-2R were measured using a sandwich enzyme immunoassay in 105 consecutive HIV-infected subjects. Data were further correlated with biological markers of disease activity. Follow up studies were performed every 4 months in untreated and AZT-treated individuals. To assess whether elevated sIL-2R may contribute to the immune defect sIL-2R were generated in vitro and supernatants were tested for inhibitory activity on NK cell activity and lymphocyte transformation.
Results. The increment of sIL-2R in HIV-infected patients was confirmed, but in our series subjects presenting with PGL showed significantly higher sIL-2R levels than asymptomatic individuals (p 0.001). Increased sIL-2R were strongly correlated with neopterin and beta-2m serum levels whereas no correlation was found with CD4+ cell counts, CD4+/CD8+ ratios, activated T cells (CD3+, HLA-DR) or serum IgA. Follow up studies showed an increase of sIL-2R with time and without clinical evidence for progression. Follow up studies in AZT-treated patients will also be presented. Analysis of the in vitro studies is still ongoing and will be reported at the meeting.
Conclusion. The data strongly suggest that elevated sIL-2R in HIV infection reflect rather monocyte and possibly B cell alterations than T cell activation and/or destruction. The significance of sIL-2R as a marker for progression will be discussed as well as their contribution to the immune defect.

T.C.P.44

LOW LEVELS OF LFA1+ CELLS IN HIV INFECTION

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Objective: LFA1 (Leukocyte Function Antigen 1) is a membrane molecule of the adhesin family, involved in cell-cell interactions, and physiologically expressed on more than 90% nucleated cells in the peripheral blood (PB). In a previous study, we established that significantly lower percentages and numbers of PB lymphocytes expressed this molecule in HIV-infected patients. These data suggested that a decrease in LFA1 expression could be involved in the immunodeficiency of HIV+ and AIDS patients. This observation was confirmed in a new series of patients, and a follow-up study was performed.
Methods: LFA1 expression on PB lymphocytes was studied using classical indirect immunofluorecence techniques with a monoclonal antibody from Immunotech (Luminy-France). Patients were divided in two groups, accor--ding to CDC classification (group 1= stage II and III; group 2=IVC1 and IVD).
Results: In spite of careful monitoring and therapeutic attempts with AZT, low levels of LFA1+ cells persisted in initially "low" patients. Patients with a progressive decrease of LFA1+ cell percentage under 30% were developing AIDS-disease at this time.
No correlation was found for the two groups between CD4+ cells count and LFA1+ cells, no more between CD8 and LFA1.
Conclusion: LFA1 expression in HIV infection is significantly decreased, adding to the immune deficiency of CD4+ cells, and could represent a new predictive factor of AIDS on a long-term follow-up.

T.C.P.45

EXPRESSION OF THE T-CELL RECEPTOR MOLECULE IN HIV INFECTION

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Objective: T lymphocytes recognize foreign molecules using the T-cell receptor (TCR), a disulfide-linked heterodimer, closely associated with the CD3 polypeptide on the cell surface. We studied in a series of 150 HIV+ patients, the expression of the TCR molecule in addition to those of CD3, CD4, CD8 and LFA1 (adhesin) molecules, on peripheral blood lympho--cytes (PBL).
Methods: Classical indirect immunofluorescence techniques were used, with monoclonal antibodies from Coulterclone (for CD3,CD4,CD8), Immunotech (for LFA1) and Becton-Dickinson (for TCR-alpha chain).
HIV+ patients were divided in two groups, according to CDC classification: group 1 = stage II and III (N=100); group 2 = stage IVC1 and IVD (N=50).
Results: As expected, a highly signicant correlation was found between CD3 and TCR + cells'percentages, in both group. But TCR percentages (respectively 48,7 and 31,2 for groups 1 and 2) were constantly lower than CD3 (61,4 and 57,7). The TCR/CD3 ratio was 0,8 (gr.1) and 0,5 (gr.2).,
Conclusion: These data show a defective expression of TCR, occuring even at an early stage of HIV infection. This may add to the immune deficiency.

T.C.P.46

MOST SERA FROM HIV INFECTED INDIVIDUALS CONTAINS HIV ANTIGEN AS IMMUME COMPLEXES

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Objective: To develop a method for improved detection and quantitation of HIV p24 antigen and to check whether the lack of detectable HIV antigen within the vast window of asymptomatic HIV seropositivity could be due to low or absent synthesis of viral antigen or to formation of immune complexes which make antigen undetectable by available methods.
Methods: Dissociation of immune complexes and denaturation of antibodies with little or no compromise of HIV antigen by low pH treatment of the samples before standard p24 ELISA.
Results: In control experiments with artificial mixtures of HIV antigen and HIV antibody negative or positive sera it was demonstrated that: 1) no false positive results were caused by the treatment, 2) both HIV antigen positivity (4% vs 98%) as well as the amount of measured antigen were significantly increased, 3) while only some HIV antibody positive sera contain free antigen, in many sera the antigen is in the form of immune complexes not directly detectable by ELISA.
Randomly selected HIV antibody positive sera (n=416) from asymptomatic persons were tested for p24 antigen in parallel without treatment and after acid pretreatment. Substantial increase of p24 antigen positivity (51.7% vs 11.8%) and level (factor 2.8) were observed after pretreatment. Similar increase (58.7% vs. 34.8%) was observed for the group of 46 tested AIDS sera. Thus an additional 40% of sera from both groups contain p24 antigen in the form of immune complexes which are detected by our method. Sera from four consecutive visits (18 month period, 6 month interval) of 29 retrospective seroconverters were tested for presence of p24 antigen after dissociation of immune complexes. Eleven individuals (37.9%) never express any kind of detectable antigen; two (6.9%) showed episodical p24 positivity and 16 (55.2%) persistently contain p24, once it appears in their serum. The antigen can be detected directly only at periods when antibody-antigen ratio is low. At higher ratio p24 antigen is present in serum as immunocomplexes and can be detected only after dissociation.
Conclusions: Many sera from HIV infected individuals contain HIV antigen. It is mainly in the form of immune complexes and can be detected by the proposed method. The results suggest two main patterns of p24 antigen expression in sera. One group of individuals never expresses HIV antigen, another relatively large group persistently shows p24 and only a small group shows episodical p24 positivity.

T.C.P.47

PRODUCTIVE IN VITRO HIV INFECTION OF NORMAL CD8$^+$ LYMPHOCYTES

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An increase in the numbers of CD8$^+$ lymphocytes occurs early in HIV infection. The role of CD8$^+$ cells in HIV infection is not clear; however, several laboratories have shown that CD8$^+$ cellular function is abnormal. In order to develop an in vitro system to study the effects of HIV infection on normal CD8$^+$ T cells, peripheral blood lymphocytes (PBLs) from HIV-negative donors were cultured with phytohemagglutinin (PHA) for 3 days and then infected with HTLV-IIIB. After reculture for 3 days, infected cells were irradiated and cocultured with uninfected PHA-stimulated PBLs from the same donor. Previous results indicated that most CD4$^+$ cells are depleted in such cultures after 6 days (FASEB J. 2:251, 1988). Cocultures and control uninfected cultures were grown in recombinant interleukin 2 for more than 3 months. HIV was monitored by electron microscopy and by p24 antigen ELISA. Cocultures were strongly positive for HIV p24 whereas uninfected control cells were negative. On day 26 after the start of the cocultures, cells were sorted into CD8$^-$ and CD8$^+$ cellular fractions. The sorted infected CD8$^+$ fraction was strongly positive for HIV p24 (1.34ng/ml); however, the CD8$^-$ infected fraction was only weakly positive (0.124ng/ml) when compared to H9-infected control cells (1.657 ng/ml). Thus, CD8$^+$ cells can become productively but noncytopathically infected with HIV. This may result from the development of a CD4$^+$ CD8$^+$ intermediary cell or after direct cell-to-cell transmission. The relevance of this data to the CD8$^+$ cellular abnormalities in vivo is unclear but suggests that HIV interactions may be more complicated than previously appreciated.

T.C.P.48

CD4-DERIVED PEPTIDE PROTECTS CD4+ T CELLS FROM HIV-I INFECTION.

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Objective. To identify primary sequences within the CD4 molecule that may be involved in the binding of the HIV-1 envelope.
Methods. We synthesized various peptides corresponding to different domains of CD4 molecule. HIV-I gp120 (200 ng/ml) was pre-incubated with CD4-derived peptides before adding to CD4+ T cells. Binding was measured by staining cells with OKT4A or Leu3A using FACS analysis. HIV-I strains: IIIB, RF and ZAIRE were added to MOLT3 cells in the presence or absence of CD4-peptides. Blocking of syncytia formation was measured after 5 days.
Results. We identified a 20 amino acid peptide (aa 74-95) mapped to the V1-J1 junction of CD4 that could protect CD4+ T cells from infection by different, divergent strains of HIV-1 (at a concentration of 25-50 g/ml). A shorter fragment of the CD4-truncated peptide (aa 81-95) was needed at higher concentration (250 g/ml) in order to block 100% of syncytia formation following infection with HIV-I. Inhibition of giant cells formation was also seen when the peptide was added 24 h after the induction of viral infection. The CD4-peptide (74-95) and the shorter fragment (81-95) succeeded (in a similar efficiency) to block HIV-I gp120 binding to CEM T cells. All other CD4-derived peptides examined had no effect on gp120 binding and did not block giant cell formation induced by HIV-I. Antisera against this peptide provided partial (40%) protection against HIV-I gp120 binding to CD4+ T cells.
Conclusions. The CD4 region (74-95) participates in the CD4-mediating binding of the HIV-I virion, and may be of therapeutic value in blocking spread of the virus in infected individuals.

T.C.P.49 HIV-1 DISEASE STATUS AND SEROREACTIVITY TO GAG, POL, AND ENV GENE PRODUCTS

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Objective. To determine possible relationships between HIV-1 disease status and seroreactivity to gag, pol, and env gene products.
Methods. Banked sera from 360 seropositive hemophiliacs were assayed for reactivity to synthetic envelope V3 loop peptides and 7 bacterial recombinant peptides (HIVAGEN). The latter represent hIV-1 (IIIB) gp120, gp41, p55, p24, and p66/RT. Disease status was determined by absolute T4 cell count and, when available, Walter-Reed stage.
Results. Correlations between seroreactivity to the various gene products and disease status were analyzed. Reactivity to the immunodominant envelope V3 loop peptides was compared to overall envelope reactivity. Since seroreactivity to the V3 loop suggests exposure to the corresponding virus isolates, the breadth of that reactivity in individual bleeds was examined over time. Broadening of that response in the hemophiliac population since 1985 is probably not due to exposure to newly infecting isolates but would rather suggest a mutation over time of the original genotypes present in the pre-1985 Factor VIII concentrates.
Conclusions. About 50% of the 360 sera were positive for the N-terminal gp120 recombinant fragment (avg. absorbance 380u), whereas 95% were positive for the C-terminal fragment (avg. absorbance 1273u). Reactivity to V3 loop peptides was only 5% for the IIIB peptide vs. 80% for MN.

T.C.P.50 PHENOTYPIC CHARACTERIZATION OF THE EXPANDED CD8Leu-7$^+$ CELL POPULATION IN PATIENTS WITH HIV INFECTION

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Objective. To determine whether the abnormal subpopulation of CD8Leu-7$^+$ cells in HIV infection belongs to a specific subphenotype which can be characterized by co-expression of additional antigenic markers.
Methods. Highly enriched CD8 cells (90$^+$%) were isolated from peripheral blood specimens by negative selection through serial steps of "panning" and complement-mediated lysis. Dual-stain (FITC/PE) monoclonal antibody analysis was performed by automated flow cytometry on these CD8 cells, effectively giving a triple antigenic phenotype. Samples from 20 HIV seropositive subjects (6 asymptomatic, 12 ARC, 2 AIDS) were analysed and compared to 15 healthy, HIV seronegative controls (10 homosexual males, HM; 5 heterosexual males, HC).
Results. The T cell phenotype subpopulation of CD8Leu-7$^+$ is abnormally expanded in HIV seropositive subjects and comprises a major cell population in patients who are symptomatic: ARC/AIDS, mean of 40% (range, 18-60%); asymptomatic HIV$^+$, 30% (18-45%); HM controls, 23% (7-46%); HC, 9% (3-14%). Because HIV$^-$ homosexual men (HM) also show elevated levels of this cell subset, it has been questioned whether this population has any direct relationship to the disease process in HIV infection. Our study demonstrates that, in HIV$^+$ subjects, a major portion of the CD8Leu-7$^+$ subset expresses the cell activation marker Leu-17/OK-T10: 69% and 41% in ARC/AIDS and asymptomatic HIV$^+$, respectively. In the seronegative HM subjects, however, only a 20% of this subset shows activation. This expanded, activated CD8Leu-7$^+$ cell subset bears the α/β chain of TCR-1 (94%) and, therefore, is part of the mature T cell population and not of the NK population. Further characterization of the CD8Leu-7$^+$ cells shows that the portion which co-expresses the CD11b (Leu-15) marker is reduced in ARC/AIDS (28%) in comparison to asymptomatic HIV$^+$ (40%) and the HIV$^-$ controls (45-50%).
Conclusion. The expanded CD8Leu-7$^+$ cell subset found during HIV disease progression appears to be derived from a distinct cell subgroup which is phenotypically different from that found in uninfected subjects, and may prove to be functionally heterogeneous as well.

T.C.P.51 IMMUNODOMINANT EPITOPES OF GP120: A POTENTIAL OBSTACLE FOR VACCINE DEVELOPMENT

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Objective. The mature gp120 has 18 cystaine residues that are conserved in nearly all HIV-1 isolates. The disulfide-bridge dependent epitopes of gp120 are immunologically more dominant than the disulfide-bridge independent epitopes. The predominant type of gp120 antibodies detected in seropositive people progressing to AIDS and in AIDS patients, are those directed to the disulfide-bridge dependent epitopes of gp120. Our working hypothesis is that disulfide-bridge dependent epitopes serve as immunodominant decoy and elicit largely non-protective antibodies. The objective of this study is to remove the immunodominant disulfide-bridge dependent epitopes from the HIV-1 gp120.

Methods. The approach of site-directed mutagenesis was carried out to replace cystain residues with other amino acids in gp120. The antigenicity of the genetically-modified gp120 was studied by radioimmunoprecipitation and Western Blot assays.

Conclusion. HIV-1 gp120 mutants that lost immunodominant epitopes yet remained infectious were identified. Such mutants may have a better potential to induce functionally important gp120 antibodies.

T.C.P.52 DIFFERENCES AMONG LYMPHOCYTE SUBPOPULATIONS IN HIV POSITIVE OR NEGATIVE HOMOSEXUAL AND HETEROSEXUAL MALES AS DETERMINED BY MULTIPARAMETER FLOW CYTOMETRY.

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Four-color flow cytometry was used to determine surface antigens on peripheral blood lymphocytes. Volunteers included normal, heterosexual males (N=20), HIV(-) homosexual males (N=20), or HIV(+) homosexual males that were divided into two groups based on a total CD4/ml blood count of >500 (N=23), or <500 (N=23). Statistical significance was accepted at $p < 0.05$. The %CD8 lymphocytes was significantly greater in HIV(-) homosexuals (35%) compared to heterosexuals (29%) and even greater in the HIV(+) >500 group (45%) and <500 group (49%). The %CD8 cells that also expressed CD38, an activation antigen, but not CD45R (a marker which reflects inducer of suppression on the CD4 background), was significantly greater in the HIV(+) <500 group (7%) and >500 group (4%) compared to HIV(-) males (1%). The significant increase in CD8/CD38 expression between the <500 and >500 groups could be attributed to 7/23 individuals in the <500 group whose serum was positive for HIV p24 antigen. The %CD8 cells that expressed both CD38 and CD45R was significantly greater in the <500 group (6%) compared to the >500 group (3%), and could not be accounted for by p24(+) individuals. Therefore CD38 alone on CD8 cells may reflect active viral replication, whereas CD38 and CD45 on CD8 cells may represent a subset alteration that correlates with progression of the disease. This work was supported by PHS U10 AI 2589-01 AIDS.

T.C.P.53 ENVELOPE GLYCOPROTEINS OF HIV-1 INHIBIT EXPRESSION OF mRNA FOR IL-2 BUT NOT FOR IL-2R IN TETANUS-SPECIFIC T CELL CLONES

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Objective: To determine whether IL-2 and IL-2 receptor (IL-2R) gene expression are suppressed by the envelope glycoproteins of HIV-1 (gp120).
Methods: Gp120 was purified from HTLV-3$_{451}$ infected Hut 78 cell culture supernatants by affinity chromatography. Tetanus antigen-specific T cell clones independent of exogenous IL-2 were developed from a normal individual. The mRNA for IL-2 and IL-2R were determined by specific cDNA probes by northern blot analysis.
Results: Cloned T cells proliferated and expressed mRNA for IL-2 or IL-2R only when cultured in presence of tetanus antigen. Preincubation of the cloned T cells for 6 hours with 0.1 to 0.001 ug/ml of gp120 resulted in dose dependent suppression of mRNA for IL-2 and of tetanus-specific proliferative responses. Although the cells that had been treated with gp120 showed a significant decrease in their ability to express IL-2R (tested by staining with anti-IL2R mAb and analysed by flow cytometry), the IL-2R gene expression was not suppressed. In T cell clones stimulated with mAb directed against surface molecules CD2 and CD28 (plus PMA), proliferative responses and mRNA for IL-2 and IL-2R were unaffected by gp120 treatment.
Conclusion: The results demonstrate that gp120 selectively inhibits antigen-specific T cell responses by inhibiting IL-2 mRNA. Suppression of IL-2R expression by gp120 appears to occur at a post-transcriptional level.

T.C.P.54 INTERFERON-BETA and INTERLEUKIN-2 BUT NOT INTERFERON-ALPHA AUGMENT NATURAL KILLING OF HIV-INFECTED TARGETS AMONG HIV(+) SUBJECTS.

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Objective: To evaluate the effects of recombinant interferons (rIFN) and interleukin-2 (rIL-2) on natural killer cytotoxicity (NKC) of HIV (+) and (-) individuals against HIV-1 infected targets.
Methods: Ficoll-hypaque separated peripheral blood mononuclear cells from HIV(-) and both Group II asymptomatic (Gp II) and Group IV symptomatic (Gp IV) HIV (+) individuals were incubated for 18 hrs with medium, 1000 U rIFNα or rIFNβser, or 50 U/ml rIL-2 prior to a 4-hr ^{51}Cr-release assay against CEM infected with HIVpm-213. NKC is expressed in lytic units per 10^7 cells at 30% lysis (LU/10^7), and analysed by Student's t-test.
Results: Mean NKC of controls was 38 LU for controls (n=12), 17 LU for GpII HIV(+) (n=8), and 10 LU for GpIV (n=10) HIV(+) (both <.05). Significant ($p<.05$) augmentation of NKC by rIL-2 occurred among all groups (213 LU, 100 LU, and 64 LU), as did augmentation by rIFNβ ser (96 LU, 53 LU, and 41 LU). There was no signficant augmentation of NKC by rIFNα except among controls (84 LU).
Conclusion: NKC against HIV-infected cells is significantly decreased ($p <.05$) with each stage of HIV infection; in addition, augmentation of NKC by rIFNβ and rIL-2 but not rIFNα may suggest 1) an effect of HIV on IFNα-responsiveness of NKC, and 2) potential for immunoreconstitution with IFNβser or IL-2 among HIV (+) individuals.

T.C.P.55 CORRELATION OF ADCC AND NEUTRALISATION WITH A BETTER CLINICAL STAGE IN CHILDREN BORN TO HIV-1-INFECTED MOTHERS

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Factors determining an uninfected or infected outcome as well as disease progression in children born to HIV-1 infected mothers are unclear. Also, early diagnosis is hampered by maternally transferred antibodies. We have retrospectively divided children, 0-24 months of age, into two groups based on HIV seroreactivity at 15 months of age. No difference was seen in presence of ADCC and neutralising antibodies between the groups. The persistently seropositive group was divided into a non-AIDS and AIDS group according to clinical status at time of serum collection. Interestingly, the ADCC frequencies in these two groups differed, 70% and 30%, respectively. Even more striking, 63% of non-AIDS and none of the AIDS patients had neutralising antibodies. These differences were not merely a reflection of decreasing IgG-titres in later stages of disease. Presence of both ADCC and neutralisation was more common in mothers giving birth to children becoming seronegative than to persistently seropositive ones.

In conclusion, ADCC and neutralising antibodies do not seem to protect against virus transmission from mother to child but are significantly correlated with a better clinical stage of HIV-infection.

T.C.P.56 AN ANALYSIS OF THE EXPRESSION OF CD4 RECEPTORS BY BLOOD MONOCYTES AND T CELLS FROM NORMAL AND HIV-1+ INDIVIDUALS.

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Monocytes harbor HIV-1 and probably play an important role in maintaining the chronicity of the disease. Monocytes are susceptible to HIV infection because they have the CD4 receptor. Objective: to compare the expression of CD4 on T cells and monocytes. Methods: An immunofluorescence (Flow cytometry, microscopy) analysis employing anti-CD4 (Leu-3a) and anti-CD14 (Leu-M3) on fresh monocytes and T cells was done. Results: 1) By flow cytometry 85-95% of monocytes from a normal(n=8) or HIV-1+ (n=4) individuals show dual positivity for CD14 and CD4. Although the analysis subtracts non-specific staining, staining with anti-CD4 causes a shift of the whole monocyte population along the fluorescence intensity axis as opposed to the tailing effect of control antibodies that did not alter the position of the fluorescence negative monocytes. These observation suggest that all monocytes are CD4+ albeit some have low CD4 density and overlap with background control staining. The results are not affected by fixation of cells or blocking of Fc receptors before staining, 2) The results were confirmed by two color fluorescence microscopy (>76% of CD14+ monocytes were also CD4+), 3) By two-color immunofluorescence microscopy, CD14+ monocytes have intracellular CD4 receptors whereas CD4+ T cells expressed nil to low levels of CD4. Conclusion: These results confirm and extend the observation that all monocytes are CD4+, contain larger amounts of intracellular CD4. HIV-1 infection did not seem to affect CD4 expression by monocytes which may help to explain the cytopathic effects of HIV-1 in monocytes and T cells.

T.C.P.57 ~~AUGMENTATION OF MONCOTYE MEDIATED DIRECT CYTOTOXICITY AND~~ ADCC BY AIDS PERIPHERAL BLOOD DERIVED MONOCYTES

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Cytotoxic effector mechanisms may play an important role in both the control and pathogenesis of HIV infection. We examined the cytotoxic activity of peripheral blood derived monocytes (PBM) from AIDS patients. Both direct cytotoxicity and antibody dependent cellular cytotoxicity (ADCC) were examined using tumor cells as targets in an 18 h ^{51}Cr release assay. Whereas normal PBM were minimally cytotoxic, PBM from AIDS patients were cytotoxic in the absence of exogenous activation. The level of cytotoxicity was comparable to IFN-γ activated normal PBM. Cytotoxicity was mediated by TNF as a) it was blocked by anti-TNF antibody and b) supernatant derived from the monocytes cultures contained high levels of TNF as assessed by cytotoxicity and by RIA. We then examined the PBM dependent ADCC using a target cell resistant to direct cytotoxicity but sensitive in the presence of anti-target antibody. PBM from AIDS patients had augmented ADCC whereas normal PBM were minimally cytotoxic. These results demonstrate that AIDS PBM are activated in vivo and mediate both direct and antibody dependent cytotoxicity. To test cytotoxicity to HIV infected targets, CD4$^+$ T targets resistant to PBM were required. Thus, we selected a variant CD4$^+$ CEM target that was resistant to monocyte-mediated cytotoxicity. These targets retain their CD4$^+$ phenotypes and bind HIV like control. We have initiated studies to use these HIV coated or infected targets with AIDS PBM. The results of such experiments and their significance will be presented.

T.C.P.58 MONOCYTE/MACROPHAGES INFECTED WITH HIV-1 PRODUCE ACID-LABILE INTERFERON-α

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Objective. To describe an interferon (IFN) produced by HIV-1-infected monocyte/macrophages (M/M) and to establish the kinetics of its production.
Methods. M/M cultures were infected with HIV/HTLV-III$_{BaL}$/1985, and p24 antigen production was measured by ELISA. The controls were HIV-1-infected cells treated with AZT and non-infected cells. IFN titers in the culture medium were determined at intervals using human foreskin fibroblasts and murine encephalomyocarditis virus as a test system. Anti-IFN antibodies were used to distinguish among IFN types.
Results. We found significant production of IFN (>10 I.U./ml) by M/M infected with HIV-1 and cultivated for ≥12 days, whereas IFN production was not detectable in non-infected cells or in infected cells in which viral replication was eliminated by AZT treatment. The antiviral effect of this IFN in the test system was neutralized by anti-IFN-α antibody and reduced 80 - 90% by treatment at pH 2, suggesting that this IFN belongs to the acid-labile subclass of IFN-α.
Conclusion. Our observations suggest the M/M as a source of the acid-labile IFN-α that has been detected in AIDS patients and reported to be a useful prognostic indicator for development of AIDS. This IFN might also play a role in the pathogenesis of AIDS and its symptomatology.

T.C.P.59 CHARACTERIZATION OF HUMAN MONOCLONAL ANTIBODIES AGAINST HIV-1 WITH GROUP SPECIFIC NEUTRALIZING ACTIVITIES

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Objective. To obtain human monoclonal antibodies (HMAbs) against the proteins of HIV with neutralizing activity from vaccinated or infected individuals.
Methods. B lymphocytes from individuals vaccinated with a recombinant gp160-vaccinia virus or from infected donors were transformed with Epstein-Barr virus. Clones were then selected and analyzed for their reactivity with HIV proteins by several methods such as immunofluorescence, ELISA and immunoblot. A few HMAbs were mapped using a library of the HTLV III B strain cDNA, expressed in the yeast model. Divergent strains of HIV (HTLV IIIB and RF) were then used in neutralization assays based on virion infectivity and HIV mediated cell fusion.
Results. Clones secreting IgG anti-gp41 and gp120 were obtained. Epitope recognized by the anti-gp41 was localized within the C terminal region of gp41, between 824 and 848 amino acids. Virion infectivity can be blocked by the anti-gp41 and the anti-gp120, whereas no neutralization has been observed in the HIV mediated cell fusion assay.
Conclusion. The neutralizing potential of the HMAbs described here is therefore group-specific. Human monoclonal antibodies directed against conserved regions of HIV proteins allow to define immunodominant epitopes for vaccination and production of anti-idiotypes. Since they recognize divergent strains, use of HMAbs in passive therapy should be considered.

T.C.P.60 AUTOANTIBODIES AGAINST COLLAGEN IN AIDS; CORRELATION WITH RISK FACTORS AND DISEASE PROGRESSION

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Autoimmunity often precedes the onset of ARC or AIDS, and a number of autoantibodies have been described in AIDS patients and in persons at risk for AIDS. Such antibodies raise the question of autoimmunity as a component of AIDS pathogenesis. We here report evidence of an autoantibody (anti-collagen) that occurs in all AIDS patients studied. Sera from various groups were assayed by ELISA for reactivity with gelatin. The specificity of this ELISA for anti-collagen activity was shown by inhibition with purified human collagens. High titre serum reactivity against collagen was found in all AIDS patients, HIV$^+$ homosexuals (66%), HIV$^-$ homosexuals (32%), and HIV$^+$ hemophiliacs (17%), but not in HIV$^-$ hemophiliacs, rheumatoid arthritis (RA) patients, or controls. Serum IgG levels showed little correlation with anti-collagen activity so this is not a reflection of polyclonal B-cell activation. Titration of anti-collagen activity in positive sera revealed levels 100 times higher than the levels in normal sera. Affinity purification followed by electrophoretic and immunoblot analysis confirmed the antibody nature of the anti-collagen reactivity. The anti-collagen antibodies react preferentially with primary determinants revealed after heat denaturation. In this respect, the antibodies are different from those described in RA, but similar to those observed in graft versus host disease and leprosy. To our knowledge, this is the first demonstration of autoantibodies of a single specificity present in all AIDS patients studied. These results suggest that all persons progressing to AIDS express anti-collagen antibodies which may be useful markers of disease progression.

T.C.P.61 POTENTIAL EXTRACORPOREAL TREATMENTS USING A CD8 T-ACTIVATOR FOR PATIENTS WITH AIDS.

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Objective. We designed a system to collect and grow autologous CD8+ T cells for use in the extracorporeal treatment of HIV-infected people. We hypothesized that the CD8+ T cell population from HIV-infected people contains useful effector cells.

Methods. A solid phase system with covalently attached anti-CD8 antibody was used to capture the cells from peripheral blood samples. Purified CD8+ T cells were grown ex vivo under the influence of interleukins for a period of two weeks. Functional assays were performed at that time.

Results. The captured cells were activated and grown ex vivo in the presence of IL2. Cultured cells were greater than 95% CD8+ and demonstrated viability greater than 95%. The CD8+ T cells exerted a strong lytic (30-60% lysis) response to various targets at an effector to target ratio of 5:1. The lytic activity of cells obtained from HIV-infected people was equivalent to that obtained from healthy control cells. The cells maintained a relatively stable phenotype and expanded quickly over the two week culture period. No evidence of the generation of transformed cells was observed indicating that the CD8+ cells did not lose their dependence on exogenously supplied growth factors. The CD8+ cells from infected donors were capable of repressing the outgrowth of HIV from autologous CD4+ cells, as measured by the presence of HIV p24 antigen in supernatant fluids.

Conclusions. The data presented support the application of this technology in the treatment of the clinical symptoms resulting from infection with HIV. Evidence supports the hypothesis that HIV-infected people have functional circulating CD8+ T cells that can be expanded in vitro.

T.C.P.62 ANTI LYMPHOCYTE ANTIBODIES ASSOCIATED WITH HIV INFECTION.

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To determine the incidence of antilymphocyte antibodies (ALA) in patients with AIDS we examined the sera of 300 patients, and found 88% had significant levels of ALA as compared to only 8% of patients with non AIDS-related diseases. In a prospective study to evaluate the usefulness of ALA in assessing the risk of HIV positive individuals developing AIDS, 61 patients with ARC and 87 apparently healthy homosexual males (34 were HIV positive) were tested for ALA and followed for 18-36 months. During this interval 31 ARC patients with elevated ALA developed AIDS, while none of 15 ARC patients without ALA progressed to AIDS. Of the 34 HIV positive healthy homosexuals, 16 had elevated ALA and of these, 7 progressed to ARC or AIDS. None of the individuals with low levels of ALA have yet progressed to ARC or AIDS.

To determine whether AIDS sera containing elevated ALA might influence lymphocyte function we examined the effect of these sera on PHA response of normal blood lymphocytes. Short term cultures were pretreated with ALA positive AIDS sera, and flow cytometric measurements of proliferating cells demonstrated substantial reduction (40-95%) of PHA stimulation. Absorption of AIDS sera with normal donor lymphocytes abolished ALA activity without affecting anti-HIV antibody levels, or abrogation of PHA response.

The determination of ALA levels may be a useful prognostic indication for the monitoring of HIV infected individuals.

T.C.P.63 PREFERENTIAL LOSS OF LEU 8^{-}, CD45R^{-}, HLA-DR^{+} CD8 CELLS DURING CULTURE OF MONONUCLEAR CELLS FROM FORMER BLOOD DONORS SEROPOSITIVE FOR HIV-1.

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Objective. To quantitate changes in CD4 and CD8 cell subsets during in vitro culture of mononuclear cells (MC) from persons seropositive for HIV-1.

Methods. MC from Controls (N=26) or former blood donors seropositive for HIV (N=28) were suspended in culture medium at 2 million lymphocytes/ml. Some cell aliquots (0.1 ml/aliquot) were placed in microtiter wells and cultured for 3 days without a stimulus. Identical aliquots were used to measure day 0 levels of CD4 and CD8 cell subsets. Quantitation was achieved using a Spectrum III flow cytometer, which counts the number of cells (sip count) in a constant volume of cell suspension. The sip count for cells of a given phenotype thus reflects the actual concentration in the suspension. Similarly, sip counts were again measured after culture (day 3).

Results. Relative recoveries (RR) of lymphocytes, CD4 cells, and CD8 cells were significantly lower in the HIV group than the Control group; for the HIV group, CD8 RR was significantly lower than CD4 RR. Dual-color cytofluorometry showed that CD8 cell loss in the HIV group occurred preferentially within subsets defined as Leu 8^{-}, CD45R^{-}, and HLA-DR^{+}; in contrast, CD8 cell loss was nonpreferential for subsets defined by Leu 7 expression. CD8 cell loss also occurred when purified CD8 cells were cultured for 3 days.

Conclusion. Some CD8 cells from HIV-infected persons do not survive during short-term culture. The predominant phenotype of the CD8 cells lost (Leu 8^{-} CD45R^{-} HLA-DR^{+}) is characteristic of activated CD8 cells.

(Supported by funds from ARCBS Biomedical Research and Development.)

T.C.P.64 INVERSE ABERRANCIES OF THE MUCOSAL AND SYSTEMIC IGA SYSTEMS IN AIDS PATIENTS.

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Objective. To describe anomalies of IgA in serum and external secretions of patients with AIDS.

Methods. It is well-documented that levels of total serum IgA in AIDS patients are often markedly and selectively increased; we have further shown that elevated levels of immune complexes in this disease can primarily be attributed to subclass-restricted IgA. Others have demonstrated the presence of IgA antibodies to HIV in saliva and cervical secretions. All of these findings indicate a profound involvement of both the systemic and mucosal IgA systems in this disease. We have initiated experiments to characterize secretory IgA in AIDS in order to determine if alterations of this component of the IgA system, similar to those often observed in its systemic counterpart, can be identified. In order to determine if the secretory IgA system was quantitatively affected in a manner similar to that of its serum analogue, 15 samples of whole saliva obtained from normal volunteers along with 28 such samples from patients with AIDS were assayed by quantitative ELISA for levels of IgA subclasses.

Results. Levels of salivary IgA1 ranged from 8.9-82.2 µg/ml (geometric mean=22.9) and from 6.0-96.0 µg/ml (g.m.=21.1) in the control and AIDS populations, respectively. (P=N.S.) On the other hand, **salivary IgA2 levels ranged from 8.3-72.5 µg/ml (g.m.=28.3) and from 1.2-72.7 µg/ml (g.m.=6.2) in the same two populations ($P < 0.0001$).**

Conclusion. IgA is composed of 2 subclasses (IgA1 and IgA2), which are present in serum and external secretions in different proportions. **IgA2 constitutes at least 40% of total secretory IgA; in contrast, it is a relatively minor component of serum IgA. Since a major mucosal (but not serum) IgA subclass is selectively diminished in AIDS (as opposed to elevations in total serum IgA), we conclude that the systemic and mucosal IgA systems appear to be inversely affected in this disease.**

T.C.P.65 EPITOPE MAPPING OF MONOCLONAL ANTIBODIES AGAINST HIV-1 STRUCTURAL PROTEINS USING PEPTIDES

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Murine monoclonal antibodies (Mab) directed against the structural proteins p17 and p24 of HIV-1 were investigated in an epitope mapping system. Overlapping peptides consisting of 15 amino acids of the p17 and p24 protein, were synthesized in solid phase. These peptides were investigated in inhibition assays. Three different immunogenic regions (region A, B and C) could be defined, one on p17 and two on p24. As expected, the monoclonal antibody 3-H-7 reacting with p17 in immunoblotting was inhibited by peptides originating in the p17 amino acid sequence KKAQQAAADT, position aa 113-122 (region A). On p24 two different regions of reactivity were observed. Region B comprised reactivity for 20 recloned Mabs, but with slightly different rectivity in the centrally located aa EAAEW epitopic site. The antibody 12-B-4 crossreacting with HIV-2 and SIVmac, recognized region C on p24 aa position 293-302. Recognized epitopes were characterized using computer analysis according to Hopp & Woods and Chou & Fasman.

T.C.P.66 EVALUATION OF MONONUCLEAR CELL ASSOCIATED HIV ANTIGEN IN INFANTS AND CHILDREN

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Objective. To determine the presence and distribution of mononuclear cell associated HIV antigen in infants and children.

Methods. Mononuclear cells were harvested from 1 to 3cc of heparinized whole blood using standard methods. The mononuclear fraction was diluted to 10^7 cells and paired aliquots were incubated with anti-leu 3a-PE anti-leu 4-PE and in selected cases, anti-leu M3-PE. These paired samples were then incubated with murine monoclonal anti-GP120 or anti-P24 and goat anti-murine IgG-FITC. The samples and control specimens were then analysed using FACS analysis.

Results. The children analysed for HIV infection ranged in age from birth to 11 years. P24 was identified on the cell membrane of both macrophages (leu M3 pos.) and T4 lymphocytes (leu 3a pos.) PG120 was seldom detected on either monocytes or lymphocytes. A striking pattern of monocyte associated antigen was identified in a young infant (4 mos.) with perinatal exposure. The density of P24 antigen and the percentage of cells expressing this antigen was much greater in the monocyte/macrophage population than the helper T-cell population.

Conclusion. These data suggest that HIV antigen is detectable on the mononuclear cells in infants and children and in infants is especially prominent in monocyte/macrophage cells.

T.C.P.67 SEQUENTIAL ANALYSIS OF HIV-SPECIFIC CTL FUNCTION IN HIV-INFECTED PATIENTS DURING AZT THERAPY

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Objective : To measure the HIV-specific cytotoxic T lymphocyte (CTL) response in patients at different stages of HIV infection during the first six months of 3-azido-3-deoxythymidine (AZT) treatment.
Methods : PBL from 10 asymptomatic, ARC or AIDS patients, were collected sequentially during the first six months of AZT treatment. HIV-specific CTL in blood were detected directly or following in vitro stimulation with autologous HIV-infected lymphoblasts. Target cells were P815 tumor cells doubly transfected with the HIV-1 env, gag or nef gene and the HLA-A2 gene. In some patients effector CTL and CTL precursor cell frequencies were estimated by limiting dilution analysis.
Results : In most patients (7/10) CTL activity increased rapidly with AZT treatment. However, after 3 months, all patients showed a dramatic decrease in CTL activities. After 6 months CTL responses remained weak without reaching levels observed before AZT treatment.
Conclusions : 1) AZT treatment seems to exert an early but transient immunostimulating effect on CTL activities. 2) The constant drop in CTL function after three months treatment might reflect the decrease in viral antigen load and/or AZT toxicity. 3) CTL functions decline before biological and clinical deteriorations become apparent.

T.C.P.68 COMPLEMENT DEPOSITION ON THE SURFACE OF HIV-INFECTED CELLS MEDIATES BINDING TO CELLS CARRYING COMPLEMENT RECEPTORS

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Objective: To investigate the biological significance of complement deposition on the surface of HIV-infected H9 cells.
Methods: HIV-infected cells, which had deposited C3 on their surfaces by incubation in normal human serum were added to complement receptor (CR) bearing target cells: human erythrocytes, U937, human macrophages and investigated for immune adherence.
Results: HIV-infected cells, when they had been incubated in human serum, specifically bound to all CR+ cells mentioned above, whereas uninfected cells did not. Heat-inactivation abolished this binding capacity indicating the role of the complement system. In the case of U937 immune adherence occurred only after stimulation with TPA, which enhances CR expression.
Conclusions: Complement deposition on the surface of HIV-infected H9 cells is able to mediate immune adherence to CR+ cells. We are presently investigating, whether this could lead to infection of CR+ cells characterizing complement receptors in addition to T4 and Fc receptors as another way to initiate infection of cells.
Supported by L.B.I., State of Tyrol, BMFT

T.C.P.69 FUNCTIONAL AND ENVELOPE BINDING ANTIBODIES TO HIV-1 IN SEROPOSITIVE SUBJECTS FROM AFRICA AND THE AMERICAS

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Objective. To determine the quantitative relationship between HIV-1 envelope binding antibodies (BA) and neutralizing antibody (NA) and those directing antibody-dependent cell-mediated cytoxicity (ADCC) in individuals from different geographic regions.
Methods. Sera were obtained from HIV-infected individuals from the U.S., Haiti, Zaire, Zimbabwe, and Brazil. NA titers were determined by 50% reduction of syncytia in a microneutralization assay in MOLT-3 cells using HIV_{IIIB}. BA titers were determined using 4 commercial ELISAs and Western blot (WB). ADCC was measured in a 4-hour ^{51}Cr release assay using HeLa cells infected with vaccinia containing an HIV envelope insert.
Results. BA and WB titers using whole viral lysate and recombinant envelope protein ELISAs correlated significantly with NA titers in sera from the U.S., Haiti, and Brazil. In contrast, sera from Zaire had lower BA and WB titers that did not correlate with NA titers. There was no correlation between ADCC and either NA or BA titers in sera tested.
Conclusions. High BA titers to both whole viral lysate and recombinant envelope proteins predict NA in North and South Americans infected with HIV-1, but may be of less predictive value in Africans, possibly due to variation in envelope-specific epitopes. The discordance between NA and ADCC suggests that different antibodies mediate these responses.

T.C.P.70 THE TRANSMEMBRANE PROTEIN OF HIV-1, gp41, EXISTS IN VIRIONS IN THE FORM OF TETRAMERIC STRUCTURES WHICH POSSESS ENHANCED IMMUNOREACTIVITIES.

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Objectives. To characterize the native structure of the HIV-1 transmembrane protein.
Methods. HIV proteins present in viral lysates were separated by SDS-PAGE, and analyzed by Western blotting, using monoclonal antibodies and anti-peptide sera specific for gp41. These antibodies were also used to characterize viral proteins resolved on various commercial HIV Western blotting kits.
Results. Western blot assays of HIV lysates performed with antibodies specific for gp41 invariably recognize a major component of 160 kDa and a less intense component of 120 kDa in viral lysates. We demonstrate that these species are noncovalently associated tetramers and trimers of gp41, which represent the native form of this protein in virions. These complexes are stable to boiling in the presence of low concentrations of SDS, but are dissociated to gp41 monomers at high SDS concentrations. Moreover, two human monoclonal antibodies preferentially recognize the oligomeric complexes over monomeric gp41 in Western blots, indicating the presence of epitopes recognized by the human immune system on the gp41 multimers which are not efficiently expressed by the dissociated monomers.
Conclusions. These studies demonstrate the existence of multimeric *env* complexes for HIV, and the enhanced and altered antigenicity of such multimers. Such oligomeric structures may be important in the design of subunit and recombinant HIV *env* vaccines.

T.C.P.71 IN VITRO ACTIVATION OF NATURAL KILLER(NK) CELLS BY INTERLEUKIN-2 (IL-2) OR INTERFERON-β (IFN-β) INDUCES THE LOSS OF CYTOTOXIC CAPACITY.

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Objective. To investigate the basis for the altered natural killer cell phenotype associated with loss of NK function observed in HIV Antibody positive (Ab^+) individuals.
Methods. Peripheral blood lymphocytes (PBL) were obtained from HIV Ab^- donors by density gradient seperation and depleted of monocytes by adherence. The PBL were incubated with HIV (RF or HTLV-IIIb strains, 1000 $TCID_{50}/10^6$ cells) and cultured for 6 days with or without IL-2 (recombinant or natural) or recombinant IFN-β (100 U/ml). $CD16^+/Leu\text{-}19^+$ cells were quantitated by flow cytometry before and after culture. NK and ADCC activity was assessed by a chromium release assay on days 3 and 6.
Results. When cells were cultured with HIV in the absence of IL-2 or rIFN-β, NK and ADCC activity against conventional tumor targets (K562 and I84) was not significantly altered. In contrast, PBL cultured with HIV and either IL-2 or rIFN-β exhibited a marked decrease in NK and ADCC (>50%). Phenotypic analysis of cells cultured with HIV but without lymphokines showed a small decrease in the percentage of $CD16^+/Leu\text{-}19^+$ cells while cells cultured with HIV and lymphokines showed a significant decrease in $CD16^+/Leu\text{-}19^+$ cells (>90%)
Conclusion. In vitro culture with HIV in the presence of an activation signal such as IL-2 or rIFN-β substantially reduces NK and ADCC function. This diminished activity is associated with and may be primarily due to the loss of $CD16^+/Leu\text{-}19^+$ cells. Thus, the decrease in NK activity observed in HIV Ab^+ individuals may be due to the loss of an NK cell subset.

T.C.P.72 UNIQUE AND CROSS-REACTIVE ANTIGENIC REGIONS WITHIN THE TRANSMEMBRANE PROTEINS OF HIV-1/HIV-2, AND THEIR UTILITY IN DIAGNOSIS OF VIRAL INFECTIONS.

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Objective. To identify antigenic regions within viral transmembrane proteins in order to differentiate HIV-1 infection from HIV-2.
Methods. Serum samples positive for antibodies to HIV-1 and HIV-2 were identified using HIV-1 and/or HIV-2 recombinant proteins on solid support. A selective population (25 sera) were further analyzed using 1) a competitive immunoassay employing synthetic polypeptides comprising immunodominant region (IDR) sequence from HIV-1 or HIV-2 transmembrane proteins and 2) site directed monoclonal antibodies as competitive probes against serum antibodies.
Results. Serum samples reacting with either recombinant transmembrane proteins of HIV-1 or HIV-2 were placed into one of four groups: 1) 8 samples containing only antibodies against HIV-1 gp41, 2) 6 samples containing only antibodies against HIV-2 gp41, 3) 4 samples which contained two distinct HIV-1 and HIV-2 antibody populations apparently indicating dual infection, and 4) 7 samples which appeared to contain antibodies exhibiting cross reactivity against HIV-transmembrane proteins. The results were confirmed using 1) specific monoclonal antibodies to either HIV-1 or HIV-2 and 2) radioimmunoprecipitation analysis of HIV-1 or HIV-2 infected labeled cell lysates.
Conclusions. These data support existance of unique and cross reactive epitopes within the transmembrane protein immunodominant regions of HIV-1 and HIV-2. In addition, a cross reactive epitope also is present and maps outside of the immunodominant regions.

T.C.P.73 HUMAN ANTIBODY RESPONSE TO HIV-1 PROTEASE ACCORDING TO DISEASE STAGE

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Objective. To study the relationship between presence of antibodies to HIV-1 protease and presence of several disease predictive markers for disease progression in different infected risk groups (homosexuals, hemophiliacs).
Methods. Antibodies to HIV-1 were measured in serum using an enzyme linked immunosorbent assay using a bacterially expressed, recombinant form of HIV-1 protease. HIV-1 antibodies, HIV-1 antigen, HIV-1 core antibodies were measured using a commercially available EIA (Abbott Lab).
Results. From a prospectively followed cohort of homosexuals 56% (34/61) had antibodies to protease one year after HIV-1 Ab seroconversion, 63% (24/38) had antibodies two years after HIV-1 Ab seroconversion. A similar pattern was observed in 20 hemophiliacs. 63% (160/255) of HIV-1 Ab positive homosexuals in CDC stage II/III were anti-protease positive, versus 60% (9/15) of homosexuals with AIDS related complex (CDC IV A) and 36% of the homosexuals with AIDS (CDC IV B-E). In 255 homosexuals (CDC II/III) antibodies to protease were significantly more frequently found in samples lacking HIV-1 antigen ($p<0.001$) and possessing antibodies to HIV-1 core proteins ($p<0.001$).
Conclusion. HIV-1 protease is expressed and antigenic in most HIV-1 infected individuals and absence of antibodies to HIV-1 protease is more often found in persons with progressive disease.

T.C.P.74 QUANTITATIVE, NOT QUALITATIVE, DEFECTS CHARACTERIZE RESPONSES OF CELLS FROM HIV+ SUBJECTS TO B CELL MITOGENS.

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OBJECTIVE: To elucidate the immunoregulatory mechanisms involved in B lymphocyte responses of cells from HIV-seropositive (HIV+) subjects.
METHODS: Proliferative responses of mononuclear cells (MNC) to B cell mitogens, (anti-u and Staphylococcus aureus Cowan I [SAC]) were determined by 3H-thymidine incorporation in 3 or 4 day cultures. Mixed lymphocyte culture supernatant (MLC-sup) and indomethacin were added to certain cultures.
RESULTS: Average proliferative responses of MNC from HIV+ patients to each mitogen are significantly defective (25-35% of control [HIV-] responses). Addition of MLC-sup increases responses of both HIV+ and HIV- MNC to anti-u (45% and 90% respectively) and SAC (60% in both groups). Addition of indomethacin increases responses to SAC, (60-70% increase for both groups). Effects of MLC-sup and indomethacin are additive. To determine if deficient responses were influenced by the altered frequency of lymphocyte subsets in the HIV+ cultures, correlations were sought between proliferation and percent of lymphocyte subsets. Proliferative responses to anti-u and SAC in the presence of both MLC-sup and indomethacin are correlated positively with the percent of B and CD4+ T cells, and negatively with the percent of CD8+ T cells in culture. Mathematical correction of the data for the abnormal percentages of B, CD4+ T and CD8+ T cells results in responses that are comparable to those of control cells.
CONCLUSION: Deficient responses may be due to quantitative differences in the responding B cells and regulatory pathways mediated by CD4+ and CD8+ T cells and not to qualitative differences in the ability of the patients' B cells to respond to these mitogens.

T.C.P.75 HUMAN MONOCLONAL ANTIBODIES (HuMAb) TO HIV-1.

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Objective. To develop a panel of human IgG monoclonal antibodies to HIV-1 that have therapeutic potential either alone or in combination with each other or with other anti-viral agents.
Methods. Hybridomas were produced by fusion of splenic or lymph node lymphocytes from HIV sero-positive patients with the P3x63AgU1 murine myeloma cell line. Hybridomas were screened for the production of anti-HIV IgG by ELISA and indirect immunofluorescence. ELISA screening was performed using plates coated with 2 different HIV-1 isolates and 1 plate coated with a gp120 synthetic peptide fragment. Cloning was done by limiting dilution.
Results. Eight HuMab have been developed that react with HIV.

HuMAb#	86	1	13	P5-3	S1-1	U7-2	V7-8	V10-9
Isotype	IgG1/κ	IgG1/λ	IgG1/λ	IgG1/λ	IgG1/λ	IgG1/κ	IgG1/κ	IgG1/κ
Recognized Antigen	gp160, 120,41	gp160, 120	gp160, 120	no rxn	no rxn	gp160, p55,24	p55,24	gp160, 120,41
I.F.	++	++	++	++	++	+/-	+/-	++
Activity	-	-	-	-	neutralizing	-	-	enhancing

Conclusion. We have established 8 anti HIV HuMAb, one of which has neutralizing activity. Such HuMAb should have major scientific, diagnostic and therapeutic applications. (Abbreviations IF: immunofluorescence, rxn: reaction)

T.C.P.76 FINE SPECIFICITY OF HIV-SPECIFIC CYTOTOXIC T LYMPHOCYTES IN HUMANS

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Objective : To identify CTL epitopes on glycoproteins coded by the HIV env gene.
Methods : HIV-specific HLA-A2 restricted CTL lines were generated from human peripheral blood lymphocytes by stimulation with autologous HIV infected lymphoblasts in the presence of interleukin 2. Peptides used were selected with the criterion of conservation among different HIV isolates in view of an eventual application in vaccines or immunotherapy. These peptides were tested for CTL recognition by incubating each peptide with 51Cr-labeled tumor target cells stably transformed with the human HLA-A2 gene.
Results, conclusions : Among the 30 peptides tested, 6 peptides were particularly well recognized. Results obtained with env synthetic peptides indicate that some epitopes recognized by HIV-specific CTL are highly conserved. This is encouraging in view of the large variability of HIV isolates.

T.C.P.77 HIV RECOMBINANT p18 CORE PROTEIN INHIBITS PROLIFERATIVE RESPONSES BY NORMAL LYMPHOCYTES IN HUMANS AND MICE.

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Objective : To determine the in vitro effect of HIV-1 core p18 protein on mitogen-induced lymphoproliferative response and mixed lymphocyte reaction (MLR). To compare results with the effect of p18 in a mouse model.
Methods : Recombinant p18 gag, p25 gag or p27 nef protein was preincubated with peripheral blood lymphocytes (PBL) from normal donors. Polyclonal mitogenic responses to plant lectins and MLR were then studied in proliferation assays. The effect of p18 was also examined in normal BALB/c mice, and in mice immunized with a recombinant vaccinia virus containing the HIV-1 gag gene.
Results : P18 gag protein suppressed the proliferative responses of PBL from five different healthy donors when lymphocyte proliferation was induced by ConA or by HLA alloantigens in MLR. In contrast, p25 gag and p27 nef proteins had no suppressive effects. These results were reproducible with mouse lymphocytes : p18 gag protein suppressed mitogenic responses to ConA and PHA, as well as specific proliferative responses to p25 gag protein in mice vaccinated with a vaccinia virus-HIV gag recombinant.
Conclusions : 1) Immunosuppressive and immunogenic epitopes of HIV-1 proteins have to be defined in view of vaccination in humans. 2) The murine model is useful to evaluate the immunogenic power of different HIV proteins.

T.C.P.78 LOCALIZATION WITHIN THE HIV-1 LTR OF NUCLEOTIDES RESPONSIVE TO CMV-MEDIATED TRANSACTIVATION

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Objective: To investigate the molecular basis by which human cytomegalovirus (CMV) activates expression from the HIV-1 long terminal repeat (LTR).
Methods: We are analyzing the molecular basis by which human CMV stimulates expression from the HIV-1 LTR by constructing recombinant plasmids with a reporter gene (CAT) under the transcriptional control of the LTR. Clustered-site mutations and small deletions have been introduced into the HIV-1 LTR. These mutants have been tested in transient expression assays in a variety of cell types, including transformed and non-transformed cells, for responsiveness to CMV IE and HIV-1 transactivator (tat).
Results: Mutations in the LTR around either the start site of transcription (-6 to +20), the three SP1 protein binding sites, or the TATA box dramatically reduce responsiveness to CMV IE. A mutation at -6 to -1 abolishes CMV IE-mediated transactivation but leaves tat-mediated transactivation intact. Mutations which abolish responsiveness to tat (+20 to +33) have little or no effect on CMV IE transactivation. Insertion of the -6 to +20 region of the HIV-1 LTR into a CMV IE non-responsive promoter confers responsiveness to CMV IE, but only in one orientation. The magnitude of transactivation by CMV IE and tat appears to be related to the transformation phenotype of the cell.
Conclusions: The mutation analysis shows that responsiveness of the HIV-1 LTR to CMV transactivation includes sequences recognized by the cellular factor designated leader binding protein-1 (LBP-1). Also, additional host factors which are involved in control of cell growth appear to play a role in transactivation of HIV by CMV.

T.C.P.79

Lymphokine-Activated Killer Cell Activity in Patients with AIDS. Chryssa Gryllis, Bluma Brenner, Richard Margolese, Mervyn Gornitsky, and Mark Wainberg. Lady Davis Institute for Medical Research of the Sir Mortimer B. Davis-Jewish General Hospital, Montreal, Quebec, Canada

Natural killer (NK) cell activity and NK cell cytotoxic subsets have been shown to be reduced in patients with AIDS-related disorders relative to healthy controls. The ability to generate lymphokine-activated killer (LAK) cells in AIDS has not yet been reported. Peripheral blood lymphocytes PBLs, (10^6 cells/ml) were incubated for 4-5 days with 15 U/ml recombinant IL-2 to generate such LAK cells. The ability of these activated killers to lyse a panel of targets was deduced using 18h ^{51}Cr release assays. Although there was a 45% decrease ($p<.001$, unpaired t-tests) of PBLs in the patients with AIDS compared to healthy males, the relative recovery of IL-2 activated lymphocytes was not significantly different for both populations. LAK activity against U-937, K562, and RAJ1 targets was reduced in patients with AIDS relative to control populations. However, the ability of patients with AIDS to lyse HIV-infected U-937 targets was not significantly different from healthy controls. LAK activity of healthy males was significantly greater against uninfected U-937 targets vs. their HIV-infected counterparts (151 ± 29.5 vs 87.2 ± 13.9 LU20/10^8 lymphocytes, $p<.05$, paired t-tests). In contrast, LAK activity in patients with AIDS showed enhanced kill of HIV-infected U-937 targets when compared to uninfected U937 cells (57.7 ± 10.6 vs 37.9 ± 6.3 LU20/10^8 lymphocytes, $p<.05$ paired t-tests). These preliminary results indicate that whereas LAK activity in patients with AIDS is impaired relative to controls, these populations vary in their spectra of target cell reactivity.

Biologie moléculaire
Molecular Biology

T.C.P.80

ANALYSIS OF THE MECHANISM UNDERLYING *REV* REGULATIO OF HIV STRUCTURAL PROTEIN GENE EXPRESSION

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Expression of HIV-1 env, gag and pol proteins is strictly dependent on co-expression of the rev protein even when SV40 based vector systems are used. These vectors produce large quantities of viral proteins and RNA and thus serve as convenient models to study the mechanism behind rev regulation. Using this system we have mapped an element normally present in the env and gag mRNAs that is required in cis for rev to act. The element is active only in one orientation. In the absence of rev or the rev-responsive element, levels of cytoplasmic mRNA for the structural proteins are dramatically decreased in transfected cells. In contrast, levels of total RNA (cytoplasmic plus nuclear) remain roughly the same whether or not rev is present. A direct analysis of nuclear RNA shows an accumulation of the RNAs for the structural proteins in the absence of rev. The results suggest that rev functions to regulate nuclear export of these mRNAs.

We are also examining rev regulation of the HIV-2 *env* gene using SV40 vectors. These experiments are aimed at defining the rev-responsive element in HIV-2 and determining the ability of HIV-1 and HIV-2 rev proteins to cross-complement.

T.C.P.81

ASSAY SYSTEMS FOR HIV REV FUNCTION USING CHIMERIC GENE CONSTRUCTIONS

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We have made chimeric constructs containing different regions of the envelope gene linked to either the gene for ß-galactosidase or the EBV EBNA1 protein. For ß-gal, a series of plasmids were created in which ß-gal was fused in frame to the envelope protein leader. 5' to 3' these plasmids contain: the first coding exon of rev, the env leader, ß-gal and different portions of the env gene. Some constructs contain the second coding exon of rev and produce both ß-gal and rev. Mutations in rev cause a decrease in ß-gal activity. Activity is restored when rev is provided in trans.Thus rev-dependence can be conveyed to ß-gal expression and only portions of the env gene are required to see the effect. For EBNA1, the entire open reading frame including the stop codon was fused to a portion of the env gene including the second coding exon for rev. This chimera was inserted into a SV40 vector.The construct produces both an authentic EBNA1 and an EBNA1-rev fusion protein. Both are detectable with EBNA1 specific antiserum.The fusion protein also reacts with a rev-specific antiserum but has no detectable rev activity. It is made because a splice donor near the 3' end of the EBNA1 ORF is used in conjunction with a splice acceptor at the start of the rev coding exon. When active rev is supplied in trans, expression of the authentic EBNA1 protein is favored.Thus rev activity can be measured by quantitation of the two proteins.

T.C.P.82

DIRECT ANALYSIS OF GENETIC DIVERSITY AND EVOLUTION OF HIV IN INFECTED PERSONS USING POLYMERASE CHAIN REACTION (PCR)

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Objective. To directly determine the genetic diversity and evolution of HIV in the lymphocytes of infected persons using a PCR, cloning and sequencing protocol.
Methods. A primer pair was used to directly amplify HIV sequences from lymphocyte DNA. Amplified DNA (about 320 bp) included a constant domain, C3, and two variable domains, V4 and V5 of the *env* gene. Restriction endonuclease sites were incorporated in the primers to facilitate cloning of the amplified HIV DNA into M13. Sequence determination of individual clones was performed using an automated DNA sequencer.
Results. Using an HIV DNA of known sequence, we estimated an overall error rate attributable to PCR, cloning and sequencing to be 0.24 substitution per 100 bases. Of 24 cloned HIV sequences determined from a hemophilic man, only 2 were identical. In the other 22 clones, multiple base substitutions, deletions (15 bp) and insertions (6 and 24 bp) were observed in V4 and V5. All the deletions and insertions and a majority of the base substitutions occurred in more than two clones. Most base substitutions were clustered and lead to amino acid changes. Insertions arose from duplications in tandem, which appeared to be an important source for HIV diversification. Five of 11 clones from a pre-seroconversion specimen of a homosexual man had identical sequences. The same sequence was present in 6 of 12 clones derived from a post-seroconversion specimen collected 5 mo. later. The other clones differed from the predominant one by 1 to 3 base substitutions.
Conclusion. We have demonstrated that PCR amplification followed by cloning and sequencing is a powerful approach to directly assess the genetic variation and evolution of HIV in infected persons.

T.C.P.83

HUMAN CHROMOSOME 12 IS REQUIRED TO SUPPORT AN ELEVATED LEVEL OF HIV GENE EXPRESSION IN HUMAN-HAMSTER HYBRID CELLS.

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Objective. To identify a human chromosome(s) that is required to support an elevated level of HIV *tat*-directed gene expression and virus production.
Methods. A series of human lymphocyte-Chinese hamster ovary cell hybrids with a defined human chromosome content were tested for *tat*-directed *trans*-activation of the HIV-LTR and extracellular virus production. DNA transfection of the cells with a plasmid containing a complete HIV proviral clone was used to assay virus production. *Tat trans*-activation of the LTR was tested by DNA cotransfection of the cells with a plasmid containing an HIV-LTR linked to a chloramphenicol acetyltransferase gene and a plasmid with the HIV *tat* gene under control of a SV40 promoter.
Results. Four of 18 hybrids produced elevated levels of extracellular virus when compared to the CHO parental cell line. These four hybrid clones also had significant increases in LTR-CAT expression in the presence of the *tat* gene. Karyotype analysis of the hybrids revealed a concordance of 94% (17/18) between human chromosome 12 and virus production. In contrast, all other chromosomes had an 11% to 72% concordance with virus production.
Conclusion. Our results indicate that a gene(s) encoded on human chromosome 12 is required for an increase in *tat*-directed *trans*-activation of the HIV-LTR leading to an increase in virus production.

T.C.P.84

EPITOPE MAPPING OF THE HIV-1 GAG REGION BY ANALYSIS OF GAG GENE DELETION FRAGMENTS EXPRESSED IN *E. COLI* DEFINES EIGHT ANTIGENIC DETERMINANTS

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Objective. To map epitopes on HIV-1 gag proteins to specific protein sequences.
Methods. Portions of the HIV gag gene were cloned into *E. coli* expression vectors and mapped on the genome by sequencing. Clones consisted of two 5' coterminal sets: the first consisting of a clone expressing the carboxyl-terminal 13 aa of p17, all of p24 and p15, and five 3' deletion mutants; and a second set consisting of a clone expressing the carboxyl-terminal portion of p24 and the amino-terminal portion of p15 and a 3' deletion mutant. Partially purified antigens expressed by the 8 clones were used in ELISA with 15 anti-gag monoclonal antibodies (MoAb).
Results. MoAb reacted differentially with the deleted clones depending on the antigen portion expressed. Of twelve potential identifiably different genomic regions predicted from the structure of the clones, 8 different antigenic epitopes were defined: 2 on p17, 4 on p24, and 2 on p15. Four regions did not appear to react with any of the MoAb.
Conclusion. Immune responses to HIV infection include apparent loss of p24 antibodies accompanied by increases in p24 antigen levels with disease progression. Precise definition of the immunodominant epitopes contained in the cloned antigens has potential clinical significance. These cloned antigens are currently being used to evaluate sera from patients at different clinical stages of progression to AIDS.

T.C.P.85 ACTIVE HIV PROTEASE PURIFIED IN A SINGLE STEP FROM *ESCHERICHIA COLI* INCLUSION BODIES

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Recombinant HIV protease, produced as inclusion bodies in *Escherichia coli*, was solubilized with 6M Gu-HCl and purified in a single step by reverse phase HPLC. This procedure yielded a pure, but inactive protein migrating as a single band of M_r = 10,000 in SDS-gel electrophoresis and exhibiting the N-terminal amino acid sequence and amino acid composition expected for the mature protease. The pure inactive protein was lyophilized, dissolved in 8.0 M urea, and refolded to an enzymatically active molecule by diluting the denaturant to 0.8M with 50 mM sodium acetate, pH 5.5, containing 10% glycerol, 5% ethylene glycol, 0.2% Nodinet P40 and 2.5 mM DTT. The final enzyme concentration was 0.5-1.0 mg/ml. About 0.2 mg of active protease per liter *E. coli* cell culture is obtained quickly by the above technique. Freeze-thawing of the enzyme solution did not lead to a significant loss of activity. The enzyme was active as a dimer and cleaved the bond between the Tyr and Pro of the octapeptide V–S–Q–N–Y–P–I–V with a pH optimum of 6.1. Lineweaver-Burk plots showed inhibition by the octapeptide substrate at concentrations higher than 3.6 mM. V_{max} was 1.5 µmol x min^{-1} x mg^{-1} and K_M was 1.7 mM. In keeping with other aspartyl proteases, the HIV enzyme is inhibited by pepstatin with a K_i = 0.4 µM.

T.C.P.86 ANALYSIS OF THE EXPRESSION OF HIV-1 ANTIGENS IN THE BACULOVIRUS SYSTEM.

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Objectives. To investigate the effect of the signal peptide and membrane anchorage domain on the expression and stability of HIV-1 envelope in insect cells and to express the antigenically important domains of the HIV-1 gag and env genes as a fusion protein.
Methods. A transfer vector containing the appropriately engineered HIV-1 sequences was used to produce recombinant baculoviruses which expressed the particular antigens under the control of the viral polyhedrin promoter. The expressed proteins were analysed by PAGE, ELISA and immunoblotting.
Results. The HIV-1 env gene can be expressed in insect cells as a glycoprotein of 150kD (gp150) but is not cleaved to gp120 and gp41. The protein is expressed to reasonable levels (>1mg/l) and remains intracellular. The signal sequence does not appear to lead to secretion of the protein from the insect cells. When the anchor sequence is removed and replaced by sequence from the transfer vector the resulting protein is less stable. A fusion of p24gag and the immunodominant region of gp41env could be expressed in this system as a stable protein which is apparently glycosylated. All the recombinant proteins were reactive with anti-HIV-1 positive sera in both ELISA and Western blots.
Conclusions. The baculovirus system is useful for expressing HIV-1 proteins because it can carry out post-translational modifications such as glycosylation. However not all processing signals will work in this system. The expressed antigens are useful diagnostic reagents and potential vaccine components.

T.C.P.87 TRANSLATIONAL EFFECTS OF THE 5' UNTRANSLATED REGION OF HIV-1 IN VIVO: REGULATION BY TAT.

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Objective. To investigate the possibility of translational repression of mRNAs containing the 5' untranslated region (UTR) of HIV-1, and the effect of tat expression in vivo.
Methods. CHO and HeLa cell lines expressing the CAT reporter gene containing portions of the 5' UTR of HIV-1 (TARCAT and derivatives) were established by cotransfection with pSV2neo and selection in G418. Translational efficiencies of CAT mRNAs were assessed by comparing the CAT activity with the steady state level of cytoplasmic CAT RNA, measured using a sensitive RNAase protection assay. The tat protein was delivered by co-transfecting the TARCAT cell lines with tat expression vectors and pSV2hygrB, and selection in hygromycin B.
Results. TARCAT mRNA containing the first 110 nucleotides from the HIV-1 5' UTR was found to have 10-fold reduced translational efficiency in CHO cells compared to CAT mRNA from pSV2CAT. Results will be presented to show the importance of stable stem-loop structures in the 5' UTR for this effect. Expression of tat led to large increases in CAT protein levels, but relatively small increases in CAT cytoplasmic RNA. The trans-activation response is therefore partially at the translational level in these cells. The effect of tat on the observed 10-fold translational inhibition by the 5' UTR will also be analyzed.
Conclusions. The 5' UTR of HIV-1 can inhibit the translation of its mRNAs in vivo. The expression of tat leads to an increase in translational efficiency of these mRNAs in this system, where both the tat gene and the CAT reporter gene are stably integrated in the cellular DNA, similar to the situation in cells infected with HIV.

T.C.P.88 FAILURE OF INTERFERON α MESSENGER RNA SYNTHESIS IN PBMC OF HIV-1 INFECTED PATIENTS AT LATE STAGES

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OBJECTIVE: To determine the mechanisms responsible for absent interferon α production in appropriately stimulated PBMC of HIV-1 infected patients at late stages.
METHODS: PBMC of 68 HIV infected patients at various stages were isolated by Ficoll-Paques Sedimentation. After overnight stimulation with 5×10^4 PFU of Vesicular Stomatitis Virus, RNA was isolated and tested for interferon α messenger RNA content by using Northern Blot Analysis with a specific cDNA probe for the interferon α gene. Simultaneously interferon α secretion into the supernatants of stimulated cells was measured by a highly specific Enzyme Immuno Assay.
RESULTS: Release of high doses of interferon α by PBMC of patients at stage II paralled with the production of mRNA coding for the α interferon gene. However patients who failed to secrete any interferon α into the supernatant showed abundance of α interferon messenger RNA as determined by Northern Blot Analysis. GAPDH cDNA which was used as a positive control revealed in unchanged signals irrespective of patients were able to produce high amounts or no IFN α gene transcripts, indicating that cells were intact.
CONCLUSIONS: Our data provide evidence that HIV-1 infection can modulate the production of interferon α in peripheral blood cells on the transcriptional level.

T.C.P.89 ACIDIC RESIDUES WITHIN THE AMINO TERMINAL REGION OF HIV-1 TAT IS CRITICAL FOR TRANSACTIVATION

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Objectives: Eukaryotic transacting factors often contain, in addition to a nucleic acid binding domain, a separate transacting domain (Ptashne, Nature 335: 683, 1988). These regions are acidic and often amphipathic. The amino terminus of HIV-1 is acidic and secondary structural analysis of this region predicts an amphipathic helix. We propose that this region is important for tat function.
Methods: A tat encoding cDNA was subcloned into m13 phage and site directed mutagenesis was performed. Mutant cDNAs were subcloned into the expression vector pSV, and analyzed for the capability to transactivate the HIV-1 LTR in transient transfection assay.
Results: Conservative changes (acidic to acidic) were well tolerated, while acid to neutral and acidic to basic changes dramatically reduced tat activity. The relative importance of each of the three acid residues correlates with proximity to the amino terminus. Substitution of the entire domain with heterologous sequences partially restores activity.
Conclusion: The data suggest that the acidity, as well as the structure of the amino terminal region, are critical for transactivation.

T.C.P.90 CD4(81-92) PEPTIDE ANALOGS BLOCK HIV INFECTION, HIV-INDUCED CYTOPATHICITY, AND POST-INFECTION VIRAL TRANSMISSION IN VITRO, AT MICROMOLAR CONCENTRATIONS.

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Objective. To determine structural requirements for CD4(81-92)-based antireceptor peptide blockade of HIV-1 infection, HIV-1-induced cytopathicity, and cell-mediated HIV-1 transmission in vitro.
Methods. Peptides synthesized by FMOC chemistry, with benzyl (b) or alkyl (alk) derivatization at specific amino acid residues. Doses given for 100% inhibition of HIV-induced cell *fusion* (Lifson et al., Science 232, 1123, 1986), >50% inhibition of HIV-1 (HTLV-IIIB) *infection* of CEM-SS cells quantitated by a syncytial-forming microassay (Nara et al., AIDS Res. Hum. Retrovir. 3, 283, 1987), and >50% inhibition of cell-mediated viral *transmission* measured by formation of syncytia between HIV-1(HTLV-IIIB)-infected cells incubated 120 hours post-inoculation (peptide present during the final 72 hours of incubation), and fresh uninfected CEM-SS cells (Nara and Fischinger, Nature 332, 469, 1988).

Results.	Peptide	Fusion	Infection	Transmission
	TbYICbEbVEDQKEE	63 µM	63 µM	125 µM
	TbYICbEbVEDQKEEalk	16 µM	10 µM	not detn'd
	TbYICbEVEbDQKEE	>500 µM	>250 µM	>250 µM
	KEEICbEbVEDQTbY	>500 µM	>250 µM	>250 µM

Conclusions. Derivatives of CD4(81-92) potently inhibited HIV-1 infection and HIV-1-induced cytopathicity (fusion). Antireceptor peptide potency is apparently dependent on both conformation, since only benzylation on specific residues afforded active peptide, and sequence, since a sequence-altered peptide of identical composition was without antiviral activity. In addition, CD4(81-92)-based antireceptor peptides appear to possess a 'virostatic' activity inasmuch as cell-mediated viral transmission, measured by formation of infectious cell centers following treatment of HIV-infected CEM-SS cells with peptide for 72 hours, beginning 48 hours post-infection, is inhibited by such treatment. This unique property of small, CD4-based peptides may recommend them for therapeutic consideration.

T.C.P.91 PROMOTOR ACTIVITY OF 5' LTR REGION OF A HIGHLY CYTOPATHIC STRAIN OF HIV-1

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In order to correlate the high cytopathic properties of HIV-NDK strain with genetic variation, the virus was cloned and sequenced. The cloned DNA was biological active as revealed by transfection into CD4 cells. One of the major differences in the alignement of nucleotides sequences of HIV-NDK and HIV-BRU prototype virus was localised in the 5' part of the LTR U3 -region. In a set of cotransfection experiments the effect of transactivating (TAT) gene product on promotor activity localised in the 5' LTR region of both, HIV-BRU and NDK viruses was compared in CAT assay. It was found that promotor activity of 5' LTR of HIV-NDK was several times higher than that of HIV-BRU prototype even without a stimulatory effect of the TAT gene product. To approach the effect of LTR region on cytopathogenecity of HIV more directly, the recombinant DNA molecule bearing HIV-NDK-LTR regions and rest of the genome derived from BRU prototype was constructed. The DNA was transfected into the cells and the virus obtained ; its properties are under investigation.

T.C.P.92 DETECTION AND SEQUENCING OF INDIVIDUAL MOLECULES OF HIV DNA AMPLIFIED BY A MODIFIED PCR

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The sensitivity of polymerase chain reaction (PCR) has been enhanced by the use of nested primers, which allowed the detection of individual molecules of HIV DNA from patient samples. Amplification of DNA involves a first reaction with a pair of HIV-specific primers, transfer of a small proportion of the product to a second tube containing primers that lie within the first pair, and a further round of amplification. Dilution studies of plasmid derived HIV sequences showed that amplification of single molecules of target sequence with different sets of primers was reliable even with primer spacings as wide as 500 base pairs. The specificity of the test was assured by the uniformly negative results obtained from a panel of seronegative blood donors with two sets of nested primers. Limit dilutions of DNA prepared from buffy coat coat cells of HIV-infected haemophiliacs allowed the isolation, amplification and sequencing of individual molecules. This method has many advantages over previously described methods of sequencing HIV by the PCR method: 1) Amplification of the target sequence takes place in the absence of competition from others that replicate faster, or match the primers better. 2) It is less prone to sequencing errors. 3) It allows the amplification of several regions from the same HIV genome.

T.C.P.93 BINDING OF THE HIV-1 TAT PROTEIN TO TAR SEQUENCES IN VITRO.

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Objective. To investigate the binding *in vitro* of HIV tat protein and cellular factors to TAR sequences.

Methods. A synthetic *tat* gene has been expressed both in an *E. coli* expression system and in a number of eukaryotic cell lines. The binding of expressed tat protein to nucleic acid representing the TAR sequence has been investigated *in vitro* using gel retardation assays.

Results. The tat protein produced from both the *E. coli* and from the eukaryotic expression systems has been shown to be biologically acive. The binding of tat, synthesised in *E. coli*, to TAR nucleic acid has been examined both in the presence and absence of host cellular proteins. Binding of tat expressed in eukaryotic cells gives a different pattern, suggesting that host proteins interact with the tat/TAR complex. The specificity of binding has been examined using a number of different nucleic acids, including mutant TAR sequences.

Conclusion. Direct interactions between tat protein and TAR sequences are involved in *trans*-activation.

T.C.P.94 CHARACTERIZATION OF THE INFECTIVITY OF HIV PROVIRUSES CONTAINING MUTATIONS IN LTR REGULATORY SEQUENCES

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Objective. To characterize the biological effects of mutations in the cis-acting regulatory sequences of the HIV LTR.
Methods. Oligonucleotide-directed, site-specific mutagenesis was employed to generate mutations in the regulatory sequences in the HIV-1 LTR. Mutated LTRs were introduced into an infectious molecular clone of HIV. Mutant proviruses were assayed for infectivity and growth in human T cells. Mutant LTRs were also tested for transcriptional activity by transfection of LTR-CAT plasmids.
Results. An HIV provirus containing a deletion of both NF-κB binding sites yielded infectious virus that replicated efficiently in MT 4 cells. Mutants defective in Sp1 binding at the 5' Sp1 site (site III) were also capable of efficient growth; proviruses with additional mutations in the Sp1 binding sites varied in their ability to produce infectious virus. In CAT assays, the mutant LTR deleted in the NF-κB sites exhibited decreased basal activity compared to the wild-type LTR, but was strongly responsive to *tat* transactivation. The effects on viral infectivity of changes in other parts of the LTR will also be discussed.
Conclusions. The NF-κB binding sites were not essential for HIV replication in MT 4 cells. Other mutations affecting the Sp1 binding sites also did not interfere with the ability to produce infectious virus. Thus HIV can replicate even when alterations are introduced into the wild-type enhancer and promoter elements.

T.C.P.95 ANALYSIS OF VPX FUNCTION IN HIV-2 INFECTED CELLS

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Objective: A novel gene, designated vpx, is present in the genomes of HIV-2, and SIVs, but not HIV-1. Our goal was to define the role of VPX in HIV-2 replication and cytopathicity.
Methods: A functional proviral clone of HIV-2, SE, was made and used to construct site directed mutants which only eliminate the AUG initiator codon of vpx (MX1), which convert codon 22 to a termination codon (MX22), or which simultaneously eliminate the first and second AUG codons and frameshift the gene introducing a termination codon at position 70 (MX1+62).
Results: Transfection of SE, MX1, MX22, and MX1+62 into COS-1 cells gave rise to equivalent amounts of virus, which could be passaged in H9 or CEM cells, or in peripheral blood lymphocytes or monocytes with equivalent efficiency. Furthermore, the vpx mutants demonstrate similar cytopathic effects as did SE. Hybridization data with DNA from the infected cells demonstrated the presence of the mutations in each of the MX infected cell lines, and equivalent levels of viral DNA and RNA sequences in SE and MX infected cell lines. Immunoprecipitation analysis demonstrated a 16 kd protein in cells infected with SE virus as well as the virus particles, but not in cells infected with the MX viruses or the particles themselves. Equivalent levels of GAG and ENV proteins were demonstrated in all infected cells and virion preparations.
Conclusions: These data suggest that VPX is dispensable for virus replication and cytopathicity. Further analysis of the vpx mutants is underway to define VPX activity in animal model systems.

T.C.P.96 HIGHLY EFFICIENT NEUTRALIZATION OF HIV WITH RECOMBINANT CD4-IMMUNOGLOBULIN MOLECULES

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It is well established that the human immunodeficiency virus type I (HIV-1) exploits the cell surface CD4 molecule to initiate the infection which can eventually lead to acquired immune deficiency syndrome (AIDS). We and others have taken advantage of this specific interaction between the HIV-1 envelope protein gp120 and CD4 and have shown that soluble CD4 molecules can inhibit HIV infectivity in vitro. However, application of these observations in vivo might require more potent reagents. Here we describe the generation of highly effective molecules which combine the specificity of CD4 and the effector functions of different immunoglobulin (Ig) subclasses. We show that pentameric forms of chimeric CD4-immunoglobulin molecules are about 1000 fold more active than their dimeric counterparts in syncytium inhibition assays.

T.C.P.97

PACKAGING AND TRANSFER OF A MARKER GENE BY HIV VECTOR PARTICLES

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Objective. To package foreign sequences in HIV particles and transfer them to HIV-sensitive target cells.
Methods and Results. Several HIV vectors were generated by introducing a selectable resistance gene (HIS) into the HIV genome. Cell lines were then established that could express these genomes, and package them into HIV particles following the transfection of HIV helper sequences. After infection of CD4+ cells with such particles and selection, we were able to demonstrate the successful transfer and integration of HIV genomes carrying the marker resistance gene. Different constructs were compared for their efficiency to transfer the marker gene, in order to delineate the cis-acting sequences required for the complete packaging, reverse transcription, and integration of the HIV genetic material.
Conclusion. We demonstrated the packaging and successful transfer of a genetic marker through HIV particles. HIV vectors will be valuable tools to study the HIV replicative cycle, and to specifically target sequences to HIV-sensitive cells.

T.C.P.98

INTERACTION OF HIV WITH INTERFERON REGULATED, ANTIVIRAL ENZYMES.

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The interferon (IFN) system is activated in AIDS and high levels of circulating acid labile IFN-alpha often accompany disease development. Although HIV replication in cell culture can be inhibited by IFN, the virus appears to have evolved a mechanism of escaping the anitviral activity of the IFN usually present in AIDS. We have investigated the activation of IFN-induced enzymes by HIV. The 5' leader of HIV-1 mRNA contains two double-stranded stems of about 17 and 23 base pairs in length. HIV-leader RNA of 232 nucleotides was produced from a plasmid containing HIV-1 LTR sequences located 3' to an SP6 promoter. The RNA product was purified and analysed to ensure the absence of aberent transcripts. This HIV-1 leader RNA was shown to activate both dsRNA-dependent protein kinase and 2-5A synthetase in an extract of IFN-treated HeLa cells. Furthermore, these enzymes were immobilized and activated on an affinity resin consisting of HIV-1 leader RNA covalently attached to finely divided cellulose. In HIV-infected cell cultures however, although IFN was able to induce 2-5A synthetase levels, no evidence for endogenous activation of the 2-5A pathway was obtained. It remains possible therefore, that viral or cellular factors in HIV-infected cells interfere with the activation of IFN-induced enzymes and contribute to viral latency.

T.C.P.99

HIV-1 REPLICATES IN HUMAN SPERM MITOCHONDRIA OF HIV-SEROPOSITIVE INDIVIDUALS

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Objective. To determine the replication site(s) of HIV-1 in the sperm of HIV-seropositive individuals.
Methods. Sperm specimens from three AIDS/ARC individuals were scrutinized for the localization of HIV-1 by electron microscopy (EM), HIV-specific mAbs-immunogold EM, and in situ hybridization using HIV-specific DNA probes.
Results. (1)Analysis of sperm by the DNA hybridization procedure revealed that over 90% of sperm which were positive for HIV by in situ hybridization, had their midpieces enlarged (4-10 times greater than normal controls). (2) HIV-DNA probes were more concentrated at the midpiece than in the sperm heads, in terms of relative intensity of staining. (3)Immunogold staining showed aggregation of gold particles in association with mitochondria. (4) Presence of HIV-like particles in many mitochondrial organelles was noted. (5) Some mitochondria resembled pods with HIV-like particles "bursting out" of them like spores.
Conclusion. These observations suggest that HIV in sperm may be replicating in the mitochondria, using mitochondrial DNA as a replicating device. It is possible that in human sperm where there is condensation and tight packaging of haploid DNA in the nucleus, relative to that in somatic cells, the random integration of the HIV proviral DNA into the nuclear-DNA might be difficult and mitochondrial-DNA may be an easier target. On the other hand, if cellular mitochondria is a global target for HIV, then different therapeutic approaches might be adopted.

T.C.P.100

TRANSMISSION OF SIV_{MND} IN A SEMI-FREE RANGE BREEDING COLONY OF MANDRILLS IN GABON.

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Objective. To study the transmission (vertical and horizontal) of a simian immunodeficiency virus from mandrills in a colony of mandrills.
Methods. A total of 33 mandrills were tested. 16 of them were wild caught animals. Antibodies were detected by a radio-immunoprecipitation assay using ^{35}S-methionine labeled SIV_{MND} virus. Virus was isolated from peripheral blood lymphocytes cocultivated with MOLT-4 cells.
Results. Two of the 16 wild-caught animals (1 1) were positive since their arrival at the primate centre (1979 and 1983 respectively). A virus was isolated (Tsujimoto) and showed antibodies to the SIV_{MND} glycoproteins only. In 1988, two new animals showed antibodies to the SIV_{MND} envelope proteins and also to the core proteins. One of these animals was a wild-caught male that was seronegative at his arrival to our centre. The other one is the second offspring of the already known positive female. Since her arrival in 1983 at CIRMF, she was pregant twice, one animal was born in 1985 (seronegative 1, 2 and 3 years respectively after birth) and one in 1987. This animal showed antibodies one year after delivery and a virus was isolated from his peripheral blood lymphocytes.
Conclusion. SIV_{MND} appears to be transmitted from mother to child in a semi-free-range breeding mandrill colony. A seroconversion with appearance of antibodies to p27was observed, and a virus was isolated.

T.C.P.101

A COLOROMETRIC ASSAY FOR TRANSACTIVATION OF THE HIV-1 LTR

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Objective: To develop a simple, rapid and sensitive assay for the activation of the HIV-1 LTR by TAT and by heterologous factors.
Methods: Stable cell lines containing multiple integrated copies of the HIV-1 LTR (-122/+80) linked to the lacZ gene of E.coli were prepared by co-selection for pSV2neo-mediated G418 resistance.
Results: HIV-1 LTR lacZ was transactivated equally well or better in rabbit skin (epithlial-like) cells than in other cell types (HeLa, CV-1, Flow 4000, etc.), by cotransfection with genomic TAT (gTAT) expressing plasmids (pCMVTAT, pRSVTAT, pRSVTAT/REV), and so stable RS/LTR lacZ cell lines were prepared to mimic the structure of the integrated provirus in latently infected cells. Three of ten independent clones responded to gTAT, and one clone was used to show that D-penicillamine was not an effective inhibitor of TAT transactivation at concentrations up to 100ug/ml. The efficacy of anti-sense phoshorothioate oligonucleotides against TAT are currently under examination in these lines. The same lines also express high levels of B-galactosidase in response to HSV-1 infection, and transactivation by IE gene products from herpes group viruses is under examination.
Conclusions: Selection of the appropriate substrate for B-galactosidase will permit detection and measurement of LTR transactivation (MUG;ONPG) and also detection of infectious centres (X-gal) in these cell lines. Therefore, molecular aspects of HIV reactivation and autologous gene regulation can be readily analysed.

T.C.P.102

HIV-I REV INDUCED MODULATION OF NEF PROTEIN UNDERLIES REGULATION OF VIRAL REPLICATION

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Objective: To study the potential functional roles of HIV-1 Rev and Nef proteins that might underlie the regulation of viral replication.
Methods: A rev defective proviral DNA was constructed from infectious HIV-I proviral clone pNL432. The Rev and Nef were supplied in trans by cotransfection of cDNA plasmids under the control of various promoters.
Results: The phenotype of rev mutant provirus was distinguished by accumulation of Nef and reduced Tat function. During transcomplementation of the rev mutant by rev cDNA, there was a decrease of both the steady state levels and rates of synthesis of Nef accompanied by enhanced viral structural proteins. Nef protein, a transcriptional repressor (Ahmad and Venkatesan, Science, 241, 1481-1485, 1988), moderated the Rev induced transactivation in a dose dependent manner. Neither the replication of standard provirus nor the repression induced by nef cDNA was modulated by cotransfection of rev cDNA.
Conclusion: The ability of Rev to modulate Nef expression from the provirus and hence relieve the inhibition of LTR transcription reveals a delicate balance of functions of these two proteins that might underlie the switch between latency and reactivation.

T.C.P.103 HIV-1 TAT FUNCTIONS IN XENOPUS OOCYTES IN THE PRESENCE OF TRANSCRIPTION INHIBITORS

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Objective. To determine the level of gene expression at which the HIV-1 TAT protein exerts it's effect.
Methods. We have developed a novel method for purifying biologically active TAT protein. TAT activity was determined by monitoring the expression of an HIV-LTR CAT reporter plasmid in the presence and absence of transcription inhibitors micro-injected into Xenopus oocytes.
Results. We show the TAT stimulates LTR- directed expression and that this stimulation in Xenopus oocytes, as in the virus, is dependent on the presence of the TAR sequence. Furthermore TAT activation of LTR-CAT functions independently of alpha-amanitin, 3'-deoxyadenosine and actinomycin D. The former inhibits transcription initiation and the latter two transcription elongation.
Conclusion. These data strongly suggest a post-transcriptional mode of action of TAT on the HIV-1 LTR in Xenopus oocytes.

T.C.P.104 GENES IN THE 3' END OF HIV CONTROL HIV REPLICATION AND CYTOPATHOLOGY

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Objective: To map the HIV gene(s) that control different biologic properties.
Method: HIV isolates with different biologic properties were molecularly cloned. Biologically active recombinant viruses were generated by DNA manipulations and transfections. Properties of recombinant viruses were examined by host range studies to correlate structure/function relationship of HIV.
Results: A macrophage tropic HIV-1-SF162 has been molecularly cloned and determined to be biologically active. Unlike HIV-1-SF2, HIV-1-SF162 does not replicate in T cell lines, is not cytopathic, does not down-modulate the CD4 receptor molecule on CD4 lymphocytes, but replicates efficiently in primary macrophages. Genomic recombinants have been generated between HIV-1-SF2 and HIV-1-SF162. Studies with recombinant viruses have shown that the 3' end of the HIV genome controls most of the biologic differences (Table 1). Fine structure mapping may identify the specific genes (env, nef or regulatory elements) that control the various biologic properties of HIV.

Physical Mapping of HIV Functions

HIV 1	HIV 2	Source	Replication in T cell lines	Replication in macro...	Cytopathology	CD4 down modulation
Parentals						
SF2	SF2	PMC	+	-	++	+
SF162	SF162	CSF	-	+	-	-
Recombinants						
SF2	SF162		-	+	-	-
SF162	SF2		+	-	++	+

Conclusion: Studies with recombinant viruses will allow the identification of genes that determine the pathogenic properties of HIV.

T.C.P.105 MOLECULAR CLONING AND SEQUENCING OF A NEW HIV2 ISOLATE ($\text{HIV2}_{\text{CAM2}}$)

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Objective. Cloning and sequencing of a new HIV2 isolate. Comparison of the genetic variability of HIV2 isolates.
Methods. Peripheral blood mononuclear cells from a Guinea-Bissau patient infected with HIV2 was cocultivated with the Karpas 45 T-cell line. A genomic library was constructed from the infected cell line. Restriction maps of clones hybridizing to a pROD probe were constructed. Nucleotide sequence determination of one clone which appeared to be full length is in progress.
Results. Restriction mapping of the full length clone shows difference in 7 out of 22 sites when compared to the prototype clone ROD. To date sequencing of the proviral LTR, gag and pol regions shows approximately 10% divergence from ROD.
Conclusion. These results indicate that $\text{HIV2}_{\text{CAM2}}$ is distinct from other HIV2 isolates. The full sequence and biological properties will be presented.

T.C.P.106 STABLE EXPRESSION AND SECRETION OF RECOMBINANT HIV 1 ENVELOPE PROTEIN IN DROSOPHILA SCHNEIDER CELLS.

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An HIV 1 gp120 envelope protein encoding all but the amino terminal 32 residues was expressed and secreted using a Drosophila cell continous culture system. The gp120 gene was incorporated into an expression vector behind the inducible Drosophila metallothionein promoter and was stably introduced into Drosophila cells by co-transfection with a vector encoding the hygromycin B phosphotransferase gene. Stable cell lines containing high copy number of the gp120 transcription unit were obtained in a single transfection-selection event using hygromycin B selection. The resistant cells expressed up to 5 mg/L of gp120 in response to metal induction. The protein was secreted into the medium and was of the expected size for a fully glycosylated protein (110 Kd). Isolation of the protein from the medium was by affinity chromatography after which concentration and identity were confirmed by amino acid composition and N terminal analysis. We have shown that the Drosophila produced gp120 is able to inhibit syncytium formation in HIV-infected H9 cells and that the affinity of the Drosophila produced gp120 for the T4 receptor is identical to that of viral derived gp120 using scatchard analysis assay.

T.C.P.107 POSSIBLE MODE OF INSERTION INTO A LIPID BILAYER OF N-TERMINAL FUSOGENIC SEGMENT OF VIRAL ENVELOPE PROTEINS.

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Objective:Analysis of the envelope fusion protein of 45 viruses.
Methods:The complete amino-acid sequence of the fusion protein of 45 viruses has been analyzed in terms of hydrophobicity and hydrophobicity moment by the Eisenberg procedure.We have focused our analysis on the conformational properties of the N-terminal peptide segment of these fusion proteins and their orientation into the lipid bilayer.
Results:For all proteins analysed, the N-terminus segment is characterized by a high hydrophobicity and a low hydrophobic moment.Next to this transmembrane peptide,we identified a "receptor-like" domain,characterized by a sequence of amino acids with a high hydrophobic moment.According to Garnier prediction,the 45 N-terminus peptides adopt an α-helical structure.These helical segments are obliquely oriented in the lipid bilayer with respect to the lipid-water interface:the angle varying from 45° to 65°.We assumed that the distribution of the hydrophobic and hydrophilic amino acids along the helix axis is responsible for the oblique orientation of the peptide into the lipid bilayer and the fusogenic properties of the protein.
Conclusion:The unusual peptides orientation is expected to induce the disorganization of the surrounding lipids and the formation of inverted micellar structures which has been suggested as one of the initial events in the virus/cell fusion.

T.C.P.108 CHARACTERIZATION OF RECOMBINANT HIV REVERSE TRANSCRIPTASE: PURIFICATION OF HOMOGENEOUS, STABLE P66 BY NATIVE/DENATURATION PROTOCOLS.

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We engineered a prokaryotic expression vector (pTM-4) encoding the HIV reverse transcriptase under the control of the strong, regulated E. coli tac promoter. Under induction conditions, E. coli JM109 carrying pTM-4 synthesized RT (p66) at about 10% of the total cell protein. We grew this strain in stirred-tank fermentations at the 200-liter scale and purified p66 by native protocols to apparent homogeneity; p66 was not stable and was processed to p51 until p66/p51 were in an approximately 1/1 ratio. Preparations of p66/p51 heterodimers consistently exhibited higher enzymatic activities (3- to 5-fold) than preparations of p66. Chromatographic analyses indicated that preparations of p66/p51 contained extensive microheterogeneity. We also purified p66 by a combination of native/denaturing protocols. Under these conditions p66 was completely denatured with 8M guanidine HCl, purified, and then refolded to native enzymatic conformation. Refolded p66 was not readily processed to p51 or other species. These data suggest that denaturation followed by subsequent purification of p66 resulted in the inactivation and/or separation of E. coli proteases responsible for much of the heterogeneity found in p66 samples. These protocols may be useful in preparing p66 suitable for structural analyses.

T.C.P.109

AN HIV1 PEPTIDE LIBRARY EXPRESSED IN YEAST REVEALS NEW CONTINUOUS EPITOPES.

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Aim. Determination of continuous epitopes relies mostly on chemically synthetic peptides and computer models. However, such an approach may be unsatisfactory due to an inappropriate choice of the sequences synthesised or the limitations of chemistry. We developed an efficient and inexpensive method for the identification of continuous epitopes, even those unpredicted or post-translationally modified.

Methods. A random library of small fragments (50-150 bp) of HIV1 DNA was expressed in *Saccharomyces cerevisiae* with a *new* expression-secretion vector, pSE-X, derived from MFα1. Random fragments obtained by partial DNAse I digest of HIV1 proviral DNA were inserted in pSE-X and a library (4.10^4 clones) was then constructed and screened.

Results. Monoclonal antibodies (directed against p18, p25, gp110 and gp41) and sera from HIV1 infected individuals were used to screen the library. All the monoclonal antibodies used revealed the presence in the library of antigenic determinants, thus validating our expression system. Eight epitopes of HIV1 were characterized, three not previously described, one in the endonuclease, one near the C-terminal region of the gp41 and one in the p25. Immunogenicity of several recombinant peptides is currently analysed on animal models.

T.C.P.110

EFFECT OF HYDROCORTISONE ON THE REPLICATION OF HIV-1 IN DIFFERENT CELL TYPES.

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It is well-known that glucocorticoid hormones can regulate either positively or negatively the replication of several retroviruses. In patients with AIDS the plasma hydrocortisone (HC) level is increased between 50 to 70% over that found in normal control subjects. Therefore, towards identifying the relative importance of endogenous glucocorticoid on the replication of HIV in AIDS patients, we examined the effect of HC on HIV replication in a variety of susceptible cell lines, and for the presence of glucocorticoid receptors (GR). The cell lines were infected with the HTLV-III_B strain of HIV-1 at various multiplicities of infection, and grown in RPMI medium containing 10% fetal calf serum and HC ranging in concentrations from 20 μM to 100 μM. The viral activity was estimated by reverse transcriptase assay, and by ELISA. GR levels were estimated by analyzing cell extracts for specific binding of ^{3}H-dexamethasone. HC stimulated HIV production in H-9 cells in a time- and concentration-dependent manner with approximately a 1500-fold increase in viral activity. Similar results were also obtained with a MT-4 cell line resistant to viral cytopathycity. In contrast, U-937 monocytoid cells did not respond to HC with an increase in viral activity, suggesting that the effect of the steroid on HIV replication may be cell-specific. Glucocorticoid receptors were present in both H-9 and U-937 cells but the level in U-937 cells was lower than that found in H-9 cells. We conclude that glucocorticoids can regulate HIV in a cell-specific manner and this effect may be mediated through GR.

T.C.P.111

CHARACTERIZATION OF HIV-1 CLINICAL ISOLATES RESISTANT TO ZIDOVUDINE (AZT).

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Objective. To demonstrate whether HIV-1 possessing a AZT-resistant phenotype might emerge under conditions of AZT drug therapy.

Methods. Sequential viral isolates were obtained by co-culture methods from patients receiving AZT. Four such isolates obtained from the same patients at weeks 0, 36, 42 and 51 after initiation of treatment were amplified by growth on peripheral blood lymphocytes from healthy individuals. The same amounts of reverse transcriptase (RT) activity from these cultures (5,000 cpm/ml) were plated and serially diluted (1:2) in 96 well plates (2.5×10^6 cells/100 μl/well) either in the presence or absence of AZT (7 μM). After 10 days, HIV-1 specific immunofluorescence and RT activity were estimated. Six different patients were screened in this way.

Results. In 4 of the 6 patients, no viral growth was ever detected in the presence of AZT. However, while isolates from weeks 0, 36 and 42 of two other patients were incapable of growing in the presence of AZT, virus from week 51 did grow out, even when diluted 1:64. Further characterization showed that none of the earlier isolates from these patients could grow in the presence of 0.5 μM AZT, while the isolates from week 51 replicated actively at concentrations up to 10 μM.

Conclusion. Treatment of patients with AZT may select out variants of HIV-1 able to replicate in the presence of the drug. The detection of such variants does not seem to occur at high frequency.

T.C.P.112

THE EFFECT OF HIV INFECTION ON MONOCYTE DIFFERENTIATION.

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Two monocytic differentiation markers were examined after HIV infection of U-937 cells: 1) cell surface CD4 antigen levels, 2) myc and fos oncogene mRNA quantities. First, a nearly complete depletion of cell surface CD4 was observed in HIV-infected monocytes. This is similar to the rapid and permanent down-regulation of CD4 occurring during PMA-induced differention of U-937 cells. RNA blot hybridization experiments in conjunction with immunoprecipitation assays revealed that a post-transcriptional inhibitory event is responsible for CD4 down-regulation in both HIV-infected and PMA-treated U-937 cells. Second, c-myc mRNA levels are slightly decreased, while the c-fos mRNA precursor is more abundant in chronically infected U-937 cells, suggesting a possible mRNA processing defect in HIV-infected monocytes. These studies show that HIV may be modulating certain events leading to terminal monocyte differentiation.

T.C.P.113

CHROMOSOMAL LOCALIZATION OF TAT-INTERACTING CELLULAR FACTORS

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Objective: To determine whether murine cells are resistant to tat-mediated transactivation due to the absence of factor(s) present in human cells and to determine whether rodent-human cell hybrids can be used to determine the human chromosomes which encode this factor or factors.

Methods: Various constructs expressing either the bacterial chloramphenicol acetyl transferase gene (CAT) or portions of the human growth hormone gene (HGH), driven from the HIV-1 LTR were introduced into various cell types by transfection in the presence or absence of a plasmid which expressed the complete tat gene of HIV-1. The level of gene expression was determined with various in vitro assays. We are also developing a genetic selection for genes encoding these tat-interacting factors utilizing a construct in which the HIV-1 LTR drives transcription of the bleomycin resistance gene.

Results: Our data suggest that human-rodent cell hybrids can be used to localize a specific set of human chromosomes which encode tat-interacting factors. Our present data indicate that such factors are encoded by three or fewer human chromosomes.

Conclusions: Our results indicate that the non-responsiveness of rodent cells to tat-mediated trans-activation is due to the lack of human factors which can be supplied by a limited set of human chromosomes.

T.C.P.114

THE REV GENE PRODUCT OF THE HUMAN IMMUNODEFICIENCY VIRUS AFFECTS RNA LOCALIZATION.

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Objective: To characterize the Rev-dependent and Rev-independent expression of the HIV-1 envelope proteins.

Methods: We have constructed plasmids that contain various regions of the envelope gene and different 3' untranslated ends. The normal splice donor for Tat and Rev which is about 150 bp 5' to the start codon for the envelope gene, was removed and these plasmids cannnot express either Tat or Rev. Envelope expression following transfections of these plasmids both with and without another plasmid expressing Rev was examined by analysis of RNA and immunoprecipitation of labelled proteins.

Results and Conclusions: In the absence of the homologous RNA splice sites, the dependence of Env expression on Rev was found to be post-transcriptional. By in situ hybridization analysis we found that Rev affects the nuclear versus cytoplasmic localization of envelope-specific RNA. Several cis-acting sites in the envelope gene are involved in its regulation. One of these is needed for the Rev response. Two others negatively affect expression by retaining the RNA in the nucleus in the absence of the rev gene product and its response element. In addition, heterologous sequences at the 3' end of the Env mRNA are able to modify its dependence on the rev gene product.

T.C.P.115 EFFECT OF MUTATIONS IN VPX ON THE INFECTIVITY OF VIRAL PARTICLES OF HIV-2.

... Guyader[1], M Emerman[1], L Montagnier[1] and Keith Peden[2], Institut Pasteur, Paris, France[1], and Johns Hopkins University School of Medicine, Baltimore, USA[2].

Objective: To determine whether the vpx open reading frame, which is present in HIV2 and SIV genomes but has no counterpart in HIV1, is expressed in infected cells and to investigate the phenotype of VPX mutants. Methods and Results: Two anti-peptide sera raised to the predicted product of the HIV-2 vpx open reading frame immunoprecipitated a 16-kd protein from the cell extract and medium of cells infected with HIV-2, and a 14-kd protein from SIV-infected cells. We used site-directed mutagenesis to introduce two types of mutations in the vpx open reading frame. Cell-free supernatants from SW480 cells transfected with the mutated HIV-2 proviral clones were used to infect several CD4$^+$ lymphocyte and monocyte cell lines as well as fresh peripheral blood lymphocytes. Mutations in the vpx open reading frame eliminated the synthesis of the 16-kd protein, confirming that this protein is the product of this gene. Full-length clones of HIV-2 containing these mutations are infectious in two established lymphocyte cell lines and a monocyte cell line. In contrast, they show a severe defect in their ability to infect peripheral blood lyphocytes. Conclusion: These findings suggest that the VPX protein may be important in the in vivo life cycle of the HIV-2/SIV viruses.

T.C.P.116 EXPRESSION IN E.coli AND PURIFICATION IN ONE STEP OF A FUNCTIONAL HYBRID PROTEIN BETWEEN A BACTERIAL PERIPLASMIC PROTEIN (MALE) AND THE T LYMPHOCYTE-HELPER INDUCER-CD4 PROTEIN (SOLUBLE PART).

CLEMENT, Jean-Marie* ; SZMELCMAN, S.* ; SCHWARTZ, O.** ; HENIN Y.** ; MONTAGNIER L.** & HOFNUNG M* et al. * P.M.T.G. & ** Oncologie Virale, INSTITUT PASTEUR, 25 rue du Dr. Roux, Paris 75015, France.

The surface glycoprotein CD4, expressed on helper/inducer T lymphocytes, serves as the HIV receptor through binding of the virus envelope protein gp120. It was recently demonstrated that the soluble truncated moiety of CD4 (the 177 N terminal amino acids) retains the ability to bind gp120 and to neutralize the HIV particule.

We describe the purification and characterization of a recombinant protein produced by *E.coli* that contains the HIV binding portion of the human CD4 molecule, fused to the periplasmic maltose binding protein (MalE) of *E.coli*.This fusion protein retains the functional properties of its two constituents:

1. It binds maltose and maltodextrins.This property is used in a one step procedure to purify the recombinant protein by affinity on a amylose column with elution in mild conditions.
2. It binds purified gp120 and neutralizes HIV particles *in vitro* ;it is also recognized by the monoclonal neutralizing antibodies IOT4 and OKT4A.

The easy purification of active soluble MalE-CD4 protein from bacteria should facilitate a number of studies such as screening and possibly selection of CD4 mutants with altered properties (stability, interaction with virus etc), investigation of therapeutic potential of CD4, determination of CD4 structure by X ray cristallography.The CD4-MalE hybrid could also be useful as a reagent for various purposes: diagnostic, HIV virus purification isolation of HIV mutants...

T.C.P.117 CONSTITUTIVE SYNTHESIS OF NF-κB-LIKE NUCLEAR PROTEINS IN MONOCYTES- AN EXPLANATION FOR HIV LATENCY?

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Objective. To determine if host nuclear elements contribute to the regulation of HIV-1 gene expression in normal human monocytes.

Methods. Nuclear proteins were prepared from freshly isolated and cultured monocytes and analyzed for NF-κB binding activity to HIV-1 LTR and mutant double-stranded oligonucleotides by gel retardation assays. Monocyte activation was monitored by IL-1 synthesis and IL-2 receptor expression.

Results. Nuclear proteins isolated from 18 hr unstimulated and LPS-activated monocytes contain specific NF-κB binding activity as observed by binding to oligonucleotides encoding a single NF-κB enhancer region from the HIV-1 LTR. No binding was observed to a mutant sequence. Specific binding could be blocked by unlabeled wild-type oligonucleotides but not by the mutant oligomer. Surprisingly, freshly isolated monocytes (IL-2 receptor and IL-1 negative) and LPS-stimulated monocytes expressed equivalent amounts of NF-κB binding activity.

Conclusions. Resting monocytes constitutively express NF-κB-like binding proteins and the level of expression is unchanged by the state of activation. Whereas NF-κB has been shown to stimulate HIV-1 gene expression in T lymphocytes, it appears unlikely that NF-κB expression is solely responsible for the functional and phenotypic changes in monocyte activity following HIV-1 infection. The constitutive synthesis of NF-κB binding proteins in circulating monocytes may explain the persistence of HIV-1 in macrophages throughout the clinical course of AIDS.

T.C.P.118 ACTIVATION OF THE HIV AND INTERFERON REGULATORY ELEMENTS IN HEMATOPOIETIC AND EPITHELIAL CELLS.

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Objective. The interferon-β promoter contains several functional domains that confer virus-inducibility to the structural IFN gene. Interestingly, one of these specific elements, the P2 domain (GGGAAATTCC; -64 to -55: relative to the mRNA start site), shares 80% sequence homology with the two NF-kB recognition sites (GGGACTTTCC) within the U3 enhancer element of the HIV long terminal repeat (LTR). This observation prompted us to measure the transcriptional activity of dimers of P2 and NF-kB motifs in a transient expression assay using epitheloid (293), T-lymphoid (Jurkat), and myeloid (U937) cell lines.

Methods & Results. Cells were transfected with expression vectors containing various synthetic IFN and HIV regulation motifs linked to the CAT reporter gene and subsequently induced with Sendai virus and/or phorbol esters. Both regulatory elements displayed similar patterns of inducible gene expression. Furthermore, specific inducible protein-DNA complexes were identified between P2 or HIV enhancer by band retention assays using uninduced and induced extracts from hematopoietic and epithelioid cell lines. Competition analysis suggested that the IFN P2 domain and HIV enhancer could interact with similar DNA binding proteins.

Conclusion: Together, these results suggest that induction of IFN gene expression may share mechanistic similarities with the activation of the HIV-LTR.

T.C.P.119 DETECTION OF A NOVEL DNA TOPOISOMERASE I ACTIVITY ASSOCIATED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND OTHER RETROVIRUS PARTICLES

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The viral replication cycle is undoubtedly dependent on numerous topological changes of the viral and host genomes. Since DNA topoisomerases have been shown to be responsible for the topological changes of DNA, it was of interest to investigate whether a topoisomerase activity could be demonstrated in retroviral particles.

In this work we demonstrate the existence of DNA topoisomerase I (topo I) activity associated with two strains of purified HIV-1, equine infectious anemia virus (EIAV) and Moloney murine leukemia virus (MO-MuLV). The relaxation activity from these viruses was inhibited by camptothecin (CPT), a specific topo I inhibitor. The viral associated topo I activity is Mg^{++} dependent and possesses other characteristics different from the host cell enzyme. The viral associated topo I activity was removed from the viral lysate by anti-topo I serum. Western blot analysis indicates that an 11.5 Kda protein from both strains of HIV-I and an 11 Kda protein from EIAV is recognized by this anti-topo I serum. No similar protein can be detected in the appropriate nuclear or cytoplasmic cell extracts.

T.C.P.120 NEF RESPONSIVE SEQUENCES (NRS) OF THE HIV-1 LTR-MEDIATE TRANSCRIPTIONAL SUPPRESSION

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Objective: The nef gene of HIV-1 encodes a 206 amino acid, 27 kd product that down-regulates virus replication. This effect is mediated by NEF suppression of transcriptional initiation. This study identified a cis acting element in the HIV-1 LTR which is responsive to NEF.

Methods and Results: Two proviral HIV-1 clones were constructed, pHIV F+ which bears an intact nef gene, and pHIV F- which has a 45 base pair deletion in the 5'portion of nef. These plasmids were transfected into COS-1 cells. Nuclear run-off, Northern blot hybridization, and radioimmunoprecipitation assays demonstrated that NEF suppresses RNA initiation and viral RNA and protein levels 2-10-fold. A NEF expression vector, pSVF, was made using an SV40 promoter. Co-transfection of pSVF in 4-fold excess with HIV-1-LTR-CAT resulted in an 8-fold depression of CAT activity. NEF-mediated suppression was dose-dependent and was specific for the HIV-1-LTR in that the SV40 promoter, and the LTRs of HTLV-I, MPMV, and RSV were unaffected. HIV-1-LTR CAT deletion mutants were used to map the NRS. These constructs were co-transfected into COS-1 cells with or without pSVF or a TAT expression clone. LTR mutants with nucleotides -65 to +33 relative to the RNA initiation site were responsive to NEF, whereas those with nucleotides -48 to +33 were unresponsive. Conclusions: NEF is a specific transcriptional silencer of the HIV-1 LTR acting through sequences between -65 and +33. The activity of NEF is independent of that of TAT. Precise definition of NRS, possible interactions with SP1 and TATA-binding factors, and the mechanism of transcriptional silencing are being investigated.

T.C.P.121 MYRISTOYLATION DEPENDENT ASSEMBLY OF INFECTIOUS HIV-1

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Objective: Linkage of myristic acid via an amide bond to the amino-terminal Gly residue of the GAG precursor of mammalian retroviruses appears to facilitate an essential step in virus assembly. The goal of this study was to determine if myristoylation of the HIV-1 GAG precursor and MA protein are required for replication and infectious particle production.
Methods: Oligonucleotide-directed mutagenesis was used to change the codon for the N-terminal Gly of GAG to an Ala codon in a functional HIV-1 proviral clone, HXB2. The mutant plasmid, HX-GAG-A1, and the parental plasmid were transfected into two CD4- cell lines, COS-1 and HeLa, and CD4+ Jurkat cells. On day 4 following transfection, the CD4- cells were cocultivated with H9 cells to support propagation of infectious virions.
Results: Viral antigen was detected following transfection of each of the CD4- cell lines with either HXB2 or HX-GAG-A1. However, sucrose gradient analysis of culture supernatants revealed only soluble GAG protein, and no detectable virus particles. Moreover, infectious virus was not produced following cocultivation with susceptible H9 cells, or direct transfection of Jurkat cells. In contrast, transfection of each of the cell lines with HXB2 plasmid produced infectious virus. Cotransfection of the CD4- cells with HX-GAG-A1 and a GAG-POL expression plasmid resulted in virus replication, demonstrating complementation of this defect.
Conclusion: Myristoylation of the HIV-1 gag polypeptide is required for virus replication and assembly. These data suggest that inhibition of myristoylation will open a new avenue of anti-retroviral research.

T.C.P.122 BIOLOGICAL SIGNIFICANCE OF HIV-1 ENVELOPE HETEROGENEITY

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Objective: To examine the nature and biological significance of naturally occuring mutations in HIV-1's derived from blood, brain, and lung of 3 patients infected with a single progenitor virus. Methods and Results: Isolates were obtained from short term PBMC cultures cocultivated with fresh tissue from an asymptomatic, HIV seropositive blood donor (pt I), and two neonatal transfusion recipients who subsequently developed AIDS (pts II & III). Isolates from the lung and brain of pts II & III replicated to 100-fold higher levels on monocytes relative to the blood isolates from the same patients; no growth differences on lymphocytes were observed. The 3'portion of the genome was cloned from each isolate, and env sequenced. The predicted amino acid sequence from the blood isolate of pt I shows a 16% divergence compared to clone HXB2. The positions of Cys residues are conserved in SU. Among the sequences from 10 clones from this clustered HIV outbreak, there are only 0.1% amino acid sequence differences from one another. No unique amino acid changes are found in the clones derived from the brain or lung isolates. All clones derived from these patients exhibit 2 termination codons in the portion of env encoding TM. Conclusions: The envelope amino acid sequence variation observed in these neonates is considerably lower than that reported for adults with AIDS, possibly reflecting the host's limited ability to provide selection pressure. The lack of a consistent difference in env between clones derived from isolates which show markedly different replication on monocytes suggests that other portion(s) of the HIV-1 genome may be contributing to cell specificity.

T.C.P.123 HIV INFECTION OF COLONIC MUCOSA ASSOCIATED WITH COLITIS

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The aetiology of diarrhoea in patients infected with the human immunodeficiency virus infection often remains obscure. We report 7 patients with human immunodeficiency virus infection with chronic diarrhoea for longer than 6 months, rectal bleeding, abdominal pain and stool leukocytosis. The mucosal pattern on colonoscopy showed diffuse proctocolitis. Colonic biopsies showed moderate to severe colitis characterised by preservation of normal crypt architecture and a mixed inflammatory cell infiltrate. These features were not compatible with a diagnosis of chronic inflammatory bowel disease. HIV nucleic acid was identified by in situ hybridisation in colonic biopsies from 4 out of 6 patients. Autoradiographic grains were distributed in clumps over epithelial cells of the colonic glands (not confined to argentaffin cells) and over cells in the lamina propria. Hybridization-histochemistry is being used to identify the latter cells. No other microbial agent could be demonstrated as the cause of diarrhoea. At presentation all patients had CD4+ lymphocyte counts greater than 150 X 10^6/L and none had AIDS. We suggest that this chronic colitis is a new entity related to infection of the colon with the human immunodeficiency virus.

T.C.P.124 ANALYSIS OF HIV SEQUENCE CHANGE DURING INFECTION

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Objective. To develop a method of analysis which will detect selection for HIV sequence variants during infection.
Methods. The probability that more than one lineage will be found in a sample taken n generations after the first has been estimated using the method of branching processes (Haldane 1927). The approach has been applied to the data of Saag et al. (Nature 334, 440; 1988).
Results. By phylogenetic analysis based on the Wagner parsimony method we have found that the WMF3 group of clones originated from within the WMF1 group isolated 16 months earlier and did not arise in parallel. Thus, after 16 months all but one WMF1 lineage had become extinct.
We have examined the probability of loss of all but one lineage in these data assuming no selection and a generation time of 5 days (based on observations made during virus isolation in our laboratory). The probability of more than one lineage persisting was found to be less than 0.05.
It is therefore not necessary to invoke selection to explain the relationships between the WMF3 and WMF1 clones.
Conclusions. The method we have used will be effective at detecting selection when the number of generations between samples is 30-50 (about 5-8 months). There is no evidence on these data for selection among clones isolated from patient WMF3.

T.C.P.125 LOCALIZATION OF A DOMAIN OF HUMAN CD4 REQUIRED FOR HIV-MEDIATED SYNCYTIUM FORMATION BY COMPARISON WITH CD4 cDNAs ISOLATED FROM THE CHIMPANZEE AND RHESUS MONKEY

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Objective. To locate regions of the Human CD4 glycoprotein required for HIV-1 mediated syncytium formation.
Methods. We have isolated, sequenced, and expressed cDNAs encoding the CD4 glycoproteins of the chimpanzee (Pan troglodytes) and the rhesus monkey (Maccaca mulatta). We performed HIV-1 infection, binding and fusion assays using cell lines expressing these antigens. We constructed trans-species hybrid CD4 antigens in vitro, and tested their ability to promote HIV-1 mediated syncytium formation.
Results. Both the chimpanzee and rhesus monkey CD4 antigens, respectively 99% and 92% homologous to their human counterpart, bind HIV-1 and permit infection when expressed on HeLa cells. Nevertheless, these non-human receptors are markedly less efficient than human CD4 at promoting HIV-1 mediated syncytium formation. We have located individual amino acid differences between the human CD4 and these non-human CD4 glycoproteins, responsible for their differing abilities to participate in HIV mediated syncytium formation.
Conclusion. We have defined a region of the human CD4 glycoprotein, distinct from the previously defined binding site for HIV-1, which is essential for the formation of syncytia in the presence of the external and transmembrane glycoproteins of HIV-1.

T.C.P.126 STUDIES ON THE FUNCTION OF VPX IN HIV-2

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Objectives. To determine the role of vpx in the life cycle of HIV-2.
Methods. To study the biological function of vpx, we constructed a transfection-competent plasmid clone of HIV-2$_{[illegible]}$ and utilized it for site-directed mutagenesis of the vpx open reading frame. An internal HindIII (vpx containing fragment) was subcloned into M13 and mutagenized so as to abolish vpx translation. The role of vpx was then assessed *in vitro* by comparing vpx-deficient and wild-type virus with respect to replication efficiency, syncytia induction, virus-protein expression, cytopathicity, infectivity and reverse transcription. For *in trans* complementation studies, HIV-2 vpx was subcloned into a eukaryotic expression plasmid and expressed in cos-1 cells.
Results. Functional analyses comparing vpx-deficient and wild-type HIV-2 indicated that vpx is not required for virus replication *in vitro* in two immortalized T-cell lines as well as in peripheral blood lymphocytes (PBL). Upon transfection into immortalized T-cell lines (SupT1 and CEMx174) syncytia induction, reverse transcriptase levels and virus encoded structural protein products were found to be comparable for vpx-deficient and wild-type HIV-2. Both mutant and wild-type viruses were infectious and equally cytopathic when transmitted cell-free to SupT1 cells. Similarly, vpx-deficient and wild-type HIV-2 were infectious and replication competent in PBL. Electron microscopy revealed no apparent differences in virus ultrastructure and morphology. Comparison of unintegrated virus DNA intermediates following high titer infection of SupT1 cells demonstrated that virus binding, uptake, uncoating and reverse transcription were equivalent in mutant and wild type viruses. Finally, cotransfection of cos-1 cells with a vpx-deficient HIV-2 provirus and a eukaryotic vpx expression plasmid resulted in the production of vpx containing virions and demonstrated that vpx can be complemented *in trans*.
Conclusions. Vpx is not required for HIV-2 replication and cell-free transmission in immortalized T-cells as well as in PBL *in vitro*. Similarly, the lack of vpx does not seem to affect early events in the viral life cycle. Since vpx is packaged within mature virions, it might be involved in HIV-2 assembly or particle stability. *In trans* complementation experiments are underway to further characterize the packaging requirements for vpx and to determine whether vpx can be packaged into HIV-1 virions.

T.C.P.127 COMPARATIVE ANALYSIS OF HIV-1 AND HIV-2 GENE EXPRESSION

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Objective. HIVs may comprise a spectrum of retroviruses with varying pathogenicity and/or latency which may partly be determined by their regulatory genes and regulatory elements. The objective of this study was the comparative analysis of the regulatory genes and elements of HIVs with varied pathogenic potential. Methods. Functional and mutational analysis of the regulatory genes and response elements by DNA mediated transfections. Results. Pathogenic HIV-1 (III_B) and HIV-2 (NIH_Z) as well as HIV-2 with attenuated cytopathicity [HIV-2(ST)] all contain functional tat, nef, and rev genes. Additionally, their expression is equally activated by T cell activation and CMV transactivation. Interestingly, the tat and T cell activation response elements in HIV-1 and HIV-2 are structured differently. For example, even though HIV-2 contains the designated enhancer element identical to that in HIV-1 where it responds to T cell activation (NFκB site), the major such element of HIV-2 is located upstream and is supposedly a member of a family of response elements. The HIV-1 and HIV-2 transactivation by the tat and CMV transactivator gene involves transcriptional activation including chain initiation and elongation, with CMV affecting elongation more than the initiation. Conclusion. While HIV-1 and HIV-2 may utilize subtly different pathways of gene activation, they both contain functional tat, nef and rev genes and response elements including those responsive to T cell activation and CMV transactivation. Thus, the possible differences in their pathogenicity may not reside in the functional capacities of the regulatory genes and elements alone.

T.C.P.128 RESTRICTION MAP PATTERNS IN SELECTED CLINICAL PAIRS OF HIV ISOLATES.

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Objective. To evaluate restriction mapping of selected viral isolates to determine the potential value of application in defining the identity of viral isolates.
Methods. Primary viral isolates were obtained by co-cultivation with normal PBMC using standard techniques. Southern blots of restriction enzyme digests of viral DNA probed with 32P labeled SST fragment of pBH10.
Results. Specific paired samples were selected and viral isolates obtained. Group 1 consisted of 4 sequential isolates pairs (less than 6 weeks apart) from the same patient (two early HIV infection and two late HIV infection). Group 2 consisted of 2 isolate pairs from same patient however different body fluid source (CSF/PBMC). Group 3 consists of same patient same time different isolation techniques (T cell versus monocyte). Group 4 consists of epidemiological pairs to include spouse and spouse/newborn pairs. Restriction patterns of pair isolates will be compared to unrelated isolates to develop an identity score.
Conclusion: These results demonstrate the applicability of restriction mapping in defining viral identity.

T.C.P.129 A STRATEGY FOR THE DETECTION OF SPECIFICALLY SPLICED mRNAs ENCODING HIV-1 REGULATORY GENES

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Objective. To differentially detect spliced mRNAs encoding the HIV-1 regulatory genes tat, rev, and nef in order to study the temporal expression of these transcripts during infection in vitro.
Methods. Primer-directed nucleic acid amplification was used to generate cDNA fragments of characteristic length which reflected gene-specific RNA splicing events.
Results. Total cellular RNA from HIV-1-infected CEM cells was amplified using primers complementary to: 1) the sequence immediately 5' of the splice donor common to all processed HIV-1 RNAs (5' of the gag start codon); and 2) the sequence at the 3' end of the tat and rev 5' coding exons. Between these two sequences are three splice acceptors whose use has been suggested to lead to specific mRNAs encoding tat, rev, and nef. The predicted cDNA fragments of 290, 108, and 92 base pairs, reflecting tat, rev, and nef mRNAs, respectively, have been detected using specific oligonucleotide probes. Several cDNA fragments of unexpected size have also been detected. Characterization of these fragments will be discussed.
Conclusion. Although differential detection of HIV-1 regulatory gene transcripts is difficult because of their similar size and largely shared nucleotide sequences, gene-specific splice events can be detected utilizing primer-directed amplification. This approach can be used to analyze the order of expression of these transcripts during infection.

T.C.P.130 PROCESSING OF THE *gag* POLYPROTEIN BY HUMAN IMMUNO DEFICIENCY VIRUS PROTEASE OCCURS IN A SEQUENTIAL MANNER

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The virally encoded protease of human immunodeficiency virus is responsible for the processing of the *gag* and *gag-pol* polyprotein precursors to their mature polypeptides. Since correct processing of the viral polyproteins is essential for the production of infectious virus, HIV protease represents a potential target for therapeutic agents. In this study, full-length *gag* polyprotein has been synthesized *in vitro* to serve as a *trans* substrate for bacterially expressed HIV protease. The *gag* polyprotein is rapidly and completely processed by protease-containing extracts. Immunoprecipitations with monoclonal antibodies to p17 and p24 suggest that initial cleavage of the polyprotein occurs at the p24-p15 junction. The proteolysis was inhibited by pepstatin with an IC_{50} of 0.15 mM for cleavage at the p24-p15 junction and 0.02 mM for cleavage at the p17-p24 junction.

T.C.P.131 POLYMERASE CHAIN REACTION IN HIV INFECTION

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Objective. Use of Polymerase Chain Reaction (PCR) in human immunodeficiency virus (HIV)-infected subjects and in seronegative but high risk subjects.
Methods. Localisation on HIV 1 genome and nucleotide sequence of the primers and probes used (derived from conserved regions of the viral genome) were :

- GAG : primer I 1088-1115, primer II 1175-1202, probe 1132-1172
- POL 1 : primer I 2391-2416, primer II 2672-2698, probe 2539-2575
- POL 2 : primer I 4118-4135, primer II 4242-4259, probe 4167-4205

Slot-blot and Southern-blot analysis were used in detection of HIV sequences.
530 subjects were studied : 200 non-haemophiliac HIV seropositive (Elisa with confirmation by Western-blot) subjects (amongst them, ten were seronegative 6 months earlier) ; 40 haemophiliac patients (20 seropositive + 20 seronegative) ; 25 AIDS patients ; 25 seronegative polytransfused thalassaemia patients ; 20 subjects with isolated and persistent anti-core antibodies (anti-p25 or anti-p18) ; 20 seronegative partners of HIV seropositive subjects (a second sample was collected and studied 6 months later in all) ; 200 healthy seronegative blood donors as controls.
Results. 1) PCR is positive in the HIV seropositive subjects but some appear negative in this assay when using only one single primer pair and probe. The use of three sets of primers appears necessary to prevent false-negative results in this context. 2) No detection of HIV DNA was observed in seronegative subjects from high risk groups. 3) All control subjects were PCR negative.
Conclusion. PCR allows the identification of HIV DNA in seropositive subjects and confirms the absence of HIV infection in seronegative subjects.

T.C.P.132 IN-VITRO EXPRESSION OF A FUNCTIONAL HIV-NEF GENE PRODUCT

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Objective: To study the biochemical function of the HIV nef protein.
Methods: We have subcloned the HIV_{SF2} nef gene DNA from an original plasmid (pKK-ori B) provided by Paul Luciw (University of California Davis, CA) into a bluescript vector (Stratagene, CA). The new construct was used in a transcriptional reaction mixture to produce the nef mRNA. The generated messenger was then translated into a micrococcal nuclease treated reticulocyte lysate. Finally, the purified nef gene product was analyzed in an in-vitro assay for GTP binding ability and kinase activity.
Results: The nef mRNA encoded for a major protein of 27 K daltons as determined by polyacrylamide gel electrophoresis. This finding is in accordance to the predicted molecular weight and is similar to what is found in HIV-infected cells. This p27 is recognized by either specific nef monoclonal antibody (Dupont, MA) or prescreened anti-nef serum from human AIDS patients. In addition, three other products of 29Kd, 25Kd and 17Kd are also synthesized at a much lower level in this reaction and are also recognized by the same antibodies.

Immunoprecipitated nef proteins can bind specifically ^{32}P-alpha-GTP. Furthermore, the immunoprecipitated translation products display a kinase activity in the presence of either ^{32}P-gamma-GTP or ^{32}P-gamma-ATP. However, the phosphorylated product of this in-vitro kinase assay runs as a single band with a molecular weight of 45 to 50 K daltons on a polyacrylamide gel. The phosphotransfer activity is dependent of the concentration on the nef translated products used.
Conclusion: The HIV nef gene expressed in-vitro possesses an integral GTP binding ability and kinase ability. The establishment of an in-vitro system allows us to study the structure and the biochemical function of the purified nef protein known as a negative regulator of HIV expression.

T.C.P.133 TWO EPSTEIN BARR VIRUS LATENT PROTEINS (LMP AND EBNA2) TRANSACTIVATE THE HIV-1 LTR

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We have constructed SV40 based vectors that express different latent proteins of Epstein Barr Virus (EBV). Using these constructs we have shown that both the nuclear EBNA2 protein and the latent membrane protein (LMP) are efficient transactivators of the HIV1 LTR. Both of these proteins are expressed in B lymphoid cells immortalized by EBV. To map the regions of the LTR involved in the transactivation we have used different mutated forms of the HIV-1 LTR linked to CAT as a reporter gene. CV-1, Ramos, Raji and Jurkat cells were co-transfected with these constructs and the vectors expressing EBNA2 and LMP. Results showed that most of the effect of the LMP protein could be mapped to the binding sites for nuclear factor κB (NF-κB). These results indicate that LMP activates second messengers that are involved in activation of NF-κB or related factors. The effect of the EBNA2 protein could not be mapped to a single defined cis-acting element and seems similar to that observed with immediate early proteins of other herpesviruses.

T.C.P.134 INFECTION OF RHESUS MACAQUES WITH A MOLECULARLY CLONED SIMIAN IMMUNODEFICIENCY VIRUS

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Objective: To analyze rhesus macaques infected with a molecularly cloned SIV with respect to viral replication, virulence, and ability to elicit anti-viral immune responses.
Methods: An infectious molecular clone of SIV from a rhesus macaque was found to replicate to high titer in cultures of primary rhesus peripheral blood mononuclear cells (PBMC) and macrophages derived from rhesus PBMC. Six juvenile rhesus macaques were inoculated intravenously with SIV recovered from the molecularly cloned provirus.
Results: All animals seroconverted (by immunoblotting analysis) within five weeks post inoculation (PI) and virus was recovered from PBMC of all animals at one and two weeks PI. Antibodies to *env*-encoded proteins were detected before antibodies to the *gag-pol* precursor and *pol* gene products. Only one animal developed detectable antibody to the p27 *gag* gene product. Once antibodies to SIV-encoded proteins were elicited, they persisted; however, SIV-specific neutralizing antibody titers declined after one month PI. By ten months after inoculation three of the animals had exhibited transient viremia (as detected by co-cultivation with human lymphoid cells), three were consiently virus negative and none had developed clinical signs of SIV disease.
Conclusions: SIV from a molecular clone is capable of producing a persistent and, perhaps, latent infection in rhesus macaques; however, the outcome of infection appears to be dependent on the individual host. These animals remain under study to assess the pathogenic potential of an SIV isolate that has been shown to be both T-cell tropic and macrophage tropic.

T.C.P.135 DETECTION OF ACTIVE VIRAL PROTEASE ASSOCIATED WITH CAPSIDS OF EQUINE INFECTIOUS ANEMIA VIRUS (EIAV).

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The cores of retroviral particles are likely to contain all the components required for infection of the host cell once it has entered the cytoplasm. In this respect, it was of interest to prepare cores of EIAV as a model system for the human immunodeficiency virus (HIV).

In this work we have prepared cores of EIAV by treatment of whole virus with detergent followed by two cycles of rate-zonal banding through Ficoll density gradients. The major components of the core are the p11 (nucleocapsid protein) and p26 (capsid protein) which are present in equimolar amounts, as in the whole virus. Since the cores are not deficient in p26, they are referred to as capsids. The other *gag*-encoded proteins p9 and p15 are removed during the preparation. At pH 7.6, the presence of active viral protease in the capsids was revealed by cleavage of p11 to a p6 protein. This cleavage was inhibited with pepstatin, which is known to work with retroviral proteases. The existence of the capsid as a distinct morphological entity was shown by electron microscopy of negative stained particles. By this means, the capsids are revealed as uniform cone-shaped particles 60nm x 120nm in size. The significance of the p11 cleavage at this stage in the retroviral life cycle is being investigated.

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T.C.P.136 EXPRESSION OF HIV GENES IN XENOPUS OOCYTES: DEMONSTRATION OF POSTRANSCRIPTIONAL REGULATION

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Objective: To study posttranscriptional aspects of HIV gene regulation in Xenopus oocytes.
Methods: Purified normal and mutant LTRCAT transcripts were synthesized using the bacteriophage T7 polymerase system. These were coinjected with plasmid DNA constructs into the nucleus and/or cytoplasm of Xenopus oocytes. CAT assays and RNA analyses were performed by standard methods.
Results: HIV genes can be faithfully and efficiently expressed in the Xenopus oocyte. We can demonstrate postranscriptional regulation of the normal LTRCAT construct. Constructs with TAR mutations express very low basal levels and are not regulated.
Conclusion: The Xenopus oocyte is a suitable system for the study of HIV gene expression. Our results suggest a postranscriptional TAR dependent regulation.

Additionnels
Additional

T.C.P.137 HIV-1 pol EXPRESSION IS DEPENDENT ON A GENERAL 'SHIFTY' SEQUENCE

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Objective. To determine the minimal sequence requirements for the frameshift event which is essential for pol expression and to examine the significance of this 'shifty' sequence in cellular genes.
Methods. We have used an SP6 in vitro system to assay a series of fragments and oligonucleotides for their ability to frameshift.
Results. We have shown that a short (26bp) sequence containing a run of 6 T's is sufficient for pol expression in both yeast and mammalian systems. We demonstrate that 6T's alone are able to direct frameshifting. Shifting occurs irrespective of the reading phase of the T's and occurs into both reading frames. The possibility of frameshifting occuring in other genes containing 6T's has been examined and we demonstrate shifting in a cellular gene which contains this 'shifty' sequence.
Conclusion. HIV-1 employs a general 'shifty' sequence of 6T's in its expression of pol. It is possible that the frequency of the shift is modulated by other viral proteins or by the particular sequence context.

T.C.P.138 MOLECULAR CHARACTERIZATION OF THE HUMAN CD4 GENE

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The human CD4 molecule has been shown to serve as a specific membrane receptor for HIV. To better understand the control of the expression of this gene as well as its specificity of expression in specific cell populations, we undertook its molecular cloning. Using the CD4 cDNA probe, we isolated a set of overlapping genomic clones from human genomic libreiries constructed in the lambda cloning vector EMBL-3. These clones span the CD4 gene and its adjacent sequences. Clones were characterized by restriction enzyme analysis and by Southern hybridization. The putative promotor has been identified and partially sequenced. Search has been initiated to identify enhancer sequences using transfection techniques with the CAT vector and by constructing transgenic mice.

T.C.P.139

REGULATION OF HIV-1 GENE EXPRESSION BY tat, rev AND nef.

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Objective. To study the mechanism of regulation of expression of HIV-1 by viral factors and the contribution of cellular factors to this process.
Methods. Gene transfer, mutagenesis, measurement of RNA and protein levels, cell fractionation, stability measurements, PCR amplification, polysomal profiles.
Results. Two viral regulatory proteins of HIV-1, tat and rev, are necessary for viral expression in human cells. A third regulatory protein, nef, has also been proposed to cause downregulation of transcription from the long terminal repeat (LTR) promoter, but is not essential for virus propagation in tissue culture. tat interacts with a cis-acting element in the R region of the LTR (TAR) and increases the steady state levels of all the viral mRNAs. Several experiments support a role of tat in transcriptional activation. In the absence of tat the majority of mRNA is not associated with the polysomes, suggesting a posttranscriptional effect of tat as previously postulated.
rev increases the levels of the viral mRNAs containing a cis-acting element (rev responsive element, RRE) localized in the env region of HIV-1. rev increases the levels of the unspliced viral mRNAs which contain RRE at the expense of the multiply spliced mRNAs not containing RRE by increasing the transport and cytoplasmic accumulation of unspliced mRNA. Splicing is not necessary for rev function. By promoting the transport of unspliced mRNA, rev decreases the accumulation of the multiply spliced mRNA. rev is produced by two classes of mRNA: (a) monocistronic, which have not been cloned previously as cDNA and (b) bicistronic, producing also tat protein. We have shown that rev acts at the RNA level to downregulate the levels of its own expression as well as the levels of tat and nef proteins.
Conclusion. Feedback regulation by the rev protein on the levels of the mRNAs producing tat, rev and nef is an essential regulatory circuit of HIV-1 allowing the balanced expression of the viral proteins and the generation of infectious virus. Intracellular and extracellular conditions disturbing this regulatory balance may have profound effects on the outcome of viral infection.

T.C.P.140

HIV INFECTION THROUGH ENDOCYTOSIS MEDIATED BY Fc-RECEPTORS OF MACROPHAGES

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Objective To study the role of Fc-receptors in HIV infection of CD4 negative cells, using a recently established macrophage/monocyte cell line: DD as a model system.
Methods Membrane marker and biochemical characterisation of DD cells had been done by immunofluorescence (IF) and enzyme cytochemical methods. DD cells were cultured in various conditions, and infected with HIV: i., directly, ii., complexed with different titers of HIV-specific IgG. Viral replication were monitored with IF, reverse transciptase assay and electron microscopy.
Results DD cells express myelomonocytic differentiation antigen CD13, and Fc-II receptors on to the cell membrane. They are negative for FcR-I, Leu M3, HLA-DR and also for CD4 receptors even after receptor induction. They do not posses enzyme activity such as α-naphtyl acetate esterase, acid phosphatase, α-1-antitripsin and lysozyme. DD cells were not permissive for direct infection by HIV. Treatment of cells with immunocomplex, however, was followed by syncytia formation and extent cytopathy resulting in a complete destruction of cultures.
Conclusion We conclude that HIV could be endocytosed in form of an immunocomplex, by the DD cells lacking CD4 receptors specific for HIV, but because of the rapid CPE, cells were not able for active viral replications in this model system. We hypothesize, that this way Fc-receptors may play an alternative route for HIV infection in vivo too.

T.C.P.141

STUDY OF THE CD45R AND UCHL1 POSITIVE LYMPHOCYTE SUBSETS IN THE BLOOD OF HIV-SEROPOSITIVE (HIV-POS) AND HIV-SERONEGATIVE (HIV-NEG) HAEMOPHILIACS

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Objectives. CD45R+ and UCHL1 lymphocyte subsets are thought to have different functions and are markers of the virgin and primed T lymphocytes, resp. Upon in vitro activation, a CD45R-UCHL1 switch occurs. It seemed therefore interesting to study if HIV infection influences the frequency of these subsets. Methods. Twenty-one HIV-pos (11 adults, 10 children) and 11 HIV-neg haemophiliacs (6 adults, 5 children) as well as 11 adult healthy controls (CO) were tested. UCHL1 and CD45R subsets were detected by monoclonals UCHL1 and SN130, resp., using FACS. Results. UCHL1+ cells exhibited reciprocal distribution to the CD45R+ cells in all 3 groups ($R=-0.53$, $p<0.0000001$). No significant differences were found in the percentage or absolute number of either subset between the HIV-pos, HIV-neg, and CO groups. By contrast, the 3 groups markedly differed from each other in the CD8/CD45R (HIV-pos: 0.69±0.25, HIV-neg: 0.43±0.18, CO: 0.28±0.10) and in the CD8/UCHL1 ratios. Interestingly enough, HIV-neg adult haemophiliacs had significantly more (53 vs 43%) UCHL1, and less (53 vs 75%) CD45R cells than the HIV-neg haemophiliac children. Conclusion. HIV infection does not alter the frequency of UCHL1 and CD45R subsets in the peripheral blood. Due to the alterations of other subpopulations, however, cells of both subsets include much more CD8+ cells in HIV-infected patients than in the healthy persons.

T.C.P.142

THE IMMUNOMODULATING AND ANTIVIRAL EFFECTS OF AS101, AN ORGANOTELLURIUM COMPOUND

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Objective. Two common approaches to the treatment of AIDS are the use of antiviral drugs and immunological enhancement. We tested AS101, an organo-metallic compound (Nature 330:173, 1987), for these activities.
Methods. We evaluated the effects of AS101 on various parameters concerning activation and function of immunocompetent cells as well as its antiviral effects assayed by determinations of the reverse transcriptase (RT) activity in supernatants from HIV infected cells.
Results. AS101 induced the expression of IL-2 receptors, the production of IL-2, colony-stimulating factor (CSF), IL-3, TNF and INFs, both *in vitro* and *in vivo*. AS101 also enhanced the ratio of OKT4 to OKT8-positive cells in cultured mononuclear cells from AIDS patients. Phase I clinical trials currently in progress on patients with AIDS or cancer show a general enhancement in the abovementioned immunological parameters.
AS101 was also found to protect mice from adverse effects of irradiation through increasing the number of spleen and bone-marrow (BM) cells, the number of BM CFU-C, and the production of CSF. *In vitro* studies with HUT78-chronically infected and with peripheral mononuclear cells infected with HIV show that AS101 had an antiviral effect. This was demonstrated by inhibition of particulate associated RT activity in the supernatants of the infected cells.
Conclusion. These findings indicate that AS101 acts as an immunomodulator and as an antiviral agent. AS101 may therefore prove useful in the treatment of AIDS patients.

T.C.P.143

A NUCLEOTIDE SEQUENCE OF UNKNOWN FUNCTION AMPLIFIED FROM DNA POLYMERASE CHAIN REACTION(PCR) IN HIV-INFECTED CELLS.

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Objective : To discovery the nucleotide sequence amplified by PCR from HIV-infected cells.
Method : The selective primers SK38/SK39 was used for HIV-1 and SK39/SK90 for HIV-2 identification using PCR single - stranded dideoxy method employing pBlueScript II was used for nucleotide sequencing.
Result : Using PCR, the virus strain from chinese homosexual patient with AIDS was identified as HIV-1, not HIV-2. During the PCR reaction, a DNA fragment of 1.4 kb was always seen in the gel when DNA from HIV-infected cells employed. Nucleotide sequence of this fragment showed that this 1.4kb fragment was flanked by SK 39 primer sequence in an inverted orientation. This sequence so far has 77% homology to c-myc and only 44% homology of HIV.
Conclusion : A nucleotide sequnce of unknown function was amplified by PCR from HIV-infected cells. The meaning of this sequence is under investigation.

T.C.P.144

INHIBITION OF HIV-1 REPRODUCTION BY SYNTHETIC PEPTIDES FROM REGION OF ENV,GAG,VPU PROTEINS SIMILAR TO CELL RECEPTORS CD-4 AND HLA-DR.

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The CD4 antigen was identified as an essential component of the cell surface receptor for HIV-1,and it interacts with HLA antigen of 11 class.Regions of viral proteins similar to receptors CD-4 and HLA-DR were localisated in gp41,gag,vpu and gp120 respectivetily.

Selected peptides, g90(547-559env)-SGIVQQQNNLLRA;g92(557-573env)-RAIEAQQHLLQLTVWG;g93(43-53vpu)-DRLIERAEDSG;g94(92-107gag)-IEIKDTKEALDKIEEE;g96(419-430env)-CRIKQIINMWQE;g97(428-439env)-MWQKVGKAMYAPP;g98(68-81vpu)-VEMGHAPWDVDDL were synthesized and used in follow up study of HIV-1 infected cells. Cells were examined at various times after HIV-1 infection by measuring of reverse transcriptase(RT) activity, virus antigens expression and viral RNA by hibridisation method.

It was found that peptides g92,g98 could be induced significantly inhibition of HIV reproduction,when there are added every day at the concentration 100 ng/ml.The g96 and g 97 peptides were inhibited RT activity more than twice only at early stage of virus infection.Additionly,the neutralizing activity of sera obtained to these peptides was studied.

These studies indicated that peptides from viral proteins similar to CD-4 receptor has suppressive effect on virus reproduction.

T.C.P.145

5'-PHOSPHONATE DERIVATIVES OF 3'-AZIDO-2',3'-DIDEOXYNUCLEOSIDES: SYNTHESIS AND INHIBITION OF HIV REPRODUCTION IN CELL CULTURES

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Objective. A group of new 5'-phosphonate of 3'-azido-2',3'-dideoxynucleosides was studied in cell cultures, infected by HIV. Methods. Synthesis of 5'-hydrophosphonates, 5'-methylenephosphonate and 5'-methylphosphonate of 3'-azido-2',3'-dideoxynucleosides was ellaborated. The activity of these compounds on HIV reproduction in H9/IIIB and MT4 cell cultures was evaluated by reverse transcriptase activity and using immunofluorescent and colorimetric analysis.
Results. 5'-Methylene- and 5'-hydrophosphonates of 3'-azido-2',3' dideoxythymidine revealed the activity close to that of 3'-azido-2',3'-dideoxythymidine (AzT) at the supression of HIV-1 reproduction, whereas their toxicity was significantly lower both in HIV-infected and noninfected cells. 5'-Hydrophosphonates of AzA and AzG were essentially more active than initial nucleosides, their toxicity being as well significantly lower. Some metabolic data for 5'-phosphonates in cells were investigated. Conclusion. The new group of highly active anti-HIV compounds was found.

T.C.P.146

REDUCED IN VITRO GROWTH AND DIFFERENTIATION OF MONOCYTES FROM PATIENTS WITH HIV INFECTION

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Methods. Monocytes (Mo) from patients with HIV (CDC II/III, n=36; AIDS, n=15), 14 HIV seroneg. homosexual men and 58 blood donors were cultured for 1 and 10 days. The number of Mo/Mφ(macrophages), protein and cell differentiation were determined,the last by immunocytochemical staining with monocl.antibodies (Mabs) against two differentiation antigens. The in vitro growth of Mo was also measured in (a) 8 AIDS patients receiving zidovudine,(b) 12 patients where Mo were cultured with Mo/Mφ supernatant from normal blood donors, and (c) 6 patients where Mo were cultured with M-CSF (Mφ Colony Stim. Factor).
Results. On day 10, the number of Mφ and cell protein were reduced in CDC II/III and even more in AIDS. Depressed in vitro growth correlated with reduced function of the bone marrow (BM) assessed as low numbers of erythrocytes (r=0.45,p=0.003), leukocytes (r=0.36,p=0.01) and thrombocytes (r=0.41, p=0.007) in peripheral blood.On day 10, HIV+ Mφ were significantly less differentiated than control Mφ. Of the patients treated with zidovudine, 3 out of 8 showed a transient improvement of in vitro growth during the first 2-3 months. Mo/Mφ supernatants from healthy donors as well as M-CSF did partially reconstitute the in vitro growth defect in the majority of patients tested. Conclusion: Decreased Mo in vitro growth and differentiation are seen in most patients with HIV infection.This may be due to lack of cytokines as suggested by the reconstitution experiments. The correlation of decreased Mo in vitro growth and low numbers of blood cells might also suggest that defects in BM precursor cells are operative.Another mechanism may be HIV replication in Mo.

T.C.P.147

THE ROLE OF INTERLEUKIN-4 (IL-4) IN AIDS.

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Objective :To present a model explaining pathogenesis of AIDS.
Methods : A literature survey has been made of molecular to epidemiologic aspects of AIDS and animal retroviruses, and of cytokines. Relevant information is presented to explain the pathogenesis.
Results : This model is based on interaction between latent HIV lurking as intracisternal A particles (IAP), other infectious agents which induce IL-4 and act as cofactors,and also, host's genetic factors. Many human CD4+ T helper cells simultaneously secrete IL-2, IL-4, and IFN-γ. IL-4 stimulates B cells to polyclonal activation and also enhances expression of HLA-DR which is spatially associated with CD23, low avidity Fc receptor for IgE (Fc$_\epsilon$R2). N linked glycosylation site on HIV gp120 which binds with CD4 is also associated with HLA-DR. Transactivation of latent HIV occurs via enhancer element present in the IAP-LTR. IgE antibody formation is genetically controlled and regulated by IFN-γ. Addition of IL-4 to mouse cells compensates for the genetic defect of a nonresponder mouse strain. Similarly, HIV-infected poor responders may overcome the defect if repeatedly triggered by IL-4 inducing cofactors. Antibodies to gp120 mimic autoantibodies to HLA-DR, which compromise effective functions of antigen presenting cells and the T$_h$-B cell interaction. IL-4 also appears to be the HTLV-induced growth factor reported to be responsible for Kaposi's Sarcoma seen in AIDS patients.
Conclusions : The model explains the depletion of T$_h$ cells in AIDS and also why some individuals develop full-blown AIDS faster than others.

T.C.P.148

FURTHER INVESTIGATIONS ON A LABORATORY MODEL BASED ON HIV-1 SPECIFIC CYTOTOXIC T LYMPHOCYTES

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The author had previously reported on the development of HIV-1 specific cytotoxic T cells, (Arida,E., 6th Internat. Cong. of Immunol., July 6-11,1986, Toronto, Canada, Abstracts:3.55.15, p. 460. Arida, E., 7th Internat. Cong. of Virology, August 9-14,1987, Edmonton, Canada, Abstracts: R38.6). In the present work, the characteristics of these cells after 6 month of propagation were investigated under several experimental conditions. These included IL-2, T cell mitogens, parasitic antigens, certain cations, cheliating agents, etc,...The cells retained their response to HIV-1 specific cytotoxic effect (SCE), even after 6 month of propagation. They proliferated freely in absence of IL-2, T cell mitogens & parasitic antigens which stimulate T cells. HIV-1 SCE was maintained by the cells only up to 10 month of propagation & was furtherly retained by treatment with Cd, Zn & Cu++ ions, but not with Cu+, Fe or Co. Cheliating agents interfered with the above cation effect. Cheliating agents (including Ca agents) interfered with HIV-1 SCE when the whole virus was used but not with its related genetic materials. These results indicate genome integration of an HIV-1 provirus & its associated influence on T cell response. The value of these cells as lab. models for immunologic tolerance is evident.

T.C.P.149

MONOCLONAL ANTIBODIES RAISED TO RECOMBINANT HIV-1 GAG-PROTEINS CAN IDENTIFY IMMUNODOMINANT B CELL EPITOPES IN AIDS PATIENTS.

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Objective: The ability of serum antibodies from AIDS-patients to compete with the binding of mouse anti-p24 monoclonal antibodies to the E. coli produced antigen, was investigated.
Methods: Microwell plates coated with E. coli produced purified p24 HIV-1 antigen, were incubated with serial dilutions of sera from AIDS-patients, followed by incubation with the monoclonal Ab, which was then detected with an anti-mouse HRPO conjugate. Inhibition of monoclonal binding was scored as a decrease of the signal, relative to the unblocked reaction. Microwells coated with monoclonal were incubated with culture supernatant from several HIV-1 producing cell-lines to investigate the binding of native viral antigen. Captured antigen was detected with an anti-HIV human IgG conjugate.
Results: Five anti-p24 and two anti-p17 mouse monoclonal antibodies were investigated. For two anti-p24 monoclonals, a variable degree of interference from a panel of 50 human anti-HIV sera was observed. The corresponding epitopes are thus immunogenic in most HIV-1 patients. However, one of these monoclonals does not recognize the antigen from viral lysates. This implies that the epitope is not acceesible in mildly denatured p24 protein. This points to the identification of epitopes exposed only after denaturation (presentation) of the viral antigen.
Conclusion: Mouse monoclonal antibodies to denatured recombinant HIV-antigen are able to identify epitopes recognized in HIV-infected humans, but not accessible in the native antigen.

T.C.P.150

HUMAN MONOCLONAL ANTIBODIES TO HIV

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R.von Baehr 2), H.Schmitz 1)
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Objective : The production of human monoclonal antibodies to HIV and the evaluation of role of antibodies in HIV-infections.
Methods : The heteromyeloma cell line CB F7 (Grunow et al, J.Immunol.Methods, 106, 1988, 257-265) was used for cell fusions with peripheral blood lymphocytes from HIV-positive blood donors. Clones were screened for specific and continuous antibody production. Supernatants from stable hybridomas were tested in specific neutralisation and cytotoxicity assays.
Results: In 20 fusion experiments a fusion frequency of 0.6×10^{-5} and a specific fusion frequency of 0.8×10^{-7} was obtained.
16 clones were recloned, all were directed against envelope glycoproteins of HIV; five were specific for gp 41 and eleven for gp 120. One clone against gp 120 produced continuously for the last three month. Neutralisation and cytotoxicity assays are in progress.
Conclusion : We have established a method allowing the production of specific monoclonal antibody producing hybridomas against different epitopes of HIV. This will enable us to investigate the correlation of neutralising or cytotoxic effects of monoclonal antibodies with the type of epitopes recognized in order to get more information concerning the interaction of HIV and antibody response.

Modèles animaux
Animal Models

W.C.P.1

AEROSOL DELIVERY OF PENTAMIDINE TO THE DEEP LUNG : A MODEL OF ISOTOPIC QUANTITATION IN BABOONS.

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The intraveinous treatment of Pneumocystis Carinii pneumonia with Pentamidine in AIDS patients is known to induce frequently adverse reactions. Aerosol administration was proved to be avoid from these toxic effects, but the best aerosolization conditions remain as yet to be defined. In this goal, we have developped a scintigraphic model to assess the deep lung accessibility of the drug. After an in vivo control of quality of isotopic labelling, the preparation was administered to 4 unanesthetized baboons as an aerosol containing 200 mg Pentamidine labelled with 370 MBq 99m Technetium. For each baboon, 2 types of aerosolizers were compared ; a TV6000 ultrasound SIEMENS (Germany) device and a compressed air Venticis ORIS (France) nebulizer. Acquisitions and processing of dynamic scintigraphies (160 images of 1 min) were performed using a PHO GAMMA CAMERA SEARLE (USA) connected to a TIM 512 computer (France). The Pentamidine lung burden was assessed based on the comparison of the lung activity to the counts obtained in a thorax like phantom containing 37 MBq 99m Tc. Pentamidine was about equally distributed between the 2 lungs and so, a total lung burden could be assessed. Using the ultrasound system, the lung burden was very low (0.06 mg i.e. 0.03 % from the initial dose opposite to the gastric delivering (0.22 mg i.e. 0.1 %). On the contrary, when using the Venticis device, the Pentamidine mass delivered to the deep lung was 1.52 mg i.e. 0.7 % with a neglectible clearance during the time course of the study (gastric delivery was 0.257 mg i.e. 0.128 %).

So, these results obtained in the baboon point out the crucial ro'e of aerosolization method for an efficient delivery of Pentamidine to the deep lung. Radiolabeling of Pentamidine offers a convenient and precise way to quantify the effective pulmonary dose and so to optimize the aerosol conditions in AIDS patients. Based on this strategy, clinical studies are currently in progress.

W.C.P.3

PERSISTENT HIV2 INFECTION OF RHESUS MACAQUE, BABOON AND MANGABEYS

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Objective. Establishment of persistent HIV2 infection in monkeys

Methods. Six monkeys of three different species (Mangabey, Macaque and Baboon) have been infected with HIV2 NIH-DZ using intraperitoneal or intraveinous injections of cell-free HIV2 or autologous HIV2 infected cells with no prior immunostimulation. Viral expression was demonstrated by reverse transcriptase activity measured in cells after coculture with human peripheral blood lymphocytes, by electron microscopy and by southern blot analysis. Serum was analysed by Western-Blot, ELISA (detection of antigen and antibody) and neutralization assay carried out using immunofluorescence techniques

Results. The six inoculated animals seroconverted in the first month after inoculation and remained persistently infected up to two years as demonstrated by RT activity, IFA, EM. We also observed integrated proviral DNA by genomic analysis in the six tested samples. No sign of immunodeficiency disease has so far been observed

Conclusion. This is the first report of experimental HIV2 infection of mangabeys. *(Cercocebus sp.)*

W.C.P.5

CD8+ AND CD4+ RESPONSES TO HIV-1 ANTIGENS IN MICE IMMUNIZED WITH VACCINIA VIRUS (VV) RECOMBINANTS.

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Objective : To study the HIV-specific cytotoxic and proliferative responses in mice immunized with VV recombinants expressing HIV-1 envelope protein or internal gag protein or non structural nef protein.

Methods : BALB/c mice were inoculated intravenously with VV recombinants or wild-type VV. Cytotoxicity assays were performed with syngeneic P815 target cells transfected with the HIV-1 env, gag or nef gene. Proliferative responses were performed using recombinant envelope gp160, gag p25, gag p18, nef p27 proteins and synthetic peptides.

Results : 1) HIV-specific CD8+ T lymphocytes were detected with P815-env-LAV, P815-gag-LAV or P815-nef-LAV target cells after in vitro interleukin-2 expansion of spleen cells. 2) A bulk memory and specific CD4+ proliferative response was observed against gp160, p25 and p27 proteins. In contrast, p18 was weakly immunogenic in mice. 3) Antigen-specific T cell lines were obtained by repeated stimulation with recombinant proteins. The proliferative and cytolytic capacities of these lines were studied.

Conclusions : Thus internal gag protein and non-structural nef protein of HIV-1 can induce cell-mediated immune responses in mice. Our murine model also permits to evaluate the immunogenic power of different HIV proteins.

W.C.P.2

SIV$_{AGM}$ AND SIV$_{MND}$ MIGHT BE NONPATHOGENIC IN VIVO

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Objective. To see infectability and pathogenicity of SIV$_{AGM}$ and SIV$_{MND}$ in various species of monkeys.

Methods. Three African green monkeys and three cynomolgus monkeys were inoculated with SIV$_{AGM}$[TYO-1] derived from a healthy African green monkey. Besides, four cynomolgus monkeys, three cotton-top tamarins and a common marmoset were inoculated with SIV$_{MND}$[GB-1] derived from a healthy mandrill. Virus reisolation and antibody detection were carried out in these animals. Hematological and immunological analyses including ConA response assay and the level of biochemical parameters in plasma were examined. Organs removed at necropsy (SIV$_{AGM}$-infected group:42 weeks p.i.,SIV$_{MND}$-infected group:20 weeks p.i.) were histopathologically examined.

Results. All animals inoculated with SIV$_{AGM}$ seroconverted within 2 weeks, and virus was recovered 2 to 42 weeks p.i. Cynomolgus monkeys and cotton-top tamarins inoculated with SIV$_{MND}$ seroconverted within 2 weeks, and virus was recovered 2 to 9 weeks p.i. in cotton-top tamarins. Animals infected with SIV$_{AGM}$ developed slight swelling of superficial lymph nodes 12 weeks p.i. and virus was reisolated from spleen and lymph nodes in 5 of 6 monkeys at the necropsy. But no noticeable changes in immuno-hematological analyses and histopathologic observation at necropsy were detected in these infected monkeys.

Conclusion. SIV$_{AGM}$ might not induce overt AIDS in its original host as well as in cynomolgus monkeys, and SIV$_{MND}$ is also considered to be nonpathogenic.

W.C.P.4

A RABBIT MODEL OF HTLV-I INFECTION: SEROCONVERSION PATTERNS AND DETECTION OF VIRUS BY PCR.

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Objective: Determine the antibody reactivity and virus distribution of rabbits persistently infected with HTLV-I. Methods: Neonatal and weanling rabbits were inoculated with HTLV-I infected cells by IP, IV or IC routes. Antibody status were assessed by IFA, WIB, and RIP assays. HTLV-I sequences were examined by Southern blot and PCR from PBMC and tissues. Results: All HTLV-I-inoculated neonatal rabbits which survived beyond 3 wks seroconverted to HTLV-I, while controls remained antibody negative. Antibody patterns included early (3 to 5 wks pi) and persistent (42-90 wks pi) reactivity to p24, p55 and gp68, while reactivity to p19 was variable. IFA titers peaked between 1:160 and 1:320, but decrease after 14 wks pi. Among virus-infected rabbits (neonatal group-killed 70-94 wks pi) HTLV-I pol and gag sequences were detected by PCR from PBMC [3/3 (#test/ #positive), liver (1/1), and mesenteric lymph node (2/2). Extracts of spleen, bone marrow, and cecal lymphoid tissue of 2 infected rabbits and PBMC from a control rabbit were negative by PCR. PBMC from infected and control rabbits were negative by direct Southern blot. No clinicopathologic alterations could be attributed to HTLV-I infection. Conclusions: HTLV-I infected rabbits, similar to humans, develop early and persistent antibody to HTLV-I gag p24 and env 68 and contain low numbers of HTLV-I positive leukocytes. HTLV-I infected rabbits are useful to study persistent HTLV-I infections in humans.

W.C.P.6

MACROPHAGES FROM LP-BM5 INFECTED MICE INDUCE MURINE AIDS.

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The LP-BM5 murine leukemia virus induces an immunodeficiency syndrome in mice (MAIDS) similar to human AIDS. To further validate this model we examined the role of macrophages as reservoirs of LP-BM5 virus. Four week old C57Bl/6 mice were infected i.p. with 0.5ml of supernatant from continuously infected SC-1 cells (TC2110); 37 days later disease was confirmed by enlarged spleens and by ConA unresponsive lymphocytes. Peritoneal exudate cells were isolated (no differences from controls were observed). Macrophages (MØ) were purified by adherence, scraped off and resuspended in PBS (10^6/ml). Splenocyte suspensions were prepared (10^6/ml). This material (1ml) and the corresponding controls were injected i.p. in normal C57Bl/6 mice. After 45 days enlarged spleens were detected only in the MØ infected group, by 65 days splenomegaly was also detected in the splenocyte infected group. At this point the animals were sacrificed, spleen weight and ConA response assessed (MTT method).

i.p. injection with:	Spleen wt. (mg)	ConA response (stimulation factor)
MØ Control	74±13	6
MØ Infected	2039±760	0
Splen. Cont.	78±12	4
Splen. Infec.	1998±300	0

These results indicate that macrophages are an important retroviral reservoir in the LP-BM5 MAIDS model similar to human AIDS.

W.C.P.7 INTERCOMPARISON OF DIFFERENT SIV ISOLATES IN RHESUS AND CYNOMOLGUS MACAQUES

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Objective Comparison of different SIV isolates in macaques.
Methods Six different isolates of SIV (SIVmac251 low passage (LP) and high passage (HP); SIVcyn186 (LP) from Dr R Desrosiers; SIVagm Tyol and 2 (HP) from Dr Hayami; SIVsm7 from Dr P Fultz). Animals were injected i.v. with virus and then bled at 2-4 week intervals. All sera were analysed by synthetic peptide ELISA, Western blotting and by RIPA.
Results All animals receiving SIVmac251 (LP), SIVcyn186 and SIVsm7 produced antibodies to the gag, pol and env viral proteins. Those receiving the SIVagm strains or SIVmac (HP) did not seroconvert. The two animals receiving SIVmac251 (LP) (rhesus 32H and cynomolgus 705B) were studied in greater detail. The rhesus 32H produced a persistent antibody response and virus was routinely re-isolated from this animal. In contrast, the cynomolgus 705B, produced only a weak antibody response, and died from a wasting syndrome 305 days p.i. The authenticity of the 32H and 705B SIV re-isolates was confirmed by PCR and sequence analysis.
Conclusion SIVmac251(LP) is pathogenic for cynomolgus macaques and can be used as an animal disease model for human AIDS.

W.C.P.8 STRAIN SPECIFICITY OF LYMPHOCYTE PROLIFERATIVE RESPONSES IN EXPERIMENTAL ANIMALS IMMUNIZED WITH RECOMBINANT HIV-1 gp120 ANTIGENS.

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Objective: To determine if the helper T-cell responses to recombinant gp120 polypeptides are directed against conserved and/or variable regions.
Methods: The following non-glycosylated, denatured HIV gp120 proteins were produced in yeast: full-length gp120 from the HIV-SF2, HIV-HTLVIIIB and HIV-Zr6 isolates; N-terminal (aa 26-277) and C-terminal (aa 274-510) halves of HIV-SF2 gp120; HIV-SF2 gp120 with the third hypervariable domain (aa 300-332) deleted; and HIV-SF2 gp120 with all five hypervariable regions (aa 131-134, 156-198, 300-332, 388-414, and 457-463) deleted. In mammalian cells, glycosylated, native HIV-SF2 gp120 has been produced. Lymphocytes from animals immunized with purified gp120 antigens were tested in vitro for proliferative responses to the immunizing antigen and other gp120 polypeptides.
Results: Lymphocytes from various immunized animals have shown that both type and group-specific helper T cell responses are elicited, that conserved T-cell epitopes exist outside the major hypervariable domains of gp120, and that T-cell responses are directed against epitopes that map to both halves of gp120. Furthermore, lymphocytes from animals immunized with non-glycosylated gp120 clearly respond in vitro to the glycosylated molecule from the same isolate. However, preliminary results suggest that glycosylation may influence the strain specificity of T-cell responses.
Conclusions: These studies point out the complexity of the T-cell responses to HIV-1 gp120. Both type and group-specific responses have been observed, and there may be differences in the responses to glycosylated and non-glycosylated versions of the same molecule.

W.C.P.9 THE SIGNIFICANCE OF PREMATURE STOP CODONS IN ENV OF SIV

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Objective. To determine the size requirements of the envelope transmembrane protein (TMP) of SIV for replication in cultured cells and in vivo.
Methods. DNA sequences of the TMP region in infectious molecular clones of SIVmac were determined. Virus was produced in cultured cells by transfection of cloned DNA using DEAE-Dextran and analysed by western blot.
Results. SIVmac251 and SIVmac142 infectious molecular clones have premature stop codons that yield virus with short (28-30K) TMP. SIVmac239 cloned virus does not have a premature stop codon; transfection of HUT-78 cells with this clone initially yields virus with 41K TMP. However, in HUT-78 cells there is strong selective pressure for a short 28-30K TMP. Upon growth of cloned SIVmac239 in HUT78 cells, virus with 41K TMP gradually disappears coincident with the emergence of virus with 28-30K TMP which eventually predominates. Cloned virus with 41K TMP grows very well upon serial passage in normal macaque lymphocytes and maintains a 41K TMP in these cells. Virus recovered from an infected macaque using normal macaque lymphocytes yielded virus with 41K TMP.
Conclusion. The natural form of the TMP in SIV appears to be the full length 41K version. Shorter forms of TMP in SIV result from growing the virus in unnatural cell types such as HUT-78 and MT4, human tumor T cell lines. Differences observed in the different cell types may be used to shed light on the role of the carboxy terminal portion of TMP either in virus entry or in the assembly and budding process.

W.C.P.10 CONSTRUCTION AND CHARACTERIZATION OF RECOMBINANT VACCINIA VIRUS EXPRESSING THE ENVELOPE GLYCOPROTEINS OF SIVmne.

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Objective: To determine the biochemical and immunogenic properties of SIVmne envelope glycoproteins expressed by recombinant vaccinia virus.
Methods: A recombinant vaccinia virus has been constructed that contains the entire env gene of SIVmne. The biosynthesis and the processing of the recombinant-made env proteins were analysed by serological assays. The ability of these glycoproteins to induce syncytium formation was tested in HeLa-CD4$^+$ cells. The recombinant virus was inoculated into rodents and macaques for immunogenicity studies.
Results: Three glycoproteins were detected by SIV-positive macaque sera in cells infected with the recombinant vaccinia virus. By their mobility in SDS-PAGE and their immunoreactivity, these proteins correspond to the precursor gp160 and the mature forms gp130 and gp32. HeLa-CD4$^+$ cells infected with vaccinia-SIVenv recombinant virus did not form syncytia as readily as those infected with an analogous recombinant virus expressing the env glycoproteins of HIV-1. Results of immunogenicity studies will be presented.
Conclusion: The envelope glycoproteins of SIVmne are expressed and processed in recombinant vaccinia virus infected cells. Unlike their HIV counterparts, recombinant-made SIVmne glycoproteins do not mediate syncytia formation in CD4$^+$ cells efficiently. This recombinant will be useful for the study of the immunogenic properties of SIV envelope antigens.

W.C.P.11 FIV-AIDS MODEL FOR TESTING NOVEL VACCINE APPROACHES FOR HUMAN AIDS

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Objective. Heterologous feline T lymphocytes infected with feline immunodeficiency virus (FIV) were used as an inactivated whole cell vaccine against feline AIDS.
Methods. Hallmark of FIV-FAIDS is immunosuppression resulting in increased susceptibility of the infected cats to secondary infections and death resulting from these secondary infections. In this study FIV-AIDS was used as a small animal model of human AIDS to test novel vaccine approaches. Infected cell vaccine consisted of adjuvant and FIV-infected feline T lymphocytes ($1x10^7$ cells/specific pathogen free cat) inactivated prior to the study with gluteraldehyde. The adjuvant used in the vaccines was thronyl-muramyl dipeptide. Uninfected cell vaccine consisted of adjuvant and uninfected feline T lymphocytes (inactivated).
Results. No virus was isolated from any of the cats prior to virus challenge. By the 4th vaccination, all 3 cats with infected cell vaccine developed antibodies to viral p17, p28, gp40, p52, and p54, and by this time, 2/3 of these cats developed antibodies to envelope gp58 except for one cat which developed after the 8th (the last) vaccination. The results below were obtained from cats monitored over 17 weeks post-challenge (wk p.c.) with live virus.

Vaccine Type	1st Virus Isolation	No. of Cats Alive
Infected Cell + Adjuvant	4 wk p.c.	3/3 (100%)
Uninfected Cell + Adjuvant	1 wk p.c.	2/2 (100%)
Adjuvant	1 wk p.c.	0/1 (0%)
None	1 wk p.c.	3/6 (50%)

Conclusion. Cats with infected cell vaccine developed antibodies to majority of viral proteins detectable by immunoblot and in these cats, the onset of the cell-associated viremia was delayed by 3 weeks. Heterologous cell vaccines appeared to decrease the mortality of the cats challenged with live FIV. Additional monitoring of these cats should determine the efficacy of this vaccine over prolonged period of time.

W.C.P.12 EVOLUTION OF THE ENVELOPE GENE OF SIVmac-BK28

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Objective. Relative to HIV-1, many SIV isolates encode truncated Transmembrane Proteins (TMPs), as a result of a stop codon in the TMP gene. Previous work by our laboratory has demonstrated that this stop codon is required for the production of infectious virus when the BK28 molecular clone of SIV$_{mac}$ is cultured in HUT78 cells. Consequently we decided to address the role of genomic evolution in the pathogenesis of SIV infections, initially by assessing changes occurring in the vicinity of the TMP stop codon. Here we report on changes within the SIV$_{BK28}$ TMP gene in viruses replicating in cultured cells and in infected macaques.
Methods. 4 rhesus were inoculated with a combination of 2 derivatives of SIV$_{BK28}$: a stop codon-less construct, and a spontaneous "revertant" containing a stop codon, that arose during in vitro growth. A portion of the TMP gene was amplified directly from infected HUT78 cells and infected rhesus lymphocytes using the Polymerase Chain Reaction, and amplified products were cloned into pUC18 and their DNA sequences determined.
Results. These viruses showed no increase in pathogenicity over parental BK28, all 4 remain healthy at 17 months p.i. TMP genes recovered from an animal 10 months p.i. were all distinct from the virus inoculum. Eleven of 15 clones carried a 12bp deletion centered over the TMP stop codon permitting production of an extended, gp41 TMP. The other 4 clones carried a different 12 bp deletion which recreated a stop codon and permitting a truncated gp32 to be produced. The TMP genes of virus derived from this animal following propagation in H9 cells were exclusively of the latter type, indicating strong in vitro selection.
Conclusion. An extraordinarily high degree of mutation and selection occurs within the region surrounding the TMP stop codon of SIV$_{BK28}$. Whether the biological basis for selection for such mutations reflects requirements for glycoprotein structure or for the utilization of alternate splice acceptor sites for viral regulatory genes (see abstract by Viglianti and Mullins) remains unclear.

W.C.P.13 ISOLATION AND PRELIMINARY CHARACTERIZATION OF A NEUROTROPIC STRAIN OF FELINE LEUKEMIA VIRUS

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SIGNIFICANCE: We have isolated a strain of feline leukemia virus (FeLV-1390)which induced significant delays in motor nerve conduction velocities in 3 of 3 experimentally infected specific pathogen free (SPF) cats within 7 months post inoculation. This isolate may lead to development of a feline model of AIDS peripheral neuropathies to be utilized in future testing of therapies for AIDS.
METHODS: Bone marrow and CSF were harvested from 3 cats exhibiting neurologic abnormalities. All 3 cats were FeLV positive and FIV negative. Two cats were naturally infected. One cat (#1390) was experimentally infected with molecularly cloned (mc) FeLV-3281 2 years before developing neurological problems. All samples were cocultured with feline fibroblasts (AH927 cells). Six SPF cats were inoculated (intracisternally and intraperitoneally), 2 each, with cell free supernatants containing 10^5 ffu of the 3 potentially neurotropic strains of FeLV. Four additional SPF cats were similarly inoculated; 2 with 10^5 ffu of minimally pathogenic mc FeLV-61E, and 2 with virus-free medium. The cats were housed under barrier conditions in two gang cages (5 cats/cage). Electrophysiology was performed and the cats were euthanized between 6 and 7 months post inoculation.
RESULTS: All of the FeLV-inoculated cats became FeLV positive approximately 3 weeks post inoculation. One of the medium-inoculated cats tested FeLV positive 9 weeks post inoculation. We assume this cat (#1970) contracted FeLV-1390 horizontally from the infected cats with which it was housed. A virus restriction pattern similar to mc FeLV-3281 was identified by Southern blot analysis of the FeLV genomes present in cat # 1970 and the 2 cats inoculated with FeLV-1390. The motor nerve conduction velocities of #1970 and the 2 cats infected with FeLV-1390 were significantly decreased when compared to the velocities of uninfected age-matched control cats and cats infected with mc FeLV-61E.
CONCLUSION: FeLV-1390 induced significant delays in motor nerve conduction velocities analogous to HIV and/or HTLV-1 peripheral nervous system lesions.

W.C.P.14 IN SITU IMMUNOASSAYING SUGGESTS CENTRAL NEUROENDOCRINE INVOLVEMENT IN INFANT FELINE AIDS (FAIDS)

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Objective. To emulate in FAIDS, the human AIDS (HAIDS) demonstration that HIV infects and affects the CNS. In FeLV+FAIDS this link was, up until our work, conspicuously missing.
Methods. The samples were brain extracts from case vs. control infant kittens (N=29) with FAIDS induced with intracerebral injection of FeLV "A" (ATCC-717). The viral assays were based on commercial reagents: polyclonal anti-FeLV virion (Antibodies Inc., Davis, CA USA) or monoclonal anti FeLV gsa p27 (CITE™-AgriTech Systems, Portland, ME USA) antibodies. The results were confirmed with a commercial ELISA (LEUKOASSAY™F or II, Pittman Moore, Washington Cross, NJ USA). Endocrine affection was shown by a heterologous rabbit anti-rat growth hormone (GH) titration in hypophyses by immunostaining. The difference in GH in the adenopituicytes between controls and FAIDS cases was significant ($p<0.01$).
Results. This study further corroborates our preliminary reports on FeLV in CNS. Pituitary GH diminution coincided with growth impairment in the form of failure-to-thrive and an ensuing fatal wasting syndrome undistinguishable from our own results with rabies [1].
Conclusion: FAIDS in kittens, as a model for HAIDS in children, strongly suggests a neuroendocrine participation that, at least in part, may explain the immunodeficiency [1].
(The kind support of the manufacturers of commercial FeLV and RV bio-technology diagnostics, as mentioned, is kindly appreciated).

[1]. Torres-Anjel et al. Failure to thrive, wasting syndrome and immunodeficiency in rabies: a hypophyseal/hypothalamic/thymic axis effect of rabies virus. Rev Infect Dis. 1988:10 (Suppl.4):S710-25.

W.C.P.15 IN VIVO ANALYSIS OF THE MINIMAL INFECTIOUS DOSE OF AN ACUTELY LETHAL POOL OF SIV (SIV/SMM/PBJ-14)

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Objective. To determine the minimal infectious (lethal) dose of an acutely lethal virus pool of SIV derived from a chronically infected macaque.
Methods. Six groups of 2 pig-tailed macaques were inoculated IV with 10-fold serial dilutions of the PBj-14 isolate, or doses ranging from 10^4-0.1 TCID$_{50}$.
Results. All animals given 10 TCID$_{50}$ or greater became infected and developed acute clinical disease. Although there was no evidence the two recipients of 1 TCID$_{50}$ became infected, one animal that received 0.1 TCID$_{50}$ was infected and at 6 weeks P.I. had reduced numbers of CD4$^+$ cells that decreased progressively until death 9 months P.I. In the other animals, disease onset ranged from day 7 (10^4 TCID) to day 12 (10 TCID) P.I., with death occurring from day 8-16. One animal survived the acute disease but showed a progressive decrease in CD4$^+$ cells and died 7 months P.I., with emaciation, oroesophageal candidiasis, lymphadenopathy, splenomegaly, lymphopenia and a CD4/CD8 ratio of 0.16.
Conclusion. The lowest dilution (10^{-3} or 10 TCID$_{50}$) of a pool of the PBj-14 isolate of SIV/SMM to infect all animals also resulted in death of both animals within 16 days, supporting the contention that PBj-14 is the sole agent responsible for the acute lethal disease. There was a correlation between dose and onset of disease and death. Two longer term survivors showed decreasing CD4$^+$ cells, weight loss, lymphadenopathy, lymphopenia and opportunistic infections. Disease in these animals appeared to correlate with a marked reduction in CD8$^+$ cells. (Supported by NIH grant RR00165).

W.C.P.16 HIV-1 INFECTION IN A CONTINUOUS RABBIT MACROPHAGE LINE

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Objective: To characterize HIV-1 infection in a continuous rabbit macrophage line.

Methods: The rabbit cell line, 6083, an SV40-transformed macrophage was infected with HIV-1. Infection was monitored using standard methodologies including RT activity and the presence of p24Ag in cell-free supernatants, indirect immunofluorescence, electron microscopy, detection of viral nucleic acids and passage of infectious virus to a number of indicator cell lines.

Results: 6083 was shown to be permissive to HIV-1 infection by all parameters assessed with the exception that no RT activity was seen in supernatants from infected cells. Presence of viral proteins were evidenced by p24 Ag capture, indirect immunofluorescence and Western blot analysis. In addition to the presence of HIV-1 nucleic acids, electron microscopy indicated production of mature lentivirus particles in a fashion morphologically similar to that seen in human macrophages and different from T-cell infection. Although virus positive by the preceding assays, cell free supernatants from HIV-1 infected 6083 cultures gave negative RT results. Supernatants derived from uninfected 6083 cultures were also shown to abrogate RT activity in known positive samples. It was shown that the lack of RT activity was not due to a direct inhibitor of the enzyme; both infected and uninfected 6083 cells produce a factor which interfere with the assay at the level of the nucleic acid template.

Conclusions: 6083 supported productive HIV-1 infection which is similar to that seen in human macrophages. As is the case for human cell lines of this lineage, measurement of RT activity cannot be used as an accurate parameter of infection in rabbit macrophages.

W.C.P.17 REGULATION OF THE VISNA VIRUS LTR IN MACROPHAGES INVOLVES CELLULAR FACTORS WHICH BIND SEQUENCES CONTAINING AP-1 SITES

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Objective. To identify sequences in the visna virus long terminal repeat involved in the developmental regulation of gene expression in macrophages.
Methods. Deletion and linker-scanning mutants, gel shift assays, and DNase I footprinting were used to study regulation of the visna virus LTR in the U937 monocytic cell line. Similar experiments using human primary macrophages are in progress.
Results. Sequences in the visna virus LTR that are involved in the regulation of visna virus gene expression in U937 cells were identified, including a region containing an AP-1 binding site which is critical for basal activity and phorbol ester-inducible gene expression. Nuclear extracts from uninduced and phorbol ester-induced U937 cells protected the same sequences from DNase I digestion; however, protection of the AP-1 site was significantly increased in nuclear extracts from induced cells. A DNase I-protected region from -87 to -81 contains the sequence TTTTTTG, which is similar to DNase I-protected sequences in the HIV and HTLV-I LTRs.
Conclusion. Our data supports a model in which one or more of the proteins which interact with AP-1 sites may be involved in the developmental regulation of visna virus gene expression in macrophages. Understanding the molecular events which relate macrophage differentiation to the regulation of viral gene expression may provide insights into mechanisms controlling viral gene expression that may be relevant to disease pathogenesis.

W.C.P.18 INFECTION WITH SIMIAN IMMUNODEFICIENCY VIRUS (SIV) VIA CONJUNCTIVAL AND ORAL MUCOSAE IN A NEWBORN RHESUS MACAQUE

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Objective. To determine if SIV can be transmitted post-natally via the mucous membranes in the newborn rhesus macaque and to determine if transmission can occur from infected infant to mother during the neonatal period as a result of close contact.
Methods. SIV was dropped on the conjunctival and oral mucosae of a newborn rhesus macaque at 0 and 93 days post-natally. Following exposure to virus, the infant was kept with the mother and both were tested for SIV infection.
Results. SIV was isolated from the peripheral blood mononuclear cells (PBMC) of the infant 22 days after the second exposure to virus and at all other sampling times thereafter. The animal died of cachexia and pneumonia 2 months after virus was detected. Generalized lymphoid depletion and interstitial pneumonia were noted at necropsy. The mother remains healthy, SIV antibody and virus negative.
Conclusion. SIV can be transmitted via conjunctival and oral mucosae in a newborn macaque. Despite intimate contact with the infected infant, the mother remains healthy and uninfected.

W.C.P.19 THERAPY OF MAIDS (LP-BM5 INFECTION OF C57BL-6 MICE) WITH DIETHYLDITHIOCARBAMATE (DTC).

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Objective. To determine the dose and time relationships in treating LP-BM5 with DTC. We have previously reported that DTC administered from the time of virus innoculation can prolong survival in mice and partially prevent both lymphadenopathy and hypergammaglobulinemia. We now report that there is a strict dose and time relationship for efficacy of this agent in the model.
Methods. Animals were innoculated with an amount of virus that results in 100% mortality by 26 weeks. DTC treatment was given 5 days per week IP. Node size, spleen weight, serum IgM and survival were measured.
Results. Dosage efficacy was 600 mg/kg (the maximally tolerated dose) >400 mg/kg >200 mg/kg; all given IP 5 days/wk. At each dosage level, therapy started 2 weeks after virus innoculation was more effective that dosing starting on the day of virus innoculation. If therapy was started as late as 10 weeks after virus (3 weeks before animals begin to die) lymphadenopathy was abrogated and mortality prevented. If therapy was stopped, disease progression resumed.
Conclusion. Determining the mechanism of action of DTC and the use of cogeners of DTC may lead to new approaches to AIDS therapy.

W.C.P.20 MOLECULAR CONSTRUCTION OF A CHIMERIC HIV/Akv MuLV PROVIRAL CLONE.

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Objective : to develop a chimeric HIV potentially infectious for murine cells, that could lead to a convenient animal model for AIDS research.
Methods : A molecular clone of HIV was constructed by substituting the 1.6 kb fragment of the HIV env gene coding for gp120 by a 1.8 kb fragment from the Akv MuLV env gene coding for gp70 and the extracellular part of p15E. The resulting virus thus has a hybrid MuLV/HIV env gene. The steps in construction were : 1) Akv MuLV and HIV env genes were subcloned in phage M13, and convenient restriction sites were introduced by site-directed mutagenesis. 2) The HIV env fragment was replaced by the Akv MuLV env fragment. 3) The hybrid env gene was reintroduced into a HIV proviral clone, and proviral DNA was transfected into human and mouse cells. 4) Virus production and infectivity were determined by reverse transcriptase assays and other virological techniques.
Results : A chimeric molecular clone of a MuLV/HIV provirus was obtained and characterized by restriction fragment analysis and DNA sequencing. The genetic sequences for HIV gp120 and vpu have been deleted. Production of virus particles with reverse transcriptase activity by human and mouse cells following transfection of chimeric proviral DNA is under study.

W.C.P.21 PATHOLOGY OF FELINE IMMUNODEFICIENCY VIRUS (FIV) INFECTION

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Objective. To study pathologic changes associated with feline immunodeficiency virus (FIV) infection.
Methods. A total of 15 cats naturally infected with FIV were examined pathologically. The cases included 2 PGL, 1 ARC, and 12 AIDS stages, and they were all examined post mortem.
Results. The lymph nodes of 2 PGL cats (one euthanatized and one died of renal disease) showed reactive changes with follicular hyperplasia. The latter had marked mast cell infiltration in the medulla. The nodes of the ARC cat died of pyothorax showed both hyperplastic changes and moderate dysplastic lesions in different nodes. All of the 12 AIDS cases had dysplastic nodes characterized by follicular atrophy, paracortical cell depletion, and fibrosis. Three cases showed extensive necrosis due to cryptococcal infection. Two AIDS cases had hypoplastic bone marrow, while the rest 8 AIDS cases showed hyperplasia with emperipolesis of megakaryocytes in 1 case. Seven AIDS cases had chronic stomatitis. Two were ulcerative stomatitis, and the rest were characterized by chronic active inflammation with extensive cellular proliferation. Many had bacterial or cryptococcal infection. Eight AIDS cases had primary hepatic lesions and 1 had metastatic mammary adenocarcinoma. Serous hepatitis, with accompanying peliosis hepatis in 1 case, was seen in 4 AIDS cases. These lesions were characterized by accumulation of proteineous material in the Disse's space compressing the hepatic cord. Other 4 cases showed cholangiohepatitis of unknown origin. Although cases with clinical renal failure were excluded from this study, many had moderate to intermediate changes. Glomerulonephritis and chronic interstitial nephritis was seen in 7 and and 4 cases, respectively. There were no P. carinii pneumonia cases. Interstitial pneumonia was seen in 4 cases, and bacterial lober pneumonia was found in 1 case. The cases studied here had no clinical evidence of neurologic disturbances, and showed no major histologic changes in the brain except for mild cell infiltration in some cases.
Conclusion. The lymphoid lesions suggested presence of the similar immunologic alterations as in HIV infection. The manifestations of AIDS phase disorders were, however, in part different from those in the human patients.

W.C.P.22 UN MODELE EXPERIMENTAL DU SIDA CHEZ LA SOURIS, QUI ELICITE DES INFECTIONS ET DES ANGIOSARCOMES (AS)

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Les souris transgéniques contenant de l'ADN proviral du virus HIV (Science 242, 1665, 1988), les souris C57 BL/6 infectées par le mélange du virus murin de la leucémie LP-BM5 (J. Exp. Med. 161, 766, 1985) et les cellules cultivées du Sarcome de Kaposi (SK) injectées aux souris nues (Science 242, 430, 1988) sont quelques uns des modèles du SIDA infectieux ou du SK. Aucun ne combine les deux comme dans le cas des hommes homo et bisexuels avec le SIDA. Nous avons démontré auparavant, que les souris CD1 à laquelle on donne du diméthylhydrazine de façon hebdomadaire pour 25 semaines et ensuite le difluorométhylornithine, ont des tumeurs colorectales, une grande incidence d'angiosarcomes et des infections qui causent leur mort.

Le but de ce projet est de décrire les évènements qui suivent dans le développement des infections et des angiosarcomes. Les souris CD1 ont reçu 20 mg/kg de DMH une fois par semaine, de façon sous-cutanée. Un groupe de 5 de ces animaux et une souris normale du même âge sont sacrifiés à toutes les 2 semaines et nous déterminons les sous-population de cellules T spléniques et périphériques, les réponses mitogéniques aux LPS et à la concanavalin A et la production d'anticorps 5 jours après une injection i.p. de globules rouges de mouton (PFC). Jusqu'à présent, après 23 semaines, la réponse (PFC) et l'activité mitogénique aux LPS démontre une diminution chez les animaux traités au DMH, de même que des changements néoplasiques précoces dans le côlon. Les sous-populations de cellules T demeurent inchangées. Ces résultats semblent indiquer qu'une immunosuppression se développera et mènera au développement d'angiosarcomes et d'infections

W.C.P.23 ADAPTATION OF HUMAN IMMUNODEFICIENCY VIRUS SEROLOGIC TESTS TO THE SIMIAN IMMUNODEFICIENCY VIRUS MODEL.

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Objective. Simian Immunodeficiency Virus (SIV) in monkeys has emerged as an important model system for studying the Human Immunodeficiency Virus (HIV). HIV and SIV are antigenically similar so that commercially available HIV II antibody and HIV I antigen reagents can be used for the SIV model system.
Methods. We evaluated the use of HIV II enzyme immunoassay (EIA) and Western blot (WB) (Genetic Systems Corp., Seattle, WA and E.I. DuPont, Inc., Wilmington, DE) for the detection of SIV antibodies in sera from captive and wild caught monkeys. In addition, HIV I antigen EIA (Abbott Laboratories, No. Chicago, IL; Coulter Immunology, Hialeah FL; E.I. DuPont, Inc., Wilmington DE; Genetic Systems Corp., Seattle, WA) were evaluated for the detection of SIV antigen in monkey sera and peripheral blood mononuclear cell culture supernatants.
Results. HIV II antibody EIA and WB equalled the performance of WB using SIV antigen. The HIV I antigen EIA was as sensitive as reverse transcriptase for detection of SIV antigen in culture supernatant. The HIV I antigen assay detected SIV antigen in serum at reduced sensitivity when compared to HIV I.
Conclusion. Commercially available HIV reagents are suitable for serological studies in the SIV model system.

W.C.P.24 ENHANCEMENT OF ANTIVIRAL THERAPY IN HIV INFECTION USING BLOOD-BRAIN BARRIER (BBB) MODIFICATION WITH INSULIN: ANIMAL DATA AND CLINICAL CONSIDERATIONS

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Objective: HIV infection of the CNS is resistant to treatment with the nucleoside-analog antiviral compounds (AZT, ribavirin) due to poor BBB penetration of these agents. Left untreated, intra-CNS HIV will cause persistence of systemic HIV infection by acting as a source of continuous reinfection for extra-CNS tissues. Modification of the BBB using insulin can increase the passage of antiviral drugs into the substance of the brain, and allow for effective antiviral therapy in the HIV-infected host.
Methods: Using the tissue sampling technique of Oldendorf, the brain-uptake index (BUI) of AZT was measured in 6-8 week old Sprague-Dawley male white rats, both with and without pretreatment of the rats with doses of insulin.
Results: Compared to an antipyrine standard, the BUI of AZT was found to be 5.4 ± 0.8 ($\bar{X}\pm$S.D., n=13, range 4.4-6.6). Pretreatment of animals with 1.0 unit of regular insulin, 10 minutes before the AZT injection, resulted in a statistically significant ($p < 0.01$) increase in the BUI of AZT (7.8 ± 1.3, $\bar{X}\pm$S.D., n=7, range 6.8-10.6).
Conclusion: A combination of insulin and AZT increased the BBB passage of the antiviral drug in rat brain. Preliminary experience using this treatment strategy in conjunction with ribavirin in two human subjects with symptomatic HIV infection (CDC Group IV-A and IV-B) has produced long-term remissions in both cases (27 and 31 months). An FDA approved clinical trial using insulin in combination with AZT is currently in progress.

W.C.P.25 LACK OF VERTICAL TRANSMISSION OF SIVagm IN A BREEDING COLONY OF CERCOPITHECUS AETHIOPS

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Objective. To investigate the occurrence of vertical transmission of simian immunodeficiency virus (SIVagm) in a breeding colony of *C. aethiops* by testing for SIVagm antibodies.
Material and Methods. Wild-caught *C.aethiops* imported from Ethiopia and offspring from these born at Statens Seruminstitut. The breeding colony was founded with 21 female and 8 male monkeys imported in the period 1976 to 1988. Serum samples from the 29 imported and from 70 colony born monkeys were examined by an indirect immunofluorescence test for antibodies against SIVagm.
Results. Live offspring were produced in the colony by 14 of the 21 imported females. Six of the 14 female breeders were found SIVagm antibody positive and gave later on birth to 26 young. From 22 of the young first time bleedings were obtained around 6 months of age or later. None were found SIVagm antibody positive. From 12 of the 22 young another sample collected 1-4 years later was also SIVagm antibody negative. Samples from the remaining 4 young, taken at age 3 months or less, were SIVagm antibody positive. In 2 of the 4 SIVagm antibodies could not be demonstrated in samples drawn around 6 months of age; one died; the fourth remains to be tested, when 6 months old.
Conclusion. In *C.aethiops* vertical transmission of SIVagm is rare if at all occurring. Presumably maternally acquired SIVagm antibodies disappear within the first 6 months of life.

W.C.P.26 EXPERIMENTAL HIV-2 INFECTION OF OLD WORLD MONKEYS

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Objective: To develop a model of HIV infection in Old World monkeys.
Methods: Peripheral blood mononuclear cells (PBMC) from baboons and rhesus macaques were screened for susceptibility to infection with four HIV-2 isolates from the Ivory Coast. Infected cells were cocultivated with uninfected PHA-stimulated monkey PBMC of the same species or with human PBMC. Culture supernatants were assayed for HIV reverse transcriptase activity. Animals whose cells showed high levels of virus replication and cytopathology *in vitro* were inoculated with the strains producing these results. Serum antibody, lymphoid cell counts, and virus production from the animals'PBMC were monitored monthly.
Results: All four HIV-2 strains tested were infectious for baboon and macaque cells, but some could be detected only upon addition of human PBMC. One isolate (UC-2) grew well in baboon cells. Two isolates (UC-2 and UC-7) replicated well in most macaque PBMC. All isolates generally showed enhanced growth in macaque and human PBMC cultures. UC-2 and UC-3 were most cytopathic for both types of animal cells, and were used for inoculation of the baboons and macaques. We have recovered HIV from PBMC of the infected macaques and seroconversion has been observed in the baboons. Serologic, immunologic and virus isolation data on the infected animals will be presented.
Conclusion: HIV-2 isolates show differential growth in non-human primate cells. Productive infection of primates with HIV-2 has been achieved after preselection of susceptible animals and specific virus strains.

W.C.P.27 MECHANISM OF DOWNREGULATION OF CD4 EXPRESSION BY PLASTIC ADHERENT HUMAN MACROPHAGES IN VITRO

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The 57kd non-polymorphic CD4 molecule acts as the major receptor for HIV on both CD4+ lymphocytes and blood monocytes. We have further investigated the regulation and function of monocyte/macrophage CD4 *in vitro*. Previously we found that the expression of CD4 antigen on the surface of Leu M3 positive human blood monocytes was variable with 65% - 90% of cells being positive by dual staining flow cytometry. When monocytes adhered to plastic, which activates macrophages, loss of CD4 expression was observed by Flow cytometry and immunofluorescence between by 3-5 days but the proportion of adherent cells expressing Leu M3 and OKM5 did not decrease. Monocytes cultured on teflon remained CD4 positive. Surface iodination of blood monocytes and plastic adherent macrophages followed by immunoprecipitation with anti-CD4 monoclonal antibodies also demonstrated a marked reduction in membrane CD4 expression by these macrophages. However CD4 mRNA levels quantitated by Northern blotting and total cellular CD4 protein levels (as demonstrated by immunoprecipitation) remained constant throughout the five day period, suggesting a selective loss of CD4 from the membrane, probably by endocytic cycling. Phorbol esters (PMA,PDB) also reduced the proportion of CD4 expressing monocytes from 90% to 8%. However no differences were observed in binding of radiolabelled PDB and PMA to blood monocytes and macrophages. Whether CD4 is is phosphorylated during downregulation and the effect of protein kinase C inhibitors on this phenomenon is under investigation. Activation of macrophages by lipopolysaccharide and interferon gamma had no effect on CD4 expression by monocytes maintained in teflon vessels, nor did other cytokines (M-CSF,GM-CSF,IL1,IL2,TGF-β TNFα).

W.C.P.28 CULTURE REQUIREMENTS FOR HIV-1 ISOLATION FROM INFECTED CHIMPANZEES

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Objective. To optimize conditions for the isolation of HIV-1 from peripheral blood lymphocytes (PBL) of infected chimpanzees.
Methods. PBL were obtained 4-9 times over a 4-month period from nine HIV-1 seropositive chimpanzees. Parallel cultures were generated each time following three protocols: (1) nonstimulated chimpanzee PBL were cocultivated with phytohemagglutinin (PHA) activated human PBL as indicator cells; (2) chimpanzee cells were PHA activated and then cocultured with human indicator cells; and (3) chimpanzee PHA activated PBL were cultured without human cells. All cultures were maintained in the presence of interleukin-2 and DEAE-dextran for 28 days and monitored weekly for production of HIV-1 in supernatants by antigen capture assay.
Results. HIV-1 isolation was successful in five out of nine chimpanzees by any protocol employed. In two of these five animals, HIV-1 could be isolated only by protocol (1) and (2); in one animal only by protocol (3), and by all three protocols in the other two animals.
Conclusions. The difficulty in isolating HIV-1 from chimpanzees is confirmed, suggesting a low level of virus integration in PBL; in some animals a clear preference for one culture condition is evident; an adverse effect of human PBL on the production of virus in one chimpanzee also indicates that requirements for virus isolation can differ dramatically between these animals and humans.

W.C.P.29 PRIMARY RETROVIRAL INFECTION VERSUS CHRONIC VIREMIA: DIFFERENTIAL RESPONSE TO THERAPY.

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Objective. To compare the therapeutic efficacy of candidate antiretroviral agents administered to animals exposed *de novo* to pathogenic retroviruses with that of therapy given to chronically viremic animals.
Methods. Adult female BALB/c mice were inoculated at time 0 with Rauscher Murine Leukemia Virus (RLV), a virus complex consisting of a lymphotropic replication-competent helper virus as well as a replication-defective spleen-focus forming virus. For post-exposure treatment, therapy was started 4 hr after virus inoculation and continued for 20 d. The animals were sacrificed and analyzed for RLV-induced splenomegaly and viremia. Therapy of chronically viremic animals was initiated only at 2 weeks after virus exposure and was continued throughout the animals' life span. Survival was analyzed by Kaplan Meier plots. 3'-azido-3'-deoxythymidine (AZT or Zidovudine), recombinant human interferonαA/D (rHuIFNαA/D), and castanospermine were administered as above.
Results. AZT and castanospermine were active in primary infection as well as in chronic viremia. In contrast, rHuIFNαA/D was able to suppress virus-induced splenomegaly by 94%, but was completely inactive in chronically infected animals: Median survival of animals treated with rHuIFNαA/D starting 14 d after virus exposure was identical to that of untreated control animals (6.7 vs 6.9 weeks, $p = 0.34$).
Conclusion. Biologically, the chronically viremic state differs significantly from primary retroviral exposure, as judged by the differential response to therapy. Evaluation of antiretroviral therapy should be carefully designed to differentiate between these situations.

W.C.P.30 PATHOLOGY OF EARLY LESIONS IN SIV ENCEPHALITIS

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Objective. To study central nervous system lesions early in the course of infection with simian immunodeficiency virus (SIV).
Methods. Twenty juvenile rhesus macaques were inoculated i.v. with SIV/Delta B670, with 4 controls. Four animals each were sacrificed at 2, 4, 8, and 24 weeks post inoculation; four became moribund and were sacrificed at 10, 11½, 20 and 23 weeks. Histologic preparations of fixed brain tissue were examined, using also immunoperoxidase for glial fibrillary acidic protein (GFAP) and for SIV antigen, employing a rabbit polyclonal antiserum.
Results. At 2 weeks there were lymphocyte infiltrates in choroid plexus (CP) and leptomeninges (LM), with a few perivascular lymphocytes in brain parenchyma; rare inflammatory cells in CP contained SIV antigen. At 4 weeks, macrophage infiltrates with positive antigen staining were observed around parenchymal vessels in 2 animals; lymphocyte infiltrates persisted in CP and LM, with rare multinucleated giant cells (MGC) in LM. The most severe lesions were observed in the moribund animals at 10 and 11½ weeks, with brain perivascular macrophage infiltrates, with MGC and karyorrhexis. Lesions were less marked in the 24 week animals. No animal exhibited myelin pallor or an excess of GFAP white matter staining, compared with controls.
Conclusions. SIV causes inflammation in LM and CP early in the course of disease, with infection occurring in the cerebrospinal fluid (CSF) compartment before it is seen in brain. The earliest occurrence of brain SIV antigen coincides with the appearance of perivascular macrophages.

W.C.P.31

HIV-1 ANTIGENEMIA IN ATHYMIC "NUDE" MICE

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Objective. Several small animal models of HIV infection have been proposed. We have developed a simple means to support the replication of HIV-1 which can produce large populations of infected mice for therapy screening and host-virus interactions.

Methods. Nude mice (3-4 wks old) were exposed to 600 R's of ^{137}Cs irradiation and inoculated with 1 x 10^7 HIV-1 infected CEM cells. The animals were followed daily for weight gain and tumor progression. Groups of 6 animals were exsangiunated at 8 intervals over a 9 week period and necropsies were performed.

Results. Plasma p24 antigen was detected at day 3 and rose over 9 weeks (>2200 pg/ml). Where possible, plasma antigen was neutralized with human antisera to HIV-1. The infected mice did not exhibit any weight loss, but a highly significant difference was seen in tumor progression when compared to controls. Using immunohistochemistry, sheep raised polyclonal antibodies to viral p24 and gp120 detected HIV proteins within tumor cells and mouse splenic macrophages. Electron microscopy revealed rare intracellular lentivirus particles in the CEM cells.

Conclusion. These findings suggest that the nude mouse transplanted with a well characterized HIV permissive cell line should be useful for many immunological and antiviral studies.

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W.C.P.32

LANGERHANS CELLS IN RHESUS MONKEY ORAL MUCOSA BEFORE AND AFTER INFECTION WITH SIMIAN RETROVIRUS SEROTYPE 1 (SRV-1).

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Objective. To study the influence of experimental SRV-1 infection on the number of Langerhans cells (LC) expressing characteristic antigens in oral mucosa of rhesus monkeys.

Methods. Ten monkeys were intravenously inoculated with SRV-1, and two animals were mock-inoculated. Status of infection was assessed by serology and virus culture from peripheral blood lymphocytes. Biopsies were taken from gingiva and cheek pouch before and 4 months after infection. Frozen sections were reacted with monoclonal antibodies (Leu-6, HLA-DR) and visualized by the immunoperoxidase technique. LC were counted in 3 sections of each specimen using each antibody, and the mean number of LC per surface mm was calculated. The examiner was blinded as to the identity of the slides.

Results. All animals except for the controls were viremic at 1 week after inoculation. The number of LC in oral epithelium did not differ significantly between the experimental and control groups at time 0 and time 4 months. The table shows LC of the experimental group.

LC in oral mucosa	Gingiva		Cheek pouch	
(no./surface mm)	Leu-6	HLA-DR	Leu-6	HLA-DR
Before infection	10.4	9.1	9.9	9.4
	P>0.05	P>0.05	P>0.05	P>0.05
4 months after infection	7.2	7.0	12.4	10.1

Conclusion. We have previously shown that SRV-1 commonly infects oral mucosal LC in rhesus monkeys. However, 4 months after SRV-1 infection the number of LCs in the oral mucosa did not change significantly.

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W.C.P.33

INOCULATION OF BABOONS AND MACAQUES WITH VIRUS PRODUCED FROM THE SIV/Mne MOLECULAR CLONE

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A full length molecular clone of SIV/Mne (CL8) was shown to be infectious in vitro by transfecting the DNA into Hut 78 cells and showing the presence of reverse transcriptase activity. 1x10^{3} TCID of virus from transfected cells was inoculated into two pigtailed macaques and two baboons intravenously on November 5, 1987. The four inoculated animals, as well as the two control animals, were examined at regular intervals for the presence of antibodies to SIV/Mne and for the presence of virus in PBL and plasma. Animals were also monitored for changes in their clinical and immunological status. Both baboons developed marked peripheral lymphadenopathy by two weeks post-inoculation, but no virus was isolated from their PBL. One of the baboons died at 33 weeks post-inoculation with anemia and a wasting syndrome similar to that seen in macaques inoculated with SIV/Mne. Attempts at virus isolation were negative at the time of death. To determine if cells containing SIV/Mne viral genomes were present in this baboon's lymphocytes or monocytes, DNA was extracted from the spleen and lymph nodes. Utilizing the polymerase chain reaction (PCR) technique, we were unable to detect SIV/Mne sequences in either the spleen or lymph node tissues of this animal. The pigtailed macaques developed peripheral lymphadenopathy four and eight weeks post-inoculation, along with an erythematous rash on the lower abdominal and inguinal areas. Both animals seroconverted and virus could be isolated at various times post-inoculation. At 64 weeks post-inoculation, both animals remain in apparent good health. However, one has exhibited a steady decrease in CD4^{+} cells since November 1988, along with thrombocytopenia and absolute lymphocyte depletion, which in previous transmission studies, were forerunners of clinical disease.

W.C.P.34

MUTATIONAL ANALYSIS OF THE CYTOPLASMIC DOMAIN OF SIV TRANSMEMBRANE PROTEIN

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Objective: To examine the role of the cytoplasmic domain of the transmembrane protein in absence of the *env* in-frame stop codon found in SIV infectious clones.

Methods: Oligonucleotide-directed mutagenesis was used to replace the in-frame stop codon by a glutamine codon. Point mutations and deletions were introduced in the *env* C-terminal domain in clones both with and without the in-frame stop codon. Phenotypes of different mutants were evaluated for virus production following transfection of SW480 cells and for infectivity in HUT78 cells.

Results: SIV in wich the in-frame stop codon was replaced by a glutamine codon infected HUT78 cells with delayed kinetics. Reversion of the slow phenotype frequently occured. Revertants having recovered a stop codon 3' to the original mutation were characterized. Deletions and termination 3' to the in-frame stop codon did not modify SIV infectivity. In contrast, mutants harbouring both the mutation of the in-frame stop codon and a deletion or a termination in the cytoplasmic domain-coding region were non infectious.

Conclusion: The *env* C-terminal domain is not necessary for *in vitro* replication. However, fusion of this domain to SIV transmembrane protein leads to a reduced infectivity. This negative effect is counterselected in vitro but may correspond to a function controlling the rate of spread of the virus in the natural host.

W.C.P.35

INFECTION OF RHESUS MACAQUES WITH MOLECULARLY CLONED HIV-2

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Objective: To develop a suitable animal model system to study infectivity and cytopathogenicity of HIV and to study viral genetic variation in vivo.

Methods: Rhesus macaques inoculated iv with molecularly cloned isolates of HIV-2 were monitored for humoral and cellular immune response, infectious virus, and physical and hematologic abnormalities. Selected viral genes from viruses reisolated from infected animals were analyzed by cloning and sequencing.

Results: Six of eight inoculated animals became persistently infected, e.g., recoverable virus, detectable genomic DNA, and/or persistent immune response. Some physical abnormalities began to appear in some animals with 6 months post-infection. Genetic changes occurring in vivo were found in virus reisolated 5 months post-infection.

Conclusion: Rhesus macaques are a useful infectivity model for HIV-2. Use of infectious molecularly cloned virus isolates provide a homogenous basis for evaluation of the generation of genomic variants in vivo.

W.C.P.36

CLINICAL AND IMMUNOLOGIC STAGING OF FELINE IMMUNODEFICIENCY VIRUS (FIV)INFECTION

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Objective. To elucidate the relationship between disease progress and immunologic alteration in feline immunodeficiency virus (FIV) infection.

Methods. The initial phase of FIV infection was studied in 5 SPF cats infected with FIV. 700 naturally-infected cats were classified into clinical stage groups using criteria modified from those for HIV patients. Lymphocyte blastogenesis was monitored by glucose consumption assay using Con A as the mitogen.

Results. The experimental infection in SPF cats revealed development of the initial acute phase of FIV disease, with a 10- to 40-week duration, characterized by lymphadenopathy, cyclic neutrophilia, fever, and chronic diarrhea. Among 700 naturally infected cats, there were 41 cats (5.9%) under 2 years of age showing the acute phase signs. In the experimental infection, the acute phase was followed by the asymptomatic carrier (AC) phase. On the basis of the serologic survey, 12.4% of clinically healthy cats had antibody to FIV with positive virus isolation, and 10.8% of the 700 antibody positive cats were asymptomatic. The mean age of the asymptomatic carriers (4.2 yrs) was smaller than that of severely ill FIV infected cats. A majority (537/700=76.7%) of the infected cats, with a mean age of 5.3 yrs, were showing a combination of chronic illness such as PGL, weight loss, diarrhea, respiratory disease, stomatitis, and skin disease, and these signs were similar to those in human ARC. More severe illness, characterized by the presence of anemia, emaciation, opportunistic infections and/or malignancies in addition to ARC signs, were seen in 6.9% of the 700 infected cats. These cats were diagnosed AIDS, and 75% (36/48) of the cases died within 6 months. The stimulation indices (SI) of Con A blastogenesis of the FIV infected cats were 48.40±4.33, 21.30±13.00, and 5.18±4.90, in AC, ARC, AIDS, respectively. These figures were all significantly lower (p<0.01) than that of uninfected healthy cats (SI=91.60±5.13). The differences between AC and ARC (p<0.01), and ARC and AIDS (p<0.05) were also significant.

Conclusion. The disease progress in FIV infection parallels with the decrease in the immunologic responsiveness. The clear distinction between each clinical phases makes this cat system excellent for the animal model of AIDS.

W.C.P.37

ESTABLISHMENT OF FIV-PRODUCING CELL LINES FROM FIV SEROPOSITIVE CATS

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Objective. To establish feline T-cell lines that continuously produce FIV in the culture. Methods. Peripheral blood mononuclear cells from 4 feline immunodeficiency virus (FIV)-seropositive and feline leukemia virus (FeLV)-negative cats were stimulated with concanavalin A (Con A) for 3-5 days and maintained with recombinant human interleukin-2 (IL-2). Results. After 4-6 weeks. reverse transcriptase activity was detected in 2 out of 4 culture supernatants without marked cytopathic effects. One of the two lines (named GA-3) was further characterized. FIV antigens were detected and identified in GA-3 cells by indirect immunofluorescence and western blot analyses. FeLV and feline syncytium-forming virus were not detected by the same methods. The virus produced by GA-3 cells failed to replicate in feline fibroblastic cell, CRFK. GA-3 cells required IL-2 and interestingly re-stimulation with Con A every 2-3 weeks for their growth. GA-3 cells have been growing and releasing FIV for more than 2 months so far. Infectivity and pathogenicity of the FIV produced by GA-3 are under investigation. Conclusion. IL-2 dependent feline lymphoid cell lines which continuously produce FIV were established.

W.C.P.38

SEROLOGIC VARIABLES AT DIAGNOSIS WITH KAPOSI'S SARCOMA(KS): PREDICTORS OF SHORTENED SURVIVAL.

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Objective: To compare viral and patient characteristics at the time of KS diagnosis,and duration of survival, in early vs recent cohorts of KS patients.

Methods: Sera drawn from 115 patients at the time of KS diagnosis (median date of diagnosis:June 20, 1984) was analyzed for viral and hematologic characteristics. Values were compared for patients diagnosed before July 1984 ("early" KS) and those diagnosed after that date ("late" KS). Duration of survival following KS diagnosis was also compared for the two groups.

Results: Survival averaged 122.9 weeks in the "early" group and 71.9 in the "late." This difference was significant with p=.005. 55 early patients and 52 late patients had laboratory results as follows:

	KS Patient Group:mean (std error)				
	Early		Late		p-value
Beta-2 microglobulin mg/l	5.44	(.38)	4.16	(.24)	.006
Neopterin nmol/l	43.77	(6.74)	27.95	(4.58)	.06
p24 antigen pg/ml	48.78	(11.98)	99.65	(27.96)	.10
Hematocrit	40.25	(.74)	37.70	(1.08)	.06
Sedimentation Rate	31.0	(4.3)	28.1	(2.9)	.58
CD4:CD8 Ratio	0.38	(.03)	0.43	(.08)	.30
T4 helper cells	209.2	(51.8)	149.3	(24.9)	.31

Conclusion: KS survival has notably shortened since the start of the epidemic. While T4 counts, hematocrit, and p24 antigen were more favorable in the early group with longer survival, the abnormal Beta-2, and neopterin levels suggest an immune response to a concomitant infectious process in this group.

W.C.P.39

HUMAN RECOMBINANT IL-2 INDUCES CYTOTOXIC LGL FROM FeLV INFECTED IL-2 IMMUNOSUPPRESSED CATS

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Feline leukemia virus (FeLV) causes a broad-spectrum of degenerative or neoplastic diseases in cats characterized by decreased immune competence and acquired immunodeficiency syndrome (AIDS). In other species, including human, retrovirus-induced AIDS is associated with decreased T helper (T_H) and cytotoxic lymphocyte functions. We describe, herein, the morphological and functional characteristics of IL-2-dependent cytotoxic lymphocytes derived from feline peripheral blood lymphocytes (PBL) and the effect of FeLV-induced T_H suppression on the function of these cells. Stimulation of feline PBL with concanavalin A (Con A) followed by culturing in the presence of 50-100 units/ml of Gibbon monkey interleukin 2 (IL-2) or recombinant human IL-2 (rHuIL-2) resulted in marked proliferation and establishment of long-term lymphocyte cultures. Cultured feline lymphocytes possess abundant cytoplasm with large granules similar to the large granular lymphocytes (LGL) in other species. These granules are bound by a bilipid membrane and contain smaller membrane-bound vesicles 50-60 nm in diameter. All feline LGL lines are cytotoxic for feline FL74 lymphoma cells, but none express self-lysis or lysis for other LGL lines, a characteristic of LGL in other species. To determine the effect of FeLV infection on cytotoxicity by PBL and on the establishment of LGL cultures, cats experimentally infected with the immunosuppressive Rickard strain of FeLV were studied. In all cases, PBL from cats with IL-2 immunosuppression failed to yield a primary cytotoxic response, whereas, IL-2 responsive PBL were cytotoxic. In contrast, rHuIL-2 induced cytotoxic LGL from cultured PBL of all FeLV-infected cats, whether or not they were IL-2 suppressed. The results indicate that, like the human HIV-1 infection, the target of FeLV immunopathology is the T_H cell and T_H-dependent cytotoxic functions, the latter of which can be restored by addition of exogenous IL-2.

W.C.P.40

ISOLATION AND PARTIAL CHARACTERISATION OF AN HIV1 RELATED VIRUS OCCURING NATURALLY IN CHIMPANZEES IN GABON

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Objective. To better understand the natural history and the evolutionary relationship of the HIV/SIV group of viruses, we tested several chimpanzees from Gabon for HIV antibodies.
Methods. The sera were tested for HIV antibodies with commercial HIV1 tests (ELISA, western blot). Virus was isolated from peripheral blood lymphocytes from the chimpanzee cocultivated with normal (HIV negative) human lymphocytes. Partial characterization was done by electron microscopy, radio-immunoprecipitation and nucleic acid hybridization.
Results. Two cases of wild born chimpanzees, positive for HIV1 antibodies were observed in Gabon. These animals were never experimentally exposed to HIV1 and had no history of inoculation with human blood products. A retrovirus was isolated from one of these chimpanzees and was refered to as SIVcpz. Partial characterization of this virus revealed that it had biological and morphological properties similar to other known human and simian retroviruses, but significant differences could be demonstrated. Several of the viral proteins differ in molecular weight from the known corresponding HIV/SIV proteins. SIVcpz did not induce severe cytopathic effects in human and chimpanzee lymphocytes. Antigenically SIVcpz seems to be closer to HIV1 than to HIV2 and the other SIV's. From nucleic acid hybridation experiments it appears that the virus is different from HIV1, -2.
Conclusion. Chimpanzees can be naturally infected with a novel retrovirus, antigenically close to HIV1.

W.C.P.41

HIV-1 INFECTION IN THE RABBIT

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Objective. To evaluate the rabbit as a model for HIV-1 infection.
Methods. Outbred New Zealand white rabbits were injected I.V. with human T-cell line A3.01 infected with HIV-1. Serum samples were monitored with a modified ELISA for anti-HIV-1 antibodies and peripheral blood leukocytes were tested for infection by reverse transcriptase activity and PCR after culture in IL-2.
Results. Injection of rabbits with human T-cells infected with HIV-1 has lead to seroconversion within about 4 wks in 19 of 20 rabbits injected and virus can be isolated from peripheral blood cells of infected rabbits after culture in IL-2. The identity of isolated virus as HIV-1 was shown by Southern blot analysis and by presence of predicted restriction enzyme sites in DNA fragments from infected cells after amplification by the PCR technique. Overt effects of HIV-1 infection in rabbits were minimal during the period of observation (9 mo) but pathologic examination upon necropsy revealed enlargement of spleen or thymus in the majority of infected animals and infiltration of lungs with lymphocytes. HIV-1 infection of rabbits previously infected with HTLV-1 caused more evident signs of illness with diarrhea in most animals along with weight loss in some. Several animals showed transient neurologic dysfunction and one had a rapidly progressing breast adenocarcinoma. Current efforts focus on determining the effects of HIV-1 infection on the immune status of the rabbits and in determining whether a homolog of CD4 plays a role in the infection process.
Conclusion. Rabbits can be infected with HIV-1 as shown by seroconversion and isolation of virus from PBL. Effects of the infection on immune function require further definition.

W.C.P.42

p24 ANTIGEN IN THE CSF AND SERUM OF PATIENTS WITH NON-HODGKIN'S LYMPHOMA TREATED WITH STANDARD CHEMOTHERAPY WITH OR WITHOUT GM-CSF

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Objective. To describe p24 antigen levels from the serum and CSF in patients with non-Hodgkin's lymphoma treated with standard CHOP chemotherapy and randomized to treatment with or without GM-CSF.
Methods. Patients with AIDS-related non-Hodgkin's lymphoma who fulfilled entry criteria for study were treated with standard chemotherapy consisting of cyclophosphamide 750 mg/m^2, vincristine 2 mg, adriamycin 40 mg/m^2 and prednisone 40 mg/m^2 on day 1 of a 21 day treatment protocol. Patients were also treated with methotrexate, 12 mg intrathecally on days 1, 8, 15 and 22. GM-CSF, 10-15 ug/kg was administered subcutaneously days 1-10. CSF and a corresponding serum sample were collected prior to the installation of chemotherapy. Serum and CSF was frozen and assayed using a standard commercial Abbott kit.
Results.

	CSF				Serum			
	Chemotherapy - GM-CSF							
Pt	Day 1	Day 8	Day 15	Day 22	Day 1	Day 8	Day 15	Day 22
1	180	424	441	ND	2928	243	ND	ND
2	0	0	ND	0	2061	24	ND	ND
3	53	0	0	0	156	17	348	286
	Chemotherapy alone							
Pt	Day 1	Day 8	Day 15	Day 22	Day 1	Day 8	Day 15	Day 22
4	0	0	ND	0	0	0	ND	0
5	0	Patient died			ND	ND	ND	ND
6	0	0	0	0	0	0	0	0

Conclusion. Preliminary results indicate that GM-CSF did not have a consistent effect on the p24 antigen from serum or CSF in patients with AIDS associated non-Hodgkin's lymphoma.

W.C.P.43 HIV-1 INFECTION OF HUMAN FETAL CENTRAL NERVOUS SYSTEM TISSUE

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Objective: It is believed that children with congenital HIV-1 infection have been exposed to HIV-1 *in utero*. Because a significant number of these children exhibit neurological manifestation associated with HIV-1 infection, this study was initiated to determine whether HIV-1 DNA could be detected in fetal CNS thereby suggesting a role in pediatric AIDS neuropathology.
Methods: Abortus tissue was collected aseptically from HIV-1 seropositive and control patients at the time of elective pregnancy terminations. Tissues were frozen in liquid N_2 deproteinized by standard phenol extraction. The presence of HIV-1 DNA was determined by molecular hybridization of a "GAG" sequence after amplification (30 cycles) using the polymerase chain reaction. Infected or uninfected H9 cell DNA or sero negative human lymphocyte DNA were included to indicated positive and negative hybridization.
Results: CNS tissue obtained at estimated fetal ages between 13 and 20 weeks showed positive reactions for HIV-1 "GAG" gene DNA in 4 samples from seropositive or risk group women. Other CNS samples from seronegative women failed to show HIV DNA.
Conclusion: Human fetal CNS tissue revealed the presence of HIV-1 DNA suggesting a role of viral infection in early AIDS associated CNS disease. (Supported, in part, by HL 07060, DA 05583, DA 04583, NS 11920, AI 20671, and the Diamond Foundation).

W.C.P.44 NATURAL ANTIBODY PERCEPTION OF AMINO ACID DIVERGENCE WITHIN AN HIV-1 NEUTRALIZATION EPITOPE

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Objective. Gaining insight into the recognition by natural antibodies of a variable gp120 epitope.
Methods. Nine synthetic peptides were used to screen sera of 134 individuals infected with HIV-1. The oligopeptides were nine amino acids in length and corresponded to the isolate specific "neutralizing" domain in gp120 (V3 region) of HIV-1 strains. LAV-1, RF, SF2, NY5, CDC4, ELI, MAL, Z6 & Z3.
Results. Reactivity to the NY5 peptide was most frequently seen in European sera (67%), reactivity to the LAV-1 peptide in american (53%) and reactivity to the Z3 peptide in african sera (78%). 58% of the sera showed reactivity with more than one of the oligopeptides. Blocking experiments favoured crossreactivity as explanation. A cluster analysis was performed on the (cross-)reactivities of the sera. This analysis grouped together LAV-1, RF and SF2; NY5 and CDC4; Z6, MAL and ELI and Z3 stood alone. This clustering could not completely be explained by comparing physicochemical properties of the oligopeptides. However, the clustering showed the greatest resemblance to a phylogenetic tree of the complete gp120 molecule.
Conclusion. Multiple reactivities are mostly due to cross reaction. The complete envelope may be involved in the selection of B cell clones for the V3 epitope.

W.C.P.45 HIV-1 BRAIN INFECTION: DISTRIBUTION OF INFECTION AND CLINICAL CORRELATES

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Objective: To define immunocytochemically: 1. The frequency and topographic distribution of productive HIV-1 brain infection; 2. The histopathological correlates and cell types infected in brain; and 3. The relation of productive infection to the presence and clinical severity of the AIDS dementia complex (ADC).
Methods: Avidin-biotin immunoperoxidase with a monoclonal antibody against a core protein (antibody 25-6, a gift from Genetic Systems, Seattle) was used to map infection in frozen brain sections from 50 HIV-1-infected patients, 37 of whom had been prospectively staged with respect to ADC.
Results: HIV-1 infection was detected 20 brains. The most commonly infected structures included globus pallidus (63% of *positive* brains); corpus callosum (57%); and caudate, putamen, substantia nigra, midbrain, pons and frontal white matter (40-43%). Cerebral cortex was among the least commonly infected (5-11%) and no infection was detected in choroid plexus or dorsal root ganglia. Productive infection was confined exclusively to macrophages, microglia and multinucleated cells derived from these 2 cell types. Infection was detected in 0 of 9 at ADC Stages 0-0.5, 6 of 11 at Stage 1, 1 of 4 at Stage 2, 4 of 6 at Stage 3 and 6 of 7 at Stage 4 and was frequently limited in relation to disease severity.
Conclusion: Productive HIV-1 brain infection correlates with later ADC Stage and is circumscribed both regionally and by cell type. Brain dysfunction is not clearly understood and does not relate to infection in a simple manner.

W.C.P.46 DIFFERENCES IN RISK FOR AIDS AND AIDS MORTALITY IN 49 INDIVIDUALS INFECTED WITH LOW-AND HIGH-VIRULENT HIV VARIANTS.

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Fourty-nine seropositive individuals (fourty of whom were asymptomatic at the start of the observation period) were studied longitudinally for the relation between in-vitro properties of their sequential HIV isolates and clinical course before and after the development of AIDS. Per individual 2-8 sequential isolates were studied. Based on the properties of their isolates (Tersmette et al., J.Virol.(1988) 62:2026-2032), the individuals could be divided in three groups. The presence of syncytium-inducing or high-replicating HIV isolates was significant predictive for the development of AIDS within ½-2 years. Azidothymidine (AZT) treatment in the asymptomatic period seemed to delay the onset of AIDS even in the highest risk group. Upon development of AIDS, significant differences in survival between the groups were observed. Also differences in clinical symptoms of AIDS patients from the three groups were observed. These observations stress the importance of the development of virulent HIV variants in the host as a mechanism for AIDS pathogenesis. The existence of a relationship between biological properties of HIV variants and clinical course may provide a possibility to identify asymptomatic HIV seropositive men at high risk for AIDS as a potential target group for early treatment with antiviral drugs.

Oncologie
Oncology

W.C.P.47 CO-FACTORS IN THE DEVELOPMENT OF KAPOSI'S SARCOMA (KS): HHV-6 INFECTION.

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Objective. To determine the in vivo effect of HHV-6 infection in compromising the immune system and/or its synergistic action in association with other cytopathic or transforming herpes- and retroviruses in Kaposi's sarcoma and various HIV+ and HIV- hospital and healthy populations.
Methods. Identification of antibody prevalence to HHV-6 vs HIV, HTLV-I, CMV, EBV and epidemiologic evaluation in endemic vs epidemic KS (equatorial Africa), classic vs epidemic KS (USA, Europa), in hospital populations and healthy subjects (>1000 sera, Uganda; >1000 sera, USA, Europe).
Results. Prevalence to HHV-6 in Kaposi's sarcoma and matched Blood Donors

KS endemic	(N.54)	Uganda	47yrs	0%	HIV+	67%	HHV-6+	15%	high-titer HHV-6
KS epidemic	(15)	Uganda	35 "	100%	"	55%	"	0%	"
KS classic	(58)	US-Eur	66 "	0%	"	47%	"	0%	"
Blood donors	(50)	US-Eur	60 "	0%	"	43%	"	0%	"
KS epidemic	(18)	US-Eur	34 "	100%	"	44%	"	0%	"
Blood donors	(50)	US-Eur	35 "	0%	"	73%	"	12%	"

Conclusion. a)There is a high prevalence of HHV-6 antibody in KS and healthy subjects; b)HHV-6 seropositive rates decrease with age; c)HIV-1+ patients have <high-titer HHV-6 antibody prevalence then matched HIV-1- controls, probably due to synergistic effect of double infection by HIV and HHV-6.

W.C.P.48 AIDS-KAPOSI'S SARCOMA (KS) DERIVED CELLS EXPRESS CYTOKINES WITH A POTENTIAL ROLE IN THE PATHOGENESIS OF KS LESIONS

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KS is a proliferative disease of unknown etiopathogenesis and frequent manifestation of AIDS. Cell cultures established from KS lesions of AIDS patients (AIDS-KS cells) are able to promote their own proliferation (autocrine) and proliferation of normal endothelial cells, fibroblasts and cells of hematopoietic lineage (paracrine). Furthermore, the AIDS-KS cells induce neoangiogenesis, and a KS-like lesion in nude mice. Studies at the molecular level indicated that the AIDS-KS cells express mRNA specific for basic and acidic fibroblast growth factor (bFGF, aFGF), interleukin-1 α and β (IL-1α and -1β), granulocyte-monocyte colony stimulating factor (GM-CSF), transforming growth factor β (TGFβ) and platelet derived growth factor β (PDGF-β). Particularly bFGF and IL-1β are expressed at high levels, released into culture media, and responsible for inducing AIDS-KS and normal endothelial cell proliferation. The results suggest that *in vivo* KS cell proliferation with cytokines production could be the final step leading to the appearance of the composite KS lesion.

W.C.P.49

MISCELLANEOUS CARCINOMAS DEVELOPING IN PATIENT'S WITH HIV INFECTION.

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Objective: To describe the occurrence of solid cancers excluding Kaposi's sarcoma in patients with various stages of HIV infection.
Methods: The pathologic tumor types of all solid tumors excluding Kaposi's sarcoma were examined in males ages 20 to 50 years of age diagnosed at the Los Angeles County/USC Medical Center from 1986 through 1988. Patients were then assessed for the presence of HIV infection by either serologic evidence or specific indicator diseases. For each patient identified with HIV infection and solid tumor, stage of HIV infection, extent of cancer, treatment modality and survival data were obtained.
Results: From a total of 359 males diagnosed with solid cancers 27 (7.5%) had co-existent HIV infection. 12 patients (pts) had Stage II disease, 7 pts Stage III and 8 pts Stage IV. Tumor types included Gastrointestinal 9 (33%), Germinal cell 4 (15%), Primary Lung 4 (15%), Basal Cell Carcinoma of skin 3 (11%), unknown primary 2 (7%) and 1 each (4%) of disseminated malignant melanoma, carcinoma-sarcoma of prostate, malignant schwanoma, squamous cell carcinoma of nose, and astrocytoma.
Conclusion: 1) Uncommon solid carcinomas are being diagnosed in pts with HIV infection; 2) Survival is often shortened because of the underlying immune dysfunction due to HIV; 3) More study is needed to establish the role of HIV in the development of these solid tumors.

W.C.P.50

49 UNUSUAL HIV-RELATED MALIGNANT TUMORS.

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Objective. To evaluate the characteristics of unusual HIV-related tumors observed in Italy.
Results. Since 1986 the GICAT has collected 49 HIV-related tumors other than KS and NHL predominantly among intravenous drug abusers (IVDA), in accordance with the overall epidemiology of AIDS.

Neoplasia	N°	Risk Group	Clinical and Pathological Features
Testis ca.	13	9 IVDA	7 carcinoma, 5 seminoma.
Cervix ca.	9	9 IVDA	median age 24, 8/9 ca. in situ
Lung ca.	8	6 IVDA	median age 34, 5 NSCLC
Acute leukemia	5	3 IVDA	4L$_3$ (Burkitt-like), 1 M$_2$
Multiple myeloma	2	2 IVDA	age 29 and 39, 1 with KS
Colon ca.	2	1 IVDA	age 25 and 55, rapid course

Only 1 case was reported of glioblastoma, thyroid ca., thymoma, melanoma, renal ca. pancreatic ca., CLL,CML, oral ca. (male polytransfused) and anal ca. (female prostitute with anal intercourse). Testis ca. occurred in patients (pts) mainly in early HIV infection without adversely affecting full dose chemotherapy or radiotherapy. Cervix ca. in 8/9 pts treated with conisation would suggest PAP test screening in young IVDA. Lung ca. occurred in a young age group with rapid progression and death within 2 mo. Intensive chemotherapy in Burkitt-like ALL was not adversely affected by HIV infection and 2 CR were achieved (11 and 15 mo. duration).
Conclusion. In this IVDA-based series, while oral and anorectal tumors did not occur, there is a wide spectrum of unusual HIV-related tumors which is probably underestimated because not diagnostic of AIDS. The required therapeutic approach may not be consistently influenced by HIV infection, as for KS and NHL.

W.C.P.51

HIV-HPV INFECTION AND PENILE CARCINOMAS (PC) IN UGANDA

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Objective. To determine effects of HIV epidemic on the incidence and the evolution of PC in Uganda, by a possible modulation of HPV infection.
Methods. DNA extracted from PC biopsies and cell lines, of HIV negative and positive patients, are tested for the presence of HPV strains by dot blot and Southern blot analysis.
Results. HIV seropositive patients have been reported to present a significantly high prevalence of cervical dysplasia (C. Bradbeer, Lancet 1987; M. Byrne et al., Lancet 1988) and signs of HPV infection (P. Crocchiolo et al., Lancet 1988). We are determining HPV incidence in biopsies from ugandan patients with PC before and during the HIV epidemic. Furthermore, two permanent cell cultures, from penile carcinomas of Ugandan patients, have been established. Some of the markers typical of oncotypes of neuroectodermal origin have been identified. HPV 6, 11 e 16 DNA sequences have not been detected. A weak hybridization signal is present with a HPV 18 DNA probe in reactions performed at high stringency (Tm-20). A stronger hybridization signal is obtained at low stringency (Tm-50), suggesting the presence of an HPV strain with low homology to HPV 18.
Conclusions. We are going to a) determine the incidence of HPV in PC in Uganda, b) verify the HIV role on HPV incidence and PC evolution, and c) to isolate and characterize the eventual new HPV strain.

W.C.P.52

KAPOSI'S SARCOMA-LIKE CELL LINES FROM SIMIAN AIDS WITH SUBCUTANEOUS AND RETROPERITONEAL FIBROMATOSIS ASSOCIATED WITH TYPE D RETROVIRUS (SRV-2) INFECTION

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Objective. To establish KS-like cell lines from SAIDS associated with SRV-2.
Methods. Two KS-like lesions, subcutaneous and retroperitoneal fibromatosis from macaques with SAIDS associated with SRV-2 infection were cultured in regular RPMI or DMEM media supplemented initially with brain derived growth factor(BDGF). Immunocytochemical, cytologic, ultrastructural and viral studies were carried out on various passages of culture (over16) during a 12 months period.
Results. Both cell lines propagate vigorously in 10% FCS media without BDGF after 4th passage and can grow with only 0.5% FCS unlike the control monkey fibroblast. Cytology and immunochemistry of both cells are similar and demonstrated heterogeneous populations of endothelial(±60%), pericytic/smooth muscle(±15%), and primitive mesenchymal/fibroblastic differentiations. Arborizing multinuclear syncytial giant cells are prominent in early culture. Both cell lines are diploid (DI=1.02) with high prolifertive activity (S=25% G2/M=30%) but show no growth in soft agar. Evidence of autocrine/paracrine growth is further suggested by the presence of cytoplasmic phosphotyrosine and BDGF-like proteins in these cultured cells.
Conclusion. Two KS-like cell lines from simian AIDS associated with SRV-2 were established for future basic and clinical study.

W.C.P.53

CERVICAL NEOPLASIA IN HIV-INFECTED WOMEN

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Objective:

To evaluate the meaning of cervical neoplasia and Papillomavirus-infection (HPV) in HIV-Infected women.

Methods:

We investigated cytological smears and cervical tissue from 108 HIV-infected women for dysplastic alteration and HPV-infection.

Results (Selection):

Dysplastic alterations were seen 15 times more often in HIV-infected women than in women without HIV-infection. Histologically 10 CIN's and 5 invasive carcinoma of cervix were detected. Nearly half of the smears without dysplastic alteration and more than 60% of smears with dysplastic alteration showed signs of HPV-infection. There was a strong correlation of clinical status of HIV-infection and dysplastic alteration and cancer.

Discussion:

On the basis of a high prevalence of HPV a routine-screening for cervical dysplastic alteration is essential in HIV-infected (immunosuppressed) women.

W.C.P.54

CHARACTERISTICS OF IN VITRO CULTURE OF KS-DERIVED CELLS,

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Culture medium (CM) from retrovirus infected T-cell lines prompte the continuous, in vitro growth of cells from biopsies of Kaposi's sarcoma (1).
These cells have endothelial like features and produce in vitro several growth factors notably bFGF-like activity (2). These cells elicit a strong angiogenic reaction in nude mice and on chicken allantoic membranes. Studies are in progress on the identity of the CM with growth promoting activity to KS-derived cells and the possible expression of autocrine and paracrine activities by these in vitro cultured cells.

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Pathogenèse
Pathogenesis

W.C.P.55 VACUOLAR MYELOPATHY: HIV-1 EXPRESSION CORRELATES WITH EXTENT OF CLINICAL AND PATHOLOGIC DISEASE.

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Spinal cord (SC) disease and a distinct vacuolar myelopathy (VM) characterized by vacuolation and macrophage infiltration of SC white matter both occur following HIV-1 infection. We have shown previously in 3 SC from AIDS patients with severe myelopathy that HIV-1 RNA was expressed in the 3 SC and localized to macrophages in vacuolated areas of white matter. To determine if (1) HIV-1 RNA is present in the SC of AIDS patients with a range of cord pathology and (2) HIV-1 expression is correlated with clinical and pathologic disease, we studied 17 SC from AIDS patients and 9 controls. In situ hybridization was used to detect HIV-1 RNA, and immunohistochemistry, to identify cell type. Immunohistochemical staining of the 10 cords with VM showed macrophage infiltration of vacuolated regions of SC white matter, with the degree of infiltration parallel to the degree of clinical myelopathy. Cords from AIDS patients with SC lymphoma and toxoplasmosis showed focal macrophage infiltration, and 6 cords from controls without SC disease showed rare, if any, macrophages. Of the 17 cords obtained from AIDS patients at autopsy, HIV-1 RNA was detected in 6 of 10 with vacuolar myelopathy, 0 of 5 without SC pathology, and 0 of 2 with focal macrophage infiltration secondary to other SC disease (toxo and lymphoma). Three control cords obtained from patients with other SC disease showed no HIV-1 RNA. In the 10 AIDS cords with VM, the amount of HIV-1 RNA expression correlated with the extent of both SC pathology and clinical disease. These data support a direct role for HIV-1 in the pathogenesis of AIDS myelopathy.

W.C.P.56 HIV-1 ANTIGENIC VARIANTS WITH DISTINCT BIOLOGICAL PROPERTIES EMERGE AT THE DECLINE OF THE HOMOLOGOUS ANTIBODY

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Objective. To study the antigenic variability of the V3 region (aa 296-331) of the external envelope of 120 kDa (gp120) of HIV-1 in natural infection.
Methods. Sequential isolates of two patients progressing to AIDS and showing a transition from non-syncytium to syncytium forming capacity were used to study antigenic variability in the V3 domain of gp120. The V3 coding domain was amplified using the polymerase chain reaction (PCR). Direct sequences of the V3 coding domain were determined and confirmed by cloning and sequencing. Antibody recognition of sequential sera of these individuals was determined for peptides covering the complete V3 domain of the isolates.
Results. The transition from non-syncytium to syncytium inducing isolates was marked by clustered nucleic acid changes of which three were consistent. This resulted in one amino acid change crucial to antibody binding. Decline of the antibody to the syncytium forming antigenic variants preceded the emergence of these variants.
Conclusion. Antigenic variants appear to be selected by antibody to the V3 domain of gp120 during natural infection.

W.C.P.57 EARLY APPEARANCE OF CROSSREACTIVE ANTIBODIES SPECIFIC FOR A COMMON EPITOPE IN GP41 and HLA CLASS II ANTIGENS CAN INTERFERE WITH NORMAL IMMUNE FUNCTIONS IN AIDS PATIENTS.

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Amino acid sequence comparison between HIV-1 envelope and human HLA class II antigens identified a highly homologous sequence in the C-terminus of gp41 and the N-terminus of all class II beta chains. Screening of sera from HIV-1 infected individuals, reveals a high frequency (35-40%) of antibodies specific for the common epitope in both early and late stages of the disease. These sera as well as murine mAb against this sequence reacts also with class II-bearing (uninfected) cells (B, T, Macrophages).
Objective. To study if the crossreactive Ab (CRAb) can interfere with T cell immune functions and contribute to elimination of class II^{+} cells.
Methods. Patients' and controls' sera were added to normal T cells stimulated with tetanus toxoid or allogeneic stimulators. Sera were tested in Ab-Dependent Cellular Cytoxicity (ADCC) of class II^{+} cell lines. CRAb were purified by affinity chromatography (peptide-sepharose-column).
Results. Sera containing CRAb were found to be potent inhibitors of the proliferative responses of normal CD4^{+} T cells. The same sera could also kill class II-bearing (uninfected) cell lines. Both reactivities could be adsorbed by peptide linked-sepharose beads. The purified CRAb were all IgG. In many cases such CRAb were present in sera from asymptomatic patients who still had CD4^{+} T cells ($>500/mm^{3}$), but demonstrated in vitro unresponsiveness to various recall antigens (influenza, tetanus toxoid, etc.).
Conclusions. HIV-1 infection may lead to generation of CR autoantibodies capable of impairing immune functions early during the course of disease.

W.C.P.58 HIV-INFECTED HUMANS, BUT NOT CHIMPANZEES, HAVE CYTOTOXIC T LYMPHOCYTES THAT LYSE UNINFECTED CD4^{+} CELLS

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Objective. It has been suggested that autoimmunity contributes to the depletion of CD4^{+} T cells in HIV-1 infected humans, based on findings that some HIV-1-infected humans have autoantibodies reactive with antigens on uninfected CD4^{+} cells. We asked whether HIV-1-infected humans also have CTL lytic for uninfected CD4^{+} cells that may contribute to the depletion of CD4^{+} cells.
Methods. Fresh PBL from humans and chimpanzees were tested for their ability to lyse ^{51}Cr labelled uninfected CD4^{+} cells and other cells.
Results. HIV-1-infected homosexuals, but not uninfected homosexuals or heterosexuals, have PBL that lyse uninfected CD4^{+} T cells from humans and chimps but not human B lymphoblastoid cells or mouse T cells. The cytotoxic PBL were concluded to be CTL that are CD3^{+},CD8^{+},CD4^{-}, CD16^{-},TCR-1-αβ^{+}, based on findings that lysis of uninfected CD4^{+} cells was diminished by (1) mAb to CD3, which inhibits CTL but not NK activity; (2) treatment of PBL with a mAb to CD8, but not to CD16 and C; (3) mAb WT31 to TCR-1-αβ which is expressed on MHC-restricted CTL; and (4) mAb to HLA class I framework determinant. In contrast, PBL from HIV-1-infected chimpanzees, which do not develop AIDS, lacked detectable CTL lytic for uninfected CD4^{+} cells.
Conclusion. Circulating CTL, lytic for uninfected CD4^{+} cells, that we detected in blood from HIV-1-infected humans but not from chimpanzees, may contribute to HIV-1-induced immunopathology in man.

W.C.P.59 INDUCTION OF HUMAN IMMUNODEFICIENCY VIRUS FROM CHRONICALLY INFECTED CLONES BY CYTOKINES AND PHARMACOLOGICAL AGENTS REQUIRES PROTEIN KINASE C ACTIVATION.

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Objective. This study was designed to define second messenger pathways by which cytokines and pharmacological agents induce HIV expression from chronically infected cells.
Methods. The U1 (promonocytic) and ACH-2 (lymphocytic) chronically HIV infected clones express low to undetectable constitutive levels of HIV. Virus replication in these cells can be increased 2-20 fold by phorbol esters (PMA), recombinant cytokines [rTNFα,rGM-CSF (U1 only)], and cytokine enriched cell supernatants. We have tested inhibitors (isoquinolinesulfonamide derivatives) and activators of protein kinases (PK) as well as agents which modify calcium activity, for their effect on baseline and cytokine induced virus expression in the U1 and ACH-2 clones. Virus expression was measured as supernatant reverse transcriptase activity, by western blot and nuclear run-on analysis.
Results. H7, the most potent inhibitor of PKC activity, effectively blocked (75%-90%) HIV induction by all cytokines and pharmacological agents in both the U1 and ACH-2 clones. Those inhibitors, H8 and HA1004, which are more selective for cyclic nucleotide dependent kinases, did not suppress viral induction. Specific activation of PKC, by synthetic diacylglycerol and bryostatin, resulted in a 2-8 fold increase in viral replication in both clones. Activators of cyclic nucleotide kinases were not effective in inducing virus. Agents which increase intracellular levels of calcium can potently synergize with PKC mediated induction in U1 but not ACH-2 cells.
Conclusion. Upregulation of HIV by cytokines and pharmacological agents requires the activation of PKC. Evidence exists of a calcium related, but ultimately PKC dependent, event which can also upregulate virus expression.

W.C.P.60 MORPHOLOGICAL CHANGES OF THE VACUOLAR MYELOPATHY IN AIDS

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Objective. To describe the morphological changes of the vacuolar myelopathy (VM). Such morphological studies are rare and thus the pathogenesis of this frequent condition is poor understood.
Methods. The spinal cord of 42 HIV-infected patients was examined with conventional histology, immunhistochemistry and electron microscopy.
Results. In 24 cases a mild (7 cases), moderate (12 cases) or severe myelopathy (5 cases) was found. Fusiform vacuoles, 50 to 180 µm in diameter and 200 to 800 µm in lenght, delimited by a thin sheat of distended myelin, are present in the white matter. Clusters of macrophages, phagocytising axons of apparently preserved structure, are found into the vacuoles. The foamy macrophages contain rest of axons; only in one case with severe tissue disruption they contain myelin debris too. In 5 cases, some macrophages, microglia cells and multinucleated cells show HIV-antigen (p24 and gp41). A strong astrogliosis is present in the white and grey matter. Proliferation of microglia cells is present between the neurons in the grey matter.
Conclusions. VM is a more frequent condition as previously thought. In VM a process of phagocytosis directed against the axon cylinders occurs simultaneously with vacuolar degeneration of the white matter. The vacuoles arises between the axolemma and the myelin sheat.

W.C.P.61 HIV-1 INFECTION OF HUMAN FETAL CENTRAL NERVOUS SYSTEM ORGANOTYPIC CULTURES.

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Objective. Most cases of pediatric AIDS are likely congenital and the product of fetal infection by HIV-1 *in utero*. Because a significant number of children with AIDS exhibit neurologic disease, this study was initiated to determine if HIV-1 can infect fetal central nervous system (CNS) cells and characterize the resultant pathology.
Methods. Explants of human fetal cerebra were established and maintained in organotypic culture for up to 8 weeks. Initial studies, using light and electron microscopy (LM and EM) in combination with immunocytochemistry and Western blot technology, confirmed that the cultures contained normal nervous tissue cellular elements. Test cultures were exposed to either infectious or heat-inactivated HIV-1 isolates. Infection of tissue was determined by immunocytochemistry, molecular hybridization, and an infectious centers assay. Pathology was assessed by LM and EM.
Results. Cultures exposed to infectious HIV-1 (IIIB strain) for up to seven days showed an array of morphologic changes. HIV-1 infection of the cultures was confirmed *in vitro* tests and virus-like particles were observed in CNS tissue culture cells.
Conclusion. Organotypic cultures of human fetal CNS tissue may provide a valuable experimental model to define the targets and mechanisms associated with the neuropathology of AIDS.
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W.C.P.62 USE OF POLYMERASE CHAIN REACTION (PCR) TO DETECT THE PRESENCE OF HIV-1 DNA IN SUBPOPULATIONS OF PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMCS) IN INFECTED INDIVIDUALS

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Objective. We have previously demonstrated that within PBMCs, HIV is expressed in vivo in AIDS patients predominantly in the T cell subpopulation which, in contrast to in vitro infection, continues to express CD4. Our prior studies utilized methods which detect HIV in cells actively producing virus. The present study determines which subsets of PBMCs harbor HIV DNA (both latent and active) and what is the precursor frequency of these virus-infected cells.
Methods. Highly purified (>98-99%) subpopulations of PBMCs were obtained from HIV infected individuals by fluorescent activated cell sorting. PCR was then performed on the DNA from these cells to detect specific HIV-1 DNA.
Results. Cells were sorted for CD4 (T helper), CD8 (T suppressor), CD14 (monocyte), and CD19 (B cell) populations. HIV-1 specific DNA was detected in the purified CD4+ T cell population in all 15 patients examined by PCR. HIV-1 DNA was not present in the CD8 or CD19 cell subsets, and rarely in the peripheral monocyte fraction. PCR performed on serial dilutions of the sorted CD4+ T cells revealed that > 1/100 cells are infected in AIDS patients, a viral burden much greater than previously reported.
Conclusions. The CD4+ T cell is the reservoir for HIV in the peripheral blood of infected individuals, and greater than 1% of these cells may contain virus in vivo in patients with AIDS. This high level of infection may be the primary cause for the progressive decline in CD4+ T cell function and number in AIDS patients.

W.C.P.63 HIV-INFECTION ALTERS THE INTERACTION OF MACROPHAGES WITH *TOXOPLASMA* AND *LEISHMANIA*.

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Objective. Examine ability of HIV-infected macrophages to ingest and kill intracellular parasites.
Methods. Monocytes from normal donors were cultured in medium with colony stimulating factor-1 (MCSF, Cetus Corp, Emeryville CA). Monocytes were infected at 7 days with a monocytotropic HIV-1 strain, ADA. Ten days after virus infection, *T. gondii* or *L. mexicana* promastigotes were added to HIV-infected and control monocytes. Cultures were examined 4 and 20 hrs after addition of parasites: percent monocytes infected with parasites and number of parasites/infected cell were quantified by microscopic analysis.
Results. At 4 hrs, 40% of control and 10% of HIV-infected monocytes were free of parasites. The number of parasites/monocyte in HIV-infected cultures was significantly greater than that in control cultures at both 4 and 20 hrs. Electron microscopy revealed virus particles and parasites within the same monocyte.
Conclusions. Monocytes infected with HIV *in vitro* ingest parasites, but show altered infectivity and microbicidal activity. These observations may explain the pathogenesis of opportunistic infection in tropical areas.

W.C.P.64 INFECTION OF HUMAN FETAL BRAIN MACROPHAGES AND MIXED NEURAL CELLS IN TISSUE CULTURE BY HIV-1.

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Objective. To clarify the role of brain macrophages and other neural cells in the pathogenesis of neurological disorders associated with AIDS.
Methods. Cultures of macrophages and mixed neural cells were established from human fetal brains of legally-induced aborted fetuses and infected with the HTLV-III$_B$ strain of HIV-1.
Results. Expression of HIV-gag gene products (p17 and p24) was detected by immunofluorescence after 6 days and peaked at 10 days after inoculation of both the macrophage and mixed neural cell cultures. Positive results were also obtained when the culture fluids of both the macrophage and mixed neural cell cultures were assessed by both antigen capture (p24) and reverse transcriptase (RT) assays. In addition, cellular disarrangement and the appearance of multinucleated giant cells was observed. Cultures of mixed neural cells derived from the substantia nigra and infected with HIV-1 revealed both giant cell formation and massive reduction of cell numbers.
Conclusion. These results indicate that brain macrophages and other neural cells are susceptible to primary infection by HIV-1. These systems afford good opportunities for investigations of the neurological consequences of HIV-1 infection and for anti-viral drug studies in neurological tissue.

W.C.P.65 GENERAL DECREASE OF LEUKOCYTE VIABILITY OF AIDS PATIENTS IN SERUM-FREE MEDIUM

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Objective. To study the mechanism of AIDS pathogenesis and to design an *in vitro* test for the follow up of antiviral drugs.
Methods. PBMC of HIV seronegative, HIV seropositive and patients with ARC or AIDS were separated from heparinized blood on a sepracell gradient. After washing, cells were incubated in a serum-free medium specially designed for lymphoid cells. Cell viability was evaluated daily by blue-trypan exclusion.
Results. While PBMC of uninfected individuals show very little loss of cell viability after 3 days of culture, cells from AIDS patients display a rapid decay varying from 10 to 40% of dead cells after 3 days. HIV positive and ARC patients show intermediate values. Cell death was often preceeded by production of cytoplasmic debris and membrane bullous formation. Fractionation of PBMC in subpopulations indicate that T8 as well as T4 lymphocytes and non T cells are decaying at about the same rate under these culture conditions.
Conclusion. An increased cell fragility, amplified by the serum-free conditions, may be an important parameter in AIDS pathogenesis. Results of antiviral treatment on such a parameter will be described.

W.C.P.66 MECHANISMS OF HIV-INFECTIONS IN MACROPHAGES

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Blocking experiments with receptor-specific monoclonal antibodies (OKT4a) lead to the conclusion that the T4 molecule is an essential receptor-component for monocytes/macrophages. Neutralization tests with T4-positive MT4 cells and peripheral blood monocytes which process the T4 molecule and Fc-receptors (FcR) were performed in order to investigate if antibody-virus-complexes are infectious for monocytes/macrophages. Using a HIV (wild type) and a respective type-specific antiserum it can be demonstrated that antibody-virus-complexes which are not infectious for MT4 cells are still able to infect monocytes/macrophages. Moreover, in certain ranges of antibody concentration, an enhancement of infectivity can be observed. Human non-immune sera did not show this effect. Simultaneous application of a monoclonal antibody against OKT4a together with the antibody-virus-complex leads to a complete protection of the monocytes/macrophages. This indicates that antibody-virus-complexes are able to enhance the infectivity for monocytes/macrophages in vitro. The specific interaction of the HIV with the T4 molecule, however, is an essential prerequisite for the initiation of the cycle of virus-reproduction. The results indicate that the enhancement of infectivity is caused by an interaction between the Fc-receptor of the macrophage and the antibody of the complex. The high affinity of the T4-gp120 binding on the one hand and the genetic variability of the env-region on the other are essentials for the effectivity of the interaction with the T4-receptor.
This mechanism gives an explanation for the fact that at present immunisation with vaccines against infections with lentiviruses seems to be rather harmful than beneficial.

W.C.P.67 CNS AND LYMPH NODE CHANGES IN HIV INFECTION.

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HIV-induced lesions in brains and lymph nodes of infected individuals were studied by immunohistochemistry and in situ hybridization. Micronodular lesions in the brains were mainly composed of microglial cells, monocyte/macrophages and lymphoid cells, predominantly CD8+.

Gag and env. coded antigens as well as virus RNA were associated with glial cells and monocyte/macrophages. The glial cells and monocyte/macrophages expressed antigens defined by the Mab's KiM6 and 9.4 and to variable degree CD4. In lymphadenopathic nodes only gag antigens were demonstrable and exclusively in germinal centers, mostly associated with dendritic follicular cells (DFC). Rare cells showed evidence of HIV replication also predominantly located to the germinal centers. Follicular involution was associated with destruction of DFC and follicular infiltration of CD8+ cells. Both in CNS and lymph nodes, antigen presenting cells constitute the main source (reservoir) of virus replication. A possible cytotoxic role of CD8+ cells to HIV-infected cells is suggested.

W.C.P.68 CYTOMEGALOVIRUS (CMV) INDUCTION OF TUMOR NECROSIS FACTOR (TNF) SECRETION BY HUMAN MONOCYTES/MACROPHAGES MAY CONTRIBUTE TO TISSUE INFLAMMATION IN AIDS PATIENTS.

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Objective. To determine whether CMV induces monocyte and tissue macrophage expression of TNF.

Methods. CMV isolated by standard techniques from an AIDS patient with CMV colitis was inoculated into cultures of purified human monocytes. Infection was confirmed by immunoperoxidase staining with monoclonal antibody to the 68 kD immediate early (IE) antigen. TNF secretion was measured by bioassay and TNF gene expression was analyzed by Northern blot. TNF expression by mucosal macrophages obtained from AIDS patients and normals was monitored by in situ hybridization.

Results. Monocytes inoculated with the clinical isolate, but not mock-infected cells, expressed CMV IE antigen. Although neither CMV-infected nor control monocytes spontaneously secreted TNF, infected monocytes produced several-fold greater amounts of TNF in response to a second stimulus. In parallel, CMV-infected monocytes expressed enhanced levels of TNF mRNA. In addition, TNF-specific RNA was detected in mucosal macrophages in biopsy specimens from 2 AIDS patients with CMV colitis, but not in specimens from healthy subjects or AIDS patients without CMV colitis.

Conclusions. TNF is expressed in increased amounts in CMV-infected monocytes in vitro and in mucosal cells during CMV enteritis. TNF secretion by tissue macrophages may contribute to the inflammatory changes that occur in various organs in patients with AIDS and CMV disease.

W.C.P.69 ALTERED BRAIN METABOLITES IN AIDS DEMENTIA AS MEASURED BY MAGNETIC RESONANCE SPECTROSCOPY

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Eight controls and 17 HIV seropositive patients with clinical evidence of the AIDS Dementia Complex (ADC) were evaluated with neurologic, psychiatric, and neuropsychological testing. Patients with focal brain lesions were excluded. All subjects were scored on the basis of cognitive, behavioral and neurologic function utilizing a standardized form. Subjects were studied with Magnetic Resonance Imaging and Spectroscopy (MRI/MRS). Brain concentrations of adenosine triphosphate (ATP), phosphocreatine (PCr), inorganic phosphate (Pi) and other phosphate-containing metabolites, such as phosphomonoesters, were assessed by MRS. Preliminary results suggest that patients with moderate to severe ADC have lower brain ATP/Pi ratios than do normal subjects. There was no correlation between ATP/Pi or PCr/Pi ratios and clinical stage of HIV infection, nor with the degree of cerebral atrophy and ventricular enlargement as measured by MRI. Cerebral atrophy, when present, was positively correlated with lower dementia scores. These preliminary findings suggest that brain energy metabolism, as measured by phosphate metabolites, may be reduced in patients with ADC. This altered metabolism may be independent of the presence of cerebral atrophy. Further studies to validate these early findings are in progress.

W.C.P.70 INDUCTION OF HIV-1 FROM A LATENTLY INFECTED CNS-DERIVED CELL LINE

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Objective: HIV-1 causes a persistent, latent and non cytopathic infection of MED 217 cells (a medulloblastoma derived cell line). We further defined the nature of this infection in terms of level of baseline viral gene expression and methods of induction of viral transcription, p24 production and production of infectious virions.

Methods: MED 217 were exposed to HIV-1_{3B} and a modified infectious center assay performed to rescue virus. The cellular RNA was extracted and probed for viral specific nucleic acid and in addition the supernatant assayed for tne production of p24 and infectious virions. A number of manipulations (such as treatment with phorbol esters, growth factors and UV light) were then performed in an attempt to induce viral replication. Results: Although in general infection in these CD4 negative cells was inefficient, with increasing time of exposure to virus approximately 1:10 cells became infected. Under baseline conditions no viral specific RNA, supernatant p24 or infectious virions could be demonstrated. Treatment with phorbol myristate acetate results in the production of viral specific RNA, p24 (≈20 fold increase over baseline sensitivity) and infectious virions. Treatment with UV light similarly results in the production of p24, but the time course is markedly different, indicating different mechanism for the activation of viral replication by these methods. Treatment with cloned growth factors is being perfomed. Conclusions: By increasing the time of exposure to virus, infection of MED 217 cells can be made efficient, allowing the dissection of mechanisms of induction of viral replication. Initial results indicate that accepted mechanisms of activation of the HIV-1 promoter will induce viral replication.

W.C.P.71 IN VIVO ACTIVATION OF ALVEOLAR MACROPHAGES AND LYMPHOCYTES IN SPONTANEOUS INTERSTITIAL LUNG DISEASE DUE TO THE VISNA-MAEDI VIRUS IN SHEEP

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Objectives. Chronic and/or degenerative disorders involving the joints, the nervous system and the lungs are a common feature of lentivirus infection in humans and animals. Sheep infected by the retrovirus visna/maedi develop a chronic interstitial lung disease characterized by an alveolitis including macrophages, neutrophils and lymphocytes. Lung parenchymal damage associates [illegible] and interstitial fibrosis which might be related to the activation of accumulating alveolar cells. In order to investigate the respective role of lymphocytes and macrophages in the pathogenesis of the disease we performed phenotypical and functional characterization of the alveolar cells.

Methods. Bronchoalveolar lavage were obtained from healthy (n=19) and maedi (n=17) animals. Diagnosis was made by pathology and evidence of a macrophage lentiviral infection. Monoclonal antibodies and indirect immunofluorescence analysed by flow cytometry were used to assess the expression of cell membrane antigens. The release of a neutrophil chemotactic factor was quantified in a micro-chemotaxis assay; fibronectin was dosed in ELISA.

Results. In maedi when compared to healthy animals, a significant decrease of the $CD4^+$ lymphocytes was observed (20%±3.7 vs 42±3.4; p<0.05) without significant changes in $CD8^+$ lymphocytes (31%±7.3 vs 26±3.4; ns). Activated lymphocytes expressing MHC class II antigens were present in both subpopulations. Both the total number of alveolar macrophages (1.8±0.5 10^6/ml vs 0.9±0.1) and the percentage of MHC Class II-positive macrophages (50.4%±4.5 vs 15.5±4.0) were significantly higher (p<0.05). In keeping with the neutrophilic alveolitis, the spontaneous release of a neutrophil chemotactic factor was increased in maedi (30.3±21.5 U/ million macrophages x 3h vs 13.2±14.7, p<0.05). Further evidence of alveolar macrophage activation was brought, in maedi, by an increased spontaneous release of fibronectin (31.0±8.7U/10^6 cells vs 9.2±2.8, p<0.01).

Conclusion. Although restricted to macrophages infection by visna-maedi induces activation of both lymphocytes and macrophages in the alveola. Macrophages release excess amounts of mediators able to play a role in the pathogenesis of the disease. In addition, through increased expression of Ia-like antigen they might potentiate the lymphocyte response.

W.C.P.72 MORBIDITÉ SYSTÉMIQUE ET EXPRESSION RÉTROVIRALE (infection productive) CHEZ LE PORTEUR HIV.

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Objectifs: relations entre statut clinique et immunologique, progressivité éventuelle et infection rétrovirale productive in vivo.

Méthodes: évaluations du statut clinique (CDC), lymphocytes T4/µl, antigénémie p24/25 (S-p24) ; le niveau d'infection rétrovirale productive in vivo est quantifié ex-vivo à partir des cellules mononucléées du sang à division/maturation bloquée (60000 rads, CMN RAD). La vitesse moyenne de propagation (score % du maximum) du matériel HIV aux lymphoblastes in vitro est fonction pour un spécimen donné du nombre de cellules contenant du HIV préformé in vivo (abstract connexe). Les mêmes systèmes de co-culture et quantifications sont appliqués aux CMN non-irradiées.

Résultats:

SCORE CMN RAD (% du maximum)	CLINIQUE (a)	T4/µl ±sd	S-p24 +/n
00-20	II-III(8)	752±222	2/8
21-40	II-III(5),IV (3)	580±320	5/8
41-60	II-III(3),IV(5)	560±455	4/8
61-90	II-III(1),IV(10)	231±263	9/11

		PROGRESSEURS							NON PROGRESSEURS	
Patients		A	B	C	D	E	F	G	H	I
Irradiées/non Irrad	1er	13/40	17/62	6/25	27/77	13/63	23/73	6/71	0/8	0/40
	Der	58/65	46/58	34/73	64/55	44/52	51/51	19/34	0/39	0/33
1er/dernier T4		1980/110	1150/50	1100/170	1800/100	750/230	940/40	700/250	600/500	500/525
Mois 1er-der		40	40	46	28	24	18	15	18	15
S-P24		+	+	-	+	+	-	+	-	-

Conclusions: la progression de la maladie HIV systémique (clinique, lymphopénique) est associée à une expression HIV active in vivo, mesurable ex vivo.

W.C.P.73 ALTERED IgG-SUBCLASS DISTRIBUTION IN LYMPH NODE CELLS AND SERUM OF PATIENTS WITH HIV INFECTION

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Objective. To study the distribution of plasma cells producing IgG subclasses in lymphoid tissue of patients with HIV infection and compare this with IgG subclass levels in serum.
Methods. Lymph node specimens from 15 patients with persistent generalized lymphadenopathy (HIV+) and 11 patients with lymphadenopathy of other causes (controls), were processed for paired immunofluorescence. Sections were stained with subclass-specific antibodies and an anti-IgG antibody. The proportion of cells containing each subclass was then calculated. IgG subclasses in serum was measured by ELISA (Nycomed A/S, Oslo, Norway) in 14 of the patients with HIV infection and 12 blood donors. Results are given as medians and 25-75 percentiles.
Results. The fraction of lymph node cells producing IgG1 was 84% (81%-88%) in HIV+s versus 76% (67%-83%) in the controls ($p<0.05$). For IgG2, the fraction was 3% (2%-8%) in HIV+s versus 8% (3%-15%) ($p<0.05$). No differences were observed for IgG3 or IgG4. In serum, total IgG was 17.6 g/l (15.1-20.8 g/l) in HIV+s and 11.9 g/l (10.6-13.4 g/l) in the blood donors ($p<0.005$). IgG1 was elevated in HIV+s: 8.9 g/l (7.5-9.6 g/l) versus 5.4 g/l (5.1-6.5 g/l) ($p<0.005$). Conversely, IgG2 was reduced in HIV+s: 1.5 g/l (1.3-3 g/l) versus 3.6 g/l (3-4.2 g/l) ($p<0.05$)
Conclusion. In lymph nodes from patients with HIV infection, the proportion of cells producing IgG1 is increased whereas that producing IgG2 is reduced. This shift is in accordance with the IgG subclasses seen in serum.

W.C.P.74 THE EFFECT OF HIV ON MEMBRANE LIPIDS OF LYMPHOCYTES

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High content of unsaturated fatty acids (FAS) in membrane lipids lead to an increase in cell membrane fluidity and can explain cell fusion and death through the loss of membrane integrity. In the present work after H-9 and MT-4 lymphocyte cell lines were infected with HIV, a quantitative and qualitative analysis of their FAS were made. These cell lines were chosen because MT-4 is killed after HIV infection and H-9 is not. Infected and non-infected cells were extracted with methanol:chloroform solutions. The lipids were transmethylated to produce FA methyl esters and analyzed by gas chromatography. HIV infection was characterized by: 1) a significant rise (180-250%)($p<0.05$) in the desaturation of essential FAS-represented by linolenic (18:3) and arachidonic (20:4) acids-in both cell lines, 2) a significant elevation ($p<0.05$) in the concentration of the saturated FA stearate (18:0) (180%) and palmitate (16:0) (187%) only in the MT-4 cell line, and 3) a significant rise ($p<0.05$) in the desaturation of stearate to oleate (18:0 to 18:1) (171%) only in the MT-4 cell line. The results demonstrate that infection by HIV is characterized by elevated desaturation of essential FAS, whereas, killing of cells shows increase in both formation of non-essential FAS and desaturation of stearate. The mechanism by which these changes take place is not at all clear.

W.C.P.75 SIMIAN IMMUNODEFICIENCY VIRUS INHIBITS BONE MARROW HEMATOPOIETIC PROGENITOR CELL GROWTH.

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Objective. To explore pathogenic mechanisms of depressed hematopoietic function in AIDS.
Methods. Granulocyte/macrophage (CFU-GM) and erythrocyte (BFU-E) progenitor cell colonies were assessed in two layer agar and methylcellulose culture systems, respectively. SIV_{mac} isolations from bone marrow were assessed in adherent cell cultures in the absence of lectin or cytokines.
Results. Both bone marrow CFU-GM and BFU-E were decreased in number in many SIV_{mac}-infected rhesus monkeys. SIV_{mac} was readily isolated from bone marrow cells of infected monkeys and was shown to be harbored in macrophages rather than T lymphocytes. The *in vitro* infection of normal bone marrow cells by SIV_{mac} inhibited colony formation. A striking *in vivo* correlation between increased SIV_{mac} load in bone marrow cells and decreased hematopoietic progenitor cell colony growth was also shown. Finally, inhibition of SIV_{mac} replication in bone marrow macrophages by anti-CD4 antibody resulted in increased progenitor cell colony growth from those bone marrow cells.
Conclusion. The infection of bone marrow macrophages by the AIDS virus leads directly to depressed bone marrow hematopoietic progenitor cell growth. Moreover, inhibition of AIDS virus replication in these macrophages should induce significant improvement in hematopoietic function.

W.C.P.76 INFECTION OF GLIAL CELLS EXPRESSING THE CD4 MOLECULE

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Objective: The U373 glioblastoma-derived cell line can be infected with HIV-1 (several strains) to cause a persistent, latent and non-cytopathic infection. A number of measures, including treatment with phorbol esters (PMA) will induce viral replication. To determine whether CD4, which is normally not present in these cells, could affect replication we prepared stable transfectants containing the human CD4 molecule.
Methods: We prepared stable transfectants of glioblastoma line U373 with a plasmid expressing the human CD4 molecule under the control of the Moloney murine sarcoma virus LTR by co-transfecting with a plasmid expressing the hygromycin resistance gene. The stable transfectants were further selected with anti-CD4 antibody by panning and by antibody dependent cell cytoxicity. Results: A variable level of expression of CD4 was seen in the initial transfectants but all of the epitopes tested, including the carboxy and amino regions of the molecule were represented. We cloned the high expressing cells and used several different strains of HIV-1 and HIV-2 in infections. We monitored viral replication by antigen capture for p24 and by the production of infectious virus and compared these with two other cell populations: (1) clones of U373 glial cells uniformly infected with $HIV\text{-}1_{3B}$ (2) randomly infected U373 cells. After infection with $HIV\text{-}1_{3B}$ there was an initial round of low-level replication ([p24] = 100 pg/ml) followed by a persistent latent infection. Conclusions: These results indicate that other factors besides the entry pathway are responsible for the characteristics of HIV-1 infection of glial cells and allow us to begin to dissect the diverse elements that determine tropism.

W.C.P.77 ROLE OF ENDOTOXIN IN MODULATION OF HIV EXPRESSION IN A MONOCYTIC CELL LINE

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Objective. To determine the role and mechanism of action of endotoxin (LPS) in modulating HIV expression in monocytic cells.
Methods. THP-1 cells, chronically infected with HIV-1/IIIB, were stimulated for 24 hours with LPS (0.5-10 µg/ml), recombinant TNFα (rTNFα), recombinant IL-1β (IL-1β) (0.1 to 10 ng/ml) and polyclonal antibodies against TNFα and IL-1β. TNFα and IL-1β were measured in supernatants using RIA. Viral expression was assessed by the level of reverse transcriptase activity (RT) in the supernatants.
Results. LPS stimulation of THP-1 cells resulted in a dose-dependent increase of RT (20 to 100% over unstimulated cells $p<0.01$), and in significant production of TNFα (1 ng/ml) and IL-1β(0.1ng/ml). Antibodies against TNFα, but not against IL-1β were able to block 50% of the increase in RT after stimulation with 10 µg/ml of LPS ($p<0.05$). Furthermore, rTNFα but not rIL-1β increased RT in a dose dependent manner($p<0.01$).
Conclusion. LPS stimulation of HIV-infected monocytic cells can significantly increase virus production and this effect may be due in part, to the release of TNFα by LPS stimulated cells.

W.C.P.78 PRODUCTION DE TNFα ET D'IL-1β PAR LES CELLULES DE LA LIGNEE MONOCYTAIRE INFECTEES PAR LE VIH

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Objectif.Mesurer la production de TNFα et d'IL-1β par les cellules de la lignée monocytaire infectées par le VIH.
Méthodes.TNFα et IL-1β ont été mesuré par RIA et l'ARNm par Northern Blots.La lignée THP-1 infectée par VIH-1/IIIB a été stimulée par 5µg/ml d'endotoxine (LPS).Les macrophages ont été infectés par VIH-1/IIIB,VIH-1/BaL et VIH-2.
Résultats.Les cellules THP-1 et les macrophages infectés par differentes souches de VIH ne produisent pas spontanément de quantité détectable de TNFα, d'IL-1β ou d'ARNm . Après stimulation par LPS des cellules THP-1,TNFα,IL-1β et de l'ARNm sont produits,sans difference significative entre cellules non infectées ou infectées de façon chronique.En revanche,les cellules THP-1 en phase aigüe d'infection,plus differenciées, produisent après stimulation,des quantités de cytokines 2 à 13 fois plus élevées que les cellules non infectées ou infectées de façon chronique ($p<0.01$).
Conclusion.Les cellules de la lignée monocytaire infectées par le VIH ne produisent pas spontanément de TNFα ou d'IL-1β mais peuvent en réponse à un stimuli comme LPS produire des quantités importantes de ces deux cytokines.

W.C.P.79 HIV-2 ENVELOPE GLYCOPROTEINS AND CELL FUSION.

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Objective: To utilize recombinant vaccinia viruses (rVV) to study the expression and function of env genes of HIV-2/ROD, the HIV-2 prototype which is fully pathogenic *in vitro*, and HIV-2/ST, a recent isolate with less virulent *in vitro* behavior, .
Significance: The envelope gene products of HIV-1 and -2 are essential to virus attachment, entry, and pathogenicity, as well as cell fusion and host immune responses. Most data indicate virus entry into CD4+ target cells occurs via viral-cell membrane fusion at neutral pH. The infected cells can produce syncytia with uninfected CD4+ cells at neutral pH. A virus unable to produce cell fusion despite normal infectivity may have an altered molecular mechanism of cell entry and membrane fusion. We hypothesize such a change in HIV-2/ST. Unlike other HIVs, this virus does not induce cell fusion or cell death; infected cells exhibit fully productive infection (mRNA production, RT activity), but the rate of free virus entry into cells is retarded.
Methods: HIV-2/ST had been isolated from a healthy West African prostitute; HIV-2/ROD was provided by L. Montagnier. The env genes were inserted into rVVs and evaluated for production of envelope glycoproteins using metabolic labelling and RIP/PAGE. Function of recombinant env gene products was assessed by infection of CD4+ cells and quantitating cell fusion. Hyperimmune rabbit antisera was produced using recombinant envelope glycoproteins.
Results: Recombinant HIV-2/ROD env gene product gp160 is produced and recognized by antisera. Infection of CD4+ cells indicates the products are cleaved and transported to the cell surface in functional form where they mediate cell fusion. rVV-ST has been constructed.
Conclusions. Recombinant VV carrying HIV-2 env genes synthesize, process, and transport functional recombinant envelope glycoproteins. The env gene product of HIV-2/ROD causes infected cells to fuse with uninfected CD4+ cells. These methods will be useful to determine whether the cell fusion defect of HIV-2/ST is a function of its env gene.

W.C.P.80 CMV IS NOT A COFACTOR IN THE PROGRESSION OF HIV INFECTION.

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Objective.To determine if coinfection with CMV affects the decline of CD_4 cells in HIV infected patients.
Methods.We have compared to rate of decline of CD_4 cells in HIV seroconverting military personnel who are CMV seropositive versus those who are CMV seronegative. Regression analysis was used to calculate the daily decline in CD_4 counts following HIV seroconversion. Blood samples were obtained at 6 months intervals to permit calculation of the rate of CD_4 cell decline.
Results.The mean initial CD_4 counts were 519 in the CMV seropositives and 457 in the seronegatives (NSS;p0.51). Fifty CMV seropositives showed a slope of CD_4 decline/day of - .3101 versus - .2044 in 7 CMV seronegatives. This difference is not statistically significant (P=0.71) when the rates are compared using students T test.
Conclusion.We conclude that CMV is not a necessary cofactor in the pathogenesis of HIV infection.

W.C.P.81 ABERRANT CIRCADIAN PHYSIOLOGIC, IMMUNE AND ENDOCRINE RHYTHMS IN HIV-INFECTED INDIVIDUALS.

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Objective: To assess circadian variation of parameters relevant to the pathophysiology and laboratory monitoring of HIV infection.
Methods: For 24h in a clinical research setting, 8 HIV-infected persons (3 AIDS, 3 ARC and 2 asymptomatic; all free of acute illness) underwent 4-h assessments of oral temperature lymphocyte subsets (CD3, CD4, CD8, B1), monocytes, neutrophils; HIV antigen, neopterin (n=6), beta-2-microglobulin; plasma cortisol, aldosterone, beta endorphin; and serum zidovudine and urinary excretion (n=3). Two patients underwent detailed zidovudine pharmacokinetics at midnight and noon. Healthy, age-matched adults served as controls.
Results: A significant circadian rhythm in oral temperature was found in 6 of the 8 patients, with unusual early morning peaks in 2 patients. Usual lymphocyte rhythmicity peaking between 6 P.M. and midnight, including all studied subsets, was lost. The normal circadian rhythm in neutrophil and monocyte concentrations was absent in patients with low counts. Rhythmicity in HIV antigen and neopterin could be demonstrated for some patients, but not as a group phenomenon since the daily peaks and valleys differed from patient to patient. HIV-infected subjects had elevated beta-2 microglobulin and rhythmicity, which was not seen in controls. Circadian variation similar to controls in beta-endorphin, aldosterone and cortisol concentrations was seen. Following constant dosing, substantial within-day variation in serum and urine zidovudine levels was seen, but half-lives at midnight and noon were similar.
Conclusion: The normal marked lymphocyte rhythmicity is ablated in HIV-infected persons, even if asymptomatic, and cannot be explained by loss of cortisol rhythmicity.

W.C.P.82 REGULATION OF CYTOKINE RECEPTOR EXPRESSION BY HIV

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Interferons (IFN) have been shown to interact synergistically with tumor necrosis factor (TNF) in cytotoxic and antiviral activities. Both cytokines are capable of suppressing the replication of HIV in vitro. To elicit biological activities, these cytokines bind to specific high affinity cell surface receptors. We have previously demonstrated down regulation of IFN-α receptors on blood lymphocytes from AIDS patients and consequent hyporesponsiveness of the cells to IFN in vitro. We postulate that HIV gene products are capable of down regulating the expression of cytokine receptors. The expression of IFN-α receptors on CD4+ cells (specifically CEM, HUT, and Jurkat) was studied using IFNα2 (Schering) labeled with ^{125}I to high specificity by a lactoperoxidase method. Saturation binding curves were generated with the ^{125}I-IFNα2 and the binding characteristics were analyzed to obtain the receptor numbers. CD4+ cells were infected with HIV in vitro and the levels of p24 antigen and reverse transcriptase activities were determined to monitor the replication of HIV. We have demonstrated a progressive down regulation of IFN-α receptors during the progress of HIV infections in vitro. To evaluate the effects of HIV on the induction of IFN regulated enzymes, HIV infected HUT cells were treated with IFN-α2 and assayed for 2-5A synthetase activities. We have shown diminution in 2-5A synthetase induction in infected cells, compared to controls. Similarly, we have demonstrated down regulation of TNF-α receptors in CD4+ cells by measuring the binding of ^{125}I-TNF-α (Genentech) during the course of HIV infection. We are currently investigating the role of individual viral genes in the regulation of cytokine receptors. Thus, these studies indicate that HIV is capable of suppressing the expression of IFN-α and TNF-α receptors. This may be one of the mechanisms by which HIV evades the antiviral actions of IFN and TNF in vivo.

W.C.P.83 ENHANCED PRODUCTION OF TUMOR NECROSIS FACTOR IN SYMPTOMATIC HIV INFECTIONS.

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Tumor necrosis factors (TNF) are polypeptides produced by macrophages and monocytes in response to inflammation and sepsis. They are also potent mediators of cachexia and autoimmune processes. We have previously demonstrated upregulation of TNF receptors and induction of TNF synthesis by the acid-labile IFN-α present in AIDS sera. We were interested to determine whether synthesis of TNF is enhanced during the progress of HIV infections in patients. Blood mononuclear cells (PBM) were obtained from normal controls and patients with asymptomatic HIV infection (CDC classification group II), persistent lymphadenopathy (III), constitutional disease (IVa), and opportunistic infections (IVc). TNF production by the cells was measured by a cytotoxicity assay on L929 cells using Hu-TNF-α (Genentech) as a standard. One unit of TNF is defined as the concentration of the cell culture supernatant which produces cytopathic effects on 50% of the L cells. PBM from normal controls produced low levels of TNF (1.1±0.96 U/ml, n=14). The levels of TNF production by the cells from Group II, III, IVa, and IVc patients were 2.2±2.0 (n=9), 7.8±7.9 (n=12,$p<.05$), 6.4±7.2 (n=5,$p<.05$), and 18.7±14.7 (n=13,$p<.01$) U/ml respectively. The cytotoxic activities in the supernatants can be completely neutralized by anti-TNF-α antibodies. Moreover, the cells from symptomatic patients (group III and IV) were hypersensitive to endotoxin resulting in further induction of TNF synthesis, compared to normal controls and asymptomatic patients. Thus these results indicate that the synthesis of TNF is enhanced during the progress of HIV infections and the cells from the symptomatic patients are hypersensitive to TNF inducers. This may be one of the mechanisms involved in the pathophysiology of cachexia and sepsis in symptomatic AIDS patients.

W.C.P.84 ANALYSIS OF BRAIN FROM AIDS PATIENTS FOR HIV-1 DNA SEQUENCES USING THE POLYMERASE CHAIN REACTION (PCR)

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Objective: To determine whether HIV-1 proviral DNA can be detected by PCR in the brains of patients with mild AIDS dementia complex (ADC). While it is clear that HIV-1 infection can be demonstrated by a variety of techniques in the brains of AIDS patients, such demonstration is confined almost exclusively to those with more advanced symptomatology and pathology. The presence and role of HIV-1 in milder ADC has not yet been established.
Methods: DNA was extracted from 56 frozen brain samples obtained at autopsy from 27 HIV-1-infected individuals and assessed using a primer pair from the HIV-1 *env* gene flanking the immunodominant region. Dilution experiments, using cloned HIV sequences from which the primer pairs were derived, indicated a sensitivity of 8.2 fg DNA by visual inspection of the gel and 66 ag when probed by Southern blotting using a reacting sequence.
Results: In samples from brains known to be HIV-1 "positive" by immunohistochemistry or Southern blot, HIV-1 DNA was amplified. However, in most "negative" brains, PCR was also negative and in those with circumscribed infection by immunohistochemistry, PCR was likewise limited.
Conclusion: These initial results suggest that viral sequences in brains of patients with milder ADC are below the level of PCR detection using this single primer pair. Further studies using additional primer pairs and well-characterized tissue specimens are needed to determine if early ADC relates to active HIV-1 replication, restricted gene expression or indirect factors.

W.C.P.85

EFFECTS OF TUMOR NECROSIS FACTOR (TNF-a), GAMMA INTERFERON AND GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR (GM-CSF) ON HIV REPLICATION IN HIV-INFECTED HUMAN MYELOMONOCYTIC CELL LINES

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Objective. To study the effects of TNF-a, gamma interferon, and GM-CSF on HIV antigen expression in chronically infected human myelomonocytic leukemic cell lines.
Methods. HTLV-IIIB infected ML-3 (myelomonoblastic), THP-1 (monoblastic), and U-937 (monocytic) cells at a concentration of 3 x 10^5 cells/ml were incubated with cytokine at 3 log concentrations for 24-102 hours. Cell viability was assessed by trypan blue exclusion and HIV replication by HIV p24 antigen capture on cell free supernatants of cultured viable cells.
Results. TNA-a had a marked cytolytic effect on HIV infected and uninfected cells at concentrations of 10^2-10^4 u/ml. No HIV inhibitory effects were seen with any of the cytokines alone or in combination. HIV p24 was significantly increased in ML-3 cells by TNF-a and by GM-CSF and in U-937 cells by GM-CSF alone.
Conclusion. The effect of these cytokines on HIV expression in chronically infected cells appears to be cell specific and may represent differences in viral regulation in cells at different stages of maturation.

W.C.P.86

PRESENCE OF HIV-1 IN THE SPERMS OF HIV-SEROPOSITIVE INDIVIDUALS BY DNA-HYBRIDIZATION AND IMMUNOGOLD METHODS

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Objective. To explore the role of sperm in the transmission of HIV-1.
Methods. Semen specimens were collected at weekly intervals from three patients who were seropositive for HIV-1. Semen specimens were washed and pellets were examined for presence of HIV by electron microscopy, by use of HIV-specific monoclonal antibodies and immunogold labelling and by HIV-specific DNA probes and *in situ* hybridization.
Results. Electron microscopic analysis of sperm showed HIV-1 like particles in the sperm of all 9 specimens. Further evaluation with HIV specific DNA probes and immunogold labelled monoclonal antibodies confirmed the presence of HIV-1 in the sperm of HIV seropositive individuals but their absence in HIV-seronegative individuals.
Conclusion. Presence of HIV-1 in the sperms of HIV-seropositive individuals indicates a potential mechanism for the venereal transmission of HIV by sperm from HIV seropositive individuals to their sexual partners.

W.C.P.87

PRESENCE OF TUMOR NECROSIS FACTOR IN THE CEREBRAL SPINAL FLUID (CSF) OF AIDS PATIENTS WITH HIV ENCEPHALOPATHY

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Objective. To assess the presence of Tumor Necrosis Factor-alpha (TNF) in the CSF of HIV seropositive patients with HIV encephalopathy (HIVE).
Methods. CSF from 3 patients with HIVE, 6 AIDS patients without central nervous system (CNS) disease, 5 patients with HTLV-I associated myelopathy/tropical spastic parasis (HAM/TSP), and 1 HIV seronegative control individual, was tested for the presence of the TNF using the Wehi 164-clone 13 bioassay. Positive samples were confirmed by neutralization with a rabbit antibody to human TNF-alpha.
Results. TNF was detected in significantly more patients with HIVE (3/3) than AIDS patients without CNS disease (1/6, p=.05). There was a trend toward significance comparing presence of TNF in patients with HIVE (3/3) to HAM/TSP patients (1/5, p=.07, Fisher's Exact Test, 1-tailed). No TNF was detected in the HIV seronegative control individual.
Conclusion. The current data suggest that detectable TNF levels are present in the CSF of patients with HIVE but to a much lesser degree in HIV+ patients with no neurological manifestations or in patients with HTLV-I associated neurologic disease.

W.C.P.88

DETECTION OF UNINTEGRATED VIRAL DNA IN HIV-1 INFECTION: USE OF A RAPID AND EASY PCR METHOD

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Objective. To study the kinetics of unintegrated viral DNA (UVD) in HIV-1 infected cells *in vitro* and presence of UVD *in vivo* in HIV-1 infected children and in homosexual men.
Methods. UVD was detected by use of the polymerase chain reaction (PCR) in which the long terminal repeat (LTR) in covalently closed circular viral DNA was amplified. The specificity of the amplified sequences was confirmed by Southern blot analysis using an LTR-specific probe and sequencing the primed fragment.
Results. Closed circular viral DNA was detected within one day post-infection in HTLV-IIIB infected Molt-3 cells. Depending on the infecting virus titer, UVD was undetectable for a short period early in infection, but persisted thereafter.
Brain and spleen tissues of HIV-1 infected children with HIV-1 associated progressive encephalopathy were analyzed for the presence of UVD. In both tissues high levels of UVD were detected, indicating active infection at both sites. In blood of AIDS-patients UVD could also be detected.
Conclusion. UVD can be detected in HIV-1 infected cells both *in vivo* and *in vitro* by use of the PCR and it may be used as a marker for active infection and disease progression.

W.C.P.89

SERUM CAPACITY TO INHIBIT REVERSE TRANCRIPTASE IN VITRO DISTINGUISHES HIV-1 INFECTION FROM HIV-2 OR SIV INFECTION

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Objective. To study the inhibition of HIV-1 and SIV reverse transcriptase by human and rhesus macaque serum positive for HIV-1 or HIV-2/SIV antibodies.
Methods. Inhibition of HIV-1 or SIV reverse transcriptase activity was assayed after incubation with HIV-1 or HIV-2/SIV antibody positive serum.
Results. The domain to which reverse transcriptase inhibiting antibodies were elicited appeared to be highly antigenic. Sixty-seven percent (48/72) of individuals had HIV-1 reverse transcriptase inhibiting (RTI) antibodies one year after seroconversion for HIV-1, 90% (9/10) of HIV-2 antibody positive persons had SIV-RTI antibodies and all four experimentally SIV-infected rhesus macaques developed SIV-RTI antibodies. Low cross-reactivity between HIV-1 and HIV-2/SIV-RTI antibodies was observed. Of 10 HIV-1-RTI sera 2 reduced SIV-RT activity by more than 50% (mean reduction 85% versus 24%). Only 1 of 9 SIV-RTI human sera reduced HIV-1-RT (mean reduction 74% versus 25%). This serum however showed a shared reactivity against both HIV-1 and HIV-2 envelope proteins.
Conclusion. These results indicate that the HIV-1 domain inducing RTI antibodies is antigenically different from the HIV-2/SIV domain.

W.C.P.90

EXPRESSION OF A POTENTIAL HIV RECEPTOR ON HUMAN GASTROINTESTINAL EPITHELIAL CELLS (GIECs)

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Objective. To determine if human GIECs express a CD4-related receptor which might allow HIV attachment.
Methods. Immunoassays of tissue sections and early passage cultures of GIECs from human normal GI (small intestine and colon) or human colon cancer (HCC) sources were done using Leu3a and OKT4 monoclonal antibodies. In addition to an immunoreactive subpopulation of lamina propria lymphocytes in tissue sections, staining was observed at the microviller surface, or glycocalyx, in a subset (2 to 25%) of GIECs in sections or in cell cultures derived from different individuals. Reactivity of well characterized GIECs maintained for 10 or more subcultures, and protein immunoblot detection of 80kd and 106kd proteins verified that carryover of CD4+ lymphoid cells did not explain the immunoreactivity. Furthermore, the established HCC lines tested in these experiments were not immunoreactive.
Conclusion. These observations suggest that GIECs bear CD4-related epitopes, which are associated with the cell surface or mucinous glycolyx. Since such surface molecules could serve as sites for HIV attachment and subsequent viral infection, these data are relevant to virus transmission, gastroenteropathies associated with AIDS or ARC, and the possibility that GIECs may serve as a reservoir for HIV. Support was provided by PHS grant R01 DK40825 and The UTHSCSA Center for Human Cell Biotechnology.

W.C.P.91 CELL-SPECIFIC CONTROL OF HIV PRODUCTION IN CHRONICALLY INFECTED GLIAL CELLS

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Objective. Evaluation of HIV regulation in potential virus reservoir cells in the brain (glial cells).
Methods. Establishment of chronically infected glioma cell lines. Measurement of HIV proteins, RNA expression, and production of infectious virus.
Results. We established chronically HIV-1 infected glioma cell lines harbouring an integrated HIV genome. The cell lines express structural proteins, which can be detected in the cytoplasm but they release extremely low amounts of infectious virus in comparison to other infected cell types (T-cells, monocytes/macrophages, mesenchymal cells). Furthermore, high amounts of intracellular nef protein with a molecular weight of 27 kD is produced in these cells.
Conclusion. Chronically infected glial cells control virus production by a cell-specific mechanism using nef protein induction and may thus represent a virus reservoir in the brain.

W.C.P.92 NEUTRALIZING AND ENHANCING ANTIBODIES IN DIFFERENT STAGES OF HIV-INFECTION

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Objectives. Enhancing antibodies (ENH AB) were reported to be present in the blood of HIV-infected patients and believed to influence the course of infection. In the present study the incidence of these antibodies were investigated in parallel to that of the neutralizing antibodies (NEU ABS). Methods. Reclustering assay on MT-4 cells was used for detection of ENH and NEU AB. HIV-seropositive (HIV+) sera were filtered through 50 nm filters and heat treated (56°C, 30 min). The same sera were tested for NEU and ENH AB after 1:1 mixing with fresh, complement-sufficient (CS) pooled HIV-seronegative serum (CS-serum). Results. The following results were obtained in the 39 serum samples tested:

Group	No sample tested	NEU AB in heated serum	NEU AB in CS-serum	ENH AB in CS-serum
asympt.HIV+	19	19	8	4
ARC, AIDS	20	11	0	12

Conclusion. These findings support the results of Robinson et al. (1988) on the presence of complement-dependent ENH AB in HIV-infected persons and suggest that their appearance in parallel to the loss of NEU AB may signal a bad prognosis.

W.C.P.93 LOW PLASMA CYSTEINE AND ELEVATED GLUTAMATE LEVELS IN HIV-1+ PATIENTS MAY CONTRIBUTE TO LOSS OF T CELL FUNCTIONS.

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Objective. To investigate the hypothesis that the immunological deficiency may be partly the consequence of a virus-induced metabolic disorder.
Methods. The plasma glutamate and thiol (cysteine) levels of groups of HIV-1 infected patients with different stages of disease have been studied; and the influence of abnormal extracellular concentrations of glutamate and cysteine on lymphocyte and macrophage functions has been analyzed in vitro.
Results. HIV-1 infected patients have markedly reduced plasma cysteine and elevated glutamate concentrations. Similar variations of the extracellular cysteine or glutamate concentrations have profound effects on proliferative responses in lymphocyte cultures. Lymphocyte responses are augmented by cysteine and inhibited by elevated concentrations of glutamate or by its structural analogues quisqualate and N-methyl-D-aspartate (NMDA) but not with kainate. This suggests that glutamate may act on cell surface receptors analogous to the quisqualate and NMDA sensitive excitatory glutamate receptors in the vertebrate central nervous system. Elevated extracellular glutamate levels inhibit also the capacity of macrophages, monocytes and fibroblasts to release cysteine into the extracellular space.
Conclusion. A metabolic defect in HIV-1 infected patients may cause an insufficient supply of cysteine for lymphocytes and may thereby be responsible -at least in part- for the insufficient immunological reactivity.

W.C.P.94 IDENTIFICATION OF PHENOTYPIC ULTRASTRUCTURES OF LYMPHOCYTES REACTING WITH AUTO-ANTIBODIES IN AIDS

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Understanding the mechanisms of immune suppression and lymphocyte depletion in HIV-positive patients is perhaps central to the understanding of the initiation and the evolution of AIDS. There is general agreement that the etiologic agent of AIDS is HIV but the precise mechanisms by which the virus affects the immune devastation are unknown. Anti-lymphocytes auto-antibodies (Ab) are lympholytic *in vitro* and undoubtedly contribute to the destruction of lymphotic tissues *in vivo*. Present studies aim at determining the specificity of anti-lymphocytes auto-Ab in AIDS.

HIV antigens were identified in peripheral blood lymphocytes (PBL) obtained from 94 patients at different stages of HIV infection using immunofluorescence (IF) and immuno-electron microscopy (IEM) techniques. *In vivo* studies of the phenotype of HIV-containing lymphocytes by double labelings showed that OKT4+ cells are the principal target of the virus. Almost all infected PBL and approximately 30 percent of uninfected PBL displayed Ab-C3 complexes on the cell surfaces as demonstrated by IF. Sera from HIV-positive patients contain Ab reacting with cell membranes and intracellular structureds of PBL from normal subjects, as demonstrated by IEM. Double immunogold labelings showed that the pattern of reaction of serum Ab is different among phenotypic lymphocyte populations and that this pattern changes with the evolution of HIV infection.

The presence of Ig-C3 complexes on a high percentage of HIV-positive or negative PBL suggests that the Ab-C-mediated lympholysis may represent a major mechanism of lymphatic tissue destruction in AIDS.

W.C.P.95 LONGITUDINAL STUDY OF HIV ANTIBODY RESPONSES OF INFANTS BORN TO SEROPOSITIVE WOMEN IN ZAIRE

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Objective. To determine if neutralizing antibodies (NA) or antibodies on isotype specific Western Blots (ISWB) are associated with transmission of HIV from pregnant women to their infants.
Methods. Paired maternal and infant sera were collected at the Mama Yemo Hospital in Kinshasa, Zaire. Sera were obtained every 3 months from infants born to HIV seropositive women. Sera were studied from 2 groups based on infant's outcome; healthy at 18 mo. (Gp 1), AIDS at 12-18 mo. (Gp2). ISWB were developed for IgG, IgG 1-4, IgA, or IgM. NA were assessed by inhibition of syncytia formation using HIV_{IIIB}.
Results. Maternal sera from both groups reacted strongly with all HIV antigens in IgG blots. Among Gp1 infants, 1/8 had anti-HIV IgM Ab and 4/8 developed new IgG Ab. Among Gp 2 infants 8/10 had IgM and 9/10 had IgG by 9-12 mo. of age. NA were detected in most maternal sera at titers from 1:8 to 1:256. Significantly, 8/10 Gp 2 infants developed NA compared to 1/10 Gp 1 infants ($p < .03$, Fisher's exact test).
Conclusions. Infants with NA and evolving ISWB patterns had AIDS by 18 months, although 5/8 healthy infants had ISWB suggesting HIV infection. IgM responses to HIV were not observed in the first 6 months of life, even in infants who had other evidence of infection. We did not find a relationship between maternal NA and transmission of infection to infants.

W.C.P.96 NEUTRALIZING ANTIBODY IN SEROPOSITIVE SUBJECTS FROM AFRICA, SOUTH and NORTH AMERICA AGAINST 4 DIVERGENT STRAINS OF HIV

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Objective. To assess cross reactivity of neutralizing antibodies (NA) against different isolates of HIV in serum of HIV infected individuals from North and South America and Africa.
Methods. Virus isolates HIV-IIIB, RF, MN, and Z-2 were tested with sera from Haiti, the U.S., Brasil, Zaire, and Zimbabwe. NA titers of sera were the reciprocal of the serum dilution that decreased the number of syncytia by >50% in Molt-3 cells.
Results. None of 50 sera from seronegative subjects had NA, while sera from seropositive subjects had NA against HIV_{MN}, HIV_{IIIB}, HIV_{RF} and HIV_{Z2} in 94%, 80%, 56%, and 57% respectively. Asymptomatic subjects (AS) were less likely to have NA than subjects with AIDS or ARC (SYM) (87/115 AS vs 72/86 SYM for HIV_{IIIB} and 56/114 vs 53/70 for HIV_{RF}, $p < .016$, X^2). Analysis of individual geographic cohorts demonstrated similar geometric mean titers (GMT) of NA against each isolate, although the GMT was significantly higher against HIV_{MN} in 60 U.S. sera (1929) than in 40 Zairean (475), 53 Zimbabwean (733) or 50 Haitian (372) sera ($p \leq .05$, Student's T).
Conclusion. Symptomatic HIV seropositive subjects have higher titers of NA against HIV compared to AS. NA in seropositive subjects in the Americas and Africa have broadly cross reactive NA against genetically divergent strains of viruses from the U.S., Haiti, and Africa.

W.C.P.97 SPECIFIC DEFECT IN TISSUE FACTOR EXPRESSION IN MONOCYTES FROM AIDS PATIENTS

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Monocytes/macrophages can be infected with human immunodeficiency virus (HIV). Such cells are important in regulating immune and coagulation systems. Hence, infection of the host may alter these cells, disrupting the expression of modulating factors. Thus, tumor necrosis factor (TNFα), tissue factor (TF), and interleukin I-ß (IL-1ß) mRNAs were evaluated in monocytes from HIV seropositive patients. RNA was extracted from monocytes with or without LPS stimulation, and hybridized with cDNA probes for TNFα, TF, and IL-1ß. A significant depression (66%) in TF mRNA expression in monocytes from AIDS patients occurred after LPS stimulation, contrasting the "normal" responses observed for TNFα and Il-1ß. Induced TF mRNA reduction was also observed to a lesser degree in ARC patients (20%) but not in asymptomatic seropositives. A similar pattern was found for TF procoagulant activity in the same cells. TF is necessary for the initiation of the coagulation protease cascade, leading to thrombin production and fibrin deposition, important effector components for a delayed hypersensitivity reaction (DTH) and an inflammatory response. Indeed, DTH responses were concordantly reduced in study patients. Thus, TF's selective reduction may be related to the diminished resistance to secondary infections observed in ARC and AIDS patients.

W.C.P.98 ANTIBODIES TO gp41 peptide (HIVIS, aa 583-599) DO NOT CORRELATE SIGNIFICANTLY WITH PROTECTION FROM DISEASE IN HIV INFECTION.

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Objective. To examine the association between antibodies to a putatively immunosuppressive domain on gp41 (pHIVIS, amino-acids 583-599) and disease outcome in a cohort of subjects infected by HIV-1.
Methods. Peptides derived from HIV-1 gp41 were made as previously described (Klasse, Pipkorn and Blomberg, PNAS 1988;85). Peptide 583-599 is partially homologous to the p15e domain on C-type retroviruses, which is thought to be immunosuppressive in vitro. Control peptides were derived from an immunogenic conserved domain on gp41, amino-acids 586-606. Antisera were assayed in a direct anti-globulin ELISA, with batteries of positive and negative controls. Sera were derived from a cohort of homosexual men followed prospectively, and well defined clinically, over a six year period.
Results. Antibodies to the peptides were found in the following proportions in these patients, grouped by clinical outcome at 6 years post infection.

	Asymptomatic	ARC	AIDS
HIVIS	3/14	1/13	2/8
Control	12/14	4/4	7/8

Conclusions. These results suggest that there is no statistical association between antibodies to the HIVIS peptide, and protection from disease progression in HIV infection, in this cohort of subjects; these results will be compared to the original results of Klasse et al.

W.C.P.99 AUTOIMMUNITY AGAINST NEUTROPHILS AND THROMBOCYTES IN DIFFERENT STAGES OF HIV-INFECTION

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Objective. To get insight in the role of autoantibodies against neutrophils and platelets in the pathogenesis of HIV-infection.
Methods. We investigated the prevalence of these autoantibodies in subjects in different stages of HIV-infection [Group3 (n=13) asymptomatic with T4> 0.5x10^9/l; Group4 (n=27) asymptomatic with T4< 0.5x10^9/l; Group5 (n=9) with ARC(CDC 4A); Group6 (n=12) with opportunistic infections (CDC 4C1/4C2); Group7 (n=10) with malignancies (CDC 4D)] and in heterosexuals (n=19, group1) and promiscuous HIV- homosexuals (n=20, group2). Presence of the autoantibodies was determined by immunofluorescence. The specific autoantibody nature was investigated by preparation of acid-eluates from the cells.
Results. Platelet- and neutrophil-autoantibodies were almost absent in group 1 and 2, but frequently found in asymptomatics (between group 3 and 4 no difference) ($p<0.002$, <0.05 respectively, as compared to HIV- individuals). In the majority of symptomatics (between group5, -6 and -7 no difference) antibodies against platelets and neutrophils were found ($p<0.002$ and <0.005 respectively, as compared to the asymptomatics). However, no correlation between the presence of the autoantibodies and the cell-count was observed.
Conclusion: In this study the presence of autoantibodies against platelets and neutrophils is limited to HIV-infection and related to the stage of HIV-infection, which suggests a role in pathogenesis.

W.C.P.100 HIV TARGET CELLS IN TESTES AND EPIDIDYMIDES FROM AIDS PATIENTS

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Objective: To elucidate possible mechanisms of sexual HIV transmission, we have studied mononuclear cells in testes and epididymides from AIDS patients and searched for HIV antigen expression.
Methods. Thirty-two testes (27 AIDS patients, 5 controls) and 17 epididymides (15 AIDS, 2 controls) were obtained post-mortem. Frozen sections were incubated with monoclonal antibodies to CD3, CD4, CD8, monocyte/macrophages, HIV P18 and P 24, and revealed by an indirect immunoperoxidase technique. Standard pathological examination was performed.
Results. No lymphocyte nor macrophage was found in the seminiferous ducts of controls. Macrophages could be found in the epithelium and ducts of control epididymides, however. HIV antigens were found in the testes of two patients in interstitial macrophage-like cells. Very high numbers of CD4+ macrophages were found in the testes and epididymides of most patients, occasionally in the seminiferous and epididymal ducts and constantly in the epididymal epithelium. High numbers of CD3+ cells, mostly CD8+, were also observed with a similar distribution. There was no pathological evidence of opportunistic infection responsible for mononuclear cell infiltration.
Conclusion. Although HIV antigenic expression was found in only two patients, abnormally high numbers of CD4+ macrophages were found in the testes and epididymides of AIDS patients, often in very close contact with germ cells. This suggests that CD4+macrophages play an essential role in the sexual transmission of HIV and raises the possibility of contamination of germ cells by direct contact with CD4 macrophages.

W.C.P.101

W.C.P.102 NOVEL SPOROZOITE SURFACE LECTIN IN CRYPTOSPORIDIUM PARVUM

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Objectives: To determine whether or not the sporozoite (S) stage of *C. parvum* (CP) produces a sugar binding lectin, to purify and characterize this protein, and to determine its role in pathogenesis of CP infection.
Methods: CP oocyts (O) were obtained from the stool of AIDS patients, purified by gradient centrifugation, and allowed to excyst *in vitro*. A hemaglutination (HA) assay was developed using intact-S, S-sonicates, intact-O, or O-membranes. S were solubilized in 0.5% triton-X-100 plus protease inhibitors and centrifuged at 100,000 g for 90 min to localize HA in the soluble and membrane fractions. Binding specificity was studied by HA inhibition in the presence of over 20 simple and substituted mono and disaccharides, and glycoproteins. Cation and pH requirements were also determined. Lectin purification was attempted by affinity chromatography.
Results: HA was present in intact S and increased 128-fold in sonicates. Isolated O had less HA activity than S, and O membranes showed none. The best inhibitor of HA was bovine submaxillary mucin (BSM). HA was optimal at pH 6, did not require divalent cations, and was present in S membranes and not in cytosol or cytoskeletal fraction. Intact S formed rosettes around erythrocytes, indicating a surface location of the HA. Partial purification of the lectin has been achieved on a BSM-Sepharose 4B column.
Conclusion: we have identified a novel *C. parvum* lectin, which is found on the sporozoite surface (the infective form of the parasite). The most effective *in vitro* hapten inhibitor tested was BSM. The *in vivo* receptor and role of lectin in attachment/invasion of host cells is not yet known.

W.C.P.103 A POSSIBLE BLOCK OF VIP DEPENDENT NEURONAL SURVIVAL BY GP120 IN AIDS DEMENTIA COMPLEX

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Objective. Vasoactive intestinal peptide (VIP) has been shown to increase neuronal survival in mouse brain culture (Brenneman,D.E.,et al., PNAS, 83:1159, 1986), and its amino acid sequence shows some homology with a sequence of the gp120, called peptide-T. Pert et al. have reported that the VIP attenuated the neuronal cell death caused by gp120 in mouse hippocampal cultures (Brenneman,D.E., et al., Nature, 335:639, 1988). To determine the mechanism of VIP dependent neuronal survival, We studied the effects of VIP and/or peptide-T on rat brain cultures, and tried to clarify the pathogenesis of AIDS dementia complex.
Methods. Neural cells of hippocampus or cerebral cortex were obtained from 18-19 day old fetal rat. VIP and/or peptide-T was added to the culture on day 0 or 7. After 12 days, the cells were stained with specific antibodies to neuron or astrocyte, and the survival of neurons was measured.
Results. Addition of 0.1 nM VIP to brain culture produced a significant increase of neuronal survival. On the other hand, 100 nM peptide-T decreased the number of neurons. Peptide-T (100 nM) antagonized the function of VIP (0.1 nM). They did not affect the numbers and shapes of astrocytes, the major glial cells in culture.
Conclusion. We confirm that VIP is important for neuronal survival in cultures of hippocampus and cerebral cortex of rat. The results suggest that peptide-T binds to VIP receptors and antagonizes the VIP-dependent neuronal survival. Possibly, the gp120 of HIV also blocks VIP-dependent neuronal survival, and the resulting death of functional neurons causes the AIDS dementia.

W.C.P.104 THE EARLY STEPS OF T LYMPHOCYTE ACTIVATION ARE INHIBITED BY HIV-2, STLV-III, AND DIFFERENT STRAINS OF HIV-1.

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Objective. To show the suppressive effect of different HIV isolates on T lymphocyte proliferation and show the effect of HIV on lymphocyte activation.
Methods. Addition of inactivated HIV preparations to PHA stimulated cultures of lymphocytes.
Results. We and others have earlier reported a suppressive effect of a HIV lysate on lymphocyte proliferation. Here we have extended these studies using different beta-propriolactone inactivated preparations of STLV-III, HIV-2, and four different isolates of HIV-1, and showed that these all had a suppressive effect on T lymphocyte proliferation. Further investigation of a preparation of beta-propriolactone inactivated HTLV-IIIB showed that the addition of this preparation to cultures of peripheral blood lymphocyte severely decreased the proliferation induced by both CD3 (T cell receptor) and CD2 (alternative pathway) monoclonal antibodies as well as the responses induced by phorbol esters (PMA) or the ionophore A23187, whereas the responses to different combinations of PMA/A23187 were either suppressed or enhanced. Studies of purified CD4 and CD8 T cells showed that addition of HIV inhibited the response to PHA in both cell subsets. The inhibitory effect of inactivated HIV seem to be on the early steps of activation since pulsing with HIV for less than five minutes followed by washing was sufficient to inhibit the proliferation in response to PHA. However, if HIV was added to already stimulated cells no inhibitory effect was found. Flow cytometry analysis of PHA stimulated lymphocytes cultured with or without HIV showed that HIV decreased the development of granularity. Further, the expression of IL-2 receptors and transferrin receptors were decreased on both CD4 and CD8 cells. Cells expressing IL-2 receptors, especially the bright type, were lacking. This indicates a decrease in the number of receptors expressed. Preliminary experiments showed that the increase in free intracellular Ca2+ after stimulation with PHA was not inhibited by addition of HIV and that HIV alone did not cause an increase in free intracellular Ca2+. Studies are in progress to determine the effect of HIV on the intracellular pathways of protein kinase C.
Conclusion. The current studies indicate that HIV has a suppressive effect on both CD4 and CD8 T lymphocytes independent of infectivity and that this effect occurs in the early steps of activation and may be related to the protein kinase C pathway. The results with PMA/A23187 may propose that the inhibition was due to preactivation.

W.C.P.105 VIRAL ANTIGEN STIMULATION OF THE SECRETION OF HUMAN MONOKINES CAPABLE OF REGULATING HIV-1 EXPRESSION.

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Objective. We have previously described model systems for cytokine-induced regulation of HIV-1 in chronically infected T lymphocyte and promunocyte clones. Our current objective was to determine whether viral antigens can stimulate human macrophages to secrete monokines capable of upregulating HIV expression in infected cells.
Methods. Chronically HIV-1 infected T cells (ACH-2) or promonocytes (U1) were tested for inducibility with monokine-enriched supernatants obtained following stimulation of elutriated human monocytes with bacterial lipopolysaccharide or purified, inactivated viruses (viral antigens). Induction of HIV expression was monitored by reverse transcriptase activity.
Results. We found that certain herpes-group viruses, including cytomegalovirus and Epstein-Barr virus augment HIV expression by stimulating monokine production. Other herpes viruses, such as herpes simplex virus, varicella zoster virus, and human herpes virus-6 were unable to function in this capacity. When non-herpes group viruses were tested, we found that human adenovirus, hepatitis B virus, and vaccinia virus all failed to stimulate the production of monokines capable of activating HIV in the chronically infected cell lines. Furthermore, HIV-1 can augment its own expression by inducing the secretion of monokines which upregulate HIV expression in the infected cell lines. Monokine production mediated by viral antigens was not attributable to contaminating endotoxin.
Conclusion. These studies provide a model to determine whether other opportunistic infections may induce the expression of HIV by indirect mechanisms, such as the stimulation of cytokine production.

W.C.P.106 EFFICIENT HIV ISOLATION FROM HEALTHY SEROPOSITIVE INDIVIDUALS USING NORMAL MONOCYTE TARGETS: IMPLICATIONS FOR HIV CELL TROPISM

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Objective. To determine the efficiency of viral isolation and in vivo cellular source of HIV from peripheral blood mononuclear cells (PBMC) of healthy seropositive individuals.
Methods. PBMC from healthy, HIV-seropositive individuals were cocultured with either allogeneic PHA blasts or monocytes obtained by elutriation. Supernatants were assayed for reverse transcriptase activity and p24 antigen. Cells were seperated into highly purified lymphocyte and monocyte fractions by rosette and FACS techniques. Polymerase chain reaction (PCR) was used to amplify proviral DNA.
Results. When HIV isolation was attempted onto PHA blasts or monocyte targets we found: in 1/23 (4%) patients, HIV could only be isolated by PBMC coculture with PHA blasts; in 7/23 (30%) patients, virus could only be isolated when PBMC were cocultured with monocytes and in 5/23 (22%) patients virus could be isolated using both systems. Leukopheresis was performed on five of the seven patients whose viral isolation was accomplished only on monocytes. PBMC from these individuals were fractionated by rosette and FACS techniques (99% purity) and PCR was performed on each fraction. Despite the fact that virus could only be isolated onto monocytes, 4 out of 5 individuals had proviral DNA detectable only in their T cells, and in the other individual in both monocyte and lymphocyte fractions.
Conclusion. In healthy seropositive individuals, HIV could be isolated with greater than 50% efficiency using monocytes as targets as compred to 26% efficiency when using PHA blast targets. In 4 out of 5 patients from whom virus could only be isolated onto monocytes viral DNA could be detected in vivo only in T cells. Thus, in vitro monocyte tropism does not necessarily indicate in vivo monocyte infection with HIV.

W.C.P.107 TNF-α CAN INDUCE THE EXPRESSION OF HIV FROM CHRONICALLY INFECTED CELLS IN AN AUTOCRINE FASHION.

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Objective. To investigate the hypothesis that tumor necrosis factor alpha (TNF-α) can induce the expression of HIV in chronically infected cells in an autocrine fashion.
Methods. The T lymphocytic (ACH-2) and promonocytic (U1) cell lines are chronically infected with HIV-1, and the constitutive low level expression of HIV can be potently induced (10-20 fold increase of reverse transcriptase) by treatment with phorbol esters (PMA) or TNF-α. We therefore investigated the possibility that ACH-2 and U1 cells could synthesize and secrete TNF-α (as assessed by a specific Biokine kit) and could express TNF-α molecules on the plasma membrane (by immunofluorescent stain and FACS analysis). We also studied the expression of TNF receptors (R) on ACH-2 and U1 cells and on their parental uninfected cell lines in unstimulated and PMA stimulated conditions.
Results. TNF-α is not detectable in supernatants of unstimulated ACH-2 and U1 cells, but significant amounts (150 pg/ml) of TNF-α are present in the supernatants of both cell lines after 24 to 48 h stimulation with PMA 10^{-7} M, in parallel with the expression of HIV. Furthermore, TNF-α is present on the plasma membrane of ACH-2 cells after treatment with PMA. Of interest, PMA stimulation of ACH-2 and U1 cells resulted in the upregulation of TNFR (2-5 fold) whereas the levels of TNFR were found unchanged or downmodulated in the uninfected parental cell lines that had been exposed to PMA.
Conclusions. TNF-α can act as an autocrine cytokine capable of inducing the upregulation of viral expression in cells of lymphocytic and promonocytic origin that chronically carry integrated HIV provirus.

W.C.P.108 QUALITATIVE DIFFERENCES IN HIV-1 AND HIV-2 INFECTIONS OF A PANEL OF $CD4^+$ T CELL CLONES

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Objective. To investigate the patterns of HIV-1 and HIV-2 infection in vitro in a panel of T cell clones expressing comparable amounts of CD4.
Methods. A panel of T cell clones were obtained from the CEM-derived A301 cell line. Four clones expressing comparable levels of CD4 were selected from an original panel of 42 because of their differences in response to HIV-1 and HIV-2, as measured by reverse transcriptase activity (RT) released in the culture supernatant and by the kinetics and extent of cytopathic effect (CPE). Cell extracts were made from the four clones and tested for the presence of transcription factors by gel mobility shift assays for NF-kB and Sp-1.
Results. Two out of four clones were "fast/high" (peak RT activity 5000-9000 cpm/μl observed between day 4 and 7 post-infection) and two were" slow/low" (peak RT below 2000 cpm/μl, observed between day 10 and 18 post-infection) in terms of patterns of infection with both HIV-1 and HIV-2. Phenotypic analysis of multiple surface markers did not show any evident correlation with the infection patterns described. HIV-1 and HIV-2 showed similar efficiency of infection in terms of RT and downmodulation of the CD4 molecule. The only difference between HIV-1 and HIV-2 was that HIV-2 infection was frequently associated with a second burst of viral replication occurring in the absence of CPE in cells that had already lost the CD4 molecule from the plasma membrane. When cell extracts from the four clones were examined, no differences were noted in terms of binding to Sp-1 specific sequences. On the other hand, only 1 out of 2 "fast/high" responder clones showed measurable binding to NF-kB.
Conclusion. Significant biological differences were observed among T cell clones expressing comparable levels of CD4 molecules in response to HIV-1 and HIV-2 infection. Different constitutive levels of NK-kB transcription factor could partially explain these results.

W.C.P.109 GM-CSF INHIBITION OF SUSCEPTIBILITY OF M-CSF TREATED HUMAN MONOCYTES TO IN VITRO INFECTION WITH HIV.

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Objective. To determine the effects of granulocyte-macrophage colony stimulating factor (GM-CSF) on the susceptibility of M-CSF treated monocyte cultures to HIV infection.
Methods. Peripheral blood monocytes (PBM) were purified by elutriation (95% purity), resuspended in medium containing 1000 U/ml of M-CSF in the absence or presence of 10 U/ml GM-CSF. After 12-14 days of culture, cells were challenged in vitro with different strains of HIV and the cultures were monitored for 30-90 days for the production of HIV p24. The ability of monocytes to proliferate and their phenotype were also assessed.
Results. Monocyte cultures maintained in the presence of M-CSF showed a productive infection with different strains of HIV. The presence in culture of GM-CSF before HIV infection resulted in the complete block of HIV expression with all the strains tested thus far. This inhibitory effect was not observed if GM-CSF was added after the infection with HIV. GM-CSF caused a dramatic increase of ^{3}H-thymidine uptake by monocytes when compared to untreated (100 fold increase) or M-CSF treated cells. The presence of GM-CSF did not affect the expression of the CD4 molecule on the plasma membrane of cultured monocytes.
Conclusion. GM-CSF is a potent inhibitor of the susceptibility of M-CSF treated monocytes cultures to HIV infection. This effect is inversely correlated with the ability of GM-CSF to stimulate monocyte proliferation. Further, the inhibitory effect of GM-CSF is not mediated through a downregulation of the CD4 molecule on the monocyte membrane.

W.C.P.110 THYMUS INVOLVEMENT IN AIDS PATHOGENESIS: IN VITRO STUDIES OF THYMUS INFECTION.

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Objective. In vivo observations suggest a thymus involvement in AIDS pathogenesis, but whether thymocytes constitute a direct target of HIV infection is under debate. To study this aspect, we infected total and fractionated thymus cell populations in vitro with HIV-1, strain HTLV-IIIB.
Methods. Kinetics of infection were evaluated by assessing R.T.activity and viral antigen expression. Viral genome in the infected cells was detected by Southern blot and dot blot techniques, using pBH10 probe. Viral transactivation activity was evaluated by CAT assay, in HIV-1 infected cells, 72 hrs after transfection with pl5CAT.
Results. Normal thymic lymphocytes and the immature CD1+CD4+CD8+ enriched fraction, retrieved by panning, were permissive to HIV-1 infection and, specifically, immature CD1+ cells showed a marked susceptibility to viral infection and replication. When total thymic lymphocytes or CD1+ cells were infected in parallel with autologous PBL or peripheral CD4+ lymphocytes, respectively, thymic cells were more susceptible to viral replication and transactivation.
Conclusions. Thymic CD4+CD8+ cells, which most likely represent the precursors of mature peripheral CD4+ and CD8+ lymphocytes, are very susceptible targets for HIV-1 infection. The implications of this finding may be relevant in the pathogenesis of AIDS.

W.C.P.111 INHIBITION OF HIV-1 REPLICATION WITH REVERSE TRANSCRIPTASE INHIBITING (RTI) ANTIBODY IN LYMPHOCYTE CULTURES

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Objective: Previous studies showed protective effect of RTI antibody in HIV-infected individuals, thus the effect of purified RTI antibody on HIV-1 replication in lymphocyte culture was determined.
Method: RTI antibody was purified from high titered human serum by affinity chromatography to sepharose 4B-200 coupled with purified RT protein. This purified RT antibody or high titered RTI serum was added to 6 x 10^6 donor PHA-stimulated peripheral blood lymphocytes (PBL) infected with HTLV-III b (1.5 x 10^5 virus particles). HIV replication was monitored by a P24 antigen capture ELISA assay (Abbott) of the culture supernatant. Donor human serum and borate-buffered saline served as controls.
Results: Addition of purified RTI antibody or high titered RTI serum to HIV-infected PBL cultures showed decreased virus replication compared to controls in 2 separate experiments.

Mean P24 Antigen in Culture Supernatant (ng/ml)

Days in Culture	High Titer RTI Serum	Purified RTI Ab	Borate-Buffered Saline	Donor Serum
9d	0	78.5	242.5	248.5
20d	0	308.5	418.5	>500.0

Conclusion: This study shows that RTI antibody to HIV inhibits virus replication in lymphocyte cultures. This RTI antibody therefore may play a role in preventing the progression of disease in HIV-infected individuals.

W.C.P.112 VIROLOGIC MARKERS OF CENTRAL NERVOUS SYSTEM HIV INFECTION IN HIV SEROPOSITIVE HOMOSEXUAL MEN WITHOUT NEUROLOGICAL SYMPTOMS.

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Objective. To determine the frequency of central nervous system (CNS) HIV infection in asymptomatic HIV seropositive homosexually active men.
Methods. Forty-four CDC class II and III patients without overt neurologic disease had peripheral blood mononuclear cells (PBMC), cell-free plasma, and cerebrospinal fluid (CSF) submitted for HIV culture. Serum and CSF HIV antibody were measured by enzyme-immunosorbent assay (EIA) (Genetic Systems) and confirmed by immunoblot; HIV p24 antigen (Ag) was measured by EIA antigen capture (Abbott).
Results. HIV was cultured from 40/44 (90%) PBMC, 7/44 (16%) plasma, and 24/44 (54%) CSF specimens after ≤28 days of culture. HIV was cultured from the CSF of 5/7 with plasma viremia (HIV+) versus 19/37 plasma HIV- patients (p=NS). HIV p24 Ag was detected at ≥30 pg/ml in 7/40 (18%) serum and 0/40 CSF specimens. The mean calculated ratio of serum/CSF HIV EIA antibody was lower for CSF HIV+ (2.58, CI 2.05-3.11) versus CSF HIV- (4.81,CI 3.15-6.47) specimens (p=0.013). Using a serum/CSF antibody ratio of 5.5, intrathecal HIV-specific antibody synthesis was found in 21/21 CSF HIV+ and 13/19 (68%) CSF HIV- specimens (p=0.014).
Conclusions. HIV infection of the CNS occurs relatively early after HIV infection, and was present in 37/44 (84%) CDC class II and III homosexual men without neurological symptoms. Plasma viremia was highly specific (90%) but not sensitive (21%) for CSF HIV isolation. CSF HIV p24 Ag also was insensitive for detecting CSF infection. The inability to isolate HIV from the CSF in 13/34 (38%) patients with increased intrathecal HIV antibody synthesis suggests either compartimentalized or restricted HIV replication in the CNS. Prospective studies are required to determine if this early detection of CNS HIV infection will predict progression to symptomatic neurologic disease.

W.C.P.113

IN VITRO INTERACTIONS OF HIV WITH NEURONS, ASTROCYTES AND MICROGLIAL CELLS

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Cultures containing human embryonic neurons, astrocytes and microglial cells, (as characterized by immunostaining) were established from spinal cord of 10-12 week-old embryos. Cultures enriched in microglial cells (60 % KiM+, non specific esterase + cells) were subsequently obtained. After infection with HIV1 (5 X 10^4 cpm of virus, 4 different isolates of HIV1, including one from CSF, 2 differents isolates of HIV2), neurons and astrocytes were morphologically unaltered and no evidence of viral replication was obtained. Cultured microglial cells replicate poorly HIV1 or 2. When 10^2 HIV1-infected U937 or HL60 cells (two cell lines of monocytes-macrophage lineage) were cocultured with uninfected spinal cord cultures in 35 mm petri dishes astrocytic lesions were induced which were not observed after cocultures of neurons and astrocytes with uninfected U937 or HL60 cells, infected lymphocytes, or supernatants of infected macrophages. An adherence of infected macrophages to astrocytes is required to induce lesions.

In conclusion : (1) in vitro, embryonnic human neurons and astrocytes are resistent to HIV1 or HIV2 infection (2) HIV infected cells from monocyte macrophage lineage can induce indirect morphological lesions on cultured astrocytes.

W.C.P.114 RAISED LEVELS OF CIRCULATING TUMOUR NECROSIS FACTOR-α/ CACHECTIN IN PATIENTS WITH ACQUIRED IMMUNODEFICIENCY SYNDROME: PATHOGENETIC IMPLICATIONS

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Objective. Rapid ageing and wasting are characteristic features of acquired immunodeficiency syndrome. The mechanisms underlying the weight loss are not well known. Tumour necrosis factor-α/cachectin (TNF) is a mononuclear phagocyte-derived factor implicated in the pathogenesis of cachexia in chronically infected experimental animals.
Methods. TNF was measured by a specific radioimmunoassay in 53 serum samples from 39 subjects with human immunodeficiency virus infection.
Results. TNF levels were elevated in all 9 subjects with AIDS and in 5/9 with AIDS-related complex. In contrast none of the 8 asymptomatic subjects and only 2/13 in the lymphadenopathy syndrome group had elevated levels. In the follow-up samples from patients with AIDS and AIDS-related complex, marked fluctuations in TNF levels were noted, but initially elevated levels remained elevated.
Conclusion. Patients with AIDS have elevated levels of circulating TNF. Since TNF suppresses lipoprotein lipase in vitro the present results may be relevant with respect to the pathogenesis of cachexia in AIDS.

W.C.P.115 ANAEMIA AND LYMPHOPENIA IN HIV INFECTION: RELATION TO SERUM LEVELS OF TUMOUR NECROSIS FACTOR-α

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Objective. Haematological abnormalities are common findings in patients with AIDS and AIDS-related complex. However, the underlying causes of the abnormalities are not well understood.
Methods. TNF levels in serum were measured by a double antibody radioimmunoassay in 37 HIV-seropositive subjects.
Results. Significant inverse relationships were found between serum TNF levels and haemoglobin values ($r = -0.83$, $p < 0.001$), as well as between TNF levels and peripheral erythrocyte ($r = -0.78$, $p < 0.001$) and lymphocyte ($r = -0.66$, $p < 0.001$) counts.
Conclusion. Since TNF suppresses the colony formation of erythroid and myeloid progenitor cells in bone marrow cultures and causes anaemia when administered to humans and experimental animals, the demonstrated relationship between TNF and cytopenia in HIV infection may be causal.

W.C.P.116 ~~REPLICATION OF HIV-1 GAG AND POL INSERTION AND~~ DELETION MUTANTS IN HUMAN CELL LINES

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OBJECTIVE. Development of retroviral vectors for human gene transfer. HIV-1 gene expression and virus production in established T4 lymphocyte lines containing incomplete provirus.
METHODS. We have constructed various HIV-1 mutants, twelve containing insertion linkers and twelve with deletions in the gag or pol regions giving rise to a frameshift. All constructs were derived from pU, a plasmid containing the complete HIV-1 proviral genome, a hygromycin B gene for selection and the 3'LTR with deletions in the -138 to -40 region. Cells were analysed using immunofluorescence assay (IFA), reverse transcriptase activity (RT), Southern and Western Blots.
RESULTS. All lymphocyte lines showed more than 60% cells positive when tested, using AIDS patient serum, one, two and five months after transfection. Supernatants were RT negative. When analysed by Western blotting the presence of p17, p24, p51, p55 and gp160 proteins was revealled in two cell lines, pU-H9 and a gag deletion mutant. Viral preparations from supernatants are RT negative even when separated by sucrose gradient.
CONCLUSION. The transfected plasmids are stably transfected and express viral proteins. All cell lines are RT negative but at present we do not know if the 3'LTR deletion is responsible. Two cell lines, that release particles into the supernatant, are WB positive for the pol protein.

W.C.P.117 IMMUNOHISTOCHEMICAL ANALYSIS OF GERMINAL CENTERS (GC) IN RECTAL BIOPSIES OF PATIENTS WITH HIV-1 INFECTION.

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Objective: To investigate the role of the GC-s of the rectum in the pathogenesis of HIV we studied 33 rectal biopsies from patients with HIV-1 infection.
Methods: Detailed histological and immunohistological analyses of the rectal biopsies were performed.
Results: Immunohistochemical reactions revealed gag proteins within the GC-s. The network of follicular dendritic cells was often disrupted. An important characteristic was the decreased numbers of CD4 lymphocytes. A similar decrease was observed in the numbers of Leu7 positive cells. There were increased numbers of CD8 lymphocytes.
Conclusion: Our findings indicate that the GC-s are important reservoirs of HIV. CD4 lymphocytes and macrophages circulating through the the GC may become infected with HIV there. We suggest that HIV can persist in the GC of the rectal mucosa for long periods or can be transported to the regional lymph nodes via the lymphatic vessels. The lymphatics then, quite possible serve as thoroughfares for HIV-1.

W.C.P.118 EVIDENCE FOR INTRAFOLLICULAR VIRUSREPLICATION IN GERMINAL CENTERS OF LYMPH NODES OF CATS INFECTED WITH FeLV: AN ULTRASTRUCTURAL EVALUATION.

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Objective: Many cats infected with the feline leukemia virus develop follicular hyperplasia, severe immunodeficiency and die of opportunistic infections, very similar to human infection with HIV. Therefore we used the feline model to investigate the cellular mechanisms of the pathomorphology and pathogenesis.
Methods: Ultrathin sections of 33 lymph nodes among 5 cats infected and 1 control animal were taken 5 or 9 months after inoculation, according to standard methods.
Results: The ultrastructural changes of the very hyperplastic follicles revealed a high concentration of virus particles in the vicinity of follicular dendritic cells (FDC) as shown in HIV-Infection. FeLV was found to replicate in different cell types: lymphocytes, plasma cells, macrophages and FDC.
Conclusion: The results suggest that FDC, as antigen trapping cells, capture FeLV. Virions held on FDC infect different target cells. Quite possible that a genomic shift may occur at the time of transmission of the virus to a novel target, therefore, GC may be one of the anatomic sites where variants with altered cell tropism and pathogenicity may be generated.

W.C.P.119 ESTABLISHMENT OF A CELL LINE CHRONICALLY INFECTED BUT NOT PRODUCING HIV-1 FROM AN ASYMPTOMATIC SEROPOSITIVE SUBJECT.

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Objective. To study a) the latency and the chronicity of HIV-1 infection and b) the control of HIV-1 gene expression.
Methods. PBL from an asymptomatic HIV-1 seropositive and HTLV-1 seronegative (ELISA, W.B.) subject were cloned by limiting dilution in presence of IL-2. The past medical history of the subject was characterized by recessive LAS (3 years ago) with virus isolation from lymphnodes. Further attempts, even at time of cloning, to reisolate virus were negative, as determined by antigen capture and reverse trascriptase assays. Cell subset characterization was made using monoclonal antibodies anti-T and -B lymphocytes, monocytes and macrophages membrane antigens.
Results. Two cell clones (URS1, URS4) carrying but not expressing the HIV-1 genome were isolated. The two clones have been maintained in culture for >5 months. Both are negative for extracellular virus production. Clone URS4 shows giant cells and an absolute requirement for exogenous IL-2. Cytofluorymetric analysis indicated that both clones are not terminally differentiated. PCR-DNA analysis, using SK01, SK02 HIV-1 gag primers followed by hybridization using oligonucleotide probes specific for gag region, was positive. Preliminary PCR-RNA analysis indicated the absence of active transcription of HIV-1 genome.
Conclusion. Cells with an integrated but not expressed HIV-1 genome are present in an asymptomatic seropositive individual. Further biological, immunological and molecular characterization of these clones is in progress.

W.C.P.120 INCREASED PRODUCTION OF ARACHIDONIC ACID METABOLITES (PROSTAGLANDIN E_2 AND THROMBOXANE B_2)BY MONOCYTES FROM DRUG ADDICTS (IVDA) INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS.

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We have analyzed the production of PGE$_2$ by monocytes from 19 IVDA with different clinical manifestations of HIV infection and from 16 healthy normal individuals or HIV-negative IVDA. The quantification of PGE$_2$ and TxB$_2$ from culture supernatants of purified monocytes was performed by high performance liquid chromatography and radioimmunoassay. The results showed that in the AIDS group 5 of 11 patients showed PGE$_2$ levels (736,419,208,372,1863 pg/ml) higher than the mean + 2 SD values from healthy controls (73 ± 21 pg/ml). This group with increased production of PGE$_2$ included: 3 patients with AIDS and opportunistic infections (OI), 1 patient with AIDS without active OI and 1 patient with AIDS-subgroup A. We also studied 8 patients with different clinical expressions of disease without AIDS. One of 8 patients showed PGE$_2$ levels (567 pg/ml) higher than the mean + 2 SD values from controls. This patient was asymptomatic but had low CD4 counts. In all cases synthesis and secretion of PGE$_2$ was inhibited by addition of indomethacin. Similar results were obtained regarding synthesis and release of TxB$_2$. We also tested the effect of concentrations of PGE$_2$ comparable to those released by monocytes from AIDS patients on the production of interleukin 2 (IL-2) by normal PHA-stimulated PBMC. The higher concentrations of PGE$_2$ produced by monocytes from AIDS patients induced a marked suppresion of IL-2 production. HIV infection may alter the synthesis and secretion of PGE$_2$ in monocytes which may lead to the immune dysfunction of AIDS.

W.C.P.121 Ras oncogene co-transfection induces transactivation of the HIV-LTR through NF-KB binding site

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Objective. To ascertain whether p21ras (the product of ras protooncogenes induced during T cell activation and a G protein with known transductionnal properties) can induce signals leading to HIV-LTR transactivation.
Methods. Human cells of two different lineages, fibroblasts (MRC-5) and astrocytes (U373MG astrocytoma cell line) were transiently transfected with vectors permitting the expression of the CAT reporter gene under the control of either the whole LTR of HIV-1 (LAV-1-BRU) or various subcloned fragments of the LTR. A vector permitting the expression of c-Ha-ras coding for a p21 protein with gly-val12 mutation was co-transfected with LTR-CAT vectors.
Results. Co-transfection of c-Ha-ras consistently resulted in a clear (up to 22 fold) transactivation of the whole HIV-LTR. We have performed further co-transfection of an HIV-1 infectious provirus clone (pNL-43) in this system, and shown that transcription of the provirus, including tat-3 protein function induction, was induced by c-Ha-ras transfection. Deletion of the LTR TAR region did not decrease ras induced transactivation. The LTR enhancer was shown to be a main responsive element in this system, since a 96 bp fragment containing the enhancer, or a synthetic oligonucleotide with the exact sequence of the twice repeated NF-KB binding site of the LAV-1-BRU enhancer cloned upstream a TK promoter, were as responsive to ras than the whole LTR.
Conclusion. Our observations are compatible with the hypothesis that endogenous p21 ras, induced during cell activation, participates in HIV-genome transcription through transactivation of the HIV enhancer.

W.C.P.122 CYTOKINE MODULATION OF HIV-REPRODUCTION IN MONOCYTES/MACROPHAGES

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Objective: Reproduction of different primary HIV-isolates (HIV-1/-2) at a given multiplicity of infection (m.o.i.) in adherent monocytes/macrophages. Modulation of HIV-1 replication in monocytes/macrophages by cytokines and phorbolester.
Results: All HIV-wildtypes (n=49) isolated from patients by cocultivation with peripheral blood lymphocytes (PBL) lead in our investigations to an infection in monocytes/macrophages. There were graduations regarding the productivity.of replication, between low level and productive HIV-infection. The role of interfering defective particle will be discussed. Cytokines effected the HIV-replication in monocytes/macrophages in vitro. Compared to control cells there was a stronger HIV-reproduction with rM-CSF and rGM-CSF especially if the cytokines were applied before HIV-infection. Also rIL-3 enhanced the HIV-replication in a positiv manner. Treatment of monocytes/macrophages with phorbolester (TPA) lead to time-dependent supression or activation of HIV-1 replication.
Conclusion: Low level HIV-replication in monocytes/macrophages can be changed to a more productive HIV-infection by different cytokines. Possible meanings about the in vivo situation will be discussed.

W.C.P.123 HIV-ASSOCIATED CHANGES IN TRANSMMEBRANE SIGNAL TRANSDUCTION IN MACROPHAGES

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Objective. Macrophages play an important role in the pathogenesis of AIDS. However, the mechanisms of HIV-induced dysfunctions in macrophages are not well understood. We hypothesize that the macrophage dysfunctions in HIV infection are a result of a deficit in transmembrane signal transduction. Furthermore, adhesion molecules expressed on macrophages may play an important role in the transmision of HIV infection to CD4+ T cells as well as in inducing transmembrane signalling. The objective is to examine the changes in plasma membrane potentials and in intracellular free calcium ($[Ca^{++}]_i$) in uninfected macrophages (U937) and HIV-infected (U937/HIV) macrophages.
Methods. Cells were cultured in the presence or absence of monoclonal antibodies against adhesion molecules, lymphocyte-associated antigen -1 and 3 (LFA-1, LFA-3) and intercellular adhesion molecule 1 (ICAM-1). Plasma membrane potentials were measured with DIOC5 dye and $[Ca^{++}]_i$ with Indo-1 dye using FACS.
Results. The membrane potentials of U937 and U937/HIV cells were 120 and 39 mean channe numbers respectively. Anti-LFA-1 and anti-LFA-3 induced hyperpolarization of both U937 and U937/HIV cells. In contrast, anti-ICAM-1 decreased (depolarized) membrane potentials of U937 (120 to 40 mean channel numbers), but increased the membrane potentials of U937/HIV cells (39 to 60 mean channel numbers). The basal $[Ca^{++}]_i$ levels in U937/HIV cells were elevated (105 nM) as compared to U937 cells (90 nM). Anti-LFA-1 induced less increase in $[Ca^{++}]_i$ levels in U937/HIV (120 nM) as compared to U937 cells (180 nM).
Conclusion. This study demonstrates a defect in the transmembrane signal transduction in macrophages infected with HIV, which could be responsible for macrophage dysfunction in AIDS. (Supported by USPHS Grant AI-26456).

W.C.P.124 PREVALENCE AND SIGNIFICANCE OF ANTIBODIES TO NEF (p27) IN HIV-1 INFECTION.

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Objective. To measure and analyse the humoral immune response to nef (p27) in serial samples from HIV-1 infected subjects.
Methods. Purified recombinant nef protein derived from E.coli (Transgene,Strasbourg) was used as the antigen in a direct, anti-globulin ELISA assay. Specificity of the anti-nef response was confirmed with a large battery of HIV-negative sera, and by immunoblotting on HIV and on nef protein. Sera were obtained from serial bleeds over a six year period from homosexual men and haemophiliac patients, and were further assayed for antibody to HIV env and gag proteins, and for HIV p24 antigen.
Results. Antibodies to nef appear simultaneously with antibodies to HIV structural proteins at sero-conversion in 65% of cases. Only 1/65 sero-converters expressed detectable anti-nef antibodies prior to sero-conversion. This subject had anti-nef present 9 month prior to full sero-conversion. High initial titres of anti-nef antibody after sero-conversion correlated with lack of progression to AIDS.
Conclusion. The expression of the nef protein prior to sero-conversion occurs, but is a rare phenomenon (circa 1%). The titre of anti-nef does correlate with protection from disease in haemophiliacs, suggesting that this negative regulatory protein may slow viral replication in vivo.

W.C.P.125 HUMAN HERPESVIRUS 6 (HHV-6) AS A POTENTIAL COFACTOR IN AIDS

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Objective: To investigate the interactions between HHV-6 and HIV-1 in vitro and the potential role of HHV-6 in the pathogenesis and/or disease progression in AIDS.
Methods: Human peripheral blood mononuclear cells (PBMC) or enriched adherent cells and established cell lines of T-lymphocytic or monocytic origin were simultaneously infected in vitro with HHV-6 and HIV-1. Electron microscopy, immunohistochemical analyses and dual-probe in situ hybridization were employed to demonstrate dual infection at the single cell level.
Results: HHV-6 and HIV-1 can productively coinfect human CD4+ T lymphocytes of both normal and neoplastic origin, resulting in accelerated viral antigen expression and cellular death. Cells of the mononuclear phagocytic system can also be coinfected by the two viruses. HHV-6 is a potent transactivator of HIV-1. HHV-6-infected cells can be visualized in AIDS patients blood.
Conclusion: These in vitro observations suggest that HHV-6 is a particularly suitable candidate as a cofactor in AIDS. Studies are underway to detect dually infected cells in PBMC from HIV-1-infected individuals.

W.C.P.126 MISE EN EVIDENCE DE SEQUENCES VIRALES HIV CHEZ DES SUJETS MARTINIQUAIS A WESTERN BLOT INDETERMINES

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Objectif. Le taux de séropositivité HIV est élevé en Martinique, intermédiaire entre celui observé en Europe et en Afrique, avec un fort taux de de western blot indéterminés (0,16 %). La transmission y est essentiellement hétérosexuelle (64 %). La PCR a permis de mettre en évidence des séquences virales HIV chez des homosexuels appartenant à des cohortes américaines, jusqu'à 36 mois avant la séroconversion, c'est pourquoi nous avons recherché la présence de séquences virales chez certains sujets contacts séronégatifs ou à western blot indéterminé.
Méthodes. Les amplifications géniques (PCR) ont été réalisées suivant la technique de Saiki et al. avec 3 couples d'oligonucléotides situés dans LTR gat et tat. Les produits d'amplification ont été hybridés en milieu liquide avec des sondes oligo internes marquées au p32 puis migrés sur gel de polyacrylamide.
Résultats. 14 séropositifs ont été testés pour valider la technique. 26 asymptomatiques et 1 Sida à W.B. indéterminé, dont la moyenne de suivi était de 13,5 mois ont été testés. 20 étaient positifs avec les 3 couples, 6 étaient positifs avec l'un des couples et 1 négatif. 8 partenaires séronégatifs de sujets infectés par le virus ont également été testés, 5 d'entre eux étaient positifs.
Conclusion. La PCR a permis de mettre en évidence des séquences virales HIV1 chez un certain nombre de sujets à risque séronégatifs ou présentant un western blot indéterminé. L'utilisation du séquençage sur produits d'amplification permettra la mise en évidence d'éventuelles particularités de ces génomes viraux.

W.C.P.127

HIV ENCEPHALITIS IN ADULTS AND CHILDREN

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Objectives : To study Human Immunodeficiency Virus (HIV) encephalitis in adult and children by identifying the HIV infected cells and determining which additional pathogens are present.
Methods : We have extensively screened frozen CNS tissue of 85 adult and 6 children AIDS patients for the presence of pathogens using a combination of immunohistological staining and in situ hybridization.
Results : A first striking difference between adults and children infected with HIV was the detection of a massive and multifocal HIV encephalitis in 24/85 adult patients, but a failure to detect HIV antigens in 4/6 children who either died with severe and typical AIDS related encephalopathy. 2/6 children with immunologically detectable HIV encephalitis had less severe neurological symptoms. For adults and children, both single and double immunohistological procedures showed that all infected cells had a macrophage/microglial cell phenotype, without any HIV antigen expression in astrocytes, neurons, or endothelial cells. The second striking difference between adult and children encephalopathies was the very frequent association with other CNS pathogens in adult, and their absence in infants with severe encephalopathies.
Conclusion : In adults, dementia is associated with multifocal and diffuse HIV replication, but the presence of severe neurological symptoms in infants without evidence of HIV replication in brain macrophages suggests that persistent, productive viral infection is not required for the pathogenesis of HIV encephalopathy. Opportunistic associated pathogens might play an important role for triggering HIV replication in adult brains.

W.C.P.128

BLOCKING OF INFECTIVITY AND IMMUNOSUPPRESSION BY AN HIV ENVELOPE-DERIVED SYNTHETIC PEPTIDE

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Objective. We have identified an epitope in the external envelope glycoprotein of HIV-1 that is likely to be involved in the binding of this molecule to its cellular receptor, CD4. Independent studies have confirmed the importance of this region in the gp120-CD4 interaction and, in addition, this region may contain an immunodominant T cell epitope.
Methods. An 18 amino acid synthetic peptide was synthesized and purified and its ability to block syncytial formation as well as be recognized by antibodies and T cells from HIV-infected individuals was determined.
Results. The peptide would inhibit 100% of syncytial formation at a concentration of 100 μg/ml. Only 2/18 asymptomatic HIV carriers had detectable levels of anti-peptide antibodies that were significantly different from normal, uninfected control subjects. The peptide did not induce proliferative responses in peripheral mononuclear cells from the HIV-seropositive subjects in either the presence or absence of IL2. Tetanus toxoid and CMV were used as positive controls in these studies. The peptide was shown to suppress recall antigen (CMV and tetanus toxoid) responses, but not PHA-induce proliferation.
Conclusion. The apparent immunosuppressive properties of this peptide indicate a potential pathogenic role of the HIV envelope in the pathogenesis of infection.

W.C.P.129

IMMUNE COFACTORS FOR HIV INFECTION IN MALE HOMOSEXUALS (MHS)

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Objective. To determine the role of immune cofactors in HIV infection.
Methods. We have studied several immune parameters and functions in a cohort of 1000 male homosexuals (MHS) in Israel, 144 of whom were followed for over 4 years and 18 seroconverted during that period.
Results. Elevated levels of serum acid labile α-Interferon (αIFN), antibodies to nuclear antigens (Histones, SS-A, SS-B and Cardiolipin) antibodies to EBV, CMV and Chlamydia trachomatis, elevated cellular lymphocytotoxicity, with normal serum levels of tumor necrosis factor (TNFα), extremely high inducibility of IFN-γ gene expression upon mitogen stimulation and lower levels of CD4 T cells were all found in a large proportion of HIV seronegative individuals and preceded HIV infection. Further derangements of several of these immune parameters were observed following sero-conversion and at later stages of HIV infection.
Conclusion. Our studies suggest that immune dysregulation is common among MHS, precedes HIV infection and probably accounts for their increased susceptibility to HIV infection and for the development of AIDS.

W.C.P.130

HYPOTHESIS: AIDS IS AN AUTOIMMUNE DISEASE CAUSED BY HIV PLUS ALLOGENEIC CELLS

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We suggest that the following facts are relevant to AIDS pathogenesis. Firstly, there is complementarity of gp120 and the CD4 protein, and there is also complementarity of CD4 and class II MHC. Hence gp120 can be regarded as MHC-mimicking, and the anti-viral immune response may include an anti-(class II internal image) component. Secondly, immunization with foreign lymphocytes leads to the production of MHC-mimicking (i.e. MHC-image) antibodies. Since infection with HIV usually occurs coincidentally with exposure to allogeneic lymphocytes, infected individuals are likely to make MHC-mimicking antibodies. These facts lead to the idea that AIDS is an autoimmune disease, that is triggered by a combination of HIV and allogeneic cells, rather than by HIV alone. These two stimuli produce MHC-image and anti-(MHC image) immune responses that seem likely to synergize with each other to destabilize the system. We have found anti-collagen antibodies in the sera of many homosexuals, both HIV^- and HIV^+, and in the sera of 16/16 homosexual AIDS patients. These antibodies are also found in alloimmune sera, graft versus host disease and lupus. Our results are consistent with AIDS being an autoimmune disease that is provoked by a combination of allogeneic cells and HIV. The theory leads to further experimentally testable predictions, and ideas concerning possible approaches for prevention of the disease. It suggests that vaccines consisting of gp120, gp160 and anti-CD4 may cause AIDS in individuals belonging to high risk groups.

W.C.P.131

QUANTITATION AND MODULATION OF HIV P24 ANTIGEN CONTENT IN INTESTINAL MUCOSA.

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Objective: To quantitate HIV expression in the intestine and to determine if viral protein production can be modulated in vitro.
Methods. Mucosal biopsies were assayed directly, or incubated in vitro. HIV content in homogenates was determined by p24 antigen capture ELISA (Coulter). In vitro incubations were performed in media containing varying amounts of hydrocortisone (5-500ug/ml) or prostaglandin E2 (0-50uM).
Results. HIV p24 was found in 44/85 serum specimens, 18/34 biopsies from jejunum, 2/4 from ileum, 9/15 from right colon, 6/10 from left colon, and 70/104 from rectum. In several cases, p24 was detected in tissue but not in serum. When calculated by sample weight, tissue p24 was more than 100 times higher than serum concentrations. As compared to control medium (5ug/ml cortisol), either 50 ug/ml and 500 ug/ml cortisol significantly depressed p24 content after 48 hours in tissue and medium in both AIDS and ARC. In contrast, 5uM PGE2 increased p24 content.

Cortisol (N=10)			PGE2 (N=7)			
5ug/ml	50ug/ml	500ug/ml	0uM	5uM	10uM	50uM
890±233	401±98*	495±92**	570±379	947±519*	308±108	252±127

*p<0.05, **p<0.02; Mean±SEM of p24 pg/mg protein

Conclusions. HIV p24 expression occurs throughout the GI tract. P24 content is higher in tissue than serum, implying intracellular localization in the gut. Mucosal HIV production can be modulated in vitro.

W.C.P.132

CREATION OF A NEW TARGET CELL TYPE FOR HIV-1

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Objective: To investigate the dichotomy between productive and nonproductive HIV-1 infection by construction of a hybrid target cell type between T cell and glial cell lines, and by analysis of its susceptibility to HIV-1.

Methods: A ouabain resistant, HAT sensitive clone of the lymphoblastic T cell leukemia line, CEM, was selected and fused to U251MG, a ouabain sensitive, HAT resistant astroglial cell line with polyethylene glycol. Fusion products were selected in HAT-ouabain, which kills the parental cells.

Results: BEN, a hybrid derived from this fusion, was selected for further analysis. Like U251MG, BEN has glial morphology, growing as an adherent cell with cytoplasmic processes. Like CEM, and unlike U251MG, it displays high amounts of surface membrane CD4. Upon infection with a cytopathic molecular clone of HIV-1, HIV-N1T-A, CEM expresses HIV-1 antigens 5 days after infection, and is killed within 10 days; U251MG expresses approximately 100 fold less HIV-1 than CEM as measured by p24 antigen expression, and is resistant to killing by HIV-1. BEN on infection with HIV-N1T-A displays no cytopathic effects and 100 fold less HIV-1 antigens than CEM.

Conclusions: HIV-N1T-A's cytopathicity for target cells can be dissociated from their high CD4 display. In this case, factors either i) contributed by the glial parent or ii) contributed by the T cell parent and suppressed by the glial parent determine BEN's response to HIV-1 infection.

W.C.P.133 HIV DNA IS PRESENT IN A HIGH PERCENTAGE OF PERIPHERAL BLOOD MONONUCLEAR CELLS IN INFECTED INDIVIDUALS

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Objective. To determine the percentage of peripheral blood mononuclear cells (PBMCs) containing HIV DNA in infected individuals.
Methods. PBMCs isolated by Ficoll-Hypaque gradient centrifugation were counted by hemacytometer. Crude cell lysates of 10^4, 10^3, 10^2 and 10^1 PBMCs were subjected to polymerase chain reaction (PCR) for 35 cycles in the presence of primers SK38 and SK39 obtained from the Cetus Corp. The specific HIV sequence amplified from these lysates were subsequently analyzed by slot blot and Southern blot hybridizations with a specific HIV oligomer probe (SK19) (Cetus Corp.)
Results. Using 10% of PCR mixtures from 10^4 PBMCs, specific HIV sequences were detected in 7/9 of patients with AIDS; 5/6 patients with ARC; 6/8 asymptomatic HIV seropositive individuals; and 0/4 of HIV seronegative controls. In some of these PCR positive persons, amplified DNA could be detected in 10% of PCR mixtures with only 10 PBMCs, indicating that greater than 10% of PBMC population contained HIV DNA in these infected individuals.
Conclusion. Using in vitro amplification of HIV DNA by PCR, we have detected a very high percentage (greater than 10%) of PBMC containing HIV sequence in seropositive individuals. This reflects a substantially higher percentage of PBMCs actually infected with HIV than previously reported by using in situ hybridization (10^{-4}-10^{-3}).
These findings may be important in explaining the severe immunologic defects associated with HIV infection.

W.C.P.134 PLASMA-ASSOCIATED HUMAN IMMUNODEFICIENCY VIRUS TYPE-1 (HIV) IS A MARKER OF PROGRESSION OF HIV INFECTION.

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Objective. To assess the duration and time course of HIV plasma viremia and whether the development of plasma viremia correlates with progression of disease.
Methods. We sequentially cultured cell-free plasma for HIV from a cohort of CDC class II, III, IVa and IVc patients. Three ml of plasma was removed, passed through a 0.45 micron filter to remove cells, and 2 ml was then added to 10^7 3-4 day old PHA-stimulated donor peripheral blood mononuclear cells (PBMC) and cultured by a standard mixed-lymphocyte procedure.
Results. All 67 sequentially sampled patients had HIV isolated from their initial and all subsequent PBMC specimens. Twenty-five CDC class IVc (AIDS) patients had plasma samples taken at a mean interval of 6 weeks (range 2-12 wk). Plasma viremia was detected in 21 at their first sampling and 21 had HIV re-isolated from the plasma on subsequent sampling. Of the 4 in whom HIV was not initially detected in plasma, 3 had HIV isolated from plasma on a second sampling. Fourteen patients in CDC class II and III (asymptomatic) and 28 in CDC class IVa (ARC) were sequentially sampled at a mean interval of 6 months (range 1-20 months); 14 (74%) of the initially plasma viremic patients remained persistently positive on resampling. Three of 12 CDC class II-III versus 14/15 CDC IV who were initially plasma HIV negative developed plasma viremia over follow-up ($p<0.001$). Three of 4 CDC class II-III patients with plasma viremia progressed to more symptomatic clinical disease versus 0/8 without plasma viremia ($p=0.034$). The CD4-cell count decreased significantly for 8 patients that progressed to plasma viremia (Wilcoxin signed rank $p=0.006$) as compared to 7 that remained viremic ($p=0.088$) and 7 that remained nonviremic ($p=0.118$).
Conclusion. Previous cross-sectional studies indicated that the frequency of plasma viremia increased with stage of infection; these data indicate that the frequency of plasma viremia progresses over time, that once it develops it persists and is associated with a decrease in CD4-cell count.

W.C.P.135 BLOCKING OF ANTIBODY-ENHANCED HIV-1 INFECTION BY RECOMBINANT SOLUBLE CD4(rCD4).

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Objective: To test whether rCD4 can block antibody-enhanced HIV-1 infection of Fc-receptor (FcR) expressing cells.
Methods: The monocytic cell line, U937 served as a target for HIV-1 IIIB strain infection. FcR and CD4 expression were measured by flow cytometry. Virus neutralization tests were performed by mixing dilutions of heat inactivated patient serum with 100TCID$_{50}$ of HIV-1. After incubation for 1 hr.at 4°C, U937 cells were added and infection was monitored by reverse transcriptase activity. High concentrations of patient serum neutralized HIV-1 but a subneutralizing concentration from the same patient enhanced infection. The role of CD4 in this antibody-enhanced infection was tested using rCD4.
Results: Flow cytometry of U937 cells showed that 74% express FcrRII and 97% express CD4. At subneutralizing concentrations (10^{-4}-10^{-6} dilutions) 5 out of 8 patient sera enhanced viral infection. The enhancement index was 1.2 to 2.18 in comparison with HIV-1 Ab-negative sera. This enhancement of HIV-1 infection was totally blocked by 1µg/ml rCD4.
Conclusion: Some HIV-1 Ab-positive human sera can neutralize HIV-1 and at higher dilutions enhance infection. Because rCD4 can block this enhancement, this FcR dependent infection pathway is also CD4 dependent.

W.C.P.136 HIV-2 SEROCONVERSION IN SENEGAL, WEST AFRICA

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Objective. HIV-2 has been found at high rates in populations of West Africa where as yet high rates of AIDS cases have not been described. This has suggested that HIV-2 may differ in pathogenicity from HIV-1. In order to evaluate this on a population level the rate of transmission of the virus is important to determine. Through evaluation of sequential samples from a high risk group in Dakar, Senegal, we determined and characterized seroconversion in this population.
Methods. A population of 1300 registered female prostitutes have been followed with sequential serology since 1985. All serum samples were evaluated for antibodies to HIV-1 and HIV-2 by immunoblot
Results. 14 women were found to seroconvert to HIV-2 with 22.6 person-years of observation. The mean time of observation prior to seroconversion was 17 months. At the time of seroconversion antibodies to the env gene products gp38-40 and gp105 for HIV-2(MS) were readily detected by immunoblot. 14/14 had antibodies to p24(gag), 13/14 to p66(pol), 11/14 to p51(pol), and 8/14 to p15(gag). HIV-2 seroconverters were compared to 1106 women (963 person-years) who remained seronegative. Risk factor analysis showed that seroconverters were significantly older than non-seroconverters ($p<.025$). Nationality or years of prostitution were not significant risk factors for seroconversion. None of the seroconverters developed AIDS or related signs. The seroconversion rate was found to be less than 2% per year based on person-years of observation in this large high risk population.
Conclusion Seroconversion for HIV-2 appears quite low despite over 10% prevalence in this high risk population. This suggests slow spread of HIV-2 in contrast to HIV-1. The stability of this virus infection in the absence of AIDS further indicates important biological differences between HIV-2 and HIV-1.

W.C.P.137 STRESS MEDIATED INDUCTION OF HIV EXPRESSION FROM A CHRONICALLY INFECTED PROMONOCYTIC CELL LINE.

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Objective. To investigate the ability of various cell stressors to induce expression of HIV from a state of latent or chronic infection.
Methods. A chronically HIV infected low-virus producing promonocytic cell line (U1) derived from infection of U937 cells was exposed to varying doses of UV-C, UV-B, or UV-A. Virus induction was measured by appearance of reverse transcriptase (RT) activity in culture supernatants as well as by an increase in percent of positive cells on indirect immunofluorescence (IFA) staining for HIV proteins. In separate experiments U1 cells were exposed to heat shock (41.3°C for 1-5 hours) and followed for appearance of RT activity over several days.
Results. A 2-3 fold induction of RT activity over untreated cells was seen at 3-5 days after UV-C and UV-B stimulation. Peak induction was seen over a narrow dose range of 0.75-1.0 mJ/cm2 for UV-C and 7-9 mJ/cm2 for UV-B. UV-A, which does not usually cause DNA damage, did not induce HIV expression in this cell line. IFA experiments also revealed a time dependent increase in percent positive cells after UV-C exposure. Decreased cell viability and a temporary growth arrest (suggesting cell stress) were associated with UV doses which induced HIV. Cells exposed to heat shock also showed an increase in RT activity over controls without decreased viability.
Conclusion. Chronically infected U1 cells can be induced to express HIV by UV irradiation in wavelengths that cause cell stress and by heat shock.

W.C.P.138 ANTI-HISTONE H2B ANTIBODIES IN HIV-SEROPOSITIVE INDIVIDUALS

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Objective. The purpose of this study was to quantitatively measure the levels of anti-H2B antibodies in HIV-seropositive individuals to assess whether the prevalence and levels of antibody correlated with disease status.
Methods. Previous studies carried out in our laboratories have demonstrated the presence of anti-lymphocyte antibodies in individuals with AIDS and at risk for AIDS. These antibodies are specific for an 18 kd antigen present on activated or HIV-infected CD4$^+$ T cells. Further studies on the 18 kd antigen have revealed that it is biochemically similar to, and immunologically cross-reactive with, histone H2B.
Results. The prevalence of anti-H2B antibodies in serum specimens tested was as follows: AIDS, 13/38 (34%); ARC, 19/31 (61%); lymphadenopathy syndrome, 41/132 (31%); HIV-seropositive asymptomatic, 3/19 (16%); HIV-seronegative normal controls, 4/50 (8%). The normal range was established as the mean + 2 SD of 50 samples in the normal control group. There was only a weak correlation ($r = 0.42$, $p = 0.001$) between serum immunoglobulin levels and titers of anti-H2B antibodies.
Conclusion. Although the prevalence of anti-H2B antibodies was associated with progression of disease, there was no clear relationship between these antibodies and the numbers of circulating CD4 cells.

W.C.P.139 MISE EN EVIDENCE DE SEQUENCES VIRALES HTLV1 CHEZ DES MALADES NEUROLOGIQUES SERONEGATIFS A W.B. INDETERMINES.

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Objectif. L'augmentation significative de la séroprévalence dans certains groupes de populations ainsi que l'existence de malades séronégatifs présentant des tableaux cliniques de HAP (HTLV1 associated paraplegia), suggèrent que le virus HTLV1 pourrait être présent chez un certain nombre de sujets séronégatifs. C'est pourquoi nous avons utilisé la PCR pour rechercher chez des sujets séronégatifs à risque ou symptomatiques des séquences virales HTLV1.

Méthodes. Les amplifications géniques (PCR) ont été réalisées suivant la technique de Saiki avec 2 couples d'oligonucléotides, situés respectivement dans gag et tax. Les produits d'amplification ont été hybridés avec des sondes internes marquées au p^{32}, puis migrés sur gel de polyacrylamide.

Résultats. L'étude de 24 sujets HTLV1 séropositifs a permis la validation de la technique utilisée. 14 malades séronégatifs ayant une symptomatologie neurologique ont été étudiés : 9 "HAP-Like" dont 4 étaient positifs avec les 2 couples d'oligo, 2 positifs avec les oligo gag seulement, 2 positifs avec les oligo tat seuls, 1 négatif avec les 2. 3 sujets dont les diagnostics suivants avaient été portés : 1 neurofibromatose, 1 cryptococcose, 1 sclérose latérale amyotrophique étaient positifs. 2 prélèvements de malades neurologiques "contrôles" : Moya-Moya, séquelle d'accident vasculaire cérébral étaient négatifs. 2 enfants de HAP séronégatifs et 9 sujets positifs en Elisa, négatifs ou indéterminés en western blot, étaient positifs en PCR.

Conclusion. La PCR a permis la détection d'informations génétiques HTLV1 chez certains sujets symptomatiques séronégatifs ou présentant des western blot ininterprétables. Une enquête épidémiologique par PCR nous permettra de vérifier l'hypothèse d'un taux d'infection de base dans la population, supérieur à celui détecté par l'intermédiaire de la sérologie.

W.C.P.140 LYMPHOCYTE SUBPOPULATIONS IN MEDITERRANEAN KAPOSI'S SARCOMA

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Objective. To evaluate the lymphocyte subpopulations in Mediterranean Kaposi's sarcoma (MDKS) which is a form of classic Kaposi's sarcoma prevalent in Greece and is characterized by frequent gastrointestinal tract lesions at the time of diagnosis.
Methods. 19 histologically confirmed cases (12 males, 7 females) of MDKS aged 48-80 years and 28 controls of similar age and sex enrolled in the study. The controls were patients admitted in opthalmology and orthopedic clinics. All patients and controls were HIV(-).
Results and Conclusions.

	Mean values						
	CD4		CD8		CD4/CD8	CD16	
	/mm3	%	/mm3	%		/mm3	%
MDKS	833	35.6	680	28.8	1.3	432	18.3
Controls	1141	40.4	769	26.5	1.7	511	18.8
P-value	<0.01	<0.01	n.s.	n.s.	<0.05	n.s.	n.s.

The moderately supressed levels of CD4 lymphocytes in MDKS may, partly, explain the clinical manifestations. The etiological implication of this finding is not clear.

Additionnels
Additional

W.C.P.141 EXPERIMENTAL INFECTION OF CYNOMOLGUS MONKEYS WITH HIV-2

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Objective. To induce experimental infection of cyncmolgus monkeys with HIV-2.
Methods. 4 cynomolgus monkeys (Macaca fascicularis) were inoculated intravenously with HIV-$2_{SBL-K135}$ which had been grown mainly in fresh human and monkey lymphocyte cultures and another 6 monkeys were inoculated with HIV-$2_{SBL-6669}$ which had been propagated for a long time in continuous human cell lines.
Results. Virus could be isolated from 3 of the SBL-K135 infected monkeys but from none of the SBL-6669 infected monkeys. All animals seroconverted although the antibody response was lower in SBL-6669 infected monkeys. Varying degrees of lymphadenopathy were observed but there were no significant changes in the numbers of CD4+ and CD8+ T cells. The infection was transferred with blood from a SBL-K135 infected monkey to 2 previously uninfected monkeys. 4 animals inoculated with HIV-$2_{SBL-K135}$, which had never been propagated in continuous human cell lines showed strong antibody responses against both gag- and env-encoded proteins of HIV-2. None of the SBL-6669 infected monkeys showed antibodies to gag proteins.
Conclusion. Infection of cynomolgus monkeys with HIV-$2_{SBL-K135}$ represents a useful experimental model for HIV vaccine trials.

W.C.P.142 EFFECT OF WHOLE BODY HYPERTHERMIA ON CATS INFECTED WITH FELINE LEUKEMIA VIRUS

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Fever indicates that a complex interaction of cells and cytokines has been activated. Whole body hyperthermia therapy mimics the natural process of fever and it triggers the elaboration of interleukins and interferons which may be beneficial to animals infected with retroviruses.
We tested the effect of whole body hyperthermia (WBH) on six specific pathogen-free cats persistently infected with a minimally pathogenic strain of feline leukemia virus (FeLV-1661E). The cats were experimentally infected two years prior to this study. Cats were anesthetized and were heated to a temperature of 42°C for two hours using a radiant heat device (Enthermics, Menomonee Falls, Wisconsin). Rectal and subcutaneous ventral abdominal temperature probes were used to monitor each patient's body temperature. Computer control and monitoring assured uniform WBH.
Serum and plasma samples were obtained prior to heating, at plateau heat, 2 hours after reaching plateau and 24 hours after heating.
None of the cats became FeLV negative. We observed a significant increase in plasma interferon activity which returned to pretreatment levels 24 hours post-therapy.
A simultaneous decrease in the FeLV reverse transcriptase activity was observed 2 hours after reaching plateau temperature. Reverse transcriptase activity returned to pretreatment levels 24 hours post-therapy.
While WBH did not alter the infection status of 6 FeLV positive cats, our work demonstrates that cats can tolerate WBH and suggests that WBH may have its place in multimodality treatment of retrovirus infections.

W.C.P.143 EXPERIMENTAL INFECTION OF SPECIFIC PATHOGEN FREE (SPF) CATS WITH U.K. ISOLATES OF FELINE IMMUNODEFICIENCY VIRUS (FIV)

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Objective. To determine the course of experimental infection of cats with FIV using 3 different isolates.
Methods. Three groups (1,2 and 3) of SPF female cats, consisting of 4, 5 and 5 cats respectively, were inoculated intravenously with FIV, each group with a different isolate. Twelve cats were given cell-free virus and 2 from group1 were given infected lymphocytes. Group1 cats were 12 weeks old when inoculated; Groups2 and 3 each comprised 2 young adult cats with one 20 week and two 12 week old kittens.
An uninfected adult male SPF cat was housed with each group. In group1 the tom was not introduced until 36 weeks post-inoculation (p.i.). The temperature and clinical signs of all cats were monitored daily and routine biochemistry and haematology were performed weekly. Virus isolation was performed every 2-4 weeks immediately p.i., then every 2 months. FIV antibody development was monitored in all groups and lymphocyte transformation assays were done weekly for groups 2 and 3. Group1 had been studied for 74 weeks p.i., groups 2 and 3 for 12 weeks p.i.
Results. All inoculated cats seroconverted by 6 weeks p.i.and FIV was recovered from all cats (by 3 weeks p.i. in all but one). Lymphocyte transformation assays showed marked changes over the period studied but the uninfected males showed similar changes. Persistent generalised lymphadenopathy occurred in 13/14 infected cats from 6 weeks p.i. onwards. Two cats in group1 became pyrexic 7 weeks p.i. with accompanying weight loss, lymphopenia and bacterial cellulitis. One recovered after antibiotic therapy, the other was destroyed. Cats in this group developed a number of minor problems such as cystitis, vaginal discharge and diarrhoea, which resolved with or without treatment, and 2 cats had intermittent reduction in the polymorph to lymphocyte ratio. An adult female in group 2 developed marked pyrexia 5 weeks p.i. and aborted 4 foetuses. The ensuing weight-loss, diarrhoea, anaemia, jaundice and profound leucopenia necessitated euthanasia. The male cats showed no significant clinical signs and have neither seroconverted nor become infected to date.
Conclusion. Significant clinical and laboratory findings were present from 6 weeks p.i. onwards in cats experimentally infected with FIV.

W.C.P.144 A MOUSE MODEL FOR INVESTIGATING HIV-1 REPLICATION

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Objective. There is great need for a small animal model of HIV-1 infection. We have developed a system in mice to evaluate the effects of chemotherapy and passive antibody on HIV-1 replication.
Methods. An immunomodulation regimen was devised to allow the growth of human CD4+ cell lines CEM (lymphocytic) and U937 (monocytic) in BALB/c mice. Female, pathogen free, retired breeders underwent sublethal irradiation and depletion of L3T4+ lymphocytes utilizing the monoclonal antibody GK1.5. Mice were then inoculated with 2 X 10^7 CEM cells or U937 cells subcutaneously.
Results. By day 8 a subcutaneous plaque could be felt and by day 14 visible tumors were present. Both cell lines formed tumors that grew exponentially. If maintenance GK1.5 was administered tumor growth continued, but without maintenance tumor growth plateaued during week 3 and then regressed. Subcutaneous tumors were infected by inoculation with CEM cells chronically infected with HTLV-IIIB which resulted in HIV-1 antigenaemia in mice with both CEM and U937 tumors. Mice remained active and appeared healthy throughout the experiment.
Conclusions. When standardized this system should provide an inexpensive approach to assess anti-HIV therapeutic and prophylactic agents in vivo. The approach could also be adapted to other viral systems in which small animal models are unavailable, and has potential application in many other fields of biomedical investigation.

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W.C.P.145 ANALYSIS OF GUINEA PIG DERMAL HYPERSENSITIVITY TO HIV WHOLE VIRUS IMMUNOGEN

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Objective. To determine the type of reactions to anticipate in humans, particularly immediate or allergic type, experiments were performed in guinea pigs on the ability of an HIV whole virus immunogen to induce and elicit skin reactivity.
Methods. Purified HIV, inactivated with gamma-irradiation and beta-propiolactone, has been prepared for use in boosting immune responses in infected individuals (provided by Dr. Jonas Salk, Salk Institute, CA, USA). It is used in man combined with incomplete Freund's adjuvant (IFA) intramuscularly or in saline as an intradermal injection. Animals received immunogen in IFA and were skin tested 10 weeks later with graded doses of immunogen in saline along with unimmunized controls. Animals were retested one week later to assess the booster effects of intradermal injections. Reactions were scored for intensity and diameter of erythema immediately, at 20 minutes, and at 4, 24, 48, and 72 hours. The change in skin thickness was assessed by a caliper.
Results. No immediate, 20 minute dermal, or systemic reactions have been observed. In animals receiving immunogen in IFA, reactions peaked at 24 hours with a loss of induration by 48 hours, consistent with a Jones-Mote form of sensitivity. Animals immunized with immunogen in saline evidenced more prolonged reactions with induration at 48 hours. Control animals, showed reactions at the second skin test equivalent to immunized animals.
Conclusion. HIV immunogen elicits DTH reactions in guinea pigs, the reactions resemble those seen with common proteins, and immediate hypersensitivity is not seen under the conditions of these experiments. These studies provide useful information on the safety and proper formulation of the immunogen for use in man.

W.C.P.146 GROWTH CHARACTERISTICS OF SIMIAN KAPOSI'S SARCOMA IN NUDE MICE.

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Objective. To establish a nude mouse model for simian Kaposi's sarcoma (KS) associated with SRV-2 infection.
Methods. Five to ten million cells of simian KS-like cell line from SAIDS associated with SRV-2 infection (kept greater than one year and 16 passages) were injected subcutaneously in 12 athymic albino nude mice. Normal monkey or human fibroblasts were used as controls. Routine histology and tissue culture were carried out with xenografted lesions and tumor.
Results. Xenograft produced nodular growth within 3-6 days, however, spontaneous regression occured in 12 mice except one in which a large tumor developed after 16 weeks. The lesions showed spindle fibrovascular proliferations involving dermis, subcutis, and lymph nodes similar to KS. The histomorphology of the single tumor ranged from pleomorphic anaplastic sarcoma to areas of spindle cell tumor with slits and extravasation of red blood cells, erythrophagocytosis by tumor cells and lymphoplasmacytic infiltration. Multiple hemorrhagic pulmonary lesions similar to KS were found in this mouse. Culture of this tumor revealed identical cells in growth, morphology, cell markers and DNA cell cycle as the original cultured cells. SRV-2 was isolated from the grafted tumor as well as from the original tumor and cultured cells.
Conclusion. Spectrum of KS-like lesions can be produced in nude mice by injection of cultured simian KS cells for use as a model system for KS.

W.C.P.147 DEVELOPMENT OF A STUDY SET ON THE PATHOLOGY OF SIMIAN RETROVIRAL DISEASES.

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Objective. To develop a study set on the pathology of retroviral infections in nonhuman primates. The set includes microscopic slides, color transparencies and a syllabus in English.
Methods. Simian Type D retroviruses and lentiviruses are etiological agents of acquired immunodeficiencies in susceptible macaque monkeys. Lesions in multiple organs from experimentally infected monkeys have been photographed and prepared into histologic sections.
Results. Approximately 35 of the most common lesions, including opportunistic infections and malignancies, are represented in the approximately 50 microscopic slides. Gross and microscopic color photographs and a syllabus provide supplemental learning material.
Conclusion. The study set should be available for worldwide distribution through the interlibrary loan network at the end of 1989. It is designed for biomedical scientists interested in the pathology of simian retroviral diseases and in simian models for human retroviral diseases.

W.C.P.148 BIOMEDICAL ENGINEERING APPROACH, THEORY AND SUBSTANTIATION OF THREE LEVEL AIDS THERAPY: ANTI-HIV LASER TRAPS, PREVENTIVE AIDS CAPNOTHERAPY AND CURATIVE COMPUTED CT-MRI TOMOGRAPHY

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After biomechanical and computed modelling of HIV spreading a three level AIDS therapy or prevention procedures in only infected by HIV proposed. First level of anti-HIV therapy include laser traps from 1 to 10 classes depending selectivity for circulating pathologic agents (infectious, malignant, leukemic) with curative screen installed with blood or lymph seperators for external contact therapy at thin layers and return to natural flow. Laser trap permit remotes photodynamic procedures (killing, sterilization, stimulation) with indicators (HpD). Second level-regional tissue, blood, lymph remote sterilization by decrease local pH till virusocidal effect after safely instant soluble gas (CO_2) intravascular, in bone marrow, intralymphatic use. AIDS gas therapy (capnotherapy) permit curatives procedures against infectious agents of all types, malignant, leukemic cells in turn step by step at all regions. Simultaneous elimination of gas remedy surplus (CO_2) by expiration of patients or surface heparinized extracorporeal artificial lung used. Third level of therapy include novel curatives CT-MRI devices with correcting tracers for orientation in scanning layers by CT-microscalpel or targeting drugs for CT-ultramicrosurgery, selective regulating drugs delivery including brain for correction of immune status.

W.C.P.149

W.C.P.150

Th.C.P.1 ROLE OF N-LINKED GLYCANS IN THE INTERACTION BETWEEN THE ENVELOPE GLYCOPROTEIN OF HIV AND ITS CD4 CELLULAR RECEPTOR. STRUCTURAL ENZYMATIC ANALYSIS.

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gp120 and CD4 are two glycoproteins that are considered to interact together to allow the binding of HIV to CD4+ cells. We have utilized enzymatic digestion by endoglycosidases in order to analyze N-linked carbohydrates chains of these proteins and their possible role in the interaction of gp120 or gp160 with CD4. SDS denaturation was not necessary to obtain optimal deglycosylation of either molecule, but deglycosylation of CD4 nonetheless depended on the presence of 1% Triton x 100 . Endo H and Endo F that cleave high mannose type and biantennary glycans diminish the MW of the glycoproteins from 120 or 160 Kd to 90 or 130 Kd respectively, but these enzymes had no action on CD4 glycans. Endo F N-glycanase mixture, which acts on all glycan species including triantennary chains led to complete deglycosylation of gp120/160 and of CD_4. Therefore, probably half of the glycan moieties of gp 120/160 are composed of high mannose and biantennary chains, the other half being triantennary species. The carbohydrates structures of CD4 seems to be triantennary chains. To analyze the binding of gp120/160 to CD4, we used a molecular assay in which a monoclonal antibody (110-4) coupled to Sepharose CL4B allowed the attachment of soluble gp120/160 to the beads ; ^{125}I-sCD4 was then added to measure the binding of CD4 to different amounts of gp120/160. Binding to gp160 was not modified when using completely deglycosylated ^{125}I-sCD4 , while deglycosylation of gp120 or of gp160 resulted in the decrease of the binding to native CD4 by 2 and 5 fold respectively. Native and deglycosylated gp120/160 bound to CD4+ cells with comparable affinities. In addition, deglycosylated gp120 displaced ^{125}I-gp160 binding to CD4+ cells and inhibited fusion of fresh Molt-T4 cells with CEM HIV1- or HIV2-infected cells to the same extent. Taken together, these results indicate that carbohydrates of CD4 and of gp120/160 do not play a significant role in the in vitro interaction between these two molecules.

Th.C.P.2 HIGH LEVEL EXPRESSION OF NATIVE REVERSE TRANSCRIPTASE AND MUTANTS AFFECTING THE ENZYME ACTIVITY

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Objective. High level expression of reverse transcriptase of HIV 1 in E.coli for crystallographic studies.
Methods. The expression of the native enzyme in E.coli was achieved by the use of synthetic oligonucleotides. The recombinant products were detected by Western blot analysis. The activity was determined by a standard reverse transcriptase assay.
Results. By partially adopting the E.coli codon usage a high and stably expressed, active reverse transcriptase was obtained. Minor changes in the aminoterminal amino acid sequence resulted in a complete loss of enzyme activity, which could be due to conformational changes inhibiting dimer formation. Additional amino acids at the aminoterminus resulted in increased accessibility to bacterial protease(s). The estimated molecular weights of the degradation products are 51 kD, 41 kD and 29 kD. A defined degradation pattern as judged by western blot analysis indicates the involvement of cellular derived proteases in the final processing of the pol polypeptide.
Conclusion. An active reverse transcriptase could be purified from E.coli lysates for structural determination. Mutant expression products indicate the involvement of cellular proteases in the pol polypeptide processing.

Th.C.P.3 HTLV-I BINDS NOT ONLY TO HUMAN T LYMPHOCYTES, BUT ALSO TO B CELLS AND MONOCYTES.

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Objective: To ascertain whether blood mononuclear cells other than T lymphocytes serve as targets for HTLV-I infection.
Methods: Purified HTLV-I was biotinylated using the procedure we developed for the labeling of Epstein-Barr virus (1). To positively identify virus binding cells, biotinylated HTLV-I was used in conjunction with FITC-conjugated monoclonal antibodies probes specific for different mononuclear cell subsets in dual color fluorescence flow cytometry. Cell-bound virus was detected using PE-conjugated avidin.
Results: Dual color contougrams obtained by fluorescence flow cytometry analysis of human peripheral blood mononuclear cells reacted with biotinylated HTLV-I bound to T lymphocytes (both CD4+ and CD8+ cells), B cells and monocytes. The bindings was efficient and dose-dependent. It could be inhibited by cold virus particles. Moreover, binding of biotinylated HTLV-I to human monocytes was prevented by the specific IgG from a HTLV-I+ patient with ATL. In conclusion, we showed that: (a) biotinylation does not affect the functional property of HTLV-I; (b) human mononuclear cells other than T lymphocytes are efficient targest for HTLV-I. Efforts are being made to track the presence of HTLV-I inside B cells and monocytes.
(1) G. Inghirami, M. Nakamura, J.E. Balow, A.L. Notkins, and P. Casali, J. Virol. 62:2453-2463, 1988.

Th.C.P.4 PROTEASE ACTIVATION DURING HIV INFECTION IN A CD4 POSITIVE CELL LINE

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Objective. To investigate the mechanism of cytopathic effect of HIV in a CD4+ cell line.
Methods and results. HIV infection of CEM CD4+ cell line results in an early inhibition of proliferation rate and of overall cellular protein synthesis, much long before the synthesis of viral proteins and production of virus. A specific band of 96Kd was particularly inhibited. In addition, when cells were incubated under particular conditions in serum-free medium, a larger degradation of proteins was observed in comparison to controls. An increased activity of protein degradation was observed also in vitro with extracts obtained from HIV-infected cells and incubated in the presence of endogenous or exogenous labelled substrates. This proteolytic activity was blocked by inhibitors of serine-proteases. Extracts from cells infected with heat-inactivated HIV did not show a similar degradative activity.
Conclusion. The induction or activation of latent proteases during the development of the HIV-infection may be an important factor in HIV-induced cytopathic effect and AIDS pathogenesis.

Th.C.P.5 CONCOMITANT INFECTION WITH HUMAN T CELL LYMPHOTROPIC VIRUS II (HTLV II) AND HIV-1

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Object: To study concomitant infection of HIV and HTLV I/II
Methods:HIV patients(pts) were screened for antibody (Aby) to HTLV I/II. Aby +sera was confirmed using Western blot technology and radioimmunoprecipitation technology (RIPA) to purified HTLV I MO-1 and HTLV II 580B. Peripheral blood lymphocytes were grown with IL-2 and PHA. After rounds of lysis, surviving cells were cocultivated with cord blood lymphocytes (CBLs) and continuous cell lines established. Viral isolation was confirmed with reverse transcriptase assay, electron microscopy and Southern hybridization technology.
Results: 30 sera from 383 HIV individuals had Aby to HTLV I/II mostly in older intravenous drug users (IVDU). 6 new isolates of HTLV II were made from 6 IVDUs. 3 isolates of HTLV I were made from 3 HS pts. Patients with HTLV II had ichthyosis,dermatopathic lymphadenopathy and staph infection. Those with HTLV I had Tropical spastic paraparesis and CD-8 chronic leukemia. Restriction enzyme mapping of 4 strains of HTLV II showed all 4 were similar to 2 previous isolates of HTLV II (Mo and NRA) indicating that the virus of HTLV II is highly conserved.
Conclusion: Significant HTLV II infection is in New York IVDU's.

Th.C.P.6 ENVELOPE CROSS-REACTIVITY BETWEEN HIV-1 AND HIV-2

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Objective. To study cross-reactions of HIV-1 and HIV-2 positive sera against HIV-1 and HIV-2 with different serological methods.
Methods. Sera from HIV-1 infected Swedish homosexual men and from HIV-2 infected blood donors and patients with AIDS related symptoms from Guinea-Bissau were tested by Western Blot (WB), radioimmunprecipitation (RIP) and neutralization assays using both HIV-1 and HIV-2 antigens.
Results. The HIV-1 positive sera cross-reacted with the envelope glycoproteins of HIV-2 in 2/24 (8%) in WB and in 10/48 (21%) in RIP assays. The HIV-2 positive sera cross-reacted with the envelope glycoproteins of HIV-1 in 15/38 (39%) in WB and in 13/27 (48%) in RIP assays. Cross-neutralization was observed in 20/57 (35%) and 16/43 (37%) of the HIV-1 and HIV-2 positive sera, respectively.
Conclusion. Serological cross-reactivity between HIV-1 and HIV-2 envelope glycoproteins is observed in both WB, RIP and neutralization assays. Cross-reactions against envelope glycoproteins are seen more often in RIP than in WB assays.

Th.C.P.7 PROSPECTIVE STUDY OF NEWBORNS TO HIV SEROPOSITIVE MOTHERS : PRONOSTIC VALUE OF ANTIGENEMIA AND ANTIBODIES WESTERN-BLOT ANALYSIS

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Objective : The results of two virological parameters evaluated at 9 months of age were correlated to the clinical status at the age of 18 months, among 86 children born to HIV seropositive mothers.

Methods : 415 infants have been prospectively followed since birth, in a multicentric French study. Among 200 children born 18 months earlier or more, 86 evaluated in the same laboratory were included in this analysis. HIV1 antibodies were studied by Western Blot analysis (Diagnostics Pasteur or Dupont de Nemours) and classified into two groups : 1 = negative or incomplete pattern ; 2 = positive pattern, with antibodies to proteins of gag, pol and env genes. The detection of antigenemia was performed by immuno-capture assay (Abbott or Diagnostics Pasteur). At 18 months of age the children were classified into two groups according whether they had presented HIV related clinical symptoms or not.

Results : The percentage of children with clinical symptoms is 28 % at 18 months of age. This percentage significantly differs according to positive or negative antigenemia at 9 months of age (100 % vs, 18 % respectively, $p < 10^{-6}$). The same pattern is observed with Western-blot (89 % when positive, vs 11 % when negative or incomplete, $p < 10^{-9}$). As the two virological parameters were correlated, adjustment test has been performed, each of the two factors is associated to the clinical status independently of the other.

Conclusion : The presence of a complete pattern of Western-blot or of a positive antigenemia at 9 months of age are highly predictive of the appearance of clinical symptoms at 18 months of age or earlier.

Th.C.P.8 THREE DIMENSIONAL ELECTRON MICROSCOPY OF HIV-INFECTED MACROPHAGES (IN VITRO AND IN VIVO)

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Objective: Analysis of the 3-D ultrastructure of HIV-infected macrophages in vitro and in vivo (bronchoalveolar lavages) and comparison with similar non infected cells.

Methods: Computer aided volumic ultra microscopy based on serial sections (20 to 40 nm) containing laser-induced topographical references allows a 3-D reconstruction of entire cells via digital processing of electron microscopic images.

Results: The 3-D analysis offers an improved knowledge of cell ultrastructure and documents the fine cytopathic effects of HIV. The detailed results will be presented on a computer display.

Conclusion: The computer-assisted 3-D analysis has potential advantages and proved particularly powerful in the study of HIV-infected cells. The methodology will be useful to delineate new approaches for evaluation of therapeutic agents.

Th.C.P.9 THE HIV1 PRODUCTION IN PERIPHERAL BLOOD MONONUCLEAR CELLS IS INHIBITED BY ANTI-B2 MICROGLOBULIN MONOCLONAL ANTIBODIES.

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We have recently searched for monoclonal antibodies (mab) interfering with HIV production. The "in vitro" assays used for the screening were designed for rapid identification of mab interfering either with entry, replication or budding of the virus. Most of the anti-B2-microglobulin (B2m) mab tested strongly delayed HIV1 production by peripheral blood mononuclear infected cells.

Our recent data suggest that anti-B2m mab do not inhibit HIV entry since cellular pre-incubation with these mab do not prevent HIV production, and therefore interfer rather after virus penetration during the viral replication cycle, either on the replication or the viral particle budding. Preliminary investigation demonstrates that inhibition is efficient if mab is added to the culture only during the three first days following infection. However, no inhibition is observed when mab is added to the cells 24 H after the infection.

Finally, anti B2m - mab also delayed syncitia apparition among infected MT4 cells, but yet have no effect on HIV1 production by CEM cells.

Th.C.P.10 HIV-1 PROTEINASE INHIBITION BY CERULENIN.

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Objective: To determine the effect of Cerulenin on the activity of the HIV-1 encoded proteinase, and understand it's mechanism of action with the aim of designing specific proteinase inactivating compounds as anti-HIV drugs.

Methods: Recombinant HIV-1 proteinase was assayed for ability to cleave gag fusion proteins or synthetic peptides, after incubation of the proteinase with cerulenin. The effect of cerulenin on the cleavage of gag precursors, in H9 cells chronically infected with HIV-1LAV, was investigated by RIPA with HIV+ patient sera.

Results: Preincubation of HIV-1 proteinase with cerulenin for 15-30 mins, markedly diminished it's cleavage of gag fusion proteins and synthetic peptides. In infected cells, cerulenin inhibited cleavage of p55gag at concentrations which did not inhibit protein synthesis. At these concentrations HIV replication was significantly reduced. Higher doses of cerulenin were cytotoxic.

Conclusion: Cerulenin inhibits gag cleavage by inactivating the viral proteinase. Using the molecular structure of the active site of HIV proteinase we can model the likely binding mode and mechanism of action of cerulenin and design more specific and less cytotoxic anti-HIV compounds, which function by inhibiting the proteinase.

Th.C.P.11 ISOLATION OF HIV-2 STRAINS WITH DIFFERENT NEUTRALISATION PATTERNS.

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Objective: To study the variability of HIV-2 isolated from patients with AIDS/ARC and asymptomatic seropositive individuals both with respect to primary sequence and biological phenotype, e.g. neutralization by sera of different origin, cytopathic effect, tropism for T-cells or monocytes.

Methods: Peripheral blood mononuclear cells from HIV-2 positive individuals in The Gambia were cultured with cord blood cells and checked weekly for reverse transcriptase. Established cell lines of T- and monocyte origin (H9, C8166, Molt4#8, U937) were added to cultures showing RT-activity or cytopathic effect to obtain permanent isolates. These were characterised by Southern blots, radioimmunoprecipitation assays (RIPA) and sensitivity to neutralizing antibodies. Fragments of the genome generated by PCR were cloned for sequencing.

Results: Among 4 new permanent isolates of HIV-2 made thus far one from an AIDS patient grows rapidly, one from an asymptomatic individual grows slowly,and the remaining two from ARC patients are intermediate. The former have been characterised by Southern blots and (RIPA) as HIV-2 viruses. Using PCR, regions corresponding to the tat gene and one portion of the env (bp 8070-8330) could be amplified from all 4 isolates. One region from the pol gene and from the env (bp 7441-8330) could only be amplified from 3 and 1 isolate, respectively. The isolates differed markedly in their susceptibility to neutralizing antibodies from HIV-1 and HIV-2 infected subjects.

Conclusions: Four new isolates of HIV-2 differ in their growth properties and susceptibility to neutralizing antibodies. Genome variability is being analysed.

Th.C.P.12 INHIBITION OF ENVELOPE OLIGOSACCHARIDE PROCESSING DIMINISHES HIV-1 INFECTIVITY

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Objective: Inhibitors of trimming glucosidases and mannosidases have been shown to reduce HIV-1 infectivity. This study focused on the effects of a potent glucosidase I and II inhibitor, N-butyl-deoxynojirimycin (N-buDNJ).

Results: With acute HIV-1 infection of H9 and CEM cells, concentrations ≥0.02 mM N-buDNJ completely inhibited syncytia formation, but virus production was reduced only at ≥2.0 mM, without cell toxicity. In chronically infected H9 cells, virus production was reduced 30% at doses of ≥2.0 mM but not at lower concentrations. The infectivity of HIV-1 produced from cells treated with 2.0 mM or 4.0 mM N-buDNJ was reduced 4-fold or ≥10,000-fold, respectively. Chronically infected cells treated with ≥0.01-0.1 mM N-buDNJ for ≥3 days showed impairment in their ability to form syncytia with uninfected T lymphoid cells. Immunofluorescent and radioimmunoprecipitation analyses demonstrated impaired expression of the envelope on the surface of N-BuDNJ treated infected cells, and increased molecular weight of the envelope proteins. Virus from N-BuDNJ treated cells demonstrated decreased binding to T lymphoid cells.

Conclusion: N-BuDNJ inhibits HIV-1 infectivity and syncytia formation by altering the processing of oligosaccharides on the HIV-1 envelope. The efficacy of this agent and its relative lack of toxicity suggest that clinical studies are indicated.

Th.C.P.13 1,25(OH)$_2$VITAMIN D$_3$ (1,25D) ENHANCES HIV-1 REPLICATION IN A MONOCYTE CELL LINE.

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Objective. To determine whether 1,25D alters HIV-1 replication in-vitro. Methods. A3.5 cells (a monocyte cell line) were treated with 1,25D either before (Pre-Rx) or simultaneously with (Sim-Rx) the addition of HTLV-III$_B$. Cultures were assayed for HIV-1 p24 antigen production by ELISA; virus yield assays were also performed (expressed as TCID$_{50}$/ml). 1,25D (10 ng/ml) modulation of CD4 and HLA-DR expression was analyzed by staining with OKT4 and OKDR-FITC conjugates. Cultures of peripheral blood mononuclear cells (PBMC) from HIV-1 seropositive subjects were performed in the presence or absence of 1,25D (10 ng/ml) by cocultivation with PHA-P stimulated PBMC from seronegative donors and subsequent analysis for HIV-1 p24 antigen production. Results. 1,25D Pre-Rx of HIV-1 infected A3.5 cells increased p24 antigen production and virus yield on assay day 10 as follows:

	No	AZT	1,25D				(*=Not done)
	1,25D	1 uM	5pg/ml	100pg/ml	1ng/ml	10ng/ml	100ng/ml
p24 (ng/ml)	0.91	0.54	1.54	1.92	13.25	557.0	2286.0
virus yield	$2x10^3$	ND*	ND	ND	$2x10^4$	$1x10^6$	$1x10^7$

Similar results were obtained on other assay days and with Sim-Rx cells. 1,25D did not decrease cell number or viability. 1,25D did not alter CD4 or HLA-DR membrane expression. p24 antigen in 1,25D-treated PBMC cultures from 2 of 4 HIV-1 infected subjects was increased 10-fold compared with controls. Conclusions. 1,25D enhancement of HIV-1 replication may be important for improved HIV isolation from clinical samples and treatment of HIV infection.

Th.C.P.14 STIMULATION OF HIV EXPRESSION IN B LYMPHOCYTES BY B CELL GROWTH FACTOR

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Objective. To study the role of B cell growth factor (BCGF) in HIV expression.
Methods. Peripheral blood lymphocytes (PBL) were preincubated with B cell growth factor (BCGF) for 48 hr, infected with HIV, and then cultured in the presence of BCGF. HIV expression was monitored by the antigen capture test and by measurement of HIV-specific RNA.
Results. BCGF increased the production of HIV 10-20 fold in PBL. The increase of virus production was associated with an increase in HIV RNA production. BCGF had no stimulatory effect on HIV production in T cell enriched cultures; BCGF also did not have any proliferative effect on these T cells. This indicates that BCGF-induced stimulation of HIV is a B cell mediated phenomenon. BCGF enhanced expression of HIV was not associated with induction of GM-CSF, IL-1B or IL-2. Anti-IgM antibody was found to inhibit the stimulatory effect of BCGF. Such suppressive effect of anti-IgM antibody was found to be associated with an increased expression of interferon.
Conclusion. In the presence of BCGF, B lymphocytes can be infected with HIV and produce high levels of virus. BCGF-induced HIV expression is down regulated by anti-IgM antibody. These data suggest that HIV replication in B cells may be of significance in the immunopathogenesis of the retrovirus.

Th.C.P.15 CELLULAR CONTROL, BUT NOT ENTRY DOWN REGULATE HIV-1 EXPRESSION IN NEURAL CELLS.

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Objectives. To analyze rate limiting steps of HIV-1 expression in neural cells.
Methods. Astroglia and neuroblastoma cell lines were used as an in vitro model system for HIV-1 neuropathogenesis. Viral expression in these cells was analyzed following infection and transfection. Using the membrane dequenching technique, viral entry was analyzed in parallel to p24 antigen accumulation in the cells.
Results. Significant variability was detected among different HIV-1 isolates in their ability to infect neural cells. Low producing non cytopathic viral expression was found in some cell lines. One cell line, did not produce virus under any circumstaces. We studied whether viral entry is a possible rate limiting step in infection of these cells.

Cells	%DQ	p24 antigen(pg/ml)	virus production
U251	23.5	312	+
TE671	15.5	397	+/-
SK N MC	8.0	550	+/-
LA N 1	15.0	335	-
Jurkat	19.0	5700	++++

Conclusion. Our data show that intracellular control, rather than virus entry, restricts HIV-1 expression in neural cells.

Th.C.P.16 LATENT/INDUCIBLE EXPRESSION OF HIV-1 IN GLIAL CELLS

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Objective. To determine the conditions for HIV-1 latency/induction in chronically-infected human glial cells.
Methods. HIV-1 induction was determined by following an increase in: i) intracellular HIV-1 RNA; ii) intracellular and extracellular HIV-1 p24 protein; iii) HIV-1 tat and art gene product as determined by reporter CAT gene expression; iv) production of infectious virus.
Results. Human glioma cells H-80/N1T-E, latently infected with HIV-1 (strain N1T-E), could be induced to increased HIV-1 replication by treatment with Na-butyrate or heat shock, but not with PMA or HHV-6, which are known to induce virus in T cells (Table). Virus induction resulted in a change of the pattern of virus-specific proteins, release infectious virus, but not cytolysis or cell fusion.

Inducer	HIV-1 production (p24, pg/ml sup.)
None	4,800
PMA (20 ng/ml)	3,200
Na-Butyrate	23,000
IL-2	5,700
HSV-6	4,000
Heat Shock	20,000

Conclusions. Human glial cells are capable of carrying latent HIV-1 infection. Cells can be induced to produce infectious HIV-1, which could contribute to the spread of HIV-1 in the brain. The mechanism of induction appears to differ from that in T lymphocytes.

Th.C.P.17 DIFFERENCES AMONG HIV ISOLATES IN CELLULAR ENTRY AND FUSOGENICITY AS MEASURED BY FLUORESCENCE DEQUENCHING TECHNIQUE.

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Objective. To compare the fusogenic properties of different strains of HIV and their ability to enter and infect various target cells.
Methods. Six strains of HIV (N1T-E, N1T-A, HTLV-III-B, RF-2, SF-3 and SF-33) were gradient purified and labelled with octadecylrhodamine B chloride (R-18). Various lymphoid, monocytic, glial, neuroblastoma cell lines and fresh lymphocytes were incubated with labelled virus and DQ values were calculated from fluorescence measurements. Viral entry was confirmed by measuring intracellular RNA and p24 antigen levels. Infection was followed by immunofluoresence.
Results. Our data demonstrates that HIV enters cells by a rapid, receptor-mediated and temperature-dependent process of fusion with plasma cell membrane. Different HIV isolates showed significant variability in their ability to fuse with various target cells as measured by DQ technique. Viral nucleocapsid entry and infection were correlated with the fusogenic properties of each isolate.
Conclusion. Our data provide quantitative measure of HIV-strain differences with respect to virus entry and fusogenic properties.

Th.C.P.18 THE ROLE OF THE *vpu* GENE IN HIV-1 LIFE CYCLE

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Objective. The presence of the *vpu* gene distinguishes HIV-1 from HIV-2. The vpu product is a 16Kd protein and elicits antibody response in HIV-1 infected individuals. The function of *vpu* gene is not fully understood. One study suggested the involvement in maturation of virion and seems to be required for the efficient replication in T cells. Another group suggested a possible role as a negative regulator. Objective of this study is to elucidate the function of *vpu* gene of HIV-1 in its life cycle.
Methods. Mutagenesis by linker insertion, deletion, and site directed mutagenesis were applied for the *vpu* gene of an infectious clone of HIV-1, and each mutant was analyzed in comparison with the wild type.
Conclusion. Some of the mutants in *vpu* gene affected a growth pattern of HIV-1 in T cells. The differences in RT activity, CPE, the expression of viral antigens will be presented and the possible mechanism of *vpu* function will be discussed in DNA, RNA, and protein level.

Th.C.P.19

MOLECULAR INTERACTIONS BETWEEN HHV-6 AND HIV-1 IN COINFECTED CD4+ T-CELLS LEAD TO INCREASED HIV-1 GENE EXPRESSION

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HHV-6 can superinfect HIV-1 infected human CD4+ T-cells, leading to increased and accelerated cell death. HHV-6 infected cells are also capable of stimulating expression of a reporter gene linked to the HIV-1 LTR. Increased HIV-1 LTR *trans*-activation is obtained when HHV-6 infected cells are co-transfected with the HIV-1 *tat* gene, or when doubly infected cells are used. In fact, sequences necessary for HIV-1 activation by HHV-6 are distinct from those required for the *tat* response and map to a region of HIV-1 LTR where nuclear proteins, activated or induced by HHV-6 infection, specifically bind. Increased levels of HIV-1-specific transcripts are seen by *in situ* hybridization in HHV-6/HIV-1 doubly infected cells as compared to single HIV-1 infection. These data suggest that since both viruses, HHV-6 and HIV-1, share similar cell tropism, coinfection of CD4+ T-cells may play an important role in the progression of HIV-1 infection to AIDS.

Th.C.P.20

INDUCTION OF HUMAN IMMUNODEFICIENCY VIRUS EXPRESSION BY ULTRAVIOLET LIGHT

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Objective. Recent data demonstrate that ultraviolet (UV) light and certain chemical agents activate transcriptional level of HIV-1 LTR-directed gene expression. We have examined effect of UV on activation of HIV-1 promotor in an attempt to elucidate mechanisms by which UV light may induce a latent virus. Methods. We have developed several human cell line clones each containing a distinct form of a stably integrated *tat*/*rev* mutant HIV-1 provirus. Adherent (HeLa) and non-adherent (H9) cells expressing *tat* constitutively have been used in amplification of virus release after UV treatment. Results. UV irradiation leads to activation of latent HIV-1 which is transmissible to CD4+ H9 cells. Characteristic syncytial cells and simultaneous virus propagation comparable to wild type were observed as early as two weeks after UV treatment. UV was highly effective for *tat*(-), but not for *rev*(-) mutants under identical conditions. Conclusion. These findings raise the question of whether natural exposure to UV light might contribute to the pathogenesis of AIDS. We propose that UV radiation of skin might directly or indirectly activate latent virus resident in human epidermal Langerhans cells and/or subepidermal lymphocytes.

Th.C.P.21

ISOLATION OF HIV IN A HIV1-HIV2 DUAL SEROCONVERTED CHILD INFECTED BY BLOOD TRANSFUSION IN 1984 IN FRANCE : CHARACTERIZATION WITH PCR

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Objective : By means of a seroepidemiological study among 144 patients multitransfused in France, we found one true dual seropositivy for HIV-1 and HIV-2. This child with Von Willebrand's disease was transfused on a first and unique occasion in April 1984. We have chosen to use the selective DNA amplification technique by polymerase chain-reaction (PCR) to type the proviral sequences, specific for HIV-1 or HIV-2.

Methods : Sera were tested with both specific type EIA, Western-blot (HIV-1 or HIV-2 from Diagnostics Pasteur) and with peptides immuno-assays (from a conserved region of the transmembrane protein : Diagnostics Pasteur). Proviral DNA sequences were studied by PCR using primers and probes for HIV-1 (pol and env regions) for HIV-2 (gag, env and LTR regions).

Results : The serological analysis of patient's sequential sera (from April 1984 to Dec. 1988) using three specific techniques, shows : - a true double reactivity for both viruses ; - a simultaneous double seroconversion between April and May 1984 ; - a profound decrease of anti-p24 antibodies between 1984 and 1988 (in contrast the titer of HIV-2 antibodies directed against p26 persisted at a high level). DNA proviral sequences were detected by PCR for pol and env regions of HIV-1, and for gag and LTR regions of HIV-2. These results were obtained from the different viruses isolated by cocultures and from the peripheral lymphocytes of the patient.

Conclusion : This dual positivity obtained by serology and by PCR in a French patient raises the possibility of a dual HIV1-HIV2 infection or of an infection by a third virus containing both HIV-1 and HIV-2 related sequences.

Th.C.P.22

Binding Characteristics of HIV-1 and HIV-2: Differences in Binding Inhibition by Soluble CD4 and Dextran Sulfate.

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Objectives: Examine binding characteristics of different HIV- 1 and HIV-2 viruses, and binding inhibition by soluble CD4 (sCD4) and dextran sulfate.
Methods: Viruses (HIV-1: HXB2D, HX10, WMJ-1, HTLV-III$_B$; HIV-2:HIV-2$_{ROD}$, HIV-2$_{DZ}$, SBL666 clone ISY, and SIV$_{MAC}$) were labeled using 5,6-^{3}H uridine, and binding and binding inhibition assays performed on H9 and Molt-3 cells.
Results: Binding affinities were similar for HIV-1 and HIV-2, but numbers of saturable binding sites varied eight-fold. HIV-2 viruses were much less susceptible to binding inhibition by sCD4, while OKT4a monoclonal antibody and dextran sulfate inhibited binding of HIV-1 and HIV-2 in an identical fashion. These differences may reflect the involvement of accessory cell surface molecules in HIV-2 binding or penetration; however, differences in the structural relationship or the stability of envelope proteins in HIV-1 and HIV-2 is suggested by the presence of differing ratios of sCD4-detectable envelope protein in purified virions and virus-free supernantants from HIV-1 and HIV-2 infected cultures.

Th.C.P.23

CHARACTERIZATION OF NEF GENES FROM SIV AND HIV2.

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Objective. To compare the nucleotide sequence of NEF genes and to examine the function of the NEF gene *in vitro* and *in vivo*.
Methods. Infectious molecular clones of SIV and HIV2 were subcloned into plasmid and M13 vectors for sequencing and mutagenesis. DNA sequencing was performed using the primer directed dideoxy method. Genes were mutated by oligonucleotide directed gap mutagenesis or by restriction site specific mutagenesis. Virus was obtained by transfecting cloned DNA with DEAE dextran.
Results. Mutations that alter the size and content of NEF are common in infectious molecular clones. The SIVmac239 NEF gene contains a TAA in-frame stop signal 93 codons from the initiating ATG predicting a protein product 65% shorter than that of SIVmac142. A premature truncation of NEF is also observed in clones SIVmac251 and HIV2rodCVB. SIV142 encodes a NEF in which a segment of 15 amino acids are different from the other sequenced NEF genes. The introduction of a frameshift mutation that removes 74% of NEF coding sequences in the SIV142 cloned virus did not affects its ability to replicate in HUT78 cells. A single nucleotide has been changed in SIV239 to create a fully open NEF reading frame in this cloned virus; the properties of SIV239 with open, truncated, and deleted NEF genes are being compared both in cultured cells and in infected macaque monkeys.
Conclusion. Changes that obviate NEF expression occur frequently in infectious molecular clones of SIV and HIV2. These findings are consistent with the proposed role of NEF in mediating repression of viral gene expression. Mutational analysis of the NEF gene is complicated by difficulties in defining the sequence of functional, wild type NEF.

Th.C.P.24

IN SITU HYBRIDIZATION ANALYSIS OF HIV RNA INDUCTION IN U1 CELLS TREATED WITH PHORBOL ESTER

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Objective. To determine the kinetics of RNA production following activation of latent HIV infection at the cellular level using non-radioactive *in situ* hybridization.
Methods. Cultures of U1 cells, which contain 2 copies of latent HIV provirus, were treated with 5 ng/ml phorbol myristate acetate (PMA) and were maintained at 5-10X10^5 cells/ml. At various times, the cells were deposited on microscope slides and fixed with ethanol. HIV RNA in the fixed cells was hybridized to a biotinylated DNA probe that contained the entire HIV genome. The hybridized probe was detected using a streptavidin-alkaline phosphatase complex. The assay was completed in 4-5 hours.
Results. In untreated control U1 cultures, 0.5% of the cells expressed detectable levels of HIV RNA. At 24, 48 and 72 hours after exposure to PMA, the fraction of cells expressing detectable levels of HIV RNA increased to 32%, 67% and 60%, respectively. The amount of RNA per cell varied considerably as indicated by the intensity of staining. Uninduced cultures contained about 4500 cpm/ml of reverse transcriptase activity. The reverse transcriptase activity increased 1.9, 4.0 and 3.4 fold at 24, 48 and 72 hours after exposure to PMA.
Conclusion. *In situ* hybridization is a more sensitive indicator of HIV induction than reverse transcriptase activity since the extent of induction observed is much greater. Additionally, heterogeneity at the cellular level is revealed. This technique may be used to study HIV induction under other conditions and to evaluate the effect of putative inhibitors on HIV expression.

Th.C.P.25

NON-RADIOACTIVE IMMUNOPRECIPITATION ASSAY AS CONFIRMATORY TEST FOR ANTIBODIES TO HTLV-I VIRUS.

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Objective. To develop a non-radioactive confirmatory test for the detection of antibodies to HTVL-I envelope protein in human sera as a convenient alternative to the radioimmunoprecipitation assay (RIPA).
Methods. The envelope glycoproteins were immunoprecipitated by HTLV-I-positive sera or by a rabbit antiserum, resolved on SDS-PAGE, transblotted on a nitrocellulose membrane and visualized with the current Western blot (WB) system.
Results. A confirmatory WB method, similar to that used for the HIV-1 antibody test, has not been successfully applied to HTLV-I antibody screening because the envelope protein is not readily detected. RIPA is currently employed for this purpose since it is a sensitive assay, particularly for the detection of the envelope protein. A non-radioactive immunoprecipitation (IP) approach, applying the principles of both RIPA and WB, readily detected the envelope precursor protein, gp61/68, with a sensitivity approaching that of RIPA, thus circumventing the problems associated with use of radioisotopes. The following table shows the relative detectability of the key antigens of HTLV-I by the present system (IP/WB) as compared to that of WB and RIPA.

	gp61/68	p24, p26/28	p19	p38 (tax)
IP/WB	+	+	+	+
WB	-	+	+	+
RIPA	+	+	-	+

Conclusions. The IP/WB system is sensitive, convenient and useful as an alternative confirmatory antibody test for HTLV-I. Since immunoprecipitated gp61/68 are readily reactive with HTLV-I-positive sera on WB, it provides a technical basis for purification of these proteins by affinity chromatographic means for the future development of the HTLV-I WB assay system.

Th.C.P.27

COMPLEMENTATION OF HIV-1 rev MUTANTS BY rex PROTEIN OF HTLV1 BUT NOT BY rex OF BLV

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Objective. To test functional similarities of rev protein of HIV-1 and rex proteins of HTLV-1 and bovine leukemia virus (BLV).
Methods. rex proteins of HTLV-1 or BLV were expressed using the RSV promoter and SV40 polyadenylation site. pREX-BLV contains the two rex exons joined by site-directed mutagenesis; thus splicing is not required for rex expression by these plasmids. In addition, the initiator AUG region was mutagenized to improve the homology to the initiator AUG consensus, in an effort to improve translation efficiency. pREX-HTLV1 contains the HTLV-1 rex coding sequence and is otherwise similar to pREX-BLV.
Results. HIV-1 rev proviral mutants show an increase in multiply spliced mRNA at the expense of the unspliced mRNA. These mutants produce low levels of gag and env structural proteins. Cotransfection of the rev mutants with a rev-producing plasmid results in full complementation of these defects. Partial complementation was also obtained by HTLV-1 rex but not by the BLV-1 rex. rev acts via a cis-acting element in the env region of HIV-1 (rev-responsive element, RRE) and affects the transport and stability of RRE-containing mRNAs. Deletion mutants affecting RRE have been studied, to identify the mechanism of function of rev and rex proteins.
Conclusion. rev and rex proteins are essential for viral replication. rex of HTLV-1 complements rev mutants, whereas rex of BLV does not. Thus HTLV-1 rex is functionally related to rev. Examination of the role of these proteins reveals that they may affect the nuclear transport of the viral mRNA.

Th.C.P.29

INTERFERONS (IFN) AND BACTERIAL LIPOPOLYSACCHARIDE (LPS) PREVENT HIV INFECTION IN MACROPHAGES BY BLOCKING PROVIRUS FORMATION.

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Objectives. To examine the effects of macrophage-activating agents on HIV replication.
Methods. Monocyte-derived macrophages were treated with various substances and then infected with a macrophage-tropic strain of HIV-1 (HTLV-III$_{\text{Ba-L/85}}$).
Results. (1) Pretreatment with IFN-α, IFN-β, IFN-γ, or LPS prevented viral replication in macrophages. In treated cultures, little or no infectious HIV or p24 core antigen was released into the supernatant, no virions were seen by electron microscopy, no viral RNA or DNA was detectable in the cell lysates, and no cytopathology (as determined by multinucleated giant cell formation) occurred. In contrast, a wide dose range of recombinant IL-1β, IL-2, IL-4, IL-6, M-CSF, TNF-α, or lymphotoxin was ineffective. A consistent effect of GM-CSF was not observed. (2) Pretreatment with ~100 U/ml of IFN-α, ~ 10 U/ml of IFN-β, or ~100 U/ml of IFN-γ was sufficient to prevent virion release maximally and to prevent cytopathology completely. Transforming growth factor β (TGFβ) at 1 ng/ml reverses the protective effects of low doses of interferons and LPS, consistent with the known macrophage "deactivating" effects of TGFβ. (3) Using the polymerase chain reaction, little or no proviral DNA was present in macrophages pretreated with interferons or LPS. Thus, these agents prevent the establishment of the proviral DNA genome in these cells.
Conclusion. HIV replication in previously uninfected macrophages can be regulated at the level of provirus formation by an inducible host cell mechanism. These findings may explain the restricted replication of HIV in macrophages *in vivo* and suggest an antiviral role for interferons in the therapy of HIV infection.

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Th.C.P.26

PURIFICATION OF HIV IN AN AQUEOUS TWO-PHASE SYSTEM RETAINS THE INFECTIOUS TITER AND GIVES A HIGH YIELD OF gp120

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Objective. Concentration of HIV by centrifugation results in a low recovery of the external glycoprotein. This is consistent with what is found with other retroviruses. Extraction in two-phase systems based on water soluble polymers were recently tested with the feline leukemia virus and the bovine leukemia virus (Hammar et al, J Virol Meth, and Biotech & Appl Biochem, 1989, in press). As the results with these viruses were promising we apply the same technique for the purification of HIV.
Methods. Several polymer-based aqueous two-phase systems (Albertsson, Biochim Biophys Acta, 1958;27:378-395) were tested for their capacity to enrich the HIV from HIV-1$_{\text{IIIB}}$ infected H9 cell culture medium. The infectivity titer and content of gp120 and p27 were determined.
Results. With a system composed of dextran and polyethylene glycol the two viral proteins were both recovered to about 60% in a small volume bottom phase, about 200-fold concentrated. The infectious titer was fully retained in this fraction, in which the two viral proteins were about 100-fold purified on protein basis.
Conclusion. Partition in aqueous polymer-phase systems seems a useful principle for the concentration and purification of HIV directly from the infected cell culture medium. Fully sealed vessels or continuous flow design of the technical set-up would be possible to construct for convenience and safety.

Th.C.P.28

ANALYSES OF UNINTEGRATED VIRAL DNA AND CYTOPATHIC EFFECT (CPE) INDUCED BY HIV

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Objective. To delineate the relation between the accumulation of unintegrated HIV DNA and CPE induced by HIV infection.
Methods.The unintegrated HIV DNA was examined in ① acutely infected MOLT-4#8 cells with cell-free virus,② persistently infected cells (PICs) treated by TPA,③ PICs after induction of fusion by polyethylene glycol (PEG).For detection unintegrated HIV DNA,DNA was extracted from infected cells by Hirt method and analysed by Southern blotting method using BH10.
Results.The parallel relation between the accumulation of the unintegrated HIV DNA and the appearance of CPE was observed when MOLT-4#8 cells were acutely infected with cell-free virus and when PICs were co-cultured with uninfected MOLT-4#8 cells. PICs with or without TPA treatment did not produce any detectable amount of unintegrated HIV DNA. PEG treatment of PICs caused ballooning degeneration as seen in acute viral infection and unintegrated viral DNA was detected.
Conclusion.The accumulation of the unintegrated HIV DNA was observed when CPE was induced either by cell-free virus or co-cultivation with PICs, but not when cell-killing and enhanced viral replication was induced by TPA treatment. These data suggest that different cell-killing mechanisms may be present. Since the unintegrated HIV DNA was not detectable in PICs and its appearance in PEG-treated PICs, we hypothesize that some negative regulation factor is present in the PICs to suppress the synthesis of viral DNA and PEG-treatment released this negative factor. Further studies are undergoing to find out this negative regulation mechanism.

Th.C.P.30

CHARACTERIZATION OF HTLV-I CELL LINES DERIVED FROM U.S. PATIENTS WITH SPASTIC PARAPARESIS.

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Objective: Determine characteristics of HTLV-I cell lines derived from U.S. patients with spastic paraparesis (SP).
Methods: PBMC or CSF cells were obtained from 4 patients with a clinical history of SP. Cell lines were established by coculture. HTLV-I expression was assessed using IFA and HTLV-I & II PCR. Serum and CSF antibodies were detected by WIB and RIP assays. Results: HTLV-I positive cell lines were derived from 3 of 3 CSF samples tested and 4 of 4 PBMC samples tested. All 4 patients direct (non-cultured) PBMC samples were PCR positive using a HTLV-I specific pol primer pair and were negative using a HTLV-II specific primer pair. In comparison, direct PBMC PCR analysis from 2 seropositive blood donors indicated 1 donor was HTLV-I positive and the other HTLV-II positive. Direct PBMC samples of 2 donors with indeterminate serologic status (p19+ only) and 0 of 3 from seronegative donors were PCR negative for either virus. SP patients serum and CSF samples contained antibodies to all major HTLV-I proteins. Data will be presented concerning the phenotype of cell lines.
Conclusions: These results provide further evidence that HTLV-I associated SP occurs in the U.S. and demonstrates the usefullness of PCR in distinguishing between HTLV-I and HTLV-II. These HTLV-I positive CSF and PBMC lines allow comparison of U.S. HTLV-I isolates with other HTLV-I isolates.

Th.C.P.31 GENERATION OF HYBRID HUMAN IMMUNODEFICIENCY VIRUSES

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Objective: To investigate the viral determinants underlying tropism and cytopathic effects of HIV, hybrid HIVs were generated.
Methods: Varying 5' or 3' proviral DNA fragments of biologically infectious HIV clones (HIV_{Zr6}, HIV_{SF-2}, $HIV_{HTLV\ III}$ and HIV_{CDC451}) were used as substrates for recombination. The proviral 5' or 3' DNA fragments were cotransfected into cells by calcium phosphate precipitation method and hybrid viruses released from the cells were quantitated by HIV antigen assay.
Results: Truncated HIV proviral DNAs with overlap homology were transfected into human rhabdomyosarcoma cells. HIV released from the cells were quantitated at the end of 3 and 5 days after transfection. Hybrid HIVs with different 5' and 3' ends were generated using the molecular clones. Hybrid HIVs were infectious upon inoculation into PBLs and their genetic structures were determined by Southern hybridization analysis.
Conclusion: Construction of hybrid HIVs based on compatible restriction enzyme sites present in viral DNA has limitations because of extensive variability between different HIVs. Homologous recombination methodology provides an efficient alternate method for generating hybrid HIVs.

Th.C.P.32 FACTORS INFLUENCING HOMOLOGOUS RECOMBINATION BETWEEN HIV DNAs IN CULTURED HUMAN CELLS

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Objective: To analyze recombination between HIV DNAs, optimal conditions were determined using DNA transfection in cell cultures.
Methods: Recombinant plasmid substrates were constructed from HIV proviral DNAs (HIV_{Zr6}, $HIV_{HTLVIII}$ and HIV_{SF-2}). The success of recombination was measured by the production of viable hybrid virus. Polymerase chain reaction method was also used to characterize the cross-over junction.
Results: Substrate DNAs were transfected into cells. The process of recombination between HIV DNAs were shown to be dependent on homology between the truncated HIV DNAs and maximum with the concentrations of the DNA 3 ug and above for both single and double cross-over. Human RD cells at a concentration of $4x10^6$ showed maximum hybrid virus production. Also, DNA calcium phosphate precipitate exposure of cells for 8-12 hrs and an expression time of 3-5 days after transfection registered detectable amount of hybrid virus in the medium.
Conclusion: Optimal conditions for efficient recombination between HIV DNAs were determined. This is a powerful technique to generate hybrid viruses at any region of the genome.

Th.C.P.33 LOCALIZATION OF THE DEFECT IN HIV PROVIRAL DNA BY HOMOLOGOUS RECOMBINATION

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Objective. Homologous recombination methodology was used to localize the defect in a $HIV_{HTLV\ III}$ proviral DNA.
Methods. High molecular weight DNA extracted from H9/HTLV III cells was cleaved with Xba I enzyme and the proviral DNA was molecularly cloned. Clone designate Xba3 was subcloned in a plasmid vector and tested for the virus production by DNA transfection. Reverse transcriptase (RT) and antigen assays were used to quantitate the virus released from the cells transfected with the proviral DNA. Truncated proviral DNAs were generated using standard recombinant DNA techniques.
Results. The proviral clone Xba3 was transfected into human RD cells. Unlike other proviral DNAs, Xba3 DNA transfected cells did not release virus which could be quantitated by RT assay. In cotransfection experiements with HIV LTR-CAT, Xba3 was able to transactivate the HIV LTR-directed expression as other proviral DNAs. Cotransfection of the Xba3 DNA with other truncated proviral DNAs (5' end) was able to increase the virus antigen detected in the medium. 5' end of Xba3 was inactive whereas 3' end was active in cotransfection experiments involving homologous recombination.
Conclusion. The defect in an HIV proviral DNA was localized by using truncated viral DNAs in cotransfection experiments. This approach narrows the region for molecular analysis to identify the nature of the defect.

Th.C.P.34 HUMAN ANTIBODIES TO HIV-1 GP160 INHIBIT ATTACHMENT TO CD4

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Objective. To detect the presence in human HIV antibody positive sera of anti-gp160 antibodies inhibiting the binding of HIV-1 gp160 to the extracellular portion of CD4.
Methods. HIV-1 sera of 264 homosexual men, 20 hemophiliacs, 10 iv-drugusers and 9 HIV-2 antibody positive sera were tested in a competition immunoassay using soluble CD4 (sCD4). Rabbits were immunized with peptides covering the CD4 binding site or with the neutralizing epitope of the HIV-1 strain HTLV-IIIB.
Results. 18 to 50% of the HIV-1 antibody positive sera from the three AIDS risk groups reduced gp160-sCD4 binding by more than 80% at a 1:100 dilution, while HIV-2 antibody positive sera tested did not show such activity in our assay. Attempts to localize the binding site for these gp160-sCD4 inhibitor antibodies on the primary sequence of gp120 by using synthetic peptides encompassing the CD4 binding site on gp120 were not successful. Neutralizing antibodies to the V3 domain of gp120 did not inhibit binding of gp160 to sCD4.
Conclusion. Antibodies inhibiting the gp160-sCD4 binding were highly prevalent among HIV-1 seropositives and not in HIV-2 sera. They emerge at the moment of seroconversion indicating good immunogenic potential of this domain. Presence of antibodies to an HIV-1 gp160 portion involved in CD4 binding did not hamper or prevent disease progression.

Th.C.P.35 DISTINCTION BETWEEN HIV-1 AND HIV-2 INFECTION USING ANTIBODY RESPONSES TO ACCESSORY GENE PRODUCTS

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Objective. To distinguish HIV-1 or HIV-2 infection by serum reactivity to the accessory gene products nef, tat, rev, vpr and vpu.
Methods. Sera of HIV infected individuals from East-Africa and from West-Africa were tested for reactivity with nef, tat, rev, vpr and vpu proteins expressed in E.coli by enzyme-linked immunoassay.
Results. Nine (38%) West-African sera had reactivity to HIV-1 accessory gene products relative to 27 (93%) of the East-African sera. Antibodies to the HIV-1 nef, tat and rev gene products were significantly ($p \leq 0.002$) more often present in East-African sera compared to West-African sera. Antibodies to vpr and vpu were completely absent from all West-African sera, but also from 33% respectively 55% of the East-African sera.
Conclusion. These results render typing of the infecting HIV-strains solely based on HIV-1 accessory gene product reactivity difficult, but reactivity to vpr and vpu may add to discriminating power of type-specific serology by env peptides.

Th.C.P.36 EXPRESSION OF EIGHT HUMAN IMMUNODEFICIENCY VIRUS GENES IN ESCHERICHIA COLI FOR USE IN DIAGNOSTIC TESTS.

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Objective. To obtain large amounts of various HIV-1 and HIV-2 gene products using recombinant DNA technology.
Methods. Genes encoding HIV-1 gp41, endonuclease, reverse transcriptase, p17, p24, nef, HIV-2 gp41 and p24 were molecularly cloned in E.coli. In some instances genes were chemically synthesized using optimized E.coli codons to maximise expression. In order to obtain large amounts of each of the viral proteins, individual genes were expressed in E.coli using vectors with the lambda pL promoter under the control of a temperature sensitive cI repressor.
Results. Each of the eight genes was successfully expressed in E.coli. The level of expression in each case was greater than 1% of the total E.coli proteins. The HIV proteins could be readily identified in induced E.coli cultures by coomassie blue staining. The antigenicity of recombinant DNA derived proteins was demonstrated by Western blot analysis as well as sandwich enzyme linked immunoassays using sera from virus exposed individuals. Whereas, control sera showed no detectable reactivity. The availability of HIV-1 and HIV-2 proteins could be effectively used to discriminate immune response to either of the viruses.
Conclusions. The HIV-1 and HIV-2 proteins expressed in E.coli at high levels provide a safe, and efficient source to 1) detect virus infection, 2) monitor various stages of the disease and 3) discriminate HIV-1 infection from HIV-2.

Th.C.P.37 DISCRIMINATION OF HIV-2 INFECTION FROM HIV-1 INFECTION BY WESTERN BLOT AND RADIOIMMUNOPRECIPITATION ANALYSIS (RIPA).

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OBJECTIVE : To evaluate the the use of Western blot and SDS-PAGE RIPA to confirm HIV-2 infection and to discriminate the serological response from that seen in HIV-1 infection.
METHODS : Western blot studies using HIV-1 and HIV-2 viral lysates and SDS-PAGE RIPA using ^{35}S-metabolically labelled cell lysates were used to evaluate specimens found to be repeatedly reactive in a recombinant HIV- 1/2 enzyme immunoassay. 126 specimens from the United States, Europe and Western Africa were tested. Antibody reactivity to specific viral gag, pol, and env proteins was determined. Confirmation required the detection of antibodies to both HIV-2 env and gag proteins. Discrimination required the detection of specific antibodies to env proteins of only one viral type.
RESULTS : Thirty one specimens from Western Africa and Europe were confirmed for the presence of antibodies to HIV-2 env and gag proteins. Twenty specimens had strong antibody responses to HIV-2 env proteins and weak or absent responses to HIV-1 env proteins. Low-titer cross-reactivity with HIV-1 gag (p24/26, p55) and env (gp150/160) was noted, including 8 (40%) with reactivity to gp120. Eleven HIV-2 confirmed specimens also had antibodies strongly reacting with both HIV-1 gag and env proteins suggesting dual infection. Of 95 Western blot positive U.S. specimens, variable cross-reactivity at most HIV-2 proteins was seen but with reactivity to gp120 able to discriminate all but 7 (7.4%) specimens .

Th.C.P.38 PSEUDOTYPES OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) WITH THE ENVELOPE ANTIGENS OF VESICULAR STOMATITIS VIRUS (VSV) OR HERPES SIMPLEX VIRUS (HSV)

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Objective. To identify the formation of pseudotypes during coinfection containing HIV genomes coated by the envelope antigens of VSV or HSV, designated HIV(VSV) or HIV(HSV), respectively.
Methods. To prepare phenotypic particles of HIV, we infected HIV RF strain-producing H9 cells with VSV temperature-sensitive (ts) O45 and thermal-labile (tl) 17 mutants or with HSV ts-J12 mutant. CD4-negative HeLa cells were used for infection with phenotypic mixtures to minimize HIV(HIV) replication. Anti-VSV or anti-HSV antiserum was used to differentiate HIV(VSV) or HIV(HSV) from HIV(HIV). HIV replication was measured by p24 production or syncytium formation on C8166 cells.
Results. Production of p24 in HeLa cells was significantly reduced when phenotypic mixtures were treated with anti-VSV. As a control, anti-VSV did not have an effect on HIV(HIV) replication in HeLa cells. The effect of anti-HSV to knock down HIV replication can be amplified by passaging anti-HSV treated particles through C8166 cells.
Conclusion. These observations indicate that pseudotypes of HIV(VSV) or HIV(HSV) can be formed during coinfection. This may be a potential mechanism for the broadening of cell tropism of HIV and for the increased spread of HIV in AIDS patients who are also infected with other viruses.

Th.C.P.39 HIV POSITIVE SERA IDENTIFIED WITH SYNTHETIC PEPTIDE ANALOGS OF ENV, GAG, TAT, AND NEF.

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Objective: To identify synthetic peptide analogs that are specifically recognized at the earliest time point after immune recognition of infection with HIV.
Methods: Panels of known seronegative, seropositive and seroconvertor sera to HIV were screened for their reactivity to peptides derived from conserved regions of gp120, gp41, p17, tat, and nef proteins using an EIA.
Results: A peptide to the immunodominant region of gp41 was the most sensitive and specific being recognized by almost all HIV positive sera. Antibodies recognizing nef peptides were detected earlier in seroconversion to HIV than those to either a recombinant antigen based commercial EIA or the various peptides. Peptides derived from p17 were recognized by both HIV-positive and -negative sera. A tat peptide was recognized by 60% of sera, although no correlation with clinical stage of infection was apparent.
Conclusion: The results of this study determined the utility of using synthetic peptides in serodiagnosis of HIV infection. In particular antibodies to gp41 and nef proteins were recognized in peptide EIA's before reactivity was apparent with other assays.

Th.C.P.40 HIV-1 INFECTION OF HUMAN MONOCYTES IS INHIBITED BY ANTISERA TO HIV-1 OR BY LPS ACTIVATION OF THE CELLS

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Objective. To assess the modulating effects of HIV specific antibodies and cell activation on the infection of human monocytes by HIV-1 in vitro.
Methods. Elutriated peripheral blood monocytes from normal donors cultured for 7 days in GM-CSF/M-CSF-supplemented medium were inoculated with 1 of 5 isolates of HIV-1: IIIB; RF; 2 clinical isolates grown in lymphocytic cell lines (U455, A4BCEM); or a commercial monocytotropic strain. For studies of neutralization or enhancement, virus was preincubated with sera from normal or HIV-infected donors. To investigate the effect of monocyte activation, cells were pretreated with LPS. Productive virus infection was quantitated by p24 antigen (p24Ag) ELISA and integrated proviral DNA detected by polymerase chain reaction (PCR).
Results. Infection of monocytes was maintained with each virus isolate for 21 days. Virus infection was neutralized (complete inhibition of p24Ag production and failure to detect proviral DNA) by 4/6 HIV antibody positive (HIV Ab$^+$) sera at dilutions of 1:10 or 1:100. There was no enhancement of p24Ag production by HIV Ab$^+$ sera at dilutions from 1:10 to 1:10,000. Activation of monocytes with LPS resulted in ≥50% inhibition of p24Ag production.
Conclusions. Human monocytes maintained in GM-CSF/M-CSF-media were susceptible to infection by HIV-1 strains characterised as either lymphocytotropic or monocytotropic. Activated monocytes were resistant to infection. HIV-1 infection of monocytes was neutralised by HIV Ab$^+$ sera.

Th.C.P.41 GROWTH KINETICS OF HIV IN HTLV-1 TRANSFORMED CELLS.

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Objective: To define replication kinetics of HIV-1.
Methods: MT-2 cells were infected at an MOI of 1. Samples collected serially were then studied for reverse transcriptase activity, soluble core antigen, intra- and extra-cellular infectious virus, viral mRNA and proteins, development of CPE, and cell viability.
Results: Three clear phases of infection were observed: an eclipse phase (0-16h) in which progeny virus and CPE were not observed, an exponential phase of particle release (16-62h) coinciding with the development of early CPE, and the production of viral mRNA and proteins; and from 62-82h, extensive CPE and cell death developed, and intracellular mRNA and protein synthesis increased markedly while the amount of infectious virus released remained stable. This appeared to be associated with the accumulation of virus particles in cytoplasmic vacuoles.
Conclusion: The replication of HIV demonstrated several features typical for Retroviruses, a lengthy eclipse phase, slow accumulation of virus and low virus yields. A unique feature was the marked increase in virus-specific mRNA and proteins at the time of cell death, after peak production of infectious virus had been reached.

Th.C.P.42 MONOCLONAL ANTIBODY IDENTIFIES A CONSERVED EPITOPE OF THE HIV-1, HIV-2 AND HTLV-1 CORE PROTEINS

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Objective. To evaluate the structure and function of HIV core proteins.
Methods. BALB/c mice (female, 10 weeks old) were immunized with partially purified HIV-1 proteins. Hybridomas secreting monoclonal antibodies (mAbs) against HIV-1 were produced by fusing P3X63Ag8 653 myeloma cells with the splenocytes of the immunized mice and screened by enzyme-linked immunosorbent assay (ELISA). The positive hybridomas were cloned and the mAbs were examined by ELISA and Western blot against HIV-1, HIV-2 and HTLV-1 proteins.
Results. Three mAbs against HIV-1 proteins were produced. Two of the mAbs, namely CBER-1 & CBER-2, were of IgG1 subclass; they bound to p24 core proteins of HIV-1 but not HIV-2 or HTLV-1 in Western blot. The third mAb, CBER-3, was IgG2b subclass; it recognized p24 of HIV-1 and HIV-2 on Western blot and reacted with both HIV-1 and HTLV-1 in ELISA. Comparison of the protein sequence of core proteins shows that a peptide sequence of [illegible] in HIV-1 is relatively well conserved in HIV-2 and HTLV-1. Further study showed that CBER-3 exhibited positive response in ELISA on the plate coated with the synthetic peptide, indicating that the mAb may bind to the core proteins at this conserved epitope.
Conclusion. A mAb reactive with HIV-1, HIV-2 and HTLV-1 has been produced and its likely binding epitope on the viral proteins identified. The biological activity of this conserved epitope is now under study.

Th.C.P.43 ROLE OF OLIGOSACCHARIDES ON THE PROCESSING AND MATURATION OF GLYCOPROTEINS FROM HUMAN T-CELL LYMPHOTROPIC RETROVIRUSES

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Objective. To study the effect of oligosaccharide processing on the maturation of glycoproteins from HIV-1 and HTLV-I. Methods. Metabolically labeled viral proteins from infected cells were immunoprecipitated with specific antibodies and the immunoprecipitates were digested by endoglycosidase H. Results. The effects of deoxynojirimycin (DNM), deoxymannojirimycin (MNM) and Swainsonine on the maturation of HIV-1 glycoproteins were studied in virus-infected cells and the results are summarized below:

Inhibitor	Enzyme Target	Cleavage of gp160-gp120	Infectivity of Progeny Virus
DNM	Glucosidase I	Inhibited	Inhibited
MNM	Mannosidase I	Normal	Inhibited
Swainsonine	Mannosidase II	Normal	No effect

Treatment of HTLV-I-infected cells with MNM did not affect the maturation of gp46, although the protein had different amounts of mannose-rich oligosaccharide cores.
Conclusion. Primary trimming of mannose-rich oligosaccharide cores in HIV-1 glycoprotein is necessary for infectivity of progeny virus but the cleavage of the precursor takes place before trimming of mannose.

Th.C.P.44 MAPPING OF THE IMMUNOREACTIVE EPITOPES OF THE HIV-1 ENDONUCLEASE PROTEIN BY MEANS OF RECOMBINANT PROTEINS.

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Objective. To define the major immunoreactive part of the HIV-1 endonuclease protein.
Methods. The complete reading frame of the endonuclease (288 AA) from HIV-1 and three subclones representing the N-terminal, central and C-terminal part of the endonuclease were cloned into the tryptophan regulated expression vector pATH. After expression four fusion proteins of 68 kD, 52 kD, 46 kD and 48 kD, respectively, were obtained and used for the production of specific polyclonal antisera (68 kD recombinant protein) or as antigens in order to map the major immunoreactive part of the HIV-1 endonuclease protein.
Results. 27 out of 27 HIV-1/endonuclease positive sera predominantly reacted with the C-terminal part of the recombinant endonuclease and only a few also showed a faint reaction against the N-terminal part in the western blot. In some cases HIV-1 positive sera which did not react against the p31 of HIV-1 infected Molt-3 cells gave a clear reaction against the C-terminus of the endonuclease.
Conclusion. The results suggest that the C-terminus contains the immunodominant epitopes of the HIV-1 endonuclease. Peptide studies for the mapping of distinct epitopes are under investigation. (Supported by the BMFT grant No. PBE/12/0318837A).

Th.C.P.45 A HUMAN MONOCLONAL ANTIBODY AGAINST ENVELOPE GLYCOPROTEIN OF HIV-1 ENHANCES HIV-1 INFECTION *IN VITRO*

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Objective: To evaluate human monoclonal antibodies (HumAb) for their abilities to enhance HIV-1 infection *in vitro*.
Methods: HumAb were generated by fusion of P3x63AgU1 cells with lymph node lymphocytes from ARC patients. Protein-A purified HumAb were assayed for complement-mediated, antibody-dependent enhancement (C'-ADE) of HIV-1 infection using an MT-2 cell microtiter infection assay.
Results: One HumAb, V10-9, of seven tested was found to mediate C'-ADE of HIV-1 infection *in vitro*. This IgG1κ recognized gp160, gp120, and gp41 on western blot and enhanced HIV-1 infection to a dilution of >1:17,468 (28 ng/ml). Enhanced infections were characterized by accelerated appearance of HIV-induced cytopathic effect, increased antigen synthesis, increased reverse transcriptase release, and increased progeny virus production. This HumAb did not neutralize HIV-1 in the presence or absence of complement.
Conclusion: The generation of a HumAb that enhances HIV-1 infection but fails to neutralize HIV indicates that at least some neutralizing and enhancing antibodies recognize different epitopes.

Th.C.P.46 CORRELATION STUDY INVOLVING THE DETECTION OF HIV-1 IN SAMPLES FROM AIDS PATIENTS USING CO-CULTURE, p24 ELISA, AND TAS- AND PCR-MEDIATED HYBRIDIZATION ASSAYS

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Objective. Correlation study involving the detection of HIV-1 in samples from AIDS patients using co-culture, p24 ELISA, and TAS (transcription-based amplification system)- and PCR (polymerase chain reaction)-mediated hybridization assays.
Methods. A collection of peripheral blood lymphocyte samples which were characterized as: 1) "+" for both co-culture and p24 assays; 2) "-" for both co-culture and p24 assays; 3) "+" for co-culture and "-" for p24 assays; or 4) "+" for p24 and "-" for co-culture assays was studied for the presence of HIV-1 nucleic acid sequences using TAS- and PCR-mediated hybridization assays. After TAS or PCR amplification, detection of amplified products was carried out by a variety of methods, including bead-based sandwich hybridization, Northern and Southern blot hybridizations, and solution hybridization.
Results and Conclusion. These experiments have permitted: 1) the results derived from immunological and culture-based assays to be compared to the results derived from amplification-mediated hybridization experiments; and 2) the comparison of PCR- and TAS-mediated hybridization results. Amplification-mediated hybridization assay results derived from individual patients indicate increasing viral nucleic acid concentrations with time, whereas other assay results (p24 and co-culture) appear more variable.

Th.C.P.47 EXPANDED HOST RANGE OF HIV ACQUIRED THROUGH MODIFICATION OF GP120

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Objective: To determine what factors control the cellular tropism of HIV.
Methods: The host range of HIV obtained by passage through different cell types was determined by infectivity studies. Genomic variations of HIV recovered were assayed by Southern blot analyses and modification of gp120 examined by glycosidase treatment.
Results: HIV-1 isolates passaged through HUT-78 cells vs. peripheral blood mononuclear cells (PMC) acquired an expanded host range and replicated better in HUT-78 than the virus from PMC (Table). Restriction analyses showed that the same virus is present in the different cell types. Furthermore, passage of the virus produced from HUT-78 back through PMC results in HIV with host range properties of the HIV recovered from PMC. Studies using castanospermine and endoglycosidases indicate that the change in cell tropism of HIV-1 could be related to modification in the gp120.

		Replication in						Plaque	
HIV-SF	Source	PMC	HUT	[illegible]	Jur	CEM	U937	Formation	Cytopathology
73	PMC	+	-	-	-	-	-	-	-
73	HUT78	+	+	+	-	-	-	-	+
663	PMC	+	+	+	-	-	-	-	++
663	HUT78	+	+	+	+	+	+	+	+++

Conclusion: Glycosylation of gp120 may contribute to the heterogeneity of host cell tropism, suggesting that interfering with glycosylation might prevent infection and spread of HIV.

Th.C.P.48 REPLICATION OF HIV-1 IN A VARIETY OF ANIMAL FIBROBLAST CELLS USING PHENOTYPICALLY MIXED VIRAL PARTICLES

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Objective: To determine whether the inability of HIV to infect animal cells can be abrogated by enveloping the virus in a xenotropic (X-MuLV) or polytropic (HIX) mouse retrovirus coat, and to study variations in intracellular control of HIV replication.
Methods: Phenotypically mixed particles were obtained by superinfecting X-MULV or HIX-chronically infected HUT-78 cell lines with HIV_{SF33}. The progeny virions were inoculated onto a variety of HIV-resistant animal fibroblast and epithelial cells. Their ability to replicate was assayed by reverse transcriptase activity using both Mn^{++} and Mg^{++} divalent cations, by detection of the MuLV p30 or HIVp25 antigens (IFA and ELISA tests), the mink S^+L^- assay and Western blot techniques.
Results: HIV can be enveloped in an MuLV coat and productively infect a wide variety of animal cell types. Differences in level of HIV replication in various cells were observed.
Conclusion: The major block of HIV infection occurs at the cell surface, but an intracellular regulation of the virus can also be present. Phenotypically mixed viruses may be useful for developing an animal model system for AIDS.

Th.C.P.49 THE ANTIBODY RESPONSE TO HUMAN IMMUNODEFICIENCY VIRUS: NEUTRALIZATION VS ENHANCEMENT.

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Objective: To examine whether antibody-dependent enhancement of HIV infectivity could explain the apparent lack of protection conferred by neutralizing antibodies in vivo, and examine whether the appearance of enhancing antibodies is associated with progression towards AIDS.
Methods: The sera of 17 HIV-infected individuals comprising asymptomatic, ARC and AIDS patients were tested for neutralization and enhancement against the patients' own (homotypic) HIV isolates as well as against HIV$_{SF33}$, an established strain which exhibits cytopathicity and a wide host range. Five patients' isolates were also tested for homotypic neutralization/enhancement in macrophages. Moreover, sequential sera of an asymptomatic, an ARC and an AIDS patient obtained over a three-year period were tested against homotypic isolates obtained at the same time points.
Results: While all sera neutralized HIV$_{SF33}$, only one had such effect on the homotypic isolate, and one asymptomatic, two ARC and four AIDS patients' sera enhanced their own isolates. In macrophages, four out of five patients' sera (comprising one asymptomatic and 3 AIDS patients) enhanced their own isolates. Finally, the sequential study showed that the asymptomatic patient's early and late sera neutralized both early and late homotypic isolates, the ARC patient's early and late sera enhanced his early but not his late HIV isolate and that the AIDS patient's late serum enhanced his late isolate, while both his early and late sera neutralized his early isolate.
Conclusion: These results suggest that enhancing antibodies might be an indicator of disease progression and underline the need to examine larger groups of infected individuals to assess for such association.

Th.C.P.50 ARE THERE MULTIPLE STRAINS OF HIV IN AN INFECTED INDIVIDUAL?

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Objective: To determine whether more than one genomically distinct HIV-1 strain can be recovered from an infected individual.
Methods: Culture the peripheral blood mononuclear cells from a clinically healthy individual who has had more than four hundred sexual partners in a life time. Cocultivate these cells with ten different cell lines. Obtain HIV isolates with tropism for different cell types including established T and B cell lines, peripheral blood macrophages, CD4+ lymphocytes and human fibroblasts. Biologically clone each HIV isolate in the cell lines selected. Evaluate the biologic, serologic and molecular properties of the various isolates by cellular host range, cytopathic effects, plaque assays and restriction enzyme analyses.
Results: Ten different HIV-1 isolates were obtained by the above techniques from one individual. All were found to grow to high titer in macrophages and only infected the Sup T and HK B cell lines. None of them formed plaques in the MT4 cell line. No virus isolate infected HUT-78, Jurkat, CEM , U937 or the MT B cell lines. No difference in neutralization pattern among the isolates was observed.
Conclusion: All ten virus isolates showed similar biologic and serologic properties. Their molecular properties are under study. The results suggest that this healthy individual is infected with one strain of HIV-1. By its substantial growth in peripheral macrophages, this HIV resembles virus isolates from individuals with neurologic disease. Similar studies now in progress on other infected individuals may reveal the presence of more than one distinct HIV-1 strain.

Th.C.P.51 PARAMETERS INVOLVED IN THE CELL FUSION INDUCED BY THE HUMAN IMMUNODEFICIENCY VIRUS

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Objective: To define the parameters involved in HIV-induced fusion.
Methods: Syncytium formation was measured by cell co-culture of the fusion-sensitive Sup T cell line with HIV$_{SF33}$ chronically infected Jurkat cells. The detection of lymphocyte markers on cells was conducted by FACS analysis. Nucleic acid synthesis and protein synthesis were measured by ^{3}H-labelled thymidine or uridine and ^{3}H-labelled leucine incorporation. HIV viral proteins were analyzed by immunoblot analysis.
Results: Optimal cell fusion was observed when chronically infected cells and uninfected cells were used at 1:1 to 1:4 ratios. All the T and B cell lines expressing the CD4 protein fused with the HIV infected cell line except the CEM line despite the fact that it had a 98% expression of the CD4 antigen. Cell clumping and cell fusion were markedly inhibited by D-glucose, D-mannose, D-galactose at 0.5 M and dextran sulfate at 10 uM. Con A, but not PHA, was capable of blocking cell fusion. An inhibitor of glycosylation, tunicamycin (0.1 ug/ml), inhibited cell fusion in HIV acute infection and cell to cell fusion. Treatment of uninfected or the infected cells with the metabolic inhibitors, cycloheximide, mitomycin-C and aphidicolin did not affect the efficiency of cell fusion. The proteolytic enzymes, trypsin and alpha-chymotrypsin, efficiently prevented cell fusion in HIV acute infection and cell to cell fusion. Subsequent FACS analysis on the Sup T cells treated with trypsin indicated that the CD4 protein had not been removed from the cell surface.
Conclusion: HIV induced cell fusion depends on HIV gp120, the expression of the CD4 protein on the surface of uninfected cells, and the presence of sugar moieties particularly D-mannose. Protein and nucleic acid syntheses are not required for the fusion process. The ability to block fusion with trypsin without removing the CD4 protein suggests a receptor besides CD4 is required for the fusion event.

Th.C.P.52 GROWTH OF HIV-1 AND T CELL SUBSETS IN SEQUENTIAL BLOOD SAMPLES TAKEN FROM A HHV-6 PATIENT BEFORE, DURING, AND AFTER INFECTION

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Objective. To evaluate the growth of HIV-1 and the T cell subsets of sequential blood samples taken before, during, and after HHV-6 infections.
Method. T lymphocytes from sequential blood samples were:
1) Inoculated with varying doses of HIV-1 and measured for virus growth by reverse transcriptase and HIV-1 antigen assay testing;
2) Measured for T subset contents by flow-cytometry.
Results. Cells taken before and after illness were normal in HIV-1 growth potential and in total T, CD4 and CD8 parameters. Samples taken during infection indicated over 70% loss of ability to be infected with HIV-1, about 35% loss of total T, about 45% loss of CD4, and about 20% loss of CD8. These results also correlated with the presence of HHV-6 antibody and virus. Antibody in the pre-infection samples was 1:10, converted to 1:320 during infection, and by eight months post infection was 1:20. HHV-6 virus was seen only in the two specimens, four weeks apart, showing T cell depletion.
Conclusion. During this HHV-6 infection, CD4 cell counts and the ability of the patient's lymphocytes to be infected with HIV-1 are both drastically reduced. Both parameters return to normal soon after illness.

Th.C.P.53 GOLD-LINKED IMMUNO ASSAY (GLIA) : A METHOD IN VIRAL DIAGNOSIS

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Objective. To describe a simple, rapid and cheap method in viral diagnosis (i.e. HIV) allowing to identify antibodies in patient sera as well as viral antigens in tissue biopsies.
Method. Infected suspension culture cells are adsorbed to glass slides coated with Poly -L-lysine or microtiter plates coated with alcian blue and fixed mildly. A drop of patient serum is placed on the cell layer. After incubation the serum is washed off and a drop of goat anti-human immunogold conjugate is placed on the cells. After incubation and washing the colloidal gold undergoes silver enhancement and light microscopic evaluation.
Results. The silver enhanced gold colloids lead to a specific gold-brown or black, granular staining of virus producing cells or purified virus incubated with serum containing specific antibodies. Likewise, semithin cryocuts attached to a glass slide are covered with an antiviral antibody and subsequently treated with immunogold labeling and silver enhancement. The possibilities and limitations of the method in comparison to well established techniques are discussed.
Conclusion. The gold linked immuno assay is a simple and rapid method for screening probes (i.e. sera and tissue biopsies) from patients at risk of infection with HIV or other viruses. The method was presented in a lecture, University of Freiburg, 1988.
Manuscript in preparation (J. Virol. Methods).

Th.C.P.54 CHARACTERIZATION OF PROTEINS ASSOCIATED WITH TWO NOVEL RETROVIRUSES ISOLATED FROM AIDS-ASSOCIATED LYMPHOMA TISSUE.

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Objective: To characterize the proteins associated with two retroviruses isolated from primary AIDS-associated lymphoma tissue.
Methods: Non-equilibrium two-dimensional SDS-PAGE, limited Staphylococcal V8 protease digestion, exhaustive tryptic peptide fingerprinting.
Results: We purified 2F7 and 10C9 virus particles from culture supernatants by sucrose density equilibrium gradient centrifugation, and analyzed the proteins associated with the purified virions. Non-equilibrium two-dimensional SDS-PAGE analysis of radioiodinated 2F7 and 10C9 viral proteins demonstrated prominent 27kd and 14kd species, which comigrated with similarly sized proteins present in bovine leukosis virus (BLV). The 27 kd proteins (p27s) demonstrated peptide homology (by limited Staphylococcus V8 protease digestion and by exhaustive tryptic peptide fingerprinting) with the p24s of BLV, HTLV-I and HTLV-II, but did not with the p24 of HIV-1.
Conclusion: These data support the inclusion of these two retroviruses in the subfamily of oncoviruses.

Th.C.P.55 DIAGNOSIS OF HIV-2 OR HIV-1/HIV-2 DOUBLE INFECTION WITH SYNTHETIC PEPTIDES AS AN ADDITIONAL CONFIRMATORY ASSAY

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Objective. To discriminate between HIV-1/HIV-2 infection of serum samples with reactivity to both HIV-1 and HIV-2 envelope glycoproteins in WB.

Methods. Synthetic peptides of the transmembrane glycoprotein (peptide "39" for HIV-1 and peptide "41.2.1" for HIV-2) were used in a spot test immuno assay (Pepti-LAV 1-2, Pasteur) and further in two separate ELISA's, employing these peptides on the solid phase. Four serum samples, reactive to both HIV-1 and HIV-2 glycoproteins in WB, were tested with Pepti-Lav, and with the peptide ELISA's in serial dilutions, and after pre-absorbtion with homologous and heterologous soluble synthetic peptide.

Results. Three of 4 samples were clearly HIV-1. One sample showed a higher reactivity to "41.2.1" in Pepti-Lav and also in serial dilution with ELISA. Pre-absorbtion of this sample with increasing concentrations of soluble homologous and heterologous peptides, excluded cross-reactivity.

Conclusions. Double reactivity to HIV-1/HIV-2 in WB, may not be due to crossreactivity. The results suggest an HIV strain with epitopes of both HIV types or HIV-1/HIV-2 double infection.

Th.C.P.56 SUPERINFECTION WITH INFECTIOUS HIV-1 OF DEFECTIVE HIV-1 PRODUCING CELL CLONES

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Objective. To examine the possibility of superinfection with infectious HIV-1 of the cell clones producing defective particles.
Methods. Cell clones producing defective HIV-1 were isolated by limiting dilutions of the MT-4 cells, which survived the HIV-1 infection after drastic cell lysis, or of MOLT-4 cells adsorbed with HIV-1 for 1 hr. The cell clones were superinfected with infectious HIV-1 and passaged as continuous cell cultures, and then recloned. The cell clones were biochemically and molecular-biologically characterized.
Results. All cell clones examined did not show cytopathic effect by the superinfection, and became the producers of infectious HIV-1. The structures of proviral DNA in the superinfected cells, which had apparent deletions before the superinfection, were mostly those of intact HIV-1 DNA. However, the HIV-1 phenotypes (at least env gp120 and gag p18 proteins) of the superinfected cells showed those of the cell clones before the superinfection.
Conclusion. Cells primarily infected with HIV-1 containing defective genome survived the HIV-1 infection and become the persistently infected cells. However, these survived cells could be changed to the producers of infectious HIV-1 by the following superinfection without cytolysis. The production of infectious HIV-1 might be due to the recombination between defective proviral DNA and superinfected viral DNA.

Th.C.P.57 ASSOCIATION OF HUMAN HERPES VIRUS 6 (HHV6) AND HIV INFECTIONS IN AFRICA

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Objective. To assess the prevalence of antibody to HHV6 in HIV infected patients versus uninfected controls.
Methods. A total of 66 HIV positive sera (65 HIV-1 and 1 HIV-2) and 66 age and sex match controls, collected as part of an ongoing HIV screening program between Jan 1987 and Jan 1989, were assayed for antibodies to HHV6 by an immunofluorescence assay (Pan Data Systems Inc., Rockville, MD).
Results. The HIV positives included 55 males and 11 females with a mean age of 27.0 ± 9.9 years. The subjects resided in 14 different African countries. Infections were presumed to have been acquired in their home of record as well as Europe and the United States. The serologic results are presented in the table. We considered a titer of ≤40 as negative and ≥160 as positive with 80 being indeterminant. Twenty-three percent (15/66) of the HIV positive sera were positive for HHV6 versus 8% (5/66) of the HIV negatives; this was a significant difference (p=.0287).

Antibody	Number	
Titer	HIV +ve	HIV -ve
Negative	14	29
20	16	11
40	20	20
80	1	1
160	1	3
>160	8	2

Conclusion. In this diverse group of HIV infected subjects from throughout Africa we found a significant association between HIV and HHV6 infection.

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Th.C.P.58 SIVsmm, A POSSIBLE PROGENITOR OF HIV-2 AND SIVmac

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Objective. To study the relationships among primate lentiviruses and the origin of human and monkey AIDS viruses.
Methods. Viral DNA was molecularly cloned from chronically infected cells, using standard recombinant DNA methodology. Nucleotide sequences were determined by oligonucleotide directed dideoxyribonucleotide chain termination method of Sanger et al.
Results. Amino Acid Identities over a 1000 nucleotide region in pol.

	SIVsmm7	SIVmac142	HIV-2rod	SIVagmTyo1
SIVmac142	84			
HIV-2rod	75	84		
SIVagmTyo1	56	59	61	
HIV-1$_{HXB2}$	56	57	60	60

Conclusion. SIVsmm7, SIVmac, and HIV-2 form one closely related subgroup of primate lentiviruses. It provides preliminary evidence for SIVsmm being a source for cross-species transmission for the origin of HIV-2 in humans and of SIVmac in captive macaque colonies.

Th.C.P.59 MAPPING OF SEVEN HIV1 ANTI-P24 MONOCLONALS USING A SERIES OF OVERLAPPING PEPTIDES

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Objective. To locate the epitopes of 7 characterised anti-p24 monoclonal antibodies for the assessment of putative HIV p24 sequence variation.
Method. A series of 15mers (obtained from P.Lachmann through MRC ADP), which overlapped by 5 aminoacids (aa) across the p24 of HIV1SF2 were coated onto the solid phase. The binding of supernatant fluid from the 7 monoclonals raised against HIV1CBL1 was detected by an anti-mouse conjugate.
Results. Five epitopes for the antibodies were positively identified:

NAME	LOCATION ON HIVBRU (aa)
DF9C3	132-147 and 194-197 HisGluAla
1D8F6	147-152
3D3	177-182
EH12E1	204-217
EB1A9	256-267

Only EH12E1 cross reacted in immunofluoresence (IF) with HIV2ROD and other unpublished HIV2 isolates. Aa 204-217 are similar between HIVBRU and HIV2ROD. The sixth and seventh, CD12B4 and 1E8G2 failed to react with the SF2 peptides. Other data generated using mutants from recombinant p24 showed these monoclonals to react near the C terminus. CD12B4 reacted in IF with HIVBRU (312 Glu) but not HIVSF2 (312Asp) indicating 309-316 as a possible CD12B4 epitope.
Conclusion. Six possibly 7 epitopes have been mapped with murine monoclonal antibodies. One antibody identified a conformational epitope which by IF and predicted sequences was conserved between HIV1 and HIV2ROD.

Th.C.P.60 LECTIN BINDING PATTERN OF HIV ENVELOPE GLYCOPROTEIN

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Objective. To characterize the oligosaccharides of the envelope glycoprotein, gp120, of different HIV isolates.
Methods. Gp120 from HTLV III B, CDC isolate 451 and LAV-2 was immobilized on nitrocellulose paper and incubated with thirteen different peroxidase conjugated lectins.
Results. Identical lectin binding was found in all three isolates: Concanavalin A, Wheat germ agglutinin, Lens culinaris agglutinin, Vicia faba agglutinin, Pisum sativum agglutinin and Phytohaem(erytro)agglutinin all bound to the envelope glycoprotein. None of the other lectins, which mainly had affinity to O-linked glycans, bound to the envelope glycoprotein.
Conclusion. From the known affinity of the various lectins to oligosaccharides it is proposed that at least four different types of N-linked glycans exist on gp120: a high mannose type (Con A), a bisected hybrid type (WGA), a biantennary fucosylated complex type (LCA, VFA, PSA) and a triantennary bisected complex type (PHA-E). Each gp120 molecule has both high mannose type glycans and sialylated (hybrid and/or complex) glycans.

Th.C.P.61 INHIBITION OF SYNCYTIUM FORMATION WITH LECTINS

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Objective. To examine the involvement of the glycans of gp120 in binding to the CD4 receptor.
Methods. Ten different lectins were added to HTLV III B infected H9 cells prior to coculture with CEM cells. Incubations were performed in RPMI 1640 with or without competing monosaccharides. Multinucleated giant cells, syncytia, were counted after 4 and 24 hours using phase-contrast microscopy.
Results. The lectins Concanavalin A, Wheat germ agglutinin, Lens culinaris agglutinin and Phytohaem(erytro)agglutinin blocked or inhibited formation of syncytia. This inhibition was reversible with competing monosaccharides. Lectins acted on HIV-infected cells, not on uninfected cells. Lectins with no effect on syncytium formation were: PHA-L, GSA-1, GSA-2, UEA-1, HPA, SBA and PNA.
Conclusion. Lectins which bind to either of the four different glycans of gp120 interfere with CD4-gp120 binding as evaluated by formation of syncytia.

Th.C.P.62 ELECTRON MICROSCOPIC EVIDENCE FOR COINFECTION AND REPLICATION OF HERPESVIRUS AND HIV-1 IN THE SAME HUMAN T-CELL

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Recent data from our laboratory indicated that unstimulated human leukemia cells (MT-4, Molt-4, CEM-SS) are permissive for both herpes simplex virus type 2 (HSV-2) and human immunodeficiency virus type 1 (HIV-1). Published evidence (Gendelman et al., P.N.A.S. (USA) 83:9759, 1986) indicates that HSV-2 can transactivate HIV-1 long terminal repeat-directed bacterial CAT gene expression. Objective. We studied the potential interaction of HSV-2 and HIV-1 virions. Methods. At various times after infection with HIV-1 alone or HIV-1 + HSV-2 we harvested CEM-SS cells for analysis by transmission electron microscopy (TEM) and HIV-1 p24 core antigen synthesis by ELISA. Results indicated budding of HIV-1 particles through the plasma membrane of cells infected with HIV-1 alone or in combination with HSV-2 at 8 days post infection. Also, we observed HIV-1 particles budding into HSV-2 containing cytoplasmic vacuoles. At 10 days after HSV-2 coinfection HIV-1 p24 core antigen synthesis was stimulated 8-fold compared to HIV-1 infected cell control. In contrast, HIV-1 did not affect HSV-2 replication in the coinfected cells. Conclusion. These data provide the first evidence that HSV-2 and HIV-1 can coinfect and simultaneously replicate in the same human T-cell and that HSV-2 may serve as a cofactor in activation of latent HIV-1 infections.

Th.C.P.63 CO-INFECTION OF A HUMAN T-LYMPHOCYTE CELL LINE WITH HIV-1 AND A NEWLY IDENTIFIED VIRUS-LIKE INFECTIOUS AGENT (VLIA).

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Objective. To determine the effects of the VLIA (J Trop Med Hyg, Feb. 1989) on HIV-1 infection of A.301, a CD4 positive T-cell line.
Methods. A.301 cells were infected with HIV-1 (LAV strain) or VLIA or both agents simultaneously. At various times after infection, supernatant samples were harvested from all cultures and assayed for reverse transcriptase (RT) activity, HIV antigen, VLIA antigen and HIV infectious titer.
Results. Infection by HIV-1 resulted in the production of HIV antigen, RT and the development of large syncytial cells associated with cell death. RT activity was high during the peak of infection, as was the level of antigen, as determined by the antigen capture assay. In contrast, cultures co-infected with both HIV-1 and VLIA demonstrated little syncytial formation, yet cytopathogenesis was present, resulting in a sharp decrease in viability. Although little or no RT activity was detected in the culture supernatants, replication of HIV-1 occurred during co-infection because the HIV antigen level and infectious titer in the supernatants tested were comparable to samples obtained from cultures infected with HIV-1 alone.
Conclusions. (1) During co-infection, despite the fact that VLIA suppressed the syncytia, cell death occurred. (2) Infectious HIV was produced in the co-infected cultures. (3) Co-infection with VLIA masked the identification of RT activity in cultures produced by HIV infection.

Th.C.P.64 CHEMICAL INDUCERS OF CELL DIFFERENTIATION INHIBIT HIV REPLICATION IN VITRO

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Objective. Investigate the effect of Chemical Inducers of Cell Differentiation (CICD) on HIV-infected cells.
Methods. Four chemicals known to induce cell differentiation changes in vitro - dimethylsulphoxide, dimethylformamide, pyridine-N-oxide and butyric acid - were used for the incubation of two lymphoblastoid cell lines - LDV/7 and MOLT 4 - infected with HIV. Their effect was assessed by evaluating the amounts of p24 and RT activity in the Tissue Culture Medium (TCM).
Results. The four compounds used to pre-incubate the lymphoblastoid cells tested failed to prevent viral infection and they also failed to inactivate the virus in vitro. In contrast, they did inhibit viral replication within the infected cells. The observed effect is dose-dependent and transient, viral replication resumes after the removal of the compounds from the TCM. The infected cells in presence of CICD express p24 antigens on their cell surface despite the inhibition of viral replication.
Conclusion. CICD have a virustatic effect on HIV-infected cells in vitro. Further studies investigating the in vivo activity are thus warranted.

Th.C.P.65 Brain and Blood HIV-1 Isolates from the Same Individual have Different Biological Properties

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OBJECTIVES: To determine whether virus isolates from the brain and blood of the same individual have different biological properties, and are genetically related.

METHODS: Brain and blood specimens, collected from 6 AIDS patients with neurological abnormalities, were co-cultivated with PHA-stimulated normal PBMC. Virus isolates were tested for their ability to grow in established T-cell lines (HUT-78, CEM, Jurkat, U937, Sup T) and in primary macrophages. Neutralization assays were performed using autologous and/or heterologous antisera. Genetic relatedness was assessed by restriction enzyme digests and Southern blot analysis.

RESULTS:

Brain/blood pairs:	#1A/B	#2A/B	#3A/B	#4A/B	#5A/B	#6A/B
T-cell lines:	-/+	-/+	-/+	-/++	+/-	+/-
Macrophages:	+++/-	+/-	+/-	+++/-	++/-	++/-

No isolates were significantly neutralized. Restriction enzyme fragment patterns of 5/5 pairs were similar but not identical.

CONCLUSIONS: Brain and blood HIV-1 isolates from the same individual are variants of each other and frequently have different cellular tropisms. This finding suggests that genetic changes in HIV-1 that occur within individuals are clinically important because they can lead to variants that can infect and cause pathological effects in different tissues.

Th.C.P.66 INHIBITION OF THE MATURATION OF HIV STRUCTURAL PROTEINS BY A RENIN PEPTIDE INHIBITOR

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The protease encoded by the Human Immunodeficiency Virus (HIV) pol gene, cleaves the gag-pol protein precursors and plays an important role in the viral replication cycle of HIV.
The HIV protease belongs to the family of aspartyl-proteases, as pepsin or renin, and can be inhibited by specific inhibitors.
Fourteen synthetic peptides known to be inhibitors of renin, were tested, one of them showed an inhibition of the cytopathic effect of HIV on MT4 cells.
This peptide also inhibited viral production by the CEM cell line, since no reverse transcriptase activity was detected and no viral antigen was revealed by immunofluorescence during several weeks after infection by HIV.
Nevertheless, when the inhibitor peptide was removed from the culture, infectious virus particles were produced after a few days.
These results demonstrate that specific inhibitors of proteases can block "in vitro" infections by HIV and provide possible strategies against AIDS.

Th.C.P.67 HIV DOWN-REGULATES ITS CD4 RECEPTOR BY TWO DIFFERENT MECHANISMS.

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Using mAbs and a genomic probe to the CD4 molecule, the HIV receptor, we demonstrated that HIV replication induced the disappearance of its functional receptor from the cell surface by two distinct mechanisms. First, after being expressed onto the cell surface, HIV envelope gp110 complexed CD4, efficiently masking the CD4 epitope used by the virus to bind its receptor. This phenomenon occured on the surface of each infected cell and was not due to the release of soluble gp110 ; infection with recombinant HIV/vaccinia viruses expressing a mutated HIV env gene designed to prevent gp110 release from the cell surface induced a similar gp/CD4 complexes formation. Second, virus replication induced a dramatic and rapid loss of CD4 mRNA transcripts, preventing new CD4 molecules from being synthesized. One possible explanation of this phenomenon could be the negative regulation of CD4 transcription by HIV replication. An expression vector containing a reporter gene under the control of a ~ 2Kb genomic sequence upstream to the CD4 gene transcription start, which includes the putative CD4 gene promoter, has been constructed to test this hypothesis. Modulation of the reporter gene expression after transfection of this construct together with various HIV genes expression vectors are currently being analyzed. The possible down-modulation of CD4 expression by HIV is reminiscent of a phenomenon which occurs during T-cell maturation and may provide new approaches to the study of T-cell ontogeny. Understanding the down-modulation of CD4 by HIV may provide new insights in understanding the molecular mechanisms of viral interferences.

Th.C.P.69 QUANTIFICATION AND CELLULAR DISTRIBUTION OF HIV PROVIRAL DNA IN BUFFY COATS FROM HIV-SEROPOSITIVE HAEMOPHILIACS

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A PCR method has been developed that detects individual molecules of HIV DNA in several micrograms of cellular DNA. This has allowed an analysis of the quantity and cellular distribution of HIV-specific DNA in buffy coat samples from seropositive haemophiliac patients. Serial dilutions of DNA prepared from buffy coat cells were tested by the PCR and the number of copies of HIV DNA measured. This figure was compared with the proportion of cells containing HIV DNA, obtained by a titration of the buffy coat cells themselves prior to DNA extraction. To corroborate these data, the number of HIV DNA molecules in each of the isolated single cells could be determined by further dilution and retesting of the DNA prepared from each. Results have shown that relatively few buffy coat cells contain HIV-specific DNA, although this is variable between patients and those cells that are positive have a relatively high copy number. Prior cell separation allows a similar analysis to be made on different cell types. Finally, primers spanning the junction on circularisation of HIV DNA in the cell can be used to show the configuration of the individual HIV DNA molecules found within each cell.

Th.C.P.71 SEQUENCE ANALYSIS OF A HIGHLY CYTOPATHIC STRAIN OF HIV1 : CORRELATION BETWEEN BIOLOGICAL AND GENOMIC VARIABILITY

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A highly cytopathic strain of HIV1 named HIV-NDK has been isolated from a Zairian patient with AIDS : this isolate is 10^5 times more cytopathic and more infectious than the prototype. In order to correlate the high cytopathic properties of this strain with relevant genetic variations we have cloned and sequenced the 9143 nucleotides of this isolate and compared the deduced amino acid sequence with those of other isolates.
The principal feature which could be drawned from the time analysis of the HIV-NDK sequence is that variability is not clustered in one particular region but rather spread out all along the genome. The maximum of variability was as expected in the external glycoprotein gp120. Hypervariable stretches were detected at the same positions as for other isolates. The region responsible for the binding with the CD4 molecule was highly conserved, but participation of the hypervariable regions to a modification of the CD4 - gp120 interaction could not be excluded. Futhermore a small deletion of three amino acids was identified in the C-terminal part of the P18 nucleocapside protein which could be involved in the cytopathic effect. Alignment of the viral regulatory proteins of HIV-NDK and other HIV1 variants did not show any major differences. It is in the 5' part of the U3 - LTR region, which had been proposed to be the target for negative regulatory element(s) where the major variability has been found.

Th.C.P.68 PRODUCTIVE HIV-1 INFECTION OF HEPATOCELLULAR CARCINOMA CELL (HCC) LINES IN VITRO.

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Objective. To determine the in vitro susceptibility of HCC lines to infection by different strains of HIV-1.
Methods. Five HCC lines, including CZHC-8571, PLC, Hep3B, HePG2 and HUH7 were inoculated with 3 diverse isolates of HIV-1 (HTLV-IIIB, RT, and AL) at multiplicity of infection ranging from 0.002 to 20. HIV-1 expression was monitored by detection of p24 antigen and RT activity in culture supernatants weekly for up to two months, & by immunohistochemical staining, in situ hybridization, & electronmicroscopy (EM) performed on the cells at 6hr, 24h, 3 & 7 days after virus inoculation. The presence or absence of CD4 on HCC lines was shown by immunoflourescence, using anti-CD4 monoclonal antibodies.
Results. Five HCC lines were found to be susceptible to productive infection by three strains of HIV-1 in vitro. Expression of HIV-1 p24 lasted for over 60 days, but its level decreased in proportion to the number of viable cells. P24 was also found in the cells by PAP staining, as were viral RNA by in situ hybridization and HIV-1-like particles by EM. Yet supernatant RT activity was not detected, and rescue of infectious HIV-1 from culture supernatants with H9 cells is negative to date. Despite their susceptibility to infection, all 5 HCC lines were negative for CD4 by immunofluorescence.
Conclusion. CD4-negative HCC lines are productively infectable in vitro by HIV-1 via an unknown pathway. Further, the replication of HIV-1 in HCC lines may be incomplete, and HIV-1-like particles found in the HCC lines may represent defective virions.

Th.C.P.70 HIV1 DNA SEQUENCES DETECTED BY PCR IN SERONEGATIVE, YET ANTI-NEF POSITIVE, INDIVIDUALS.

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Objective. To investigate the presence of HIV1 DNA in seronegative individuals at risk of HIV infection.
Patients. 6 subjects : 2 sexual partners of HIV1 positive subjects, 2 haemophiliacs, 2 with lymphomas (non Hodgkin lymphoma : NHL). In addition: 2 anti-nef negative patients (1 with T cell lymphoma and 1 sexual partner of a seronegative anti-nef positive subjects) were tested.
Methods. PCR with 40 cycles and 3 sets of primers (Pol and env genes). Anti-nef were detected through western-blot using a recombinant nef protein (Transgene).
Results. HIV1 DNA sequences were identified in 5 of the 6 anti-nef positive subjects. This included 1/2 haemophiliacs, 2/2 sexual partner of HIV+, 2/2 NHL lymphomas. In addition HIV1 DNA scored + in 2/2 anti-nef negative subjects (with T cell lymphoma and sexual partner).
Conclusions. This study 1) indicates the possibility of HIV infections in apparently seronegative, yet anti-nef positive subjects, 2) will lead to further investigate the potential implications of HIV1 DNA and anti-nef positivity in some subjects with lymphomas.

Th.C.P.72 Susceptibility to HIV-1 Infection of a Human B-lymphoblastoid Cell Line, DG75, Transfected with Subgenomic DNA Fragments of EBV.

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We have previously shown that the presence of the EBV genome and active EBV infection in some Burkitt's Lymphoma cell lines confer the susceptibility to HIV-1 infection in spite of the absence of surface CD4 receptors in these cells. In the present study we used an EBV genome negative Burkitt's Lymphoma B-cell line, DG75, transfected with three different subgenomic fragments of EBV expressing the nuclear antigens (EBNA1 and EBNA2) and the latent membrane protein (LMP), respectively. Immunofluorescence analysis demonstrated CD4 expression in more than 90% of the EBNA1, EBNA2 and LMP transfected cell lines, whereas the antigen could only be detected in less than 4% of the parental DG75 cell line. Unlike the wild type DG75 line the three transfected cell lines were shown to be susceptible to HIV-1 by both IFA and production of virions. Northern blotting of poly(A) selected mRNA of the four cell lines and hybridization to a human CD4 cDNA(pT4B) demonstrated a 3kb band in all three EBNA1, EBNA2 and LMP transfected cells as well as in the wild type DG75 cells. Approximate quantitation indicates equivalent level of T4 mRNA expression in the transfected cell lines as compared to T-cell lines (Hut-78, H9-9).

Th.C.P.73 PROCESSING OF GAG AND POL POLYPEPTIDES AS IN VITRO MODEL FOR PROTEASE INHIBITOR STUDIES IN EUCARYOTIC TARGET CELLS

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Objective. The protease of HIV could be a target for specific inhibition in therapeutic application. Specific proteolytic processing of HIV derived polypeptides has been demonstrated in recombinant E.coli extracts and intact cells. However, it is essential for an inhibitor to demonstrate its uptake into HIV infected cells.
Methods. Recombinant vaccinia viruses were constructed, expressing gag or pol polypeptides respectively in connection with the HIV protease. Processed gag and pol derived proteins were analysed by western blot analysis, with monoclonal and polyclonal sera.
Results. The insertion of the entire gag (p55) encoding sequence resulted in an expression of the gag polypeptide precursor. The addition of the protease sequence in its natural configuration resulted in no detectable processing, due to the missing ability of translational frameshifting in vaccinia virus infected CV-1 cells.
The enforced frameshift due to site directed mutagenesis resulted in a processing of the gag polypeptide precursor. The processed proteins could be easily detected by immunological methods such as western blot analysis with monoclonal antibodies.
Conclusion. With the recombinant vaccinia virus obligatory expressing gag and protease a convenient in vitro system for testing specific inhibitors and their cell permeability was established.

Th.C.P.75 IDENTIFICATION D'EPITOPES SEQUENTIELS DES PROTEINES MAJEURES DE CORE DES VIRUS HIV1 et HIV2.

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OBJECTIF : Identification des épitopes séquentiels de la protéine P24 reconnus par des anticorps monoclonaux murins (ACM) et par des IgG purifiées à partir de sérums humains anti-HIV1 ou anti-HIV2, par la méthode "épitope scanning" selon GEYSEN ou PEPSCAN.
METHODES : -Obtention d'ACM après immunisation de souris Balb/c par différents antigènes: virus purifiés inactivés (souches HIV1/HTLV-IIIB ou HIV2/P2B9), protéines P24 purifiées.
-Caractérisation des ACM en ELISA et Western-blot.
-Identification des épitopes reconnus par la méthode de l'épitope scanning après synthèse des 225 hexapeptides couvrant la totalité de la P24/HIV1 (aa 133 à 363 de la P55).
RESULTATS : -10 ACM dirigés contre les protéines P24 ont été obtenus. Testés en Western-blot, ils reconnaissent tous la P24/HIV1 et 5 réagissant également avec la P 24/HIV2.
-Le PEPSCAN réalisé avec les ACM a permis d'identifier 4 épitopes séquentiels :

1 ACM reconnaît la séquence ATPQDLNTML (aa 179 à 188)
3 " " " " " AAEWDRVHP (aa 209 à 217)
5 " " " " " EIYKRWII (aa 260 à 267)
1 " " " " " SILDIR (aa 286 à 291)

CONCLUSION : -Les 5 ACM reconnaissant la séquence EIYKRWII sont ceux qui présentent une réactivité croisée avec HIV2 en Western-blot. La séquence homologue de la P24/HIV2 est DIYRRWIQ.
-Les premiers résultats obtenus avec les IgG humaines mettent en évidence des épitopes reconnus également par nos ACM.
Mots-clés : P24/HIV, épitopes séquentiels, anticorps monoclonaux

Th.C.P.77 MOLECULAR CHARACTERIZATION OF TWO NON-INFECTIOUS HIV-1 ISOLATES.

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After long-term screening of chronically-infected U-937 cells, we succeeded in isolating two clones of cells which show peculiar cell-virus interactions. In order to better define the properties of these clones, biological and molecular analyses were performed.
The virus-specific proteins of two clones (UHC4 and UHC15) were identified by western blotting using whole virus preparations from the culture supernatants as well as purified membranes from infected cells. No viral proteins nor virus-specific mRNA were detectable in the UHC4 preparations; therefore, we tested this clone for the presence of integrated proviral genome by polymerase chain reaction analysis.
The results show that proviral DNA was present but not expressed. Subsequent binding studies using OKT4A monoclonal antibody were performed and showed that CD4 surface antigen was present at normal levels. Whole virus preparations of cellular clone UHC15 lacked gp120 and gp41 proteins, although normal levels of these proteins were present on the cell membranes. Since surface-labelled cells did not produce virus carrying radioactive gp120 or gp41 (as detected in the infected U-937 control), we suggest that this virus does not bud in close association to its envelope proteins.
Further characterization of these clones should lead to increased understanding of the mechanism of replication and maturation of HIV-1 in cells of monocytic origin.

Th.C.P.74 BIOLOGIC AND MOLECULAR PATTERN OF DIFFERENT HIV ISOLATES FROM ZIDOVUDINE (AZT) TREATED AND UNTREATED AIDS PATIENTS.

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Objetive. To compare the replicative ability of different HIV isolates as a marker of replication in probably AZT altered strains.
Methods. Cinetics of replication using different multiplicities of infection (MOI) with human cell lines (H9 and U937) were determined for a set of HIV isolates. The detection of viral replication was established by cytopathic effect, RT activity, p24 antigen and indirect immunofluorescent. Molecular pattern was conducted by restriction enzyme fragment of genomic DNA by Southern blotting.
Results. HIV isolates from AZT treated AIDS patients and untreated could be distinguished by their biologic and molecular pattern. According to their capacity to replicate in vitro some virus differ in the type of cytopatic effect, p24 antigen detection in cell culture supernatant and immunofluorescence antigen in cells. We are currently examining the restriction enzyme pattern.
Conclusion. If the AZT treatment induce probably variant virus with different virulence the biologic characterization could be useful as a prognosis marker of the treatment during the disease progresion.

Th.C.P.76 DIFFERENTIAL SUSCEPTIBILITY TO AZT OF HIV-1 VARIANTS GROWN IN EBV-TRANSFORMED B CELL LINES.

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Objective. Three different isolates of HIV-1 were used to determine the potential inhibitory effect of AZT on viral replication in EBV-transformed B cells.
Methods. EBV-transformed B cells were infected with two clinical isolates and the HTLV-III$_B$ strain of HIV-1. These cells were pretreated with various concentrations of AZT (1, 5, and 10 µM) prior to viral inoculation and were thereafter maintained in AZT-containing medium. Presence of HIV-1 infection was determined by antigen capture assay and indirect immunofluorescence.
Results. We have found that three different concentrations of AZT prevented infection of susceptible B cells by one of the clinical isolates (334) of HIV-1. In contrast, no such inhibitory effect was observed with each of a second clinical isolate (336) or with the HTLV-III$_B$ laboratory strain of HIV-1. However, in these latter cases, pretreatment of cells with AZT did cause a drug-dependent retardation in establishment of HIV-1 infection. In addition, no noticeable anti-retroviral effect was observed with EBV-transformed B cell lines that had been pre-infected by HIV-1 prior to AZT treatment.
Conclusion. These results indicate a differential susceptibility to AZT of HIV-1 variants grown in EBV-transformed B cells.

Th.C.P.78 INTERET DE PEPTIDES SYNTHETIQUES DANS L'ETUDE DE VIRUS APPARENTES AU VIH : L'EXEMPLE DES VIRUS SIMIENS

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Objectif : Etudier divers isolats de virus SIV et leur proximité avec le virus VIH au niveau de l'épitope transmembranaire conservé à l'aide de peptides synthétiques spécifiques (Genetic Systems,USA).
Matériel et Méthodes : Le peptide 39, spécifique du virus VIH1(RILAVERYLKDQQLLGIWGCSGKLIC) et le peptide 41.2.1 spécifique du virus VIH2 (NVTAIEKYLQDQARLNSWGCAFRQVC) miment un épitope immunodominant de la glycoprotéine transmembranaire de chaque virus. Le test PEPTI-LAV 1.2 est un test ELISA (Diagnostics Pasteur) utilisant ces deux peptides fixés sur membrane, qui permet de différencier indirectement la nature des infections sur la base de la réponse sérologique par visualisation d'un spot coloré au niveau du peptide reconnu. 14 sérums de singe ont été testés en PEPTI-LAV 1.2 : 4 singes en captivité inoculés avec diverses souches virales et 10 singes de République Centrafricaine (RCA) naturellement infectés.
Résultats :

Espèce	Nombre	Virus	Origine de l'infection	Peptide 39	Peptide 41.2.1
Rhesus macaque (Centre de primates)	1	SIVmac	Transmise	-	+
	1	SIVsmm		-	+
	1	SIVst		-	+
Patas(capturé en RCA)	1	SIVagm05	"	-	+
Singes verts AGM(RCA)	10	SIVagm	Naturelle	-	+

Tous les sérums de singes infectés naturellement ou inoculés par divers isolats de virus SIV reconnaissent le peptide spécifique du VIH2.
Conclusion:Un test utilisant divers peptides mimant plusieurs épitopes immunodominants de cette famille de lentivirus permet non seulement un complément de diagnostic mais aussi une caractérisation antigénique des virus apparentés au VIH.Dans ce cas de virus simiens leur proximité avec le VIH2 est confirmée.

Th.C.P.79 Dideoxynucleosides Prevent Formation of HIV-1 Provirus During Single Cycle Infection of Macrophages.

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Dideoxynucleosides previously had been shown not to inhibit low level replication of the lymphotropic LAV-1 strain of HIV-1 in primary human macrophages. In contrast, AZT markedly inhibits the replication of a macrophage-tropic strain of HIV-1 (HTLV-III $_{BaL/85}$) which replicates to high titers ($\geq 10^{6.0}$ $TCID_{50}$/ml) in primary macrophage culture. The effects of 1 uM AZT on the replication of this BaL/85 strain in macrophages were examined using a high multiplicity (m.o.i.= 3) single cycle infection. At several time points after infection, cells were harvested and viral nucleic acids were assessed by PCR amplification of a conserved HIV-1 envelope sequence. In the absence of AZT, envelope DNA (provirus) could be detected by 12 hours after infection, approximately concurrent with the release of viral p24 antigen into the supernatant. In the presence of AZT, no viral DNA or new p24 antigen was detectable during the five day incubation. Viral RNA was measured using one round of reverse transcription prior to DNA amplification. In the AZT treated cells, viral RNA was continuously present up to 48 hours, when it began to decrease steadily during the remainder of the incubation. We conclude that (1) the replicative cycle of this HIV-1 strain in macrophages is approximately 12-24 hours, (2) AZT prevents the formation of HIV-1 provirus in this system, and (3) virion input RNA, in the absence of viral replication, persists in macrophages for more than 48 hours.

Th.C.P.80 QUANTIFICATION OF GP160 FROM HIV BY A "CAPTURE" ELISA.

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Objective. To develope a sensitive and quantitative test for gp120/gp160 from HIV-1.
Methods. Polyclonal anti gp160 sera were produced by immunizing rabbits with gp160 (vaccinia) iscoms. The serum IgG was used as "capture" antibody. Detection of gp120/gp160 was done by an indirect method using a panel of monoclonal antibodies reacting with gp120 and gp41. The monoclonal antibodies were detected with horse raddish peroxidase conjugated rabbit anti mouse antibodies. The monoclonal antibodies were produced and selected in our laboratory from spleen cells from mice either immunised with native gp120 or gp160 from Vero cells infected with a vaccinia virus vector.
Results. We were able to detect gp120/gp160 from from different sources sutch as purified virus, culture fluid and HIV infected cells. The detection limit is around 0.5ng. The gp120/gp160 "capture" ELISA is used routinely to measure the production of gp120/gp160 in Vero cells infected with a vaccinia virus vector. The ELISA is also used to determine the yield of gp160 incorporated into gp160 experimentaliscom vaccine. One of the monoclonal antibodies used for the detection of gp120/gp160 recognize a loop region (aa 302 to 338) and neutralizes the HIV IIIB isolate in vitro.
Conclution. The gp120/gp160 "capture" ELISA we have developed is sensitive with a detection limit of 0.5ng. The ELISA is routinely used for screening of HIV envelope gp120/gp160 content in cell cultures.

Th.C.P.81 SEQUENCING OF PCR-AMPLIFIED HIV-1 RELATED SEQUENCES FOUND IN THE DNA OF INSECTS FROM CENTRAL AFRICA.

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Objective. To detect HIV-1 related sequences integrated into the DNA of African insects and to investigate their nature and origin.
Methods. Classical molecular hybridization techniques were first used for the detection of the considered sequences : squash-blot, dot-blot, Southern transfert. For the PCR amplification, we designed primer-oligonucleotides in the gag, env and nef genes. The amplified materials were sequenced with the Taq-polymerase and non-kinased primers, following the technique of Sanger.
Results and conclusion. Screening of more than 5000 insects captured in Central Africa has revealed, using molecular hybridization techniques, the presence of HIV-1 related sequences in the DNA of insects belonging to numerous species. However, HIV-1 probe generally hybridizes mainly two EcoRI fragments of 4.5 Kb and of 3.5 Kb in the insect DNA. This pattern is not in agreement with the restriction map of the described members of the HIV family. We used PCR to amplify these sequences in the gag, env and nef genes. The PCR-amplified DNA was directly sequenced by a new technique using non-kinased primers and the Taq-polymerase allowing a higher temperature of reaction, which overcomes the blocks induced by secondary structures of the DNA. Sequence results, with evidence of important rearrangements in the env gene, will be presented.

Th.C.P.82 IMPROVED ASSAYS FOR DNA-POLYMERIZING ENZYMES, BY THE USE OF 5-^{125}I-IODODEOXYURIDINE TRIPHOSPHATE, ILLUSTRATED BY DIRECT QUANTIFICATION OF HIV-RT ANTIBODY (AB).

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The design of a procedure to synthesize ^{125}I-IUdRTP in one step from ^{125}I-IUdR, followed by a onestep shielded purification giving an allover recovery between 50-75% and a >90% pure product within 8 hours is described. The sensitivity and specificity for the ^{125}I-IUdRTP compared to ^{3}H-TTP as a substrate in DNA-polymerase (DNAp) and reverse transcriptase (RT) assays was evaluated with different specimen, including purified recombinant HIV-RT. The ^{125}I-IUdRTP was accepted equally as well as ^{3}H-TTP and depending on enzyme specimen a 10-25 fold increase in assay sensitivity was found when using ^{125}I-IUdRTP at low substrate concentration. Thus the new assay could detect DNAp activity from <5 HSV2-infected cells, while $<0,3\times10^{-12}$ g sufficed for detection of purified recombinant HIV-RT. Due to the small HIV-RT amounts necessary for detection, it was possible to quantitate HIV-RT ab, without previous purification of immunoglobuline. Analyses of 31 HIV-infected individuals showed that all had HIV-RT ab and the serum needed for 50% inhibition of the HIV-RT activity corresponded to a 100-fold less immunoglobuline (i.e. 0.02-31.4µg) than earlier reported.... It is concluded that ^{125}I-IUdRTP both simplifies the assay, by excluding the need of TCA-precipitation and of scintillation coctail, and that it is an excellent substrate for improved detection and quantitation of diffe-rent DNA-synthetizing enzymes, and thus also for their blocking abs.

Th.C.P.83 Multiple Sclerosis and Retrovirus: Screening with retroviral probes of cDNA library constructed with poly A+ RNA from active lesions

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Multiple sclerosis (MS) is a chronic neurologic disease of unknown etiology. The inflammatory demyelinated lesions (plaques) are found in the central nervous system (CNS). Briefly, in MS plaques the oligodendrocytes that are producing the myelin sheets are destroyed leaving intact axon more spaced.

One of the best animal model for MS is a demyelinating disease in sheep caused by visna virus. Visna virus belongs to the lentivirus subfamily of retrovirus and is related to HIVs. Recently, another retrovirus was shown to be associated with chronic neurologic disorders. Studies indicated that the oncovirus HTLV-I has a causal role in tropical spastic paraparesis (TSP) as well as in chronic progressive myelopathy. Attempts were also made to associate HTLV-I with MS. The results were limited and inconclusive. Since three of the four known human retroviruses can cause neurologic disease, we try to identify retroviral nucleic acid from MS plaques.

RNA was isolated from active MS plaques. Purified poly A+ RNA was used to construct a cDNA library in lambda gt 10. A low-stringency hybridization with specific retroviral probes was used to screen the library. Screening of the first 10^5 clones was negative. However, these preliminary results will be discussed in regard that they do not exclude the possibility of a new retrovirus.

Th.C.P.84 A SINGLE TUBE, ONE-STEP PURIFICATION AND ASSAY FOR THE ANALYSES OF REVERSE TRANSCRIPTASE ACTIVITY (RT) IN CRUDE SPECIMENS AND SOME APPLICATIONS WITH REFERENCE TO HIV.

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Based on ^{125}I-IUdRTP as a substrate (see abstract), a further simpli-fied and improved procedure for quantitation of HIV-RT, using solid-coupled template, has been designed. In principal, the enzyme sample is mixed with a reaction solution containing the radiolabeled substrate and other necessary components, wherafter the solid-coupled odT primed prA is added. Next the reaction proceeds for desired time, wherafter the product is separated from substrate by washing the solid phase with a salt solution. Then the incorporated radioactivity is directly measured in a γ-counter. For the analyses of RT activity in crude specimens, containing disturbing substances or enzymes like RNAse, TTPase etc, the assay is improved by adding a primary step as follows; the specimen is first added to the solid-coupled primed template and kept for 10-20 min at 4° C, in order to let the RT bind to the template, next the disturbing factors are washed away, wherafter the amount of RT on the solid phase is determined by adding radiolabeled substrate and further proceeding as indicated above. Further, data showing that the assay can be improved by addition of ribonucleotide, ie CTP and by addition of pG will be given. Analyses using Sepharose or plastic balls as solid phase have been done, and a high recovery of activity from mixtures of recombinant HIV-RT with lymphocyte- or crude bloodcell-extracts was obtained. Further analysis of clinical specimen are given in abstr. ( )

Th.C.P.85 CHARACTERIZATION OF AN HIV-2 RELATED VIRUS WITH A SMALLER SIZED ENVELOPE PRECURSOR

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Objective : A new cytopathic isolate of the human immunodeficiency virus (HIV) related to the HIV-2 strain was isolated (HIV-2 MAN) from peripheral blood lymphocytes of an Ivory Coast patient with AIDS.
Results : HIV-2 MAN could be differentiated by its envelope precursor and external glycoprotein which are 20kd molecular weight smaller than those of HIV-2 ROD isolate. Furthermore, the apparent molecular weight of the major core protein of HIV-2 MAN is 27kd instead of 26kd as in HIV-2 ROD isolate. In addition, the product of the vpx gene which is a characteristic feature of the HIV-2 strain, is 14kd in HIV-2 MAN compared with 16kd in HIV-2 ROD. In contrast to these, the envelope precursor of HIV-2 MAN forms a transient dimer during its maturation as it is the case for HIV-2 ROD. In both cases the transmembrane proteins are 36kd and exist as homodimers of 80kd. Endo H digestion experiments indicated that the 20kd difference between the two HIV-2 isolates is due to their polypeptide moiety. Furthermore partial proteolysis with the V8 protease gave two distinct polypeptide patterns, thus suggesting that the differences between the external envelope proteins of the two HIV-2 isolates are due to their amino-acid composition. Accordingly, polyclonal antibodies raised against HIV-2 ROD envelope do not recognize the corresponding envelope proteins of HIV-2 MAN by immunoblotting and immunoprecipitation assays.
Conclusion : These data illustrate that analysis of viral proteins could be useful for a rapid and an efficient method to characterize new HIV isolates.

Th.C.P.87 INFECTION AND REPLICATION OF HIV-1 IN HUMAN BRONCHO-ALVEOLAR AND PERIPHERAL BLOOD MONOCYTES-MACROPHAGES

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Objective : To characterize the mode of penetration replication and transmission of HIV in monocytes - macrophages (MO.MΦ).
Methods : MO.MΦ were isolated by plastic adherence, from broncho alveolar lavages (BAL) from AIDS patients or from peripheral blood (PB) from healthy donors and then infected in vitro. Cells were monitored for HIV by reverse transcriptase (RT), electron microscopy (EM) and genomic DNA analysis (Southern).
Results : Virus expression measured by RT, was never detected in direct cultures of MO.MΦ infected in vivo or in vitro. Cocultures with a sensitive cell line (CEM) or normal PBL-PHA blasts, after freezing - thawing the adherent cells, allowed virus production. Efficient blockage of virus infection on PB MO.MΦ was obtained using low dilutions of human HIV seropositive sera and using monoclonal antibody (MAb) against CD4 (13B8.2). Other MAbs directed against different CD4 epitopes are currently investigated. EM showed the presence of a high amount of viral particles enclosed into cytoplasmic vacuoles of MO.MΦ while no RT was measurable. Futhermore, no external budding has been seen on the same cells. Preliminary results using Southern analysis indicated that viral DNA was not integrated in infected MO.MΦ.

Th.C.P.89 EXPRESSION OF VIRAL AND CELLULAR GENES IN CELLS INFECTED BY THE HUMAN IMMUNODEFICIENCY VIRUS, HIV-1, AND THE SIMIAN IMMUNODEFICIENCY VIRUS, SIV/Mne.

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The current study was undertaken to define the complex regulatory events occurring *in vivo* in CD4-positive lymphoid cell lines infected by HIV-1 and SIV/Mne. Initial efforts were directed at measuring viral and cellular mRNA and protein levels in HIV-infected CEM cells. Northern blot analysis revealed that viral-specific mRNAs could be detected as early as 2 days after infection of CEM cells by HIV-1. Maximal accumulation of the major species of viral mRNAs occurred by 5 days post-infection (PI). In accordance with these results, the synthesis of viral-specific proteins was readily detectable at 2 days PI and peaked dramatically at 4 and 5 days PI. Immunofluorescence studies showed that >90% of CEM cells were infected by 4 days PI. Cell viability studies, using trypan blue exclusion, demonstrated that >75% of infected cells were still viable at 4 and 5 days PI. We next examined the effects of HIV-1 infection on cellular mRNA and protein synthesis. The steady state levels of actin and GADPH mRNAs steadily declined during virus infection with actin mRNA levels down ten-fold by 5 days PI in HIV-1 infected CEM cells. There was a corresponding progressive decrease in cellular protein synthesis during infection at the time when viral protein synthesis was found to peak. In parallel studies, we examined the kinetics of viral protein synthesis in cells infected by SIV/Mne. In contrast to the results obtained with HIV-1, little or no viral protein synthesis was detectable in SIV-infected CEM cells. However, in SIV-infected C8166 cells, high levels of the SIV-specific proteins were detectable by 2 days PI. As was the case in the HIV-CEM system, overall levels of cellular protein synthesis declined during SIV infection of C8166 cells. Efforts are in progress to delineate the mechanisms responsible for the decreases in cellular mRNA and protein levels in HIV- and SIV-infected cells.

Th.C.P.86 NEW TESTS USING SYNTHETIC PEPTIDES IN THE DIAGNOSIS AND TYPING OF HIV INFECTIONS IN HUMAN.

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Objective : Microtiter ELISA using two synthetic peptides derived from transmembrane glycoprotein of HIV1 and HIV-2 were optimized. One allows to detect anti-HIV antibodies (TOTAL HIV Ab (1+2)) and the other one allows to type specifically anti HIV-1 and anti-HIV-2 antibodies (TYPING HIV Ab (1 or 2)) .
Methods : The TOTAL HIV Ab assay involves microwells coated with a blend of the two HIV-1 and HIV-2 peptides and the TYPING HIV Ab involves strips coated with HIV-1 peptide only and strips coated with HIV-2 peptide only on the same plate. The duration of the test is 35 minutes long (15 min. serum incubation, 15 min. conjugate incubation and 5 min. color devlopment).
Results : In a preliminary study, 302 sera were tested ; 191 anti HIV sera and 111 negative sera. Among the 191 positive sera : 132 samples are from Europ origin, 41 samples from Africa origin, 11 samples are seroconversion HIV- 1 and 7 samples are anti-HIV-2 sera (Africa origin). Among the 111 negative sera; 66 samples from Europ origin, 41 samples Africa origin and 4 samples are false-positive with core reactivity. The performances of TOTAL HIV Ab and TYPING HIV Ab are respectively of 99.1% and 99.3% for sensitivity and 100%, 100% for specificity. The cross-reactivity of sera in TYPING HIV Ab is 2.1% for anti-HIV-1 sera in HIV-2 strip.
Conclusion : These first results show the advantages of ELISA kits using synthetic peptides for detection of HIV infections and also to type the infectious virus, that is a very important information for epidemiologic studies. We thank Dr. Ph. Pouletty.

Th.C.P.88 ZIDOVUDINE SERUM LEVELS AND HALF-LIFE IN PATIENTS ON CHRONIC MAINTENANCE HEMODIALYSIS

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Objective: To determine zidovudine serum levels and half-life in HIV+ patients on chronic maintenance hemodialysis due to renal failure.
Methods: Zidovudine serum levels were determined with an HPLC assay at 0, 60,120 and 180 min. after single dose oral administration and during hemodialysis sessions. 2 patients with HIV-1 infection have entered the study so far. 1 pat. is ready for evaluation, 1 is still under study.
Patient characteristics:

age (yrs)	sex	HIV risk factors	cause of renal failure	CD4+ (c/nl)	p24 antigen	other	
42	male	homosex.	acute GN	0.31	-	OHL	evaluable
50	male	transfus.	IgA nephritis	0.15	≥1000 E/ml	OHL	under study

None of the patients had impaired hepatic function.
Results: Zidovudine peak levels were reached after 2 h following oral administration of 100-200 mg of AZT. They were within the therapeutic range (1.67 umol/l). Half life was not prolonged and was not significantly altered by hemodialysis in the first pat. studied so far. The results of both will be ready for presentation in detail.
Conclusion: Serum half-life of zidovudine may be normal in renal failure and patients on chronic hemodialysis. Delayed and low peak levels may be due to impaired absorption. Because of these results different from the observations of others (Deray et al. 1988) a pretherapeutic assessment of the basic pharmacokinetic parameters seems justified in this setting.

Th.C.P.90 IDENTIFICATION OF HIV-1 PACKAGING SIGNALS

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Objective: To define regions of the HIV-1 genome required for packaging HIV-1 RNA into virions.

Methods: Deletions in the area 3' to the splice donor and 5' to the gag ATG were made using site directed mutagenesis. Virion RNA content was determined by RNA dot-blot analysis.

Results: Deletions of as little as 19 base pairs in this region produced viruses which produced abundant viral protein and morphologically normal virions as seen by E.M. These virions displayed a *cis*-acting replication defect and packaged virion RNA at an efficiency of 2% of wild-type virus.

Conclusions: A region important for packaging HIV-1 RNA into virions has been defined. Mutation of this region inhibits both cell free and cell to cell viral transmission.

Th.C.P.91 DIFFERENTIAL INHIBITION OF HIV VARIANT INDUCED SYNCYTIUM FORMATION BY SEROPOSITIVE PEDIATRIC SERA

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Objective. To assess the ability of sera from HIV seropositive children to inhibit in vitro syncytium formation induced by different HIV-1 variants.
Methods. Sera were incubated with supernatant from H-9 cells productively infected either with HIV-1-IIIB or -RF2. The virus-serum mixtures were incubated with CEM-SS cells plated on poly-L-lysine coated 96-well plates. Syncytia were counted after 5 days incubation at 37°C.
Results. Each serum was initially tested for its ability to inhibit in vitro syncytium formation induced by HIV-IIIB. Four of the sera showed low level inhibition (20-40%). Three other samples exhibited intermediate inhibition (40-60%) and the remaining 3 sera showed high neutralizing activity (95-100%). The same sera were subsequently tested for their ability to inhibit HIV-RF2 induced syncytium formation. Six sera showed equivalent neutralization of both variants. Of the remaining 4 samples, 3 exhibited 2-fold increase in inhibition of RF2 whereas the remaining 1 sample did not neutralize RF2.
Conclusions. Serum from HIV seropositive children showed inhibition of HIV induced syncytium formation in vitro. Sixty percent of the samples showed equivalent neutralization of 2 different HIV-1 variants, whereas significant differences were observed in 40% of the samples. The development of HIV disease has been shown to correlate with the emergence of HIV-1 variants which in vitro, are progressively more cytopathic. Neutralization of a range of HIV strains may be prognostic of improved clinical outcome.

Th.C.P.92 HIV-1 INFECTION OF HUMAN MONOCYTE CULTURES; IMPLICATION FOR SILENT INFECTION

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OBJECTIVE To study HIV-1 infection of normal peripheral blood monocytes/macrophages.
METHODS Monocyte cultures were prepared from peripheral blood mononuclear cells (PBMC) recover by Ficoll-Hypaque gradient centrifugation. PBMCs were cultured in RPMI medium containing 10% HIV negative human serum and 20% FCS. After five days non-adherent cells were discarded. The monocyte cultures were infected with viruses isolated from primary PBMC of HIV-1 seropositive individuals. Two months after infection PHA-stimulated normal PBMC were added to the monocyte flasks in RPMI medium with 10% TCGF. Virus infection was monitored by reverse transcriptase (RT) activity and presence of viral antigen (p24) in culture medium, as well as by immunofluorescence (IF) of infected cells.
RESULTS Viral replication in monocytes was transient and could be detected by antigen assay in 11 cultures and by RT assay only in 2 cultures (of 14). Even if virus replication appeared to be absent for up to two months after infection, the presence of virus could be demonstrated in 12 of 14 monocyte cultures by cocultivation with PHA-stimulated PBMC.
CONCLUSION Our results show that HIV-1 infection of normal monocytes/macrophages can lead to a silent or latent infection. Such persistently infected, non producing cells, may conceivably serve as infectious reservoir in the infected individual and spread infection to other susceptible cells for a long time.

Th.C.P.93 EFFECT OF CALCIUM CHANNEL BLOCKERS ON HIV-1 EXPRESSION IN LYMPHOID CELLS.

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Objective: To determine the effect of the calcium channel blockers (CCB's) verapamil (V), diltiazem (D), and nifedipine (N) on the replication of HIV-1 and the expression of the HIV LTR in lymphoid cells.
Methods: CEM cells were exposed to CCB's at 0, 25, 50, and 75 uM for 1 hour before inoculation with HIV-IIIB or medium control. Drug concentrations were maintained in the cultures, which were monitored for RT activity, fixed cell immunofluorescence (IFA) for p24 antigen, and cell viability. The effect of CCB's on HIV LTR expression was determined by transfection of CEM cells with LTR-chloramphenicol acetyltransferase (CAT) plasmid constructs, exposure to 50 uM V or D for 48 hours, and assay of CAT activity.
Results: Peak RT and % p24 IFA+ cells were seen 3-4 days earlier in V and D treated cultures vs controls. N had no effect. Results, day 6 post infection:

	RT ($\log_{10}$ cpm/ml)	p24+ Cells (%)	Viability (%)
V 75 uM	5.70	63	63
D 75 uM	5.70	65	80
Control	4.22	5	99

In HIV LTR-CAT studies, V and D at 50 uM induced consistent 5-10-fold increases in CAT activity.
Conclusions: (1) CCB's can markedly enhance HIV-1 replication in lymphoid cells; (2) This effect may be related to activation of the HIV LTR; (3) Agents which affect signal transduction can be used to further our understanding of the control of HIV replication.

Th.C.P.94 A RAPID AND SENSITIVE PLAQUE ASSAY OF HIV-1 ON C8166 CELLS

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Objective. To develop a sensitive and simple assay to measure the infectivity of human immunodeficiency virus (HIV-1).
Methods. A syncytial plaque assay was developed using C8166 cells (kindly supplied by R. Gallo), a CD4+ lymphocytic line derived from cord blood and superinfected with HTLV-1. The cells were adhered to plastic with poly-L-lysine, infected, and overlaid with agarose. After 2-3 days' incubation neutral red was added in a 2nd overlay, and syncytial plaques were counted 18 hours later using low-power or dissecting microscopy.
Results. Two strains of HIV-1, IIIB and RF, were tested, and both produced giant cells large enough to be easily recognized as plaques after staining. There was a linear correlation between number of plaques and virus dilution. The sensitivity of the assay was almost identical to that of $TCID_{50}$ tests. Plaques were specifically inhibited by neutralizing antibody. Two of 4 new isolates of HIV obtained from pediatric AIDS cases similarly formed plaques. The assay has been used to determine the neutralizing antibody titers in multiple serum specimens from children with HIV infection.
Conclusion. A plaque assay of HIV-1 on C8166 cells has been developed which readily permits the determination of infectivity in standard and new clinical isolates and quantitation of neutralizing antibodies in human sera. The assay is rapid, sensitive, reproducible, and easy to perform.

Th.C.P.95 PROCESSING AND ASSEMBLY OF HIV-1 CORE ANTIGENS EXPRESSED BY RECOMBINANT VACCINIA VIRUS

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Objective: To demonstrate processing and assembly of HIV-1 core antigens expressed by recombinant vaccinia virus and to study the effect of viral protease on these processes.
Methods: Recombinant vaccinia viruses have been constructed that contain the gag ORF and varying extents of the pol ORF of HIV-1. Biosynthesis of HIV-1 core antigens was studied by serlogical assays and the assembly of core structures detected by electron microscopy.
Results: HIV gag antigens are efficiently expressed by all recombinants tested. Recombinants lacking the protease-encoding region direct the synthesis of gag antigen precursor p55 and processing intermediate p40 only. Those containing the protease region direct synthesis of the processed products p24 and p17 as well. Surface flourescence is detected by anti-p24 MAb in 10-15% of the infected cells and up to 15% of the core antigens synthesized is released into the medium. Particles of 100nm diameter are present in recombinant-infected cells, even in the absence of viral protease functions.
Conclusions: HIV-1 core antigens are efficiently expressed and processed by recombinant vaccinia virus infected cells, indicating the presence of viral protease function and successful read-through of the gag and pol ORF's. Recombinant-made gag antigens are assembled into viral core-like structures. This process is independent of any other HIV-specific functions, including that of the viral protease.

Th.C.P.96 CHARACTERIZATION OF HIV-1 PROTEINS EXPRESSED BY VACCINIA VIRUS AND E. COLI.

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Objective. To examine immunogenicity of HIV-1 gag proteins, P17 and P24, reverse trancriptase (RT) and vif product. Methods. The DNA fragments representing P17 or P24 of gag protein, RT or vif protein as well as the sequences spanning from gag to vif were expressed both in recombinant E. coli and in recombinant vaccinia virus (RVV). These sequences were prepared from a HIV-1 clone pBH10 by restriction endonuclease digestion and/or site-directed mutagenisis, and inserted into a bacterial expression plasmid pOR540 and vaccinia virus genome. HIV-specific proteins expressed from the recombinants were detected and identified by indirect fluorescence antibody (IFA) and western blot analyses, using polyclonal and monoclonal antibodies against HIV-1 proteins. Results and conclusion. Expression of the proteins reacted with patients' sera and monoclonal antibodies was observed except vif-constructs in both RVV-infected cells and E. coli transformed with recombinant plasmids. The production of HIV antigens in vivo was also demonstrated at the dermal sites inoculated with RVV by IFA. For preliminary immunological analysis, rabbits were inoculated with RVV expressing P17 and serum samples were tested for specific responses to P17 protein. Considerable levels of anti-P17 antibodies are not detected so far. Immunogenicity of other RVV and E. coli-derived HIV proteins is presently under research.

Th.C.P.97 HIV TYPE 1 SPECIFIC ANTIBODIES IN CEREBROSPINAL FLUID MEDIATE CELLULAR CYTOTOXICITY AND NEUTRALIZATION.

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OBJECTIVE To investigate the presence of antibodies mediating HIV-1 specific cellular cytotoxicity (ADCC) and neutralizing activity in cerebrospinal fluid (CSF) and serum of HIV-1 infected subjects.

METHODS In ADCC assay monocytoid cell line U937 clone 2 was used as target cells; PBMC, obtained from HIV seronegative blood donors were used as effector cells. In neutralization test, virus was incubated fo 60 min (37 C) with heat-inactivated serum or CSF. The serum-virus mixture was added to PBMC (60 min, 37 C) and virus replication assayed by HIV antigen capture ELISA. Virus isolates from blood and CSF were used in the different assays.

RESULTS ADCC-mediating antibodies against target cell infected with the IIIB strain of HIV-1 were present in both CSF and sera from HIV-1 infected subjects, 32% and 60%, respectively. The frequency of ADCC positice CSFs was comparable for the different clinical stages of the disease.

Serum antibodies neutralized blood isolates more frequently than CSF isolates, 53% and 35%, respectively.Only 3 (7%) of the CSF specimens contained neutralizing activity to the CSF derived isolate and none to HTLV-IIIB.

CONCLUSION Our results indicate that both ADCC-mediating and virus neutralizing antibodies may be intrathecally synthesized.

Th.C.P.98 IN VITRO, UNE HEURE D'EXPOSITION A UNE MICROMOLE D'AZT PROTEGE DES LYMPHOCYTES DE L'INFECTION HIV PENDANT PLUS DE QUARANTE HUIT HEURES.

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Objectifs: rémanence de l'AZT (effet anti-rétroviral) dans des lymphocytes après exposition des cellules pendant une heure à des concentrations extra-cellulaires d'AZT équivalentes à celles obtenues en clinique avec une prise orale unique de 200 mg.

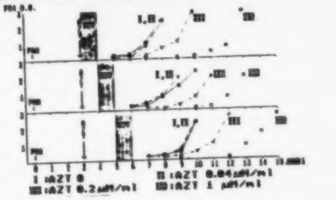
Méthodes: 500 000 lymphocytes stimulés à la PHA (1/10000) 3 jours plus tot sont incubés une heure avec l'AZT (0.02 à 1.0 micromoles), lavés, remis en culture (IL-2 R-Uclaf/SVF/RPMI), et exposés à HIV milliporé (=500-900 picogrammes p24), immédiatement, 24 ou 48 heures après élimination de l'AZT du milieu. Chaque jour, la moitié du milieu est renouvelé par du milieu frais. Le dosage de p24 surnageant (immuno-capture) et l'immunofluorescence p24 intra cellulaire (monoclonal) assurent le monitoring des cultures (répliques de 2).

Résultats:

1) avec des PHA-blastes

2) avec des lymphocytes d'abord quiescents, puis stimulés à la PHA, et alors exposés chaque 24 ou 48 heures pendant une heure à l'AZT, les résultats sont identiques.

Conclusions, en prenant en considération le temps de latence de 3 jours irréductible entre inoculation et expression HIV mesurable, la durée de vie anti-rétrovirale de l'AZT intralymphocytaire serait d'environ 4 jours.



Th.C.P.99 DETECTION OF THE NEF CELLULAR PROTEIN BY SYNTETIC MONOCLONAL ANTIBODY FROM HIV INFECTED SUBJECTS

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Objective. To investigate the presence of NEF gene product of HIV in peripheral blood mononuclear cells (PBMCs) from anti-HIV seropositive and seronegative individuals at risk for AIDS (ELISA and Western Blot tests).

Methods. We have selected and synthesized by Marrifield solid-phase methodology a six aminoacid sequence in a region of the NEF protein, previously found to be immunogenic. After carrier conjugation, the peptide was used to immunize Balb/c mice in order to obtain NEF-specific monoclonal antibody. Cytocentrifuged PBMCs from 6 anti-HIV seropositive subjects and their seronegative regular heterosexual partners, previously found to be HIV infected by "in situ" hybridization with DNA probe, has been studied. The immunohistochemical reactivity of the NEF peptide specific antibody was visualized by a second antibody alkaline-phosphatase conjugate anti-mouse IgG. Positive and negative controls were performed by using HIV non infected and infected H 9 cell culture lines and healthy seronegative blood donors.

Results. An intracytoplasmic granular staining has been observed in three seropositive and in two seronegative subjects.

Conclusion. NEF protein is expressed "in vivo" and may play a role in pathogenesis in the natural host.

Th.C.P.100 QUANTIFYING HIV INFECTIVITY

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Objective. We present a model of the kinetic processes in viral infectivity assays. We show how the model is used for designing and analyzing viral infectivity assays, and discuss how it applies to questions such as – How many infectious virions are in an inoculum? How virulent are the virions in an inoculum? How stable are the virions in an inoculum? How effective are various chemical agents against the virions? How effective are immunoglobulins from infected individuals in neutralizing the virions?

Methods. Our model simulates the three overall steps that have been suggested for HIV's infective process. First, HIV diffuses to a target cell's surface. Second, gp120 on the virus' surface and CD4 on the target cell's surface form a bimolecular complex. Third, interactions involving CD4, gp120 and gp41 promote fusion of HIV envelope with target cell membrane, resulting in entry of the viral core.

Conclusion. We have used the model to calculate the gp120-sCD4 association constant (k_{assoc}) directly from viral infectivity assays. We find $k_{assoc} = 3\times10^{-9}\ M^{-1}$, in agreement with equilibrium dialysis methods. We also report the values for the other parameters defined below.

Results. The model quantifies four rate-constants from viral infectivity assays: k_t = rate constant for successful infective contact (tropism) between virus and a CD4+ target cell, k_s = rate constant for spontaneous disassociation (shedding) of gp120 from gp41, k_n = rate constant for non-specific killing (e.g., by enzymatic degradation, nonoxynol-9, etc.) of virions, and k_{assoc} = association constant for a gp120 blocking agent (e.g., soluble CD4 protein) or anti-gp120 immunoglobulin. These rate-constants are derived by straightforward graphical techniques.

Th.C.P.101 HOST CELL TROPISM OF HIV STRAINS: COMPARISON OF REPLICATION IN PERIPHERAL BLOOD LYMPHOCYTES AND MONOCYTE-DERIVED MACROPHAGES.

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Objective. To develop a model of macrophage infection with representative strains of human immunodeficiency virus (HIV) of varying host cell tropism.

Methods. We have established a system for the extended culture of monocyte-derived macrophages. Using three prototype strains (3B, DV and SF162) we have established a model for permissive and non-permissive macrophage infection and compared the replication of these strains in primary macrophages and lymphocytes to standard lymphocytoid and monocytoid cell lines.

Results. All three strains replicate to high titer in peripheral blood lymphocytes. In macrophages strain SF162 replicates to intermediate titer with production of viral antigens and release of infectious virus while DV replicates to low levels producing viral protein and minimal free virus, and 3B fails to replicate significantly. In contrast, both the monocytoid line U937 and the T cell line SUP-T1 support replication of 3B and DV but not SF162.

Conclusions. All reference strains examined so far replicate freely in PBL's; monocyte-tropic strains replicate in macrophages but to lower titer than in PBL's. The monocytoid cell line U937 and T cell line SUP-T1 may not represent adequate surrogates for the corresponding primary cell type. This matrix is being used to isolate and characterize fresh clinical isolates from varying sources, study the cellular and viral determinants of HIV host cell tropism, examine the role of CD4 in viral entry and compare the neutralizing and (potentially) enhancing epitopes of macrophage- and lymphocyte-tropic viruses.

Th.C.P.102 SPECIFICITY OF MURINE ANTIBODIES TOWARDS EPITOPES OF HIV-1

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Objective: Reactivity of murine antibodies with synthetic peptides corresponding to epitopes of the viral proteins was studied

Methods: Mice were immunized with purified HIV-1. Hybridomas were produced and selected by ELISA with plate fixed HIV-1 proteins and immunofluorescence. Antigen specificity of the elicited antibodies was determined. Reactivity with synthetic peptides corresponding to HIV-1-gag aa 105-115, aa 129-135, and HIV-1-env aa 507-518, aa 512-518, aa 597-611 was observed in ELISA.

Results: Murine antibodies recognized the synthetic peptides in different degrees. Peptide HIV-1-env aa 507-518 was best recognized, all antibodies reacting with aa 512-518 were included. Peptide HIV-1-gag aa 129-135 was only recognized by a single antibody.

Conclusion: Murine antibodies recognize epitopes in synthetic peptides that were previously found to be immunogenic in human.

Th.C.P.103 SINGLE AMINO ACID SUBSTITUTIONS IDENTIFY AMINO ACIDS CRITICAL FOR RNASE H ACTIVITY AND REPLICATION OF HIV.

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Objective. To identify amino acids in the HIV pol gene critical to the function of RNase H.
Methods. Site-directed mutagenesis was used to substitute either of two conserved retroviral pol amino acids (aspartic acids) in the putative RNase H domain in a molecularly cloned infectious HIV (pNL4-3). HIV particles produced by SW480 cells following transfection of the mutant DNAs were harvested, evaluated for RT activity and for infectivity on A3.01 cells. RT and RNase H activities of the partially purified mutant RTs expressed in E. coli were determined.
Results. SW480 cells transfected with the mutated pNL4-3 DNAs produced particles with normal protein and RNA content and slightly decreased RT activity. These particles were not infectious. Whereas RT activities of normal and mutant RTs expressed in E. coli were essentially the same, the RNase H activity in mutant RTs was decreased more than 30 fold.
Conclusion. Two conserved aspartic acid residues in RT are associated with RNase H function and are critical for infectivity of pNL4-3.

Th.C.P.104 HIV DETECTION IN PLASMA OF PATIENTS WITH RETROVIR.

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Measurement of the viral load in HIV disease is crucial for the management of seropositive patients (pts) specially to evaluate their response to current and future therapeutic trials. To assess the HIV production in vivo, we have developed an assay measuring directly cell-free virus in plasma. We cultured plasma (and cells) from 32 HIV+ pts (10 AIDS and 22 seropositive pts with low T4 cell counts) before and 1 month after onset of AZT therapy (20mg/kg) ; 10^6 allogeneic normal T-blasts grown in PHA and IL2 were cultured with 25% vol/vol HIV+ plasma or with 10^6 HIV+PBL in IL2-enriched medium ; supernatants were serially harvested for 30 days ; p24 was assess with an immuno capture assay (Enzacor). Cell cultures were 100% plasma cultures and antigenemia are given in the following table :

	Non-AIDS pts		AIDS pts	
	before AZT	under AZT	before AZT	under AZT
Plasma culture	9 positive →	3 positive	8 positive →	2 positive
" "	13 negative →	2 positive	2 negative →	1 positive
Antigenemia	11 positive →	9 positive	7 positive →	5 positive
"	11 negative →	1 positive	3 negative →	0 positive

These data demonstrate a significant decrease of plasma infectivity under earlier administration of AZT, and suggest that measurement of plasma HIV is a more valuable tool to evaluate the in vivo antiviral activity of chemical compounds than p24 antigenemia. However, since these 2 parameters are not closely linked they are both useful for the management of HIV seropositive individuals.

Th.C.P.105 HTLV 1 ANTIBODY SCREENING IN IV DRUG MISUSERS, HAEMOPHILIACS, HOMOSEXUALS AND BLOOD DONORS IN EDINBURGH, SCOTLAND.

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***Hepatitis Reference Laboratory, University of Edinburgh.
****Central Public Health Laboratory, LONDON. UNITED KINGDOM

Objective. To test for HTLv 1 antibody levels in three high risk populations and new blood donors in an area where a high proportion of intravenous drug misusers (IVDM) are HIV positive.
Methods. HTLV 1 antibody tests were performed on sera from 302 IVDM, 138 blood product recipients (80 haemophiliac A and 58 other blood disorders), 153 homosexual or bisexual men and 5000 new blood donors using Dupont HTLV 1 ELISA. HIV antibody seropositivity rates in the groups studied were estimated. Confirmatory testing of HTLV 1 antibody was by immunofluorescence (IF) against HTLV 1 infected cells, particle agglutination assay for HTLV 1 (Fujirebio) and immunoblotting.
Results. 1 of 302 IVDMs, 1 of 138 blood product receipients, 0 of 153 homosexual or bisexual men and 1 of 5000 new blood donors were positive by ELISA. Confirmatory testing was undertaken on the single positive IVDM and the individual was negative for HTLV 1 by particle agglutination but positive by IF and immunoblotting. This patient (who is HIV 1 antibody negative) may be infected with a retrovirus other than HTLV 1 or HIV 1. The single positive haemophiliac was of Japanese origin and was possibly infected by Japanese blood or blood products. Results from confirmatory testing are awaited in the single positive blood donor.
Conclusion. HTLV 1 appears in this initial survey not to have significantly infiltrated a population with a high rate of HIV antibody infection, nor in other high risk populations or new blood donors in the same city.

Th.C.P.106 THE KILLING EFFECT OF 65°C TEMPERATURE ON HIV-1 IN DRIED BLOOD; DECONTAMINATION OF LAB INSTRUMENTS/EQUIPMENTS.

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OBJECTIVE: To determine the efficacy of 65°C for inactivation of HIV-1. This information is valuable for industrial settings involved in repairing laboratory instruments/equipments contaminated with human blood.
METHOD: HIV-1 (250-500 pg/ml P24) was mixed with normal blood. One tenth of 1 ml HIV-1 inoculated blood was placed on a sterile glass-slide (in duplicate) and air dried at room temperature for 24 hours. Dried blood samples were left in an oven heated to 65°C for 4,8,12,18,24 and 36 hour intervals. After the specified time interval, samples were removed and blood was eluded in 5ml of RPMI. A sterile rubber police spatula was used to ensure removal of blood residues. Eluates were used for HIV-1 isolation using cocultivation with PHA-P treated normal PBMC's ($5X10^6$ cells/ml) in a T25 culture flask in Il-2 containing RPMI culture media and monitored for viral growth.
RESULTS: HIV-1 was isolated from blood samples not heated at 65°C. However, HIV-1 was not recovered during one month of follow-up from any blood samples that were incubated at 65°C for four hours or more.
CONCLUSION: HIV-1 in dried blood does not survive four hours or more at 65°C. This low and safe temperature therefore could be applied for decontamination of laboratory instrument/equipment contaminated with human blood.

Th.C.P.107 FUSION OF SIMIAN IMMUNODEFICIENCY VIRUS (SIV_{mac}) WITH LIPOSOMES AND ERYTHROCYTE GHOSTS.

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We investigated the kinetics of membrane fusion between SIV_{mac} and phospholipid vesicles, and the effects of various parameters on this process. SIV was purified by ammonium sulfate precipitation of cell-free supernatant followed by two sucrose density gradient centrifugations, and labeled with octadecyl rhodamine (R18). Fusion was monitored continuously as an increase of fluorescence intensity resulting from the dilution of the probe into target membranes. Ultrastructural analysis of the virus and fusion products was performed by electron microscopy. Viral fusion was strongly dependent upon the liposome composition. Pure cardiolipin (CL) vesicles fused with the virus at a fifty-fold greater rate than pure dioleoylphosphatidylcholine (DOPC) liposomes. SIV fusion with CL/DOPC (3:7) and phosphatidylserine (PS) vesicles was slower than that with pure CL. Calcium or reduced pH greatly enhanced the rate of SIV-CL fusion but did not affect that of SIV-DOPC fusion. SIV also fused with erythrocyte ghosts, and the rate of fusion increased in the presence of calcium or reduced pH. SIV fusion with model membranes is similar in some aspects to that of other lipid enveloped viruses. Our results indicate that SIV can fuse with biological and model membranes lacking the CD4 receptor. This assay system can be used to test inhibitors of the fusion activity of SIV.

Th.C.P.108 MONOCLONAL ANTIBODIES TO HTLV I AND HTLV II GAG PROTEINS.

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**LTCB, National Institute of Cancer, Bethesda, MD.
***National Institute of Health, Bethesda, MD. U.S.A.

Objective. To generate specific and cross-reactive monoclonal antibodies (MoAb) to HTLV I and HTLV II gag proteins.
Methods. Lymphocytes from Balb/c mice immunized with either HTLV I or HTLV II virions were fused with NS-1 myeloma cells in the presence of PEG. ELISA assays were utilized to select cells secreting anti-viral immunoglobulins. Cells were cloned by limiting dilution. ELISA results were confirmed and protein specificity determined by Western Blot and by RIPA. Immunoglobulin subclass was determined by Ouchterlony double diffusion.
Results. MoAbs isolated from HTLV I immunized mice showed the following reactivities: (1) specificity for HTLV I p19, (2) specificity for HTLV I p24, (3) cross-reactive with HTLV I and HTLV II p24, and (4) cross-reactive with HTLV I p19 and HTLV II p22. The HTLV I p19 specific clones recognize two different epitopes: one which reacts with the intermediate proteins and one which recognizes only p19. MoAbs isolated from HTLV II immunized mice were: (1) specific for HTLV II p22, (2) cross-reactive for HTLV I p19 and HTLV II p22, and (3) cross-reactive for HTLV I and HTLV II p24. All MoAbs were of the IgG_1 subclass.
Conclusion. HTLV I p19 and HTLV II p22 share a common epitope. The p19/p22 and the p24 proteins of HTLV I and HTLV II have similar and differing antigenic epitopes.

Th.C.P.109

ADDITIONAL CHARACTERIZATION OF UNUSUAL HUMAN IMMUNODEFICIENCY ISOLATES FROM TWO CAMEROUNIANS. (ANT 70 AND ANT 70 NA)

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Objective: To assess the relationship between isolated ANT 70 and ANT 70 NA and other HIV and SIV strains and to determine the biological properties of the isolates.
Results: Dot-blot hybridization experiments were performed in order to evaluate the relatedness of the isolate ANT 70 to other known human and simian immunodeficiency viruses. Hybridizations were carried out using probes derived from HIV-1 (gag-pol), HIV-2 (pol-env), and ANT 70 (nef-U3). Under nonstringent conditions, crosshybridization was observed between virus types. However, a clear distinction could be made between ANT 70 or ANT 70 NA, and other virus types under stringent conditions. Although ANT 70 and ANT 70 NA have been shown to be indistinguishable by Western blotting or nucleic acid hybridization, biological differences could be demonstrated between the two strains in terms of their preference for certain cell lines.
Conclusions: ANT 70 and ANT 70 NA differ significantly in their nucleic acid homology from prototype HIV-1 and HIV-2 strains, even in relatively highly conserved regions of the genome. The two isolates are highly related to each other but can be differentiated based on biological properties.

Th.C.P.111

DETECTION OF HIV GENOME IN SERONEGATIVE HOMOSEXUAL MEN

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Objective. The aim of our investigation was to evaluate the presence of HIV latent infection and HBV genome in peripheral blood mononuclear cells (PBMCs) from 20 asyptomatic homosexual men with multiple sexual partners. All the subjects, non intravenous drug users, were seronegative for anti-HIV antibodies (ELISA test and Western Blot), for HIV antigen and HBsAg. The T4/T8 ratio ranged between 0.75 - 2.25.
Methods. Cytocentrifuged PBMCs were "in situ" hybridized with three probes: 1) an SP 64 plasmid containing the 9 kb SstI-SstI viral insert from lambda BH 10 recombinant clone able to recognise both viral mRNA and proviral cDNA; 2) the whole HBV genome, near 3.3 kb, purified from pAO1 plasmid; 3) the pBR322 plasmid lacking viral insert. The probes were tagged by inserting an antigenic sulfone group in cytosine moieties and visualized by the sandwich immunohistochemical reaction using a specific monoclonal antibody against the sulfone group and an anti-mouse alkaline phosphatase conjugate antibody (Chemiprobe, Orgenics). The controls were performed by HIV non infected and infected H 9 cell culture lines and PBMCs from 20 healthy heterosexual men.
Results. HIV genome sequences were observed in the cytoplasm of mononuclear cells of three subjects as a granular staining and in some cases a mild nuclear positivity was found. The HBV genome was observed also in three cases.
Conclusions. Active homosexual and/or bisexual men are at risk of acquiring HIV infection.

Th.C.P.113

Sodium Pentosan Polysulfate (SP-54), an Anti-HIV Agent Also Exhibits Lymphocyte Proliferative Activity and Synergism with AZT.

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Objective. Sodium pentosan polysulfate (SP-54) was studied for its antiviral action against HIV-1 and was compared with dextran sulfate (DS) and AZT.
Methods. Drug responses on the production of HIV-1 in normal human peripheral mononuclear cells were tested by reverse transcriptase (RT) assay, p24 antigen test and p24 radioimmunoassay.
Results. More than 90% of virus replication was inhibited with 5.0 mcg/ml of SP-54. Direct inhibitory effect of SP-54 was also observed on the HIV reverse transcriptase reaction in vitro. No toxicity was observed with SP-54 on PMNC cultures. In fact, it had proliferative effect on uninfected PMNC and protective effect on infected PMNC cultures at concentrations of 0.1 to 10.0 mcg/ml. In addition, SP-54 showed profound synergism with AZT. In the presence of 25 and 100 nM AZT, 2.0 mcg/ml of SP-54 reduced HIV-1 replication 110- to 176-fold as compared to 3- to 16-fold decrease in the presence of either drug.
Conclusions. SP-54, owing to its anti-HIV-1 activity, nontoxic nature, lymphocyte proliferative activity and synergism with AZT could prove to be a valuable agent in the chemotherapeutic intervention of AIDS.

Th.C.P.110

EXPRESSION OF THE GAG-POL GENE PRODUCTS OF HUMAN IMMUNODEFICIENCY VIRUS BY RECOMBINANT VACCINIA VIRUS VECTOR

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OBJECTIVE: To understand the molecular mechanisms of virion assembly and processing of the gag precursor of HIV. METHODS: The gag and pol genes of HIV1 were inserted so as to be driven by the 7.5 K promoter in the thymidine kinase gene of vaccinia virus strain WR by the standard procedure.
RESULTS: In the lysates of CV-1 and SW480 cells infected with the recombinant vaccinia virus (RVV) carrying the entire gag-pol region, the precursor gag protein was almost exclusively detected by immunoblot analysis using serum from an AIDS patient. However, in the culture fluids of infected SW480 cells, but not of infected CV-1 cells, we could clearly detect reverse transcriptase (RT) activity, even when the replication of vaccinia virus was suppressed by cytosine arabinoside. The highest RT activity was found at a density of 1.16 g/ml and this fraction was revealed to contain mainly the cleaved gag proteins by immunoblot analysis, suggesting that particles containig the HIV RT and the cleaved gag proteins were released from infected SW480 cells. The corresponding fraction prepared from the culture fluids of SW480 cells infected with another RVV carrying only the gag gene contained exclusively the uncleaved gag precursor and lacked the RT activity, confirming that the processing of the gag precursor was mediated by the HIV protease encoded in the pol gene. Electron microscopic exanamination is now under way. CONCLUSION: Our results showed that only the gag gene products are sufficient for particle production and suggested that the particle formation is necessary for efficient processing of the gag precursor.

Th.C.P.112

A METHOD FOR QUANTITATING INFECTIOUS HIV PARTICLES

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Objective. To develope a method for determining the number of infectious HIV particles in various preparations.
Method. MT4 cells were incubated with the preparation containing HIV particles for 1 h. The cells were then mixed with a molten solution of agarose in a cell medium. The agarose was placed in the refrigerator for rapid solidification. Extra medium was added on top of the gel and the tubes incubated for four days with one medium change. The gels were then melted by heating, mixed with a salt solution and the cells rescued by centrifugation. After fixing, the cells were stained by immuno-fluorescence using an anti-HIV antiserum. The relative number of fluorescent cells were counted.
Results and Conclusion. Culturing the infected cells in an agar gel seemed to inhibit the transfer of virus between cells. The number of HIV positiv cells after the incubation should therefore reflect the concentration of infectious HIV particles in the original preparation. If the cells had been cultured without a gel, some cells would be expected to present antigen due to secondary infection. The present method is faster than traditional plaque assay.

Th.C.P.114

VIRAL GENE EXPRESSION ASSESSED BY PCR IN HIV-1 INFECTED H9 CELLS

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Objective. To study early events of viral gene expression in HIV-1 infected cells by a sensitive gene amplification technique, polymerase chain reaction (PCR).
Methods. H9 cells were infected with HIV-1 (10^6 infectious units/ml). At various times after infection (3,6,18,24,48,72 and 144 hr), high molecular weight DNA and RNA were isolated. Virus-specific DNA and RNA were detected by co-amplification of primer pairs to gag, env, tat and nef regions of the viral genome using PCR. Reverse transcriptase (RT) activity was measured by direct assay of cell culture supernatants.
Results. Virus-specific sequences were first detected in genomic DNA of H9 cells 3 hrs. after HIV-1 infection, thereafter, these sequences increased in copy number. Synthesis of viral-specific RNA was detected at 6 hrs. after infection. Extracellular RT activity increased 35-fold, to 0.75 pmol TTP/hr/20 ul between 3 and 6 days after infection.
Conclusion. Results indicate that virus-specific DNA became integrated into host genome rapidly after HIV-1 infection, followed several hours later by synthesis of viral RNA's. Release of virion, signalled by increased extracellular RT, was delayed between 3 and 6 days. These results demonstrate that PCR is a useful technique to evaluate early events in replication of HIV-1 in target cells such as lymphocytes and macrophages.

Th.C.P.115 PURIFICATION AND ANALYSIS OF THE HTLV-I ENVELOPE GLYCOPROTEIN gp46 USING AN ANTI-CARBOXYL-TERMINAL SYNTHETIC PEPTIDE SERUM.

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Objective. The objective was to isolate gp46 from HTLV-I transformed HUT102 cells by immunoaffinity chromatography.
Methods. A rabbit antiserum against a synthetic peptide corresponding to the carboxyl-terminus of gp46 (LPPFSLSPVPTLGSRSRR) was prepared and analyzed for reactivity with the native gp46 and precursor gp61 proteins by ELISA, Western blot and RIPA assays. An affinity column was used to purify gp46.
Results. The anti-peptide serum reacted with proteins with apparent molecular weights of 46,000 on HTLV-I and HTLV-II viral lysate Western blot strips. The specificity of this reaction was established by inhibition with the homologous but not an irrelevant peptide. Removal of N-linked carbohydrates with endoglycosidase F resulted in a decrease in molecular weight from 46,000 to 31,000. RIPA analysis using [35S]methionine labeled HUT102 cell lysate revealed specific reactivity with the envelope precursor gp61 in addition to a smaller protein of approximately 30,000 daltons. gp46 was purified by immunoaffinity chromatography and shown to be reactive with sera from HTLV-I infected patients as well as a monoclonal anti-HTLV-I gp46 antibody but not with sera from uninfected individuals or monoclonal anti-HTLV-I gag (p19, p24) antibodies. Faint reactivity of the gp46 preparation with an antiserum against uninfected T lymphocytes revealed minor contamination with cellular proteins.
Conclusion. HTLV-I gp46 can be purified using an anti-peptide serum in a form suitable for evaluating envelope-enriched ELISA and Western blot assays.

Th.C.P.116 BIOLOGICAL HETEROGENEITY AMONG HIV-1 ISOLATES

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Objective: To biologically characterize HIV-1 isolates having variable tropisms and cytopathogenicity.
Methods: The infection kinetics of 14 independent HIV-1 isolates were monitored in 8 cell lines. Viral replication was characterized with respect to RT activity, p24 production, and cell growth and viability.
Results: In the absence of preexisting transactivator activity, HIV-1 isolates spread slowly in most cell cultures requiring from 8-14 days to achieve infection in 100% of the cell population. The viruses varied in their tropisms, with the degree of susceptibility of CD4-positive cell lines to infection varying as much as 100,000-fold. One isolate, HIV-1_{TP1}, infected the promonocytic cell line, THP-1, and T cell lines equally well; but it did not readily infect the HL-60 promyelocytic cell line. RT activity was an unreliable measure of viral replication. Some isolates yielded high RT, while others were consistently low. In addition, RT was always low in some cell lines even though high titers of infectious virus were produced. HIV-1 isolates varied in their ability to kill and/or fuse cells, however most isolates killed cells without syncytia formation.
Conclusions: HIV-1 isolates demonstrate considerable heterogeneity in their biological properties. Cell tropism, replication, and CPE within a given cell may well be important parameters of virulence. The findings of this study should form a framework from which HIV genome sequence information may eventually be correlated with biological function.

Th.C.P.117 CLONAL HETEROGENEITY OF HIV-1 ISOLATES IN U-937 CELLS.

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Clones of U-937 cells were derived from a chronically-infected population by limiting dilution and micro-manipulation. We studied the expression of HIV-1 by immunofluorescence and reverse transcriptase assays in six of these clones. Four of them showed presence of the p24 viral antigen that correlated with normal mRNA expression and reverse transcriptase activity in the supernatants. These virus-containing supernatants were inoculated onto other cell types and were shown to differ in infectiousness. Western blot analysis revealed structural differences at the level of viral antigens which could account for a defect in viral budding and infectivity. The results clearly show heterogeneity of isolates recovered from U-937 clones and raise the question as to whether the expression of HIV-1 is influenced by the innate biological characteristics of these clones.

Th.C.P.118 A RAPID, DIRECT ASSAY FOR REVERSE TRANSCRIPTASE ACTIVITY IN HIV-INFECTED CELL CULTURE SUPERNATANTS.

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Objective.To develop a simple, rapid and sensitive assay for reverse transcriptase (RT) activity in HIV-infected cell culture supernatants.
Methods.The RT microassay reported by Spira et al. (J.Clin.Micro. 25:97,1987) was miniaturized and conditions for trapping the ^{3}H-products on glass fiber and DEAE filter mats were optimized for rapid collection and counting on a flatbed scintillation counter. Briefly, 20ul of culture supernatant was transferred directly to a 96-well microtiter plate and virus coats were solubilized with 5ul buffer including 30% glycerol and 0.5% Triton X-100. 25ul containing 5uCi ^{3}H-thymidine triphosphate (TTP, 20Ci/mmol, NEN), 0.45ug poly(rA)oligo(dt)$^{12-18}$ (Pharmacia) and 10mM $MgCl_2$ were added to wells and incubated at 37°C. Reaction products were precipitated with tRNA (Sigma) buffer and 10% TCA and transferred to mats using a cell harvester (LKB). Mats were counted in a flatbed scintillation counter (Betaplate, LKB).
Results.The RT reaction was linear over a 100-fold range of RT concentrations during 4 hr incubation at 37°C. 20ul of supernatant from 10^6 HIV_{IIIB}-infected H9 cells incorporated 1.1 pmol TTP/hr, 3.5 times the activity reported in the micromethod. RT activity in supernatant of 10^5 H9 cells/ml rose 35-fold, to 0.75 pmol TTP/hr, 6 days after infection with approximately 10^4 infectious units of HIV_{IIIB}. Completion of RT measurements in one 96-well plate required about 3 hr, while each additional plate added 20 min to total processing time.
Conclusion.The procedure described for measuring RT activity in cell culture supernatants does not require isolation or concentration of virus and represents a simple, sensitive and rapid assay for HIV replication *in vitro*.

Th.C.P.119 SIMULTANEOUS DETECTION OF HIV-1 AND HTLV-1 INFECTIONS BY CO-AMPLIFICATION USING PCR

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Objective. To detect in the same PCR reaction, the presence of multiple viral infections.
Methods. Genomic DNA isolated from HIV-1 (H9/HTLV-IIIB) or HTLV-1 (MT-2) infected cells was used as the template for gene amplification. PCR was performed in the presence of primer pairs to the gag and env genes of HIV-1 and the pol region of HTLV-1 primers were optimized for conditions of equal sensitivity.
Results. PCR performed by co-amplification of the HIV-1 gag and env regions was positive for both gene sequences in 21/21 high risk samples and 0/11 negative controls. In addition PCR performed on mixed genomic DNAs (H9/HTLV-IIIB and MT-2) resulted in specific detection of each of the amplified targets with comparable sensitivity (20-40 gene copies each).
Conclusion. Using co-amplification of multiple gene sequences it is possible to simultaneously detect and confirm the presence of HIV-1 in clinical samples. In reconstitution experiments the same method has been used to simultaneously detect HIV-1 and HTLV-1 predicting another clinical application.

Th.C.P.120 VARIABILITY OF HIV-1: COMPUTER ANALYSIS OF DATA BASE.

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Objective. The activity of the reverse transcriptase (RT) depends on Mg ion, and the ionic strength around RT may be very strong and may force the nucleic acid sequence to have a specific conformation near RT. The conformation may depend on the context of the nucleic acid sequence. I analyzed the data base (Los Alamos, 1988) with computer to examine whether the variability of the env gene depends on the context or not.
Methods. The viruses in the data base were divided into four groups; New York, WMJ, Haiti which contains sf2, cdc and rf, and Africa. The variability was considered within each group, and to examine the context dependency the variability of a sextuplet composed of purine (r or R) or pyrimidine (y or Y) was considered. When only one strain in a group was mutated at the same point of the env gene sequences, this mutation was counted to calculate variabilities of sextuplets. The variability of a sextuplet in a group was defined as:

$$\frac{\text{the sum of counted point mutations at the 2nd, 3rd and 4th bases of the sextuplet in the group}}{\text{the frequency of appearance of the sextuplet in the consensus env gene sequence of the group.}}$$

Results. The RRR in the sextuplets rRRRrr, rRRRry and rRRRyr corresponds to the amino acids which have polarity and the mutation of these amino acids may be very advantageous to escape from the immune system of host. If the mechanism causing variation was random, these sextuplets showed the same high variabilities. The variabilities of rRRRry and rRRRyr were, however, the highest ones in the 64 possible sextuplets, but that of rRRRrr was at about the average. This was common to the four groups. There were sextuplets which showed similar variabilities among the four groups like rRRRry and rRRRyr, and some other sextuplets showed distinct variabilities among the four groups. For example, that of rRRYyr decreased from the Africa group to the New York group.
Conclusion. These strongly suggest that the variability of the env gene depends on the context of the nucleic acid sequence (therefore on the conformation), and depends on RT of each group.

Th.C.P.121 DEVELOPMENT OF A NOVEL QUANTITATIVE ASSAY TO STUDY MEMBRANE FUSION MEDIATED BY gp120/gp41

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A single vector (pSVSX1) expressing the tat, rev and envelope proteins of HIV-1 was used to develop a quantitative fusion assay. This assay is based on the ability of the tat protein to transactivate the HIV LTR. CD4+ cells are transfected with a plasmid (LTR-CAT) in which the LTR is linked to the chloramphenicol acetyl-transferase gene and at the same time CV-1 cells are transfected with pSVSX1.Twenty-four hours later these cells are mixed and after an additional twenty-four hours of incubation the cells are harvested, extracted and assayed for CAT activity. If fusion takes place, the tat protein produced in the CV-1 cell is able to transactivate the LTR CAT. This is the only mechanism by which transactivation occurs in this system, since control experiments have ruled out leakage of tat from transfected cells and transactivation by uptake into the CD4+ cells. The sensitivity of this assay permits it to be performed using only a small number of cells in multi-well dishes. This assay has been used to analyze fusion inhibition by specific antisera and peptides.

Th.C.P.122 EXPRESSION AND CHARACTERIZATION OF HIV-1 ENVELOPE PROTEINS SYNTHESIZED FROM A SV40 VECTOR

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We have used an SV40 late replacement vector system to express HIV-1 envelope proteins in COS cells. One construct produces gp160 which is efficiently processed to gp120 and gp41. Fusion assays utilizing transfected cells and CD4 expressing Hela cells indicate that functional env proteins are inserted into the plasma membrane of the transfected cells. Approximately one third of the gp120 produced is found in the medium. This plasmid was modified to produce a soluble form of gp120 which is efficiently secreted into the culture medium. Other truncated forms of the envelope protein have also been made. We have started a systematic analysis of these proteins with regard to kinetics of cleavage and glycosylation, transport and oligomerization.

Th.C.P.123 PURIFIED REVERSE TRANSCRIPTASE (RT) FROM HIV-1, HIV-2 AND EIAV SHARE STRUCTURAL AND IMMUNOLOGIC PROPERTIES

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Objective: To determine if sequence homology among the RT proteins of the lentiviruses is reflected in common structural and immunologic properties.
Methods: A synthetic peptide derived from a C-terminal portion of HIV-1 RT which is conserved in all lentiviral RTs was used to raise rabbit monospecific sera. Purified IgG was tested for RT inhibitory activity and as immunoaffinity adsorbent to purify RT from HIV-2 and EIAV.
Observations: Anti-peptide IgG directly inhibited RT from HIV-1, HIV-2 and EIAV RT and it provided a good chromatography matrix to purify RT from HIV-2 and EIAV. RT activity was associated with a pair of proteins - p68/p55 for HIV-2 and p66/p51 for EIAV. Sera of HIV-2 infected individuals had anti-RT antibody; EIAV-infected horses did not.
Conclusions: The RTs of HIV-1, HIV-2 and EIAV share structural similarities, being comprised of two associated proteins. However, high immunogenicity seems to be a feature of human lentiviral RTs. The broadly inhibitory nature of the antibody suggests that the peptide sequence represents a portion of the RT active site.

Th.C.P.124 CLONING, PRELIMINARY CHARACTERISATION AND EXPRESSION OF GENE FRAGMENTS OF A EUROPEAN HIV-2 ISOLATE (ANT53).

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A Belgian AIDS patient, who had never visited Africa, was found to have a Western blot profile consistent with an HIV-2 infection. An HIV (designated ANT53) was isolated from this patient and adapted to culture. An HIV antigen capture test on culture supernatants indicated that this was indeed an HIV type 2 (Vanderborght *et al*, 1988 Eur J Clin Microbiol Infect Dis 7: 816-8)
OBJECTIVES. To clone and sequence this isolate to determine its relationship to the African HIV-2 prototype ROD and to express ANT53 genes in heterologous systems to obtain reagents for further research.
METHODS. Viral RNA from infected cell cultures was used to prepare cDNA clones either by standard methodology or by the use of PCR technology. Specific gene products were then expressed in prokaryotic (*E. coli*) and eukaryotic (insect cell) systems and analysed immunologically.
RESULTS. Clones containing the major genes were obtained and preliminary sequence data has shown that ANT53 is an HIV-2 isolate and is distinct from HIV-2 ROD; the homology is between 70-90% at the amino acid level depending upon the particular gene compared. *Env* and *gag* polypeptides have been expressed both in *E. coli* and baculovirus systems and are reactive with anti-HIV-2 sera.
CONCLUSION. ANT53 is an HIV-2 isolate related to but distinct from the African prototype ROD. Recombinant viral gene products will be useful as research tools and as potential diagnostic and vaccine reagents.

Th.C.P.125 KINETICS OF APPEARANCE AND SPECIFICITY OF NEUTRALIZING ANTIBODIES IN PATIENTS WITH PRIMARY HIV INFECTION.

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Objective. To study the appearance of virus neutralizing antibodies in patients with symptomatic primary HIV-1 infection. To establish if these antibodies play a role 1) in elimination of the initial viremia; 2) in selection for the development of antigenically distinct HIV-1 strains in the infected individual.
Methods. Sequential HIV isolates and serum samples were obtained from four patients during and after primary HIV infection. The neutralizing capacity of the sera from one individual was tested against sequential virus isolates from the same and other invividuals.
Results. Preliminary results show that HIV neutralizing antibodies develop early after infection. The initial antibody response is strain-specific, but widens with time to include several strains.
Conclusions. The results will be important in understanding early events in HIV-1 infection and in vaccin studies.

Th.C.P.126 EVALUATION OF THREE METHODS FOR HIV DETECTION IN CULTURE IN HAEMOPHILIA A PATIENTS

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Objective. To evaluate 3 methods for HIV detection in culture in HIV antibody positive haemophilia A patients.
Methods. PBMCs from 40mls of heparinised blood were seperated on a Ficol-hypaque gradient. One third of the cells were cultured in RPMI 1640 in the presence of FCS, IL-2 and PHA. On the remaining cells a panning method was used for CD8$^+$ cell depletion. Half of the seperated PBMCs from the CD8$^+$ depleted non adherent fraction were co-cultured with the cell line C-8166 in RPMI 1640 with FCS, IL-2 and PHA. The other half was co-cultured with PHA stimulated CD4 enriched PBMCs from a know HIV negative donor. The 3 cultures were harvested at weekly intervals, supernates were tested for the presence of p24 antigen using an antigen capture assay (Dupont). The panning efficancy was checked by flow cytometry (Simultest. Becton Dickinson).
Results. Flow cytometry showed that the panned PBMC fractions contained less then 10% CD8$^+$ cells. Six out of 15 patients were investigated,1 has consistently yielded a positive virus culture, 1 has had a positive culture on one occassion and 4 have been negative over a period of 2 years. The results are presented in the table below:-

CDC Status	Number of patients	Unpanned culture	co-culture of panned PBMCs with:-	
			CD4$^+$ enriched	C8166
II	2	-	2	1
IV A	1	1	1	1
IV C-2	2	-	1	1
IV C-1	1	-	1	1

Conclusion. Co-cultivation of CD8$^+$ depleted PBMCs is a more sensitive method for HIV detection then simple culture of PBMCs and the addition of normal CD4$^+$ cell may promote virus detection.

* FCS Foetal calf serum.

Th.C.P.127 RECOGNITION OF ANTIBODIES IN HIV-1 POSITIVE SERA BY SYNTHETIC PEPTIDES DERIVED FROM DIFFERENT VIRAL PROTEINS

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Objective.To analyse immune response against different epitopes in HIV proteins.
Methods.The peptides were selected from the proteins encoded by gag,pol,env and tat genes and were synthesized by the solid-phase method.Reactivity of peptides with HIV-1 positive sera was monitored by ELISA.The presence of antibodies against HIV was tested by Abbott and Wellcome kits.Simultaneously a T-cell analysis was carried out.
Results.It was found that antibodies against some epitopes of viral proteins were present in all sera tested,but antibodies against other epitopes were present only in a few sera.
Conclusion.The formation of antibodies against .. viral proteins is induced mainly by some epitopes of p24 and gp41.

Th.C.P.128 MEASUREMENT OF ANTIBODY TO HIV1 REVERSE TRANSCRIPTASE

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Objective. To evaluate 2 ELISA assays for measurement of anti-RT activity and determine changes in antibodies to RT in HIV infection.
Methods. Recombinant HIV1 RT@antigen(RT,p66/p51)was adsorbed onto the solid phase.Serum samples were incubated overnight before addition of (sequential assay),or together with(simultaneous assay)alkaline phosphatase labelled RT antigen.Wells were washed and enzyme activity determined by an enzyme amplification method.
Results. All blood donor controls(859)were unreactive in both assays; of 182 anti-HIV1 positive sera 177 were reactive in the sequential assay and 182 in the simultaneous assay.Lower dilutions of seropositive controls were detected in the simultaneous assay than the sequential assay,but the latter produced more consistent concentration/response curves for quantitative studies.Four of 20 anti-HIV2 sera had anti-RT reactivity.
Initial studies of 223 patients during seroconversion showed no anti-RT activity prior to seroconversion to other HIV1 antigens.Samples from 20 seronegative homosexual partners of PGL or AIDS patients followed for >4years had no anti-RT activity detected.Data is also presented on changes in anti-RT during progression of HIV disease(123 patients).
Conclusion. Using recombinant HIV1 RT,ELISA assays have been developed with high specificity and sensitivity for qualitative and quantitative measurement of anti-RT activity in patients throughout HIV disease.
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Th.C.P.129 COMPLEMENT RECEPTOR TYPE 2 (CR-2) IS A RECEPTOR FOR *IN VITRO* COMPLEMENT-MEDIATED, ANTIBODY-DEPENDENT ENHANCEMENT (C'-ADE) OF HIV-1 INFECTION.

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Objective: To determine the receptors required for complement-mediated, antibody-dependent enhancement (C'-ADE) of HIV-1 infection *in vitro*.
Methods: Two murine monoclonal antibodies (mAb) to CR-2 (Ortho Diagnostics, Becton-Dickinson) and seven mAb to CD4 (Ortho Diagnostics) were tested in an MT-2 cell microtiter infection assay for anti-HIV-1, anti-fusion, and anti-C'-ADE activities.
Results: Murine anti-CR-2 mAb, OKB7, but not Becton-Dickinson anti-CR-2 blocked C'-ADE of HIV-1 infection *in vitro*. Neither mAb blocked HIV-1 fusion or infection in the absence of C'. Murine mAb to CD4 had 50% neutralizing activities at the indicated concentrations (Table):

Anti-	OKT4 µg/ml	OKT4A µg/ml	OKT4B µg/ml	OKT4C µg/ml	OKT4D µg/ml	OKT4E µg/ml	OKT4F µg/ml
C'-ADE	3.4	.06	<0.4	64	2.2	22	>55
HIV-1	1.7	0.2	0.4	32.0	2.8	21.7	>55
fusion	6.8	0.4	1.6	>64.0	2.8	10.9	55

Conclusion: Murine mAb to CD4 blocked HIV-1 infection, C'-ADE, and cell fusion while a murine mAb to CR2 receptor blocked C'-ADE of HIV-1 infection *in vitro*, thereby implicating CR2 and CD4 receptors in C'-ADE of HIV-1 infection.

Th.C.P.130 PROCESSING OF THE HIV-1 GAG-POL PRECURSOR PROTEIN

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Objective. To study the processing of the full-length HIV-1 gag-pol precursor protein.
Methods. Oligonucleotide-directed mutagenesis was used to place the gag and pol genes in the same translational reading frame. The modified gene was then incorporated into vaccinia virus and expressed in mammalian cells. Unlabelled and metabolically labelled polypeptides were identified by Western blot and immunoprecipitation, respectively.
Results. Reverse transcriptase activity and polypeptides that rected with HIV-1 specific antisera were detected in cells infected with the recombinant vaccinia virus. At the earliest times, the size of the predominant polypeptide(approximately 160 kDa) was consistent with it being the full-length gag-pol precursor. At late times, the predominant polypeptides corresponded to mature gag and pol products (p17, p24, p32 and p66). Other intermediate size polypeptides (-130, 100, 90, 55 and 41 kDa) appeared transiently. Monospecific antisera and labelling with ^{3}H-myristic acid were used to further characterize the precursor-product relationships. Inoculation of animals (mice and rabbits) with the recombinant vaccinia virus led to the production of antibodies to p17, p24 and p66.
Conclusions. The putative full-length gag-pol precursor polypeptide was synthesized by recombinant vaccinia virus and processed through discrete size intermediates into mature and enzymatically active proteins.

Th.C.P.131 Double reactive sera for HIV1 and HIV2 antibodies and HIV variant strain from West Africa.

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Objective:To study by RIPA and synthetic peptides West African sera showing a double reactivity on HIV1 and HIV2 Elisa and WB assays.
Methods : 9 sera were collected from patients (CDC group II,III) originating from Ivory Coast (n=3) and Ghana (n=6). These sera showed by WB (Diagnostics Pasteur) high and equal reactivity on all the glycoproteins of HIV1 and HIV2 (HIV1: gp160, gp120, gp41 ; HIV2: gp140, gp125, gp36). These sera were studied by RIPA (CEM-HIV1$_{Bru}$, CEM HIV2$_{ROD}$) and by dot using transmembrane synthetic peptides (Diagnostics Pasteur). A quantitative evaluation was done by dilution titers and inhibition curves using these peptides on coated microplates.
Results : Eight out of the 9 sera demonstrated by RIPA a strong reactivity on the gag-pol-env products of HIV1 and HIV2, and high and equal reactivity on both HIV1 and HIV2 peptides. Three sera had a 10 time higher antibody (Ab) titer on HIV1 than on HIV2 peptides and 2 other sera had 5-10 fold higher Ab titer on HIV2 than on HIV1 peptides. Three other sera, collected from Ghanaian patients, had equivalent titers on HIV1 and HIV2 peptides with equivalent inhibition curves.
The last serum collected from a Ghanaian woman (CDC group II) was equally reactive on both peptides and had the caracteristic to react by RIPA and WB on the envelope antigens of both HIV1 and HIV2 but only on the p24 HIV1 gag protein without any reactivity on p26 HIV2 gag protein. A cytopathic HIV strain was isolated from PBL. Characterization of this isolate (hybridization) will be presented as well as PCR on fresh PBL.
Conclusion : The double reactive sera could be interpreted as a double infection (as previously described) or as a geographical variation in HIV strains.

Th.C.P.132 FREQUENT ISOLATION AND MOLECULAR IDENTIFICATION OF HUMAN T-CELL LEUKEMIA VIRUS TYPE-2 (HTLV-2) IN THREE U.S. POPULATION CENTERS.

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Human T-cell leukemia virus type-1 (HTLV-1) is endemic in Japan, the Caribbean, and southeastern United States where it is etiologically linked to adult T-cell leukemia. HTLV-2, a related but phylogenetically distinct human leukemia virus, has been found only sporadically and is associated with a T-cell variant of hairy cell leukemia. Recent serologic surveys of U.S. intravenous drug abuse (IVDA) populations have been interpreted to show that substantial proportions (30-50%) of these individuals are infected with HTLV-1, but the methodology employed in these studies could not distinguish HTLV-1 from HTLV-2. We cultured peripheral blood lymphocytes (PBL) from twenty "HTLV-1" seropositive subjects from New Orleans (10), Newark (1), and Miami (9). The 11 subjects from New Orleans and Newark were black IVDA and the 9 from Miami were from renal dialysis and general blood donor populations. Southern blot hybridization restriction enzyme pattern analysis (SB/RE) and polymerase chain reaction amplification (PCR) were used to identify unambiguously HTLV-1 and HTLV-2 DNA sequences in cultured and uncultured PBL specimens. 14 of 20 PBL cultures were positive by SB/RE for HTLV-2 alone, 3 of 20 were positive for HTLV-1 alone, and 2 of 20 PBL cultures were positive for double infection with both HTLV-1 and HTLV-2. PBL cultures positive for HTLV-2 and/or HTLV-1 by SB/RE were also positive by PCR, but PCR detected one additional double HTLV-1 and HTLV-2 infection and one additional HTLV-2 infection. Using SB/RE and PCR techniques on cultured and uncultured specimens, a total of 17 HTLV-2 and 6 HTLV-1 infections were detected in the 20 subjects studied. This study is the first to demonstrate conclusively that HTLV-2 is a common infection in selected populations in different U.S. cities and that some individuals are coinfected with both HTLV-2 and HTLV-1. The high prevalence of HTLV-2 in certain populations has important implications concerning potential clinical sequelae, heightened risk to the blood supply, and the origin, evolution, and natural history of human retroviral infections.

Th.C.P.133 QUANTITATIVE HIV BLOOD CULTURES.

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Objective. Quantitate the minimum number of patient peripheral blood mononuclear cells (PBMC's) required to isolate HIV in culture.
Methods. PBMC's from 12 staged HIV seropositive patients were obtained by Ficoll-Hypaque separation of heparinized blood. Serial ten-fold dilution of cells ($3x10^6$ to $3x10^2$) were inoculated into cultures of PHA and IL-2 stimulated normal donor target PBMC's. Culture fluids were monitored weekly for 6 weeks for HIV p24 antigen.
Results.

Walter Reed Stage	N patients	Minimum # cells for positive
1 - 2	3	10^4*, 10^4, 10^3*
3 - 4	3	10^5*, 10^4, 10^4
5 - 6	6	10^4*, 10^4, 10^4, 10^3*, 10^2*

HIV was also isolated in cultures from plasma from 5 to the 12 patients (* noted above). Rapid appearance of antigen (≤7 days) in cultures using $3x10^6$ patient cells correlated significantly ($p < 0.05$) with a high titer of circulating infected cells (≥1 in $3x10^3$) and with plasma viremia, and possibly ($p = 0.11$) with stage of illness.
Conclusion. Culture-positive blood from HIV patients contains approximately 100 infected cells per cm^3, with a range from 10 to 10,000 infected cells per cm^3.

Th.C.P.134 A HOST-RANGE MUTANT OF HIV WHICH CAN INFECT FIBROBLAST-LIKE CELLS DERIVED FROM HUMAN BRAIN.

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Objective. It is not understood well what type of cells in the brain and what type of HIV have participated in the development of neurological disorders induced by HIV. In this study, we analyzed a mutant HIV which can infect fibroblast-like cells derived from human brain.
Methods. Fibroblast-like cells (BT cells) were readily cultivated from various types of human brain tumors. A mutant of HIV (HIV[GUN-1_V]) highly infectious not only to $T4^+$ T cells, but to BT cells was obtained by infection of BT cells with HIV[GUN-1_{WT}], which is infectious to $T4^+$ T cells, but almost not to BT cells. Genomes of HIV[GUN-1_{WT}] and HIV[GUN-1_V] were cloned from DNA of HIV[GUN-1_{WT}]-infected MOLT-4 and DNA of HIV[GUN-1_V]-infected BT cell, respectively. Various recombinant genomes were transfected to MT-4, and recombinant viruses were obtained.
Results. Infectivity of recombinant viruses to BT cells were tested. Viruses containing a 2.3 kbp PstI (Ps-b) fragment derived from HIV[GUN-1_V] clone were infectious to BT cells, whereas viruses containing Ps-b fragment from HIV[GUN-1_{WT}] failed to express HIV-antigens in BT cells. The Ps-b fragment encodes parts of env, rev and tat genes. In preliminary comparison of the sequences of the Ps-b fragments from the two viruses, we detected three nucleotide exchanges.
Conclusion. Difference in infectivities of HIV[GUN-1_{WT}] and HIV[GUN-1_V] to BT cells was coded for by the Ps-b fragment. Some of the three nucleotide exchanges might determine the host-range difference.

Th.C.P.135 INFECTION OF MESENCHYMAL CELLS WITH HIV-1 IN VITRO

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Objective. Infection of mesenchymal cells of different origin (lung, skin, bone) with HIV-1 in vitro.
Methods. Infection of primary cell cultures and permanent cell lines with HIV-1 in vitro. Demonstration of virus infection and production by indirect immunoperoxidase staining (IP), in situ hybridization, reverse transcriptase activity (RT), electron microscopy and virus rescue.
Results. Different human cells of mesenchymal origin (primary skin fibroblasts, fetal lung cells, osteogenic cells) can be infected with HIV-1 in vitro. Especially in lung-derived cells, the infection was more pronounced, could be inhibited by anti-CD4 monoclonal antibodies and resulted in a persistent and productive infection similar to that of T-cells (RT activity, amount of infectious particles).
Conclusion. The productive and peristent infection of mesenchymal cells with HIV-1 indicates another potential virus reservoir in vivo which may contribute to local pathogenesis as for example in the lung (pneumonitis).

Th.C.P.136 SYNTHETIC SELECTIVE INHIBITORS OF HIV PROTEASE

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Retroviral protease, the enzyme which processes viral precursor polyproteins, is essential for virus replication and thus is an attractive target for chemotherapeutic treatment of retrovirus infections. We have designed and synthesized a structurally simple and versatile class of compounds, 2,3-epoxy alcohols, acids, and derivatives, and found several of them to be selective inhibitors of the HIV protease. The effect of these compounds on chemically synthesized HIV protease was conveniently studied by monitoring the cleavage of an authentic single peptide bond in a synthetic nonapeptide corresponding to a natural cleavage site in HIV-1 *gag* precursor polyprotein. The relative inhibitory effects of these compounds have afforded an insight to the structural characteristics which impart activity. Several compounds which inhibited the HIV protease showed negligible inhibitory effect on renin, a related nonviral aspartyl proteinase. Preliminary studies indicate that some of these synthetic compounds inhibit viral infectivity without substantial cytotoxicity. These compounds represent an entirely novel class of agents against HIV infection.

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Th.C.P.137 COMPARISON BETWEEN IMMUNOCYTOFLUOROGRAPHIC ANALYSIS (ICF) AND IN SITU HYBRIDIZATION (ISH) IN DETECTION OF HIV INFECTION OF MONOCYTE-MACROPHAGES (Mφ).

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Objective: To compare the techniques of ICF and ISH in assessment of proportion of mφ which contain HIV antigen and HIV RNA respectively.
Methods: Mφ were isolated from (1) peripheral blood (PB) of HIV sero-negative donors (n=14) infected in vitro with HIV-DV at multiplicity of one; (2) PB of HIV-infected individuals (n=6). Mφ were stained with Mab directed against HIV p24 (provided by J. Carlson, U.C. Davis) and the proportion of cells expressing HIV was quantitated using an Ortho IIS cytofluorograph. Parallel samples of mφ were spotted onto slides, fixed and ISH was performed with ^{35}S-labelled full-length HIV-SF_2 gene probe (provided by Chiron, CA). Slides were coded and examined by a blinded observer.
Results: In the 20 samples examined, the proportion of mφ containing HIV antigen varied from 0-70% and the proportion of cells containing RNA varied from 0.001 - 88%. Linear regression analysis showed a strong correlation between the two methods (r=0.77). The calculated relationship between ICF and ISH is: % mφ HIV positive (ISH) = 0.8 [% mφ p24 positive (ICF)]- 3.75.
Conclusion: ICF and ISH correlate well in determining the proportion of mφ within a population which contain HIV p24 antigen or HIV RNA respectively.

Th.C.P.138 QUANTITATION OF HIV-1 IN PLASMA AND PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMC) OF SEROPOSITIVE PERSONS.

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Objective: To quantify the titer of infectious HIV-1 in plasma and PBMC.
Methods: Plasma (2, 10, 40, 200, 1000 ul) and PBMC ($2x10^2$ to $2x10^6$) were cultured with $2x10^6$ PBMC from normal donors, and HIV-1 replication was monitored by supernatant p24 expression twice weekly for up to 28 days. Infectious titers for plasma and PBMC were expressed as tissue culture infective doses (TCID) per ml and TCID per 10^6 cells, respectively.
Results:

		T4 #	Serum p24 (pg/ml)	plasma HIV-1 titer (TCID/ml)		PBMC HIV-1 titer (TCID/10^6 cells)	
	N	mean	mean	range	mean	range	mean
Healthy	5	431	7	5-100	24	5-50	23
ARC	8	140	434	25-500	196	50-5000	2675
AIDS	19	90	812	1-500	187	5-5000	1433

Conclusions: (1) Infectious HIV-1 was detected in the plasma of every seropositive person, suggesting that HIV-1 infection is active and not latent. (2) Symptomatic individuals have significantly more virus than asymptomatic subjects. (3) In 1 ml of blood, asymptomatic persons have approximately 15 TCID of HIV-1 in plasma and 25 TCID of HIV-1 in mononuclear cells, while ARC and AIDS patients have 140 TCID in plasma and 1000 TCID in cells. In fact, many symptomatic patients harbor HIV-1 in 1 in 200 PBMC, which is a virus load much greater than previous reports suggesting that only 1 in 10^5 or 10^6 cells carry virus. (4) This quantitative culture has been successfully applied in patients receiving azidothymidine to demonstrate the in vivo antiviral effect.

Th.C.P.139 THE BINDING OF HBsAg TO HUMAN T4 LYMPHOCYTES INDICATES THE POSSIBILITY OF THE ANTIGEN TO FUNCTION AS OLIGOPEPTIDE ANTAGONIST TO HIV PRIMARY INFECTION OF T4 LYMPHOCYTES.

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Objective. To evaluate if HBsAg can bind on CD4 receptor of human T4 Tymphocytes and to identify if it can function as oligopeptide antagonist to HIV primary infection of T4 lymphocytes.

Methods. HBsAg positive sera samples, partially purified HBsAg and highly purified HBsAg were assayed for HBsAg reactivity when tested with and without equal volumes of human T4 lymphocytes ($2x10^6$ cells) using Organon diagnostic kit for the detection of HBsAg.

Result. HBsAg reactivity in the samples gave higher OD reading when tested with the T4 lymphocytes than the same samples tested without the T4 lymphocytes.

Conclusion. HBsAg can bind on human T4 lymphocytes obviously on the CD4 receptor hence may function as oligopeptide antagonist to HIV primary infection of T4 lymphocytes. The application of oligopeptides of HBsAg in preventing HIV primary infection of T4 lymphocytes should be investigated in the future.

Th.C.P.140 ANALYSIS OF A FUNCTIONAL HIV-2 REV GENE

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Objective: HIV-1 Rev is required for HIV-1 envelope protein expression. We have begun a functional and structural comparison of the rev gene of HIV-2 with that of HIV-1 in order to better understand their mechanism of action.
Results and Methods: We constructed a cDNA library from HIV-2 infected cells and cloned a cDNA encoded the rev gene. The sequence of the rev cDNA shows that the rev gene of HIV-2 is encoded on a message with four exons. The first, from R to the major splice donor, and the second, a 72 bp exon in the pol gene, are non-coding. The first coding exon begins between the ATG of the tat gene and the ATG of the rev gene and ends after the ATG of the env gene. The second coding exon begins near the end of the env gene. The HIV-2 rev gene product is predicted to share 44% amino acid identity with that of HIV-1. To show that the HIV-2 rev cDNA was functional, co-transfections were done with another plasmid that encodes the envelope gene of HIV-2. We found that expression of the envelope protein of HIV-2 from a plasmid vector was dependent on co-transfection of the HIV-2 rev cDNA.
Conclusion: We have cloned a functional cDNA encoding the HIV-2 rev gene. Comparision of the specificity of the HIV-2 rev product with that of HIV-1 will be usefull in defining the target site of the HIV rev products.

Additionnels
Additional

Th.C.P.141 HUMAN MONOCLONAL ANTIBODY AGAINST HIV

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Objective. Attempts were made to produce monoclonal antibodies of human origin against HIV which have neutralizing antibody activity.
Methods. Mononuclear cells from peripheral bloou of the patients with hemophiliacs showing sero-positive to HIV and the healthy sero-negative donors were cultivated with inactivated HIV and CD28 antibody as an in vitro immunization for 4 days. On day 4, EBV was infected to the culture. After 2 to 3 weeks of cultivation the growth of EBV transformed B cell clusters was observed. Culture supernatant of propagated B cells through cloning procedure was tested for their antibody activity to HIV by using ELISA method, immunofluorescence method, and Western blot procedure.
Result. Series of experiments were performed on the mononuclear cells originated from 2 hemophilia B patients, 1 hemophilia A patient, and 2 healthy donors. Numbers of B cell clones were obatained from a hemophilia B patient in ARC stage, whereas no continuous propagation of B cells were observed on the cells from other donors. Some culture supernatants of the propagated B cell clones showed antibody activity to HIV by ELISA method. However, those positive reactivities have not been reproducible by immunofluorescence or Western blot procedure.
Conclusion. A procedure to produce human monoclonal antibody against HIV by EBV transformed B cell method has been partially established. Cloning procedure and screening procedure have to be improved to obtain B cell clones consistentely produce human monoclonal antibody to HIV.

Th.C.P.142 CHARACTERIZATION OF MONOCLONAL ANTIBODIES REACTIVE WITH DIFFERENT PROTEINS OF HIV1 - NDK STRAIN.

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We attempt to generate monoclonal antibodies (mab) specific for the highly cytopathic strain HIV1-NDK. Until now, 6 mabs have been obtained : 3 mabs have been shown to react with epitopes of p 24 (mabs : BL 4.72.1 and BL 4.11.14) or gp120 (mab : BL16.76.1) shared among several HIV isolates. The 3 other mabs 2 of which react with epitopes of p17 (mabs : BL16.26.5 and BL16.45.1) and 1 with an epitope of p68 (mab : BL4.25.5) apparently bound specifically HIV1-NDK proteins. Further characterization is in progress to evaluate the biological effects of these reagents on HIV infection.

Th.C.P.143 DECREASING PRODUCTION OF IgG, IgM, AND IgA ANTIBODIES AGAINST PNEUMOCYSTIS CARINII ANTIGENS IN AIDS PATIENTS MESURED BY ELISA AND WESTERN BLOT.

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Objective. The study assesses IgG, IgM, and IgA production against major Pneumocystis carinii (PC) antigens during the development of AIDS.
Methods. Eight homosexual AIDS patients were included in the study. Six patients suffered from PC Pneumonitis during the period and two patients had Kaposi's sarcoma. Between 2 and 21 sera per patient were examined for specific antibodies. Twenty-nine healthy volunteers served as controls. The antibodies were mesured by ELISA and Western blot using soluble PC-antigens.
Results. All patients, except one, had decreasing antibody level in all immunglobulin classes. The level of IgG and IgM were in all patients below the level of the normal subjects. However, the IgA level was during the whole period above the level of the normal subjects. Western blot reveal changes related to the major antigenic components with molecular weights of 66.000 and 55.000 Dalton. IgG from normal controls did not react in the 55 kDa region. In AIDS patients the reaction between the immunoglobulins and the antigenic components disappeared in the following order: IgG/66, IgA/55, IgM/55 and finally IgM/66 or IgA/66.
Conclusion. The humoral immunity against PC may serve as a marker for the degree of immunodeficiency in AIDS patients.

Th.C.P.144 B-CELL SYSTEM ACTIVATION AND HIV-1 INFECTION

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Objective. To better define B-cell activation during HIV-1 infection.
Methods. Limiting dilution assay of B-cell precursors spontaneously secreting HIV-1-specific and total Ig; absorption of culture supernatants with solid-phase HIV-1; effect of T-cell and monocyte removal, and interleukin addition, on in vitro spontaneous Ig synthesis.
Results. In vitro spontaneous Ig synthesis did not depend on T-cell presence, while monocyte removal caused a striking fall in spontaneous Ig production. IL-6 presence in culture was essential; antisera against IL-6 strongly reduced spontaneous Ig synthesis, which was partly restored by rIL-6 addition to monocyte-depleted populations. The frequency of B-cell precursors spontaneously producing HIV-1-specific Ab was about 1/3-1/4 of that of spontaneously activated, Ig-secreting precursors. Moreover, after absorption with solid-phase HIV-1, about 30% of total Ig was removed from unstimulated culture supernatants.
Conclusions. HIV-1-specific B-cell activation is a major constituent of the overall B-cell activation in PBL from seropositive subjects. This phenomenon can contribute to the virus-induced immune damage, and partly explain the increased frequency of AIDS-associated B-cell malignancies.

Th.C.P.145 FINE STRUCTURE OF INSIDE THE VIRAL ENVELOPE OF THE HIV-1

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Objective. We presented an envelope surface model of HIV-1 using a computer image processer with negatively stained electron micrographes, namely, envelope structure of HIV-1 particle is constructed of T=7 laevo symmetry icosahedron and 72 knobs(gp120/gp41) are stuck into the envelope on the pentamer/hexamer clustering positions(4th. Int. Conf. AIDS: abstract No. 1042, and J. AIDS in press). Our results support the studies presented by Gelderblom et al.. In this study we will indicate some structures under the viral envelope.
Methods. HIV-1 particles were obtained from the HIV-producing H9-clones of the HT-lymphocyte line. The unfixed particles were negatively stained with 2% phosphotungstic acid(pH 6.6) and then dried in air to obtain well preserved structures.
Results. From the electron microscopic observations following features will be suggested.

1) The core shell has a polyhedral structure.
2) The space between viral envelope and core shell is filled with fibrous structures.

We also show a three dimensional model.

Th.C.P.146 SOME OBSERVATIONS ON THE LATENT HIV INFECTION PERIOD

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Objective. To evaluate the latent HIV infection period, from January 1988 to December 1988 six seronegative regular sexual partners of HIV infected subjects has been studied.
Methods. The seronegative diagnosis has been based on the demonstration of the absence of specific serum antigen and antibodies to the viral proteins by ELISA and Western Blot tests. The HIV latent infection has been evaluated by "in situ" hybridization on peripheral blood mononuclear cells (PBMCs) using an SP 64 plasmid containing the SstI-SstI 9 kb viral insert lambda BH 10 recombinant clone tagged with a sulfone group and visualized by double immunohistochemical antibody reaction. The controls were performed using HIV infected and non infected H 9 culture cell lines and PBMCs from healthy blood donors.
Results. The HIV genome was evidenziated, at first control, in the cytoplasm of mononuclear cells of all the seronegative subjects as a granular staining (alkaline phosphatase). Five subjects showed a transient positivity for anti-p 24 and three for specific HIV antigen. One subject seroconverted three months after first control.
Conclusions. The "in situ" hybridization is a useful technique to recognize HIV infection at very early stage.

Th.C.P.147 HIV-1 DOES NOT REPLICATE IN HUMAN VAGINAL EPITHELIAL CELLS

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Objective. To determine the ability of HIV-1 to replicate in human vaginal epithelial cells, a potential cellular target in heterosexual transmission.
Methods. Vaginal epithelial tissue explants obtained from HIV-seronegative women undergoing hysterectomies were seeded in tissue culture wells for 12 days. Cell-free supernatant from H9/HTLV-IIIB cells was added and adsorbed X 18 hrs. Explants were washed three times with saline, refed, and examined for morphological changes and supernatant HIV p24 antigen (Abbott) at times 0, 3, 6, 10, and 18 days following viral inoculation.
Results. No morphological changes were detected for tissue explants inoculated with HIV when compared to uninoculated wells. Spreading monolayers consisting of epithelial and/or fibroblasts were observed in all wells, and increased in size regularly. Supernatant p24 antigen levels were negative in all wells at the time points examined.
Conclusion. Human vaginal epithelial cells cannot support HIV replication when examined for up to 18 days following inoculation with a lymphoblastoid-adapted strain of virus. Experiments are in progress to determine whether a macrophage-adapted strain of HIV can infect vaginal tissue explants.

Th.C.P.148 EXCRETION OF HUMAN IMMUNODEFICIENCY VIRUS IN BODY FLUIDS

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OBJECTIVE: To evaluate techniques to assess HIV excretion patterns and specific antibody responses in body fluids.
METHODS: Peripheral blood, semen, saliva and female genital secretions from asymptomatic and symptomatic patients are being examined for infectious virus, viral antigens (EIA and flow cytometry), viral nucleic acid (PCR to follow) and antibodies (EIA and Western Blot).
RESULTS:

Sample	Infectious Virus	p24 Antigen	IgG	IgA
Blood	*24/31 (77%)	11/31 (35%)	31/31 (100%)	9/12 (75%)
Semen	3/12 (25%)	0/25	29/30 (96%)	11/13 (84%)
Saliva	0/12	0/18	23/25 (92%)	1/15 (6%)
Genital secretions	To follow	0/5	4/5 (80%)	To follow

* Nos positive/nos tested

Positive cultures occurred within 3-7 days among symptomatic and 7-28 days among asymptomatic patients. We have shown that flow cytometry provides an efficient method for analysis of cell populations in blood and female genital secretions; we have not yet detected expression of HIV antigens.
CONCLUSIONS: Infectious virus and viral antigens were detected less frequently in semen and saliva which may reflect the fact that they contain specific antibodies. These fluids probably represent a low risk for transmission of virus. Detection of positive cultures earlier among symptomatic than among asymptomatic patients suggests higher virus load or strains that replicate more efficiently.

Th.C.P.149 MOLECULAR CHARACTERIZATION OF A DEFECTIVE HUMAN IMMUNODEFICIENCY VIRUS

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Prolonged culturing of H9IIIB cell line, chronically infected with HIV-1, resulted in the emergence of a variant cell line that was found to be defective for virus production. This cell line (M-IIIB) was tested for the production of p24 antigen by ELISA and was found to be negative. Similar negative results were obtained when the cells were analyzed by FACS using monoclonal antibodies to p24. However, these cells were found to produce large quantities of HIV envelope gene product and were found to induce massive syncytia when cocultured with SUP-T1 cell line which is a CD4+ T-lymphocytic leukemia cell line. Immunoprecipitation analysis of the labelled cell lysates revealed the synthesis of envelope gene products (gp160, gp120). As predicted, there was no synthesis of p24 antigen as well as gag precursor protein, p55. The Southern blotting analysis of the M-IIIB cell DNA revealed the presence of a single proviral genome in cellular DNA. Following digestion with XbaI, which cleaves outside the proviral genome, the DNA was fractionated and cloned into a λ phage vector. A molecule analysis of the proviral genome aimed at understanding the nature of defect will be presented.

Th.C.P.150 HIV: EARLY VIRUS-CELL INTERACTIONS

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Objective. HIV infects CD4+ cells, mainly lymphocytes and monocytes. Two entry mechanisms have been observed in different reports: 1. direct fusion of the viral envelope with the cell membrane, 2. receptor-mediated endocytosis via clathrin coated pits and vesicles.
Method. Uninfected cells were incubated with purified virus and studied by EM at different time intervals and temperatures with regard to adsorption, fusion mechanisms and penetration of the core. Results. Since fusion was seen not only within cytoplasmic vesicles but also at the cell surface of both lymphocytes and macrophages, virus entry seems to be pH independent. The two layers of the viral envelope and the lipid bilayer of the cellular membranes usually fuse seamlessly within 1-3 min, but occasionally membrane ruptures may also occur, leading to rapid cytopathic effects, i.e. vacuolization and cytolysis. In the course of fusion at the cell surface, the viral envelope glycoprotein gp120 is integrated into the lipid bilayer of the cell membrane, where it can be visualized by immuno electron microscopy. Free gp120, shed by the mature virion already before attachment to the cell, may also bind to the cell surface and is most frequently found within clathrin coated pits. Formation of syncytia by cells studded with viral proteins was observed as early as after 1h of incubation with virus. SBL6669(HIV-2) Syncytia reach a larger size than HTLVIII-B (HIV-1) Syncytia.
Conclusion. The rapid entry of HIV into its host cell as well as early cytopathic effects should be considered in attempts to block virus entry or replication.

Modèles animaux
Animal Models

C.501

Inhibition of retrovirus-induced diseases by two naturally occurring polycyclic aromatic diones hypericin and pseudohypericin

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Two aromatic polycyclic dione compounds hypericin (HY) and pseudohypericin (PS) have been found to markedly inhibit the onset and progression of retrovirus induced disease. The compounds were originally derived from plants of the hypericum family (St. Johnswort). Their intravenous administration to mice infected with Friend virus at the time of virus inoculation can completely prevent the onset of leukemia and death. Intraperitoneal administrations shortly after virus inoculation significantly reduces splenomegaly associated with this disease as measured 10 days post virus inoculation, but does not completely prevent disease inductions. Another mouse model in which the antiviral efficacy of the compounds has been monitored is the murine immunodeficiency virus model (MAIDS), induced by the LP-BM5 virus. In our hands viremia in mice infected with the virus begins approximately 14 days post virus inoculation. Administrations of HY or PS intraperitoneally once every two weeks, beginning on day 14 after virus inoculation markedly reduced viremia to almost background levels throughout a 90 day follow up. Splenomegaly was also reduced by 66.2% after treatment with HY and by 49% after treatment with PS. These data coupled with the demonstrated in vitro activity of these compounds against retroviruses including human immunodeficiency virus, HIV, suggest that these compounds may have potential value as therapeutics for the treatment of diseases such as AIDS.

C.502

TRANSMISSION OF SIV_{mac} TO BABOONS

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Objective. To study the transmissibility and course of infection of freshly isolated SIV_{mac} in baboons and rhesus macaques.
Methods. Virus was isolated from a rhesus macaque 57 days after intravenous inoculation with SIV_{mac251} (from Dr Desrosiers) by co-cultivation of monkey PBL with human cord blood lymphocytes. This isolate was authenticated as SIV_{mac} by serology, electron microscopy and sequence analysis of PCR-amplified-gag. Blood from the infected animal, CEL and C8166 adapted virus was inoculated into 3 baboons and 3 rhesus macaques. These animals were monitored for seroconversion, virus isolation and disease status.
Results.

Animal No.	Inoculum	Virus Isolation			West. Blot		ELISA
		Day 38	Day 96	Day 129	p28/14	gp 32-37	gp 125
Rh 61H	Blood	+	+	+	+	+	+
Bab 36617		-	+	-	+	+	+
Rh 19H	Virus	+	+	+	-	+	+
Bab 36638	(CEL)	+	+	+	+	+	+
Rh 14H	Virus	+	+	+	+	+	+
Bab 36626	(C8166)	±	-	-	+	+	+

At 7 months no animals have disease.
Conclusion. Baboons are susceptible to infection with SIV_{mac}.

C.503

C.504

DIFFERING EFFECTS OF HELPER T LYMPHOCYTE DEPLETION ON MURINE INFECTION WITH HERPES SIMPLEX (HSV) AND CYTOMEGALOVIRUS (MCMV)

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Objective: To determine effect of helper-inducer T lymphocyte depletion on the pathogenesis of HSV and MCMV infection of mice.
Methods: Injection of rat monoclonal antibody GK1.5 into mice causes >95% depletion of L3T4 lymphocytes (the murine homologue of CD4 lymphocytes).
Results: In this model, resistance to acute HSV encephalitis is little impaired (virus LD_{50} decreased from 10 to 10 pfu/mouse; brain virus titers unchanged), even though depleted animals fail to generate humoral or cellular immunity to HSV. The L3T4-depleted mice have intact natural killer cell activity, which may contribute to host defenses in the absence of L3T4 lymphocytes. In marked contrast to HSV, acute CMV infection was profoundly altered by L3T4 lymphocyte depletion. Virus replication in depleted animals was prolonged by 3-4 weeks and increased (e.g. peak salivary gland titers increased from 10^{8} to 10^{10} pfu/gm). As expected, depleted animals made <5% of the anti-MCMV antibody of controls. Despite humoral immunodeficiency and markedly augmented virus replication, L3T4 depleted animals were more resistant to infection than normals (LD_{50} increased from $10^{3.6}$ to $10^{4.5}$ pfu/mouse).
Conclusion: Depletion of murine helper-inducer lymphocytes consistently results in augmented replication of herpesviruses, but the effect on host defenses is unpredictable: depletion increases mortality following HSV infection but decreases mortality following CMV infection.

C.505

C.506

C.507

C.508

IDENTIFICATION and CHARACTERIZATION of RABBIT CD4 USING ANTISERA PREPARED AGAINST HUMAN CD4

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Objective: To prepare and characterize antisera which bind rabbit CD4 and to identify T-cell subpopulations in normal and HIV-1 infected rabbits.
Methods: Goats, sheep and chickens were each immunized subcutaneously with 80 ug of recombinant soluble human CD4 (gift of D. Capon, Genentech Inc.) in 0.1 ml complete Freunds adjuvant. Subsequently, the animals were given weekly booster immunizations of 80 ug each in incomplete Freunds commencing on day 21 and continuing for 4 weeks. On the fourth week, the goats and sheep were boosted as usual with CD4, and sera were collected four days later; the chickens were boosted with 5 million rabbit thymocytes, and sera were collected four days later. All sera were tested by immunofluorescence (microscopy and flow cytometry) and by immunoprecipitation to detect the presence of antibodies to rabbit and human CD4.
Results: The goat and chicken antisera bound a subpopulation of T-cells from rabbit spleen, lymph node, thymus, and appendix. Cell staining of rabbit PBL were inconsistent and work is continuing. The sheep antisera were negative on rabbit cells. The goat antisera also bound A3.01 (human CD4+ T-cell line) but not A2.01 (human CD4- T-cell line) cells. Immunoprecipitation of human CD4 has been accomplished with goat antisera but not with chicken or sheep antisera. Preliminary experiments show that soluble human CD4 reduces the binding of goat and chicken antisera to rabbit cells. Additional experiments also indicate that A3.01 absorption of goat antisera removes its ability to bind rabbit CD4. Experiments in progress include: immunoprecipitation of rabbit T-cell lysates, absorption of antisera with immobilized CD4, and double staining in the context of known rabbit antibodies.
Conclusion: Cross-reactive epitopes exist between human and rabbit CD4 suggesting that binding of CD4 to HIV is a possible mechanism for HIV infection of rabbits.
*Recipient of an NRC fellowship.

C.509

C.510

DEVELOPMENT OF A NEUTRALIZING ANTIBODY ASSAY FOR THE SIMIAN IMMUNODEFICIENCY VIRUS MODEL

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Objective. To develop a neutralization antibody assay (Nt assay) that will be used to monitor SIV infected monkeys. Methods. Four cell lines (Hut 78, MT-2, MT-4 and CemXI74) were infected with a standard stock of SIV supernatant and monitored for infection by Reverse Trascriptase assay (RTA), P24 antigen assay (Dupont), and by cell viability using MTT. The $TCID_{50}$ value calculated using each system was compared. Results. The most reproducible $TCID_{50}$ was in the Hut 78 cell line using the antigen assay to determine the endpoint. The RTA gave similar results as the Dupont antigen assay, but it was more difficult to determine the negative cut-off. When MTT was used, the cell line MT-4 provided the highest $TCID_{50}$, however, these results were not consistent. A Nt assay using Hut 78 cells as the target for SIV with an antigen assay to determine the titer, was used to test the sera from SIV infected Rhesus monkeys. By this assay, sera from preinoculated monkeys were consistently negative for Nt antibodies and sera from 5 monkeys that had been infected for at least 2 months gave reproducible neutralizing titers that ranged between 1:64 and 1:512. Conclusion. An assay to test for Nt antibody titers in rhesus nonkeys infected by SIV was developed and found to be reproducible.

C.511

ROLE OF ETHANOL-INDUCED IMMUNOSUPPRESSION ON DISEASE AND TUMOR RESISTANCE OF RETROVIRALLY INFECTED MICE.

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Objective. To develop a murine model of AIDS for study of immunomodulatory cofactors as reviewed in Life Sci. 44:i, 1989. To determine the effects of a murine retrovirus causing immunosuppression, alone and with dietary ethanol, on cellular immune functions. Then to assess the effects of immunosuppression on infectious disease and tumor resistance.
Methods. C57BL6 female mice were infected with a murine retrovirus, LP-BM5, as described in Life Sci. 43:v, 1988. Mice were fed a liquid diet with 5% ethanol 5 days which produced withdrawal upon cessation. Controls were fed the diet with sucrose replacing ethanol. Then lab chow followed for 10 days with the cycle repeated over the course of the experiment. The mice were challenged with Streptococcus or syngeneic tumor PYB6.
Results. Effects of dietary ethanol in frequency of lymphocytes identified by surface markers 8 weeks post-LPBM5 murine leukemia virus infection.

Treatment	Control		Ethanol	
Virus Infection	-	+	-	+
T-helper	33.5 ± 4.9	24.3 ± 1.1	38.0 ± 2.5	41.0 ± 2.6
T-suppressor/cytotoxic	20.5 ± 0.7	11.3 ± 0.5	20.6 ± 1.1	19.0 ± 2.6
Activated Macrophages	23.0 ± 18.3	5.6 ± 2.0	17.0 ± 2.6	3.3 ± 1.1

Resistance to challenge by PYB6 tumor, S. pneumonia or both was assessed.
Conclusion. Ethanol suppresses numbers of T-cells and macrophages. It further suppresses immune functions in retrovirally infected mice beyond that caused by the virus. The murine AIDS model shows promise for investigating immunomodulatory effects of cofactors like alcohol us during retroviral infection on disease and tumor resistance. Supported by NIH Grant AA08037.

C.512

DEVELOPMENT OF MURINE RETROVIRUS MODEL USING F_1 HYBRID MICE FOR EVALUATION OF THERAPEUTIC SUBSTANCES

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Objective: To develop a predictive murine model for AIDS using an F_1 hybrid mouse strain capable of eliciting viral specific neutralizing antibodies that reduce retrovirus titers near limits of detection, but which still die of the disease, and to use this model for evaluating potential anti-AIDS therapies.
Methods: The utility of this mouse model was demonstrated by chronically treating female (B10.A X A/WySn)F_1 mice with zidovudine (AZT) 4 hrs. or 6 days after injection of Friend virus complex (FV). Per os (p.o.) and intraperitoneal (i.p.) treatment with an immunomodulator (bropirimine, ABPP) was also evaluated, with treatments started at 1 day pre-, 4 hr pre-, or 4 hr post-FV injection. Spleen weights, FV infectious centers in the spleen, cell-free virus in the spleen, plasma FV, FV-specific neutralizing antibody, cell enumeration by FACS analysis, and blastogenesis response were monitored
Results: AZT: When AZT was given i.p. or in the drinking water 4 hr after FV injection, the viral infection was prevented and immune parameters were not altered by the virus. When AZT was administered beginning 6 days after FV injection, viral titers were reduced but not eliminated. ABPP: When viral parameters were monitored 14 days post-FV injection, p.o. or i.p. treatment of ABPP did not affect viral parameters. Spleen weights were increased in the ABPP treated mice. When monitored at day 4 post FV injection, infectious centers in the spleen and spleen weights were increased in mice treated p.o. with ABPP.
Conclusions: Early treatment with AZT may prevent FV disease, but later treatment after virus exposure only reduces viral parameters. Enhancement of viral parameters by ABPP demonstrates that care must be used in application of immunomodulators. (Supported by NIH AIDS Program Contract NO1-AI-72662.)

Immunologie de base
Basic Immunology

C.513

A NEW SIMPLIFIED ASSAY FOR NEUTRALIZING ANTIBODIES TO HIV-1

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Objective. To develop a simple, large-scale assay for the safe and rapid quantitation of antibodies which block HIV-1 infectivity.
Methods. The reduction of a new tetrazolium salt, XTT, by viable T-lymphoblastoid cells to a soluble formazan was used to quantitate HIV cytopathic effects in a semi-automated 5-day microculture procedure for evaluation of neutralizing antibodies. Comparative methodologies included analysis by syncytium assay, quantitation of p24 synthesis, and anti-HIV-1 gp160/gp120 binding titers.
Results. The tetrazolium assay permitted screening large numbers of human and non-human primate sera including selected, AIDS patient sera and sera from iscom-vaccinated chimpanzees and rhesus monkeys for antibodies to HIV-1. Sera from goats immunized with HIV gp160/gp120 were also evaluated for specificity of reactivity permitting development of a competition neutralization assay.
Conclusion. The soluble formazan based tetrazolium assay can be employed for large-scale screening of sera from a variety of species for neutralizing antibodies to HIV. This new assay eliminates manipulations associated with other tetrazolium assays and is sensitive enough to permit evaluation of antibody binding specificities. Supported in part by NOI-CO74102

C.515

ANTISPERM ANTIBODIES AS A RISK FACTOR FOR SEXUALLY TRANSMITTED HIV INFECTION

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Objective. To determine whether men with antisperm antibodies in their semen will be more likely than men who are not sensitized to sperm to transmit HIV to their sexual partners. Men with a history of STDs and homosexual men have a high incidence of antibodies to sperm.
Methods. Sperm from fresh ejaculates were tested for bound antibodies by the Immunobead assay. Seminal mononuclear cells were purified by Ficoll-Hypaque gradient centrification and CD4 and CD8 T lymphocytes quantitated by immunoperoxidase staining using monoclonal antibodies. Interferon gamma (IFN) in seminal fluid was measured by ElISA. The ability of sperm with or without bound antibodies to induce IFN production or immunosuppress allogeneic mononuclear cells was determined by co-culture.
Results. CD8 cells predominate over CD4 cells in semen from men with antibody-free sperm. In men with antibody-bound sperm there is a selective loss of CD8 cells so that CD4 cells now predominate. IFN is present in semen only from men with antibody-bound sperm. Antibody-bound sperm induces IFN from allogeneic lymphocytes while antibody-free sperm inhibits allogeneic lymphocyte proliferation.
Conclusion. CD8 cells normally predominate in semen and the male genital tract and sperm are immunosuppressive. This inhibits replication of HIV-infected mononuclear cells. In men with antibodies to sperm, however, CD4 cells predominate in semen and their sperm are IFN inducers. This promotes replication of HIV-infected cells in the male and enhances viral infectivity.

C.517

QUANTIFICATION OF HIV-BINDING TO CD4+ CELLS USING FLOW CYTOMETRY

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The anti-CD4 antibody Leu 3a is able to inhibit HIV-virion binding to its receptor, the CD4 molecule. (Weiss et al., 1984). On the other hand, the viral protein gp120 can block Leu 3a antibody binding. Titration of fluorescein-conjugated Leu 3a in combination with Scatchard-Plot analysis of flow cytometric data gives a good estimate of the average number of CD4 molecules per cell and of the corresponding affinity constants. Such the optimum Leu 3a concentration with the highest sensitivity to interfering ligands can be used in further experiments. Human peripheral blood lymphocytes were incubated with supernatants of HIV-producing cell lines (Molt 4/8, H9), washed and fixed. The remaning binding capacity for Leu 3a was determined using a calibrated flow cytometer. The decreased fluorescence intensity compared to appropriate controls can be regarded as a measure of gp120 blocked CD4 and intact virions. Ultracentrifugation of HIV containing supernatants makes it possible to distinguish free gp120 from particle-associated glycoprotein and to estimate the content of virions with ability to bind to cells. In all experiments performed receptor occupation by HIV-virions or their glycoprotein did not exceed 50% of the CD4 molecules wich is in good agreement with theoretical considerations

C.514

ANTIBODY DEPENDENT CELL-MEDIATED CYTOTOXICITY (ADCC) IN RELATION TO CLINICAL PROGRESSION OF HIV-1 ASSOCIATED DISEASE IN HAEMOPHILIACS.

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Objective. Evaluation of the ability of serial serum samples from a cohort of HIV-1 positive haemophiliacs to mediate ADCC, with study of the relationship of ADCC to clinical state and disease progression.
Method. HIV-1 isolates in the CEM cell line were used as target cells and peripheral blood mononuclear cells from selected normal donors as effector cells*. Comparison of serial samples from 36 HIV-1 positive haemophiliacs infected with the same contaminated factor VIII is described. Titres of antibody mediating HIV-1 specific ADCC are compared with the evolution and clinical stage of HIV-1 associated disease.
Results. Preliminary results show that 7/7 ARC/PGL patients with non-progressive disease have higher ADCC than 2/2 patients progressing to AIDS. Full results of 30 patients will be presented.
Conclusion. Our preliminary studies as well as those from other groups suggest a protective function of sera that can mediate HIV-1 specific ADCC. If the trend is confirmed the findings will be of importance in design of HIV vaccines and therapeutic strategies.
*Reference. Sinclair, AL, Habeshaw, JA, Muir L, Chandler, P, Forster S, Cruickshank, K, and Dalgleish, AG. (1988) Antibody-dependent cell-mediated cytotoxicity: comparision between HTLV-1 and HIV-1 assays. AIDS Journal, 2:465-472.

C.516

MODULATION DE L'EXPRESSION DE CD4 PAR LE PMA ET INFECTION VIH IN VITRO

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Objectif. La liaison de la glycoprotéine 120 (gp120) à la molécule CD4 constitue l'un des mécanismes principaux de l'infection de la cellule par le virus de l'immunodéficience humaine (VIH). La modulation de l'expression de CD4 in vitro, par le phorbol myristate acétate (PMA), permet d'étudier les conditions d'infectivité de la cellule par le VIH.
Méthodes. Des cellules de lignée lymphoïde MT4 sont prétraitées avec PMA (10^{-8}M) pendant 1,5 et 16h. Le phénotype CD4 de ces cellules est analysé en immunofluorescence avant l'infection par VIH in vitro. L'évaluation de l'infection virale est basée sur l'apparition d'un effet cytopathogène (ECP), l'expression intracytoplasmique de l'antigène viral p24 et d'une activité transcriptase inverse ou RT.
Résultats. Les cellules MT4 expriment, à plus de 80 %, la molécule CD4 et les conditions de leur infection in vitro par PMA ont été définies.Le traitement, des MT4 au PMA, pendant 1,5 et 16 h a permis une forte réduction de l'expression CD4 associée à une absence d'ECP et de p24 intracytoplasmique. L'activité RT était absente après 1h d'incubation au PMA mais par contre détectable à 5 et 16 H de prétraitement au phorbol.
Conclusion. Ces résultats confirment que l'infectivité in vitro par VIH est associée avec le degré d'expression de la molécule CD4.

C.518

SPONTANEOUS TNF-ALPHA PRODUCTION BY ALVEOLAR MACROPHAGES AND PERIPHERAL BLOOD MONOCYTES FROM PATIENTS WITH AIDS.

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Objective: To assess spontaneous and LPS induced TNF-alpha production by monocytes/macrophages from AIDS patients.
Method: Bronchoalveolar lavage (BAL) cells and peripheral blood mononuclear cells (PBMC) were cultured for 24 hours, with and without LPS (1ug/ml), aftur which supernatants were collected and assayed for TNF by ELISA. Patient groups included:

Group 1 - HIV positive patients with PCP (AIDS).
Group 2 - HIV positive patients without PCP, but with bacterial infection (ARC or AIDS)
GROUP 3 - HIV negative patients with negative bronchoscopy for - carcinoma.

Result:		Group 1	Group 2	Group 3
BAL cells	Spontaneous	177.6 ± 53.1 (n=17)	25 (n=8)	26 ± 1 (n=15)
	LPS induced	231.5 ± 84.8	268.2 ± 36	298.6 ± 54.3
PBMC	Spontaneous	55.05 ± 18.7 (n=8)	25 (n=8)	25 (n=8)
	LPS induced	136.8 ± 33.8	135 ±47.3	133.2 ± 20.9

[Figures are mean values of TNF, expressed as units/ml/10^5 macrophages. Values lower than the limit of detection of the assay (25 units/ml) were assigned a value of 25]
Plasma and BAL fluids did not contain detectable TNF.
Conclusion: AIDS patients with Pneumocystis carinii pneumonia,but not those with bacterial infection, showed increased spontaneous TNF-alpha production.

C.519

INDUCTION OF MAJOR HISTOCOMPATIBILITY (MHC) CLASS II ANTIGEN ON CELLS OF THE DEVELOPING HUMAN FETAL PERIPHERAL NERVOUS SYSTEM BY GAMMA-INTERFERON

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Objective. To examine the effect of gamma interferon (γ-IFN) on the level of MHC class II expression on cells isolated from the developing human fetal peripheral nervous system.
Methods. γ-IFN was used to study the induction of MHC class II antigen expression on the surface of cells obtained from dorsal root ganglia (DRG) derived from aborted human fetal specimens between 13 and 16 weeks gestation. The induction of class II antigen expression by γ-IFN was also examined on U373 glioma cells. Fluorescence-activated flow cytometric analysis was performed on both live and fixed cells utilizing a primary monoclonal antibody specific for the HLA-DR (MHC class II) region-associated bimolecular complex in conjunction with a fluorescein-conjugated goat anti-mouse secondary monoclonal antibody.
Results. We have demonstrated that between 15 and 25% of human DRG neural cells isolated from aborted human fetal specimens are HLA-DR antigen-positive. However, when human fetal DRG neural cells isolated from the same tissue were treated for 48 hr with γ-IFN (100 U/ml), the number of HLA-DR antigen-positive cells increased to between 41 and 71%. Kinetic analysis of MHC class II antigen expression in the U373 glioma cell line after treatment with γ-IFN (100 U/ml), demonstrated an increase in the number of HLA-DR antigen-positive cells, reaching a maximum of 86-98% antigen-positive cells within 48 hr after exposure, declining thereafter, but remaining above pretreatment levels 24 hr later.
Conclusion. γ-IFN enhances MHC class II expression on human fetal DRG neural cells. Future studies will examine the effects of HIV infection, HIV antigens, and factors secreted by HIV-infected cells on MHC class II expression in the developing human nervous system.

C.520

DECREASING ANTIBODY RESPONSES IN ASSOCIATION WITH AIDS

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Objective. To identify HIV specific immune responses associated with the development of AIDS in HIV seropositive homosexual men.
Methods. Sera were obtained semi-annually over 3 years from 20 asymptomatic HIV seropositive men in San Diego, 10 of whom developed AIDS and 10 remained stable. They were studied by quantitative Western Blot (WB) neutralising antibody (NA) and antibody-dependent-cell-mediated-cytotoxicity (ADCC) assays.
Results. Quantitative analysis of the IgG binding to individual proteins and glycoproteins of HIV on WB demonstrated no differences between the groups at the initial visit. After 2-3 years, there was a significant decrease in antibodies against p24, p31, gp41, and p55 in the group with AIDS compared to the stable subjects ($p < .03$, Mann-Whitney). NA decreased in 6/10 subjects with AIDS and 2/10 stable subjects. Reciprocal geometric mean titers (GMT) of NA were identical in the two groups at presentation (79), but 3 years later it was significantly lower in those with AIDS (30 vs 70 $p < .05$ Student's t test). ADCC was detected in sera at ≥1:1,000 in 17/20 subjects and there was no difference or change in ADCC titers between the groups over time.
Conclusions. Development of AIDS in initially asymptomatic HIV seropositive homosexual men was associated with a decline in HIV specific antibodies against core antigens and NA but not ADCC or envelope binding antibodies as detected by WB.

C.521

THE EFFECT OF HIV ON THE EXPRESSION OF HLA-DR AND CYTOCHROME-b OXIDASE mRNA IN MONONUCLEAR CELLS

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Objective. To determine if HIV infection can alter the expression of two distinct mRNA markers of mononuclear cell activation: 1. HLA-DR--the major histocompatability antigen responsible for accessory cell function; and 2. Cytochrome b heavy chain (cyt-b)--a component of the oxidase system responsible for mononuclear cell respiratory burst activity.
Methods. The HTLV-III$_B$ strain was used to infect two human promonocytic cell lines, U937 and THP-1. At the time of peak reverse transcriptase activity, cells were divided into the following groups: non-stimulated cells; cells stimulated with 400 U/ml interferon (IFN$_\gamma$); and cells stimulated with 100 ng/ml lipopolysaccharide (LPS). Non-infected cells were treated identically and served as controls. After 24 hr, total RNA was extracted, electrophoresed and subjected to Northern blot using probes consisting of cDNA for HLA-DR and for cyt-b. An actin probe was used as an internal control.
Results. Expression of HLA-DR and cyt-b mRNAs were decreased in non-stimulated, HIV-infected cells. IFN$_\gamma$ stimulation resulted in increased levels of HLA-DR and cyt-b mRNAs; however, these levels were diminished in the infected vs. the non-infected cells. LPS had no effect. Actin mRNA was equivalent in all groups and was not affected by either infection or stimulation.
Conclusion. HIV infection caused down-regulation of two markers of mononuclear cell activation at the transcriptional level. These alterations may play an important role in the pathogenesis of cellular immune dysfunction. IFN$_\gamma$ partially reversed the HIV effects.

C.522

MUCOSAL IMMUNE SYSTEM IN HIV1 INFECTION; ACTIVITY OF SPECIFIC ANTIBODIES IN PAROTID SALIVA

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Objective. To look for qualitative and quantitative properties of the specific antibodies in the parotid saliva of HIV1 infected people.
Methods. Serum and parotid saliva was collected from 19 HIV1 infected people of different clinical status; CDCII (7), CDCIII (3), CDCIV (9). The immunoglobulins IgA, IgG and IgM were seperatly eluted from the sera and saliva. The serological techniques used were the western blot, ELISA and neutralization test.
Results Specific antibodies (Ab) to the HIV1 were found in the sera and saliva of all the people tested. They were found positive in both immunoblotting and ELISA. The immunoblotting test revealed Ab's to all major HIV1 antigens (env, pol and gag). The predominant Ig class of specific Ab's toward env proteins in the serum was IgG, while in the saliva it was IgA class. Moreover IgA antibodies were found by ELISA in 14 of 16 salivas tested, while IgG antibodies were found in only 6 of 12 saliva samples. The level of Ab's to the env antigens in the sera and salivas varied widely. Comparing level and class of Ig's, we could not find any significant differences between the groups of asymptomatic, CDCII and AIDS affected people. The saliva IgA antibodies toward the env proteins revealed less reactivity compared to the serum IgA, in 12 of 14 samples tested. The relative lower reactivity ranged from 2 to 65 times lower (mean=11). Neutralization assay revealed positive reaction in 3 of 7 sera tested in rather low titers (1:10-1:100). None of the 9 tested salivas nor their respective IgA demonstrated neutralization activity.
Conclusion The current data revealed; A) Relatively low reactivity of saliva IgA compared to serum IgA. B) Lack of neutralization activity in the HIV1 antibodies of salivas. C) No correlation could be established between antibody reactivity and the 3 CDC HIV1 categories. These findings might suggest that the mucosal immune response in HIV1 infected people is impaired long before any pathognomonic symptoms of AIDS occur.

C.523

EARLY DEVELOPMENT OF ANTI-HIV IgG

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Objective. To enhance the early seroreactivity in HIV infection/immunization.
Methods. Non-glycosylated 15-30 aa peptides covering the CD4 binding region of HIV were prepared by solid phase synthesis. All peptides were made to contain two cysteine residues in the same molecule and chemically oxidized. The sulphur bridge formed, restricts the peptides sterically.
Results. All patients (n=100) with established HIV-1 infection had an IgG1 response to one (JB-8p) of ten peptides representing the CD4 binding region. Subclasses IgG2, 3 and 4 appeared in 27, 60 and 35% respectively. In seroconverting persons (n=10) IgG1 and IgG3 antibodies to the peptide JB-8p developed within 3-4 weeks and parallelled total antiviral IgG. The JB-8 sequence represents the C-terminal of the putative gp120 CD4 binding region.
Conclusion. The 100% seroreactivity of HIV-infected individuals to a chemically modified peptide representing the CD4 binding region and the early serological response after primary infection implies a role for this peptide in vaccine development.

C.524

THE IMMUNE RESPONSE TO HIV-1 ENVELOPE PROTEIN INVOLVES BOTH ADCC AND CTL

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Objective env protein specific cytotoxic effector cells, present in the peripheral blood of most HIV seropositive donors, have been characterised as either CD8+, MHC restricted or CD8- and MHC unrestricted. Phenotypic studies and analysis of antigen processing were used to define these effector cells.
Methods Uncleaved gp160 anchored in the plasma membrane, soluble gp120, an env precursor with deletion of the peptide signal or gp160 with deletion truncations were expressed in vaccinia. Autologous EBV transformed lymphoblastoids cells were infected with these recombinant vaccinia viruses and used as targets for primary cytotoxic effectors present in PBMC of HIV seropositive donors.
Results the predominant env specific cytotoxicity in most HIV donors is mediated by ADCC effectors cells : CD3-, CD4-, CD8-, CD16+ ; and lysis can be blocked by antibody to human IgG. ADCC effectors cells are able to lyse only target cells that express the env proteins at the cell surface as detected by surface immunofluorescence. However, CD8+ CTL are able to lyse target cells that do not express the whole env protein on the surface.
Conclusion in the heterogenous population of viral antigen specific effector cells in the pheripheral blood during HIV infection a major cytotoxic activity is env specific ADCC. However, in some individuals CTL activity or both ADCC and CTL activities are detectable.

C.525 TUMOR NECROSIS FACTOR (TNF) STIMULATES HIV1 TRANSCRIPTION IN HUMAN T CELLS

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Objective. We have examined whether TNF might stimulate HIV1 transcription and we have analyzed the mechanism involved.
Methods and results. We transfected J. Jhan cell line (a subclone from Jurkat T cell line) with the plasmid LTR HIV.CAT which contains the HIV1 LTR sequences upstream of the bacterial CAT gene. CAT activity was consistently increased 5 fold when transfected cells were treated with TNF. Such transactivation was enhanced : more than 20 fold when the NRE region of the LTR (upstream of -138) was deleted. More precisely we show here that the enhancer (-108, -75) element, previously described to bind NF-kB, is necessary for TNF activation of the heterologous tk promoter. However flanking sequences of this region are important for full transactivation. Using bandshift assay, we show that this increased expression is accompanied by the induction or activation of an NF-kB-like transcription factor. We show also that PHA and PMA have synergistic effects with TNF. Such a synergy was not due to superinduction or activation of this transcription factor and may be due to upregulation of TNF receptors by PHA or PMA.
Conclusion. Since TNF is secreted during most immunological and inflammatory reactions and has been indeed detected in the serum of AIDS patients, our observations suggest a possible rôle for TNF in the pathogenesis of AIDS through activation of HIV genome transcription

C.526 HIV-1 AND HIV-2 SPECIFIC IgG SUBCLASS REACTIVITY TO env AND gag PEPTIDES

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Objective. To evaluate and compare the HIV-1 and -2 specific IgG subclass reactivity to selected peptides.
Methods. Peptides representing five immunodominant regions of the HIV-1 and -2 env and gag proteins were used as antigens in IgG subclass ELISA assays. Sera from HIV-1 and -2 infected individuals were analysed.
Results. IgG1 was the dominant anti HIV-1 subclass and was detected in 100% of the sera. The HIV peptides representing gp36-41 elicited the highest frequency of reactivity of all subclasses. The reactivity to the gp120 peptide was mainly restricted to IgG1 or 1+3. A high IgG1+3 reactivity was also seen directed to peptides representing the putative hypervariable loop region of gp120. Subclass response to peptides representing regions of p17 and p15 was restricted to IgG1+4 and IgG1+2 respectively. Sera from HIV-2 infected individuals showed a 90-100% reactivity to the corresponding HIV-2 peptides. Crossreactivity was more frequent in the HIV-1 group to HIV-2 peptides than vice versa.
Conclusion. A differential restriction of the IgG subclass response was seen to regions of HIV representing the major structure proteins. The IgG3 response to envelope-representing peptides indicates frequent gp120 stimulation and capacity for neutralization.

C.527

C.528 RELATIONSHIPS BETWEEN THE PHYSIOLOGICAL FUNCTION OF CD4 AND ITS ROLE AS THE HIV RECEPTOR

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Objectives To define with the use of monoclonal antibodies (mAbs) to CD4 and their anti-idiotypes those sites on the CD4 antigen important in the physiological functions of this molecule in relation to their role in HIV reception.
Methods The amino acid residues essential for the binding of a number of CD4 mAbs has been determined using forms of the CD4 antigen containing point mutations. These mAbs have also been used to probe the function of the CD4 antigen in terms of its HIV binding capacity and role in T-cell activation.
Results We have defined those CD4 mAbs which react with residues most similar to the amino acids which gp120 requires for binding. These mAbs are highly effective at inhibiting T-lymphocyte responses to soluble recall antigens and mitogens in a soluble form, but are also capable of enhancing T-cell responses when cross-linked with CD3 mAbs.
Conclusions Antibodies against CD4 which inhibit HIV-induced syncytium formation require residues very similar to those required by gp120 for binding to CD4, and are also highly effective at modulating T-cell activation. We therefore conclude that the regions of CD4 reactive with HIV gp120 are important in the physiological function of CD4.

C.529 HIGH LEVELS OF CELL-ASSOCIATED IL-1 IN CIRCULATING MONOCYTES FROM HIV-INFECTED INDIVIDUALS.

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Stimulation of normal monocytes results in transcription of IL-1α and β genes and accumulation of cell-associated IL-1. Some but not all IL-1 inducers further trigger the extracellular release of IL-1β. We have examined the production of cell-associated IL-1 in vivo and that of cell-associated and extracellular IL-1 in vitro in 30 infected individuals and 30 non-infected controls. Cell-associated IL-1 activity assessed using a comitogenic thymocyte assay was significantly increased in patients with AIDS (80.6 ± 19 U/ml (mean ± SEM ; n = 14) and HIV+ oligosymptomatic individuals (32.9 ± 10.2 U/ml ; n = 16) as compared with normals (4.4. ± 1.6 U/ml ; n = 30). Cell-associated levels of IL-1α and β antigens were also elevated in HIV+ individuals. Serum-free culture of monocytes from HIV+ individuals in the absence of IL-1 inducers resulted in spontaneous release of IL-1 activity, IL-1β and α antigens. No IL-1 activity was released by cells from normal individuals cultured under the same conditions. LPS-stimulation of monocytes from HIV+ patients induced the release of both IL-1 and whereas cells from normal individuals exclusively released IL-1β. However less IL-1 activity was released by LPS-stimulated cells from HIV+ patients as compared with normals. Thus, HIV-infection is associated with the chronic stimulation of monocytes to produce IL-1 in vivo and an alteration in the intracellular pathways regulating the extracellular release of IL-1α.

C.530 SPECIFICITY OF CD4$^+$ T CELLS FROM CYNOMOLGUS MACAQUES IMMUNIZED WITH HYBRID HIV P24:Ty VIRUS LIKE PARTICLES

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Objective. To assess the ability of a novel antigen presenting system to generate T-cell responses to HIV gag proteins in primates.
Methods. Four pairs of cynomolgus macaques were immunized with a recombinant HIV-1 gag protein expressed in yeast as hybrid P24:Ty virus like particles (VLPs). Animals received 3 i.m. injections, at 6 week intervals, of 50 or 500µg of P24:Ty-VLPs with or without alum as adjuvant. Proliferative responses of peripheral blood lymphocytes were tested at 2 week intervals. CD4$^+$ T-cell lines and clones were established and assessed for antigen specificity.
Results. Lymphocyte proliferative responses to P24:Ty-VLPs and control Ty-VLPs were detected in all animals as soon as 2 weeks after immunization. Responses were significantly greater in animals given the antigen with alum. Lymphocytes from these animals also gave a significant response to recombinant gag alone or to whole HIV. Proliferation and IL-2 release by T-cell lines and clones in response to synthetic peptides from the P24 sequence demonstrated the presence of CD4$^+$ T-cell epitopes on HIV-P24.
Conclusion. Hybrid HIV P24:Ty VLPs are a useful antigen presenting system for the generation of proliferative T-cells to HIV gag proteins and have allowed us to identify determinants on P24 recognised by CD4$^+$ T cells from cynomolgus macaques.

C.531

T CELL RECOGNITION OF HIV PEPTIDES. R.D. Schrier, C.A.Wiley, J.W. Gnann Jr., R. Landes, C. Lockshin, D. Richman, A. McCutchan, M.B.A. Oldstone, J.A. Nelson. Research Institute of Scripps Clinic, La Jolla, CA, University of California, San Diego, La Jolla, San Diego V.A. Medical Center, San Diego, U.S.A.

Because T-cell responses are critical for defense against viral infections, a series of synthetic peptides derived from the predicted sequence for human immunodeficiency virus (HIV-1) proteins gp41, gp 120, gag and viral polymerase were employed to test the T-cell proliferative response of HIV-1 seropositive individuals. Ninety percent (27/30) of HIV-1 infected donors from various clinical categories had sensitized cells that proliferated in response to at least 1 of 21 HIV peptides tested. Cells from HIV seronegative controls did not proliferate (0/9) in response to these HIV peptides. Individuals with fewer clinical manifestations of HIV-1 disease responded to a greater number of peptides and the number of peptides recognized also correlated with absolute number of CD4 positive cells. Response patterns differed considerably among individuals, and some peptides stimulated proliferation in many (48%) HIV infected donors (peptides gp41-2, and pol-3), whereas another peptide elicited no T-cell response in any donor tested (peptide gp120-8).

We have begun to investigate the basis for individual heterogeneity of T lymphocyte proliferative responses. Peptide structure and HLA class II determinants both influenced patterns of lymphocyte responses. Reactivity correlated with peptide size, the presence of and secondary structure and lack of reverse turn potential. HIV infected lymphocyte donors were HLA typed to examine the influence of the MHC on T lymphocyte proliferation. Analysis of the frequencies of individuals reacting to specific peptides, when compared to the allele frequencies in the population at large, indicated association of some responses to DR alleles. Genetically determined variations in responses could influence disease progression and may have to be considered for vaccine design. This work was supported by USPHS grants AI-07007 and NS-12428 (MBAO), funds provided by the State of California and allocated on the recommendation of the Universitywide Task Force on AIDS (RS, JN, DR, AM), USPHS training grant NS-07078 (JG) and the U.S. Army Medical Research and Development Command under Contract No. DAMD17-88-C-8103.

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STUDY OF THE FUNCTION AND STRUCTURE OF IL2-R IN HIV-INFECTED SUBJECTS. Y. LUNARDI-ISKANDAR, E. SPANAKIS, C. JASMIN, V. GEORGOULIAS. Oncogénèse Appliquée (INSERM U268), Hôp. Paul Brousse, 14-16 av. P.V. Couturier, 94804 Villejuif, France.

Objective : To elucidate the mechanisms responsible for the low proliferative responses of T cells during HIV infection.

Methods : PBL were obtained from 7 AIDS, 5 LAS and 8 asymptomatic seropositive patients as well as from 8 normal controls. Surface Tac expression was studied by indirect immunofluorescence whereas the affinity and the structure of IL2-R were evaluated by binding and cross-linking of ^{125}I-rIL2 under high affinity (h.a.) conditions using 3-day PHA-activated cells. Northern blot analysis was used to determine the expression of the Tac gene.

Results : LAS and AIDS patients displayed fewer (1444±884 and 1070±870 sites/cell, respectively) h.a. binding sites and a significantly (p<0.1) higher (188±34 pM, and 120±88pM, respectively) kd than asymptomatic subjects (B.C=3003±782 sites/cell : kd=58±18pM) and normal controls (BD=2842±844 sites/cell : kd=74±17pM). In some patients, cross-linking experiments revealed the absence of the p75 chain of IL2-R. The expression of the Tac gene although present is decreased in comparison to normal cells. HIV infection of T cells in vitro, before their mitogenic activation, resulted in a decreased expression of the Tac molecule and in a time-dependent decrease of h.a. binding sites as well as in an increase of kd. In vitro infection of already activated cells was followed by a time-dependent decrease of the h.a. binding sites. One hour cell incubation with infectious, but not non-infectious, HIV resulted in an increase of the kd (88%) which remained unchanged for 3 days, and which could be prevented by an incubation with anti-CD4a mAb before infection. The rapid increase of the kd of IL2-R is not due to a decreased expression of the Tac gene since 5hr post-infection cells still express considerable amounts of Tac mRNA.

Conclusions : The described functional and structural abnormalities of IL2-R are due to HIV infection and could be involved, at least partly, to the impaired proliferative responses of T cells during HIV infection.

C.536

IMPAIRMENT OF HUMAN NEUTROPHIL (PMN) FUNCTION IN VITRO BY HIV-1 AND GP 160
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In addition to opportunistic infections, individuals (especially children) infected with HIV-1 may also be at increased risk for bacterial infections due to pyogenic organisms such as S.aureus. The PMN of HIV-infected persons have been reported to have impaired bactericidal activity and chemotaxis but a normal respiratory burst. Objective. To study the effect of ultraviolet-inactivated (UV) HIV-1 or purified envelope component gp 160 on PMN function in vitro. Methods. Isolated PMN were exposed to UV-HIV-1 (3 x 10^6 CPM RT assay/10^5 PMN) and gp 160 (2.5 ug/10^5 cells). Functional capacity of stimulated PMN was measured using luminol enhanced chemiluminescence (CL) and chemotaxis. Results. UV-HIV-1 and gp 160 reduced opsonized zymosan and FMLP stimulated CL by 20-30% but had no effect on PMA-stimulated CL. The effect of UV-HIV-1 and gp 160 on chemotaxis are in progress. Conclusion. The data suggest that the immunosuppressive activity of noninfections HIV-1 may contribute to the phagacytic cell defect observed in infected patients.

C.537

C.538

ANTI-IDIOTYPIC ANTISERA TO ANTI-CD4: THEIR SPECIFICITY AND ANTI-HIV POTENTIAL

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OBJECTIVE: To investigate the cross-reactive nature of anti-idiotypic reagents to Leu3a anti-CD4 and to evaluate their potential to inhibit syncytial formation between CD4+ c8166 cells and HIV RF.

METHODS: Lou rats, Balb/c and SJL mice were immunised with Leu3a anti-CD4 antibody coupled to KLH, administered intraperitoneally with complete freunds adjuvant. The resulting antisera were screened for their capacity to inhibit the binding of Leu3a, and other anti-CD4 antibodies to CD4+ Supt1 cells.

RESULTS:

IDIOTYPE	RECIPIENT	ANTI-IDIOTYPE ACTIVITY					
		Leu3a	RFT4	MT310	NUTH-1	L201	MT151
	Rat	+++	-	+++	-	+++	-
Leu3a	Balb/c	+++	+	+++	++	+++	+
	SJL	+++	-	-	-	-	-

CONCLUSIONS: The anti-idiotypic profile induced by Leu3a is dependent on the choice of recipient, therefore, the suitability of the anti-idiotypic approach to HIV therapy will be reflected by the genetic background of that recipient. None of the anti-Leu3a antisera contained anti-HIV potential.

C.539

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PRELIMINARY EVALUATION OF A RECOMBINANT SIV-ENVELOPE PEPTIDE FOR USE AS A DIAGNOSTIC FOR HIV-2 INFECTION.

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Objective. To develop a recombinant peptide for use in an HIV-2 immunoassay.

Methods & Results. We have cloned several unique restriction fragments from the SIV envelope coding region into *E. coli* expression vectors. When tested in Western blots, three of the expressed proteins were capable of detecting all of the known HIV-2 positive sera from a well characterized panel of West African samples. One of the recombinant proteins, SIV-env, represents about 35% of the total sequence of the SIV envelope glycoprotein; the C-terminal one-third of the external envelope glycoprotein plus the N-terminal half of the membrane-associated domain. SIV-env was expressed to high levels in *E. coli* and was isolated to greater than 95% purity from inclusion body preparations. We have used the purified SIV-env to construct an experimental ELISA for HIV-2. In preliminary studies, we have found this immunoassay capable of specifically detecting all of the known HIV-2 positive samples in our panel.

Conclusion. Preliminary results demonstrate the potential of SIV-env for use as a tool for the diagnosis of HIV-2 in humans.

C.541

BRONCHOALVEOLAR LAVAGE (BAL) MONONUCLEAR SUBSET CELLS, AT DIFFERENT STAGES OF HIV INFECTION.

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Objective: Long term effects of HIV infection on BAL mononuclear cells, were evaluated in a cohort of 88 patients, at different stages of HIV infection.

Methods: These patients were divided in 4 groups, according to clinical stages: group A = CDC II and III; group B = ARC; group C = AIDS except pulmonary infections; group D = AIDS including pulmonary infections. The mean age was 37+5 years, and sex ration 6:1. Smokers represented 80%.
Biological investigations on BAL cells included cytological and immunological strudies, using classical indirect immunofluorescence techniques.

Results are summarized in this table:

group	A	B	C	D	control
cellularity (10^3/ml)	607+102	803+145	287+49	313+52	213+134
macrophages (10^3/ml)	506+83	687+167	235+50	224+45	202
% macrophages	82+5	83+8	78+5	71+5	89
% lymphocytes	15+4	12+6	18+2	24+4	7
%CD4+cells in BAL	10	4	5	2	35
%CD8+cells in BAL	40	44	42	40	22
CD4/CD8 on PBL**	0,76	0,27	0,42	0,12	2+0,5
CD4/CD8 in BAL	0,25	0,09	0,12	0,05	1,59

**PBL=peripheral blood lymphocytes

Conclusion: Even at early stages, HIV infection induces significant modifications on BAL cells: in groups A and B, macrophages and CD8+cells are increased, and there is a rapid and profound defect of CD4+cells.

C.542

ANALYSIS OF EXPRESSION OF $\gamma\delta$-T CELL RECEPTOR AND $CD3^+CD4^-CD8^-$ PHENOTYPE BY LYMPHOCYTES FROM HIV-1 SEROPOSITIVE AND SERONEGATIVE HOMOSEXUAL MEN IN THE BALTIMORE MACS.

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Objective: To determine the degree to which the increase in calculated $CD3^+CD4^-CD8^-$ (double negative; DN) lymphocytes associated with HIV-1 seropositivity (Margolick et *al*., Clin.Immunol.Immunopathol., in press) is due to an increase in lymphocytes expressing the $\gamma\delta$ T-cell receptor (TCR).

Methods: Peripheral blood lymphocytes from 17 SN and 19 SP (17 AIDS-free) homosexual men were analyzed by 2-color flow cytometry using the following combinations of fluorescein (FITC)-or phycoerythrin (PE)-conjugated monoclonal antibodies: 1) CD3-FITC; 2) CD4-PE/CD8-FITC; 3) CD3-FITC/CD4-PE + CD8-PE; 4) CD3-PE/pan-δ-chain-FITC; and 5) CD8-PE/pan-δ-chain-FITC. Calculated DN (CDN) were determined by the formula %CD3 - (%CD4 + %CD8).

Results: Compared to SN, SP had increased proportions of calculated DN (3.5% vs. 1.5%; p=0.03 by 2-sample T test), as expected, and δ^+CD3^+ cells (3.7% vs. 2.3%; p=0.05). Directly measured DN (DDN) cells ($CD3^+CD4^-CD8^-$ in antibody combination #3) were also increased in SP, but not significantly (4.6% vs. 3.5%; p=0.13); however, %DDN was significantly correlated with %CDN (r=0.484; p=0.003). DDN cells not expressing the δ chain (%DDN - (%δ^+CD3^+ - %δ^+CD8^+) were present in both SP and SN (2.3% vs 1.6%; p=0.15).

Conclusions: These data suggest that 1) the increase in calculated %DN lymphocytes which is associated with HIV-1 seropositivity is at least partly due to an increase in lymphocytes expressing the DN phenotype and the $\gamma\delta$-TCR; and 2) changes in other lymphoid populations, such as a decline in natural killer cells, may also contribute.

C.543

USE OF AUTOLOGOUS CD4+ T CELLS IN THE ASSAY OF HIV-1-SPECIFIC CYTOTOXIC T CELLS (HIV-CTL)

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Objective.- We have reported that the anti-HIV drugs castanospermine (CSP) and dextran sulfate (DS) induce the regeneration, within 5 days, of CD4+ T cells in lectin-stimulated cultures of blood lymphocytes from HIV+ patients. Based on this observation, we describe a method that permits the use of autologous CD4+ T cells as targets in the assay of HIV-specific cytotoxic T cells (HIV-CTL). Method.- Blood mononuclear cells cultures are started with Con A, IL-2, to which are added CSP or DS (25 μg/ml). On day 3 the CD4+ cells are separated from CD8+ T cells by staining with anti-CD8 (OKT8) antibody, incubation with goat antimouse antibody conjugated to magnetic particles and separation of CD8+ T cells using a magnet. The separated cells are cultured for 3 to 4 days in a medium containing IL-2 and CSP or DS (25μg/ml). A day before the CTL assay, the CD4+ cells are infected in vitro with prototype HIV-1 virus and incubated for 18 hours in a medium without anti-HIV drugs. The following day the CTL assay is carried out. Results. A systematic analysis of the method demonstrated that the proposed assay is reproducible and reliable. We have used autologous CD4+ T cells in the cloning of HIV-CTLs (3 experiments) and in the study of the HIV-CTL response in 5 HIV+ patients. A more detailed study of patients is now being carried out. Conclusion. The method proposed here should be of value in studies of the HIV-CTL response in the clinical as well as the research laboratory.

C.544

CHEMICAL SYNTHESIS OF CHIMERIC PEPTIDES AND PROTEINS FOR IMMUNOLOGICAL PURPOSES.

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Objectives. To chemically synthesize a 104 amino-acid long peptide corresponding to the 273-377 sequence C terminal half of HIV-1 gag p24, and the hybrid peptides p24 (T-epitope)-linker-env (B epitope) 42 mer and p24 (273-377)-linker-env (B-epitope) 138 mer.
Methods. The three polypeptides were synthesised using highly optimised custom protocols on an ABI-430 synthesiser. Crude peptides were dialysed and purified by a combination of reverse phase, size exclusion and ion-exchange HPLC. Quality control included amino-acid analysis, protein sequencing, SDS-PAGE and IEF gel chromatography and FAB-mass spectrometry.
Results. The synthesis of the 104 mer peptide yielded three grammes of crude peptide-resin. After purification 20% (w/w) of the cleaved peptide was obtained and had a chemical composition which was consistent with the expected amino-acid sequence. Similar yields of homogeneous material were obtained for the chimeric peptides. Immunisation of mice with the peptide and proteins induced antibodies to HIV core and envelope proteins.
Conclusions. This work suggests that the chemical synthesis of long peptides is feasible and may have application in vaccine development.

C.545

A CHEMICALLY SYNTHESISED 104-MER PEPTIDE OF THE C-TERMINAL HALF OF HIV-1 P24 SUCCESSFULLY USED AS AN HIV IMMUNOGEN

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Objective. To investigate the immunological properties of a chemically synthesised C-terminal half (104 residues) of HIV-1 p24 core protein.
Methods. The 104-mer peptide was prepared using an Applied Biosystems 430-A synthesiser employing t-Boc chemistry and used in purified form in the subsequent work. T-cell response was studied by in vitro proliferation of antigen-restimulated spleen cells from mice previously primed with the peptide. Mice and rabbits were immunized subcutaneously with approx 10μg peptide in Freund's incomplete adjuvant. Murine monoclonal antibodies were made using NSO myelomas as partner. Antibody activity in sera from HIV-1 haemophiliacs and experimental animals was tested in ELISA and Western blot with the 104-mer and HIV-1 proteins.
Results. A dose-dependent proliferative T-cell response in mice was found using the 104-mer as antigen. Antibodies from mice and rabbits reacted strongly with the 104-mer immunogen and also with the HIV gag proteins p24 and p55. Conversely, sera from HIV-1 seropositive humans reacted with the 104-mer.
Conclusion. The synthetic 104-mer peptide elicited an anti-HIV-1 T- and B-cell response, indicating that some important epitopes are shared between this chemically synthesised molecule and the natural viral gag proteins. Thus, immunologically useful HIV-proteins can now be prepared by chemical synthesis.

C.546

MHC CLASS I-III ALLOTYPES IN PATIENTS WITH DISSEMINATED KAPOSI SARCOMA (KS), ARC/WRS, AND IN NORMAL CONTROLS

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Objectives: *Major histocompatibility complex* (MHC) class I and II (=HLA-A,B,C,DR) association in HIV-infected patients has been controversial. Of the MHC coded complement components C2, BF, C4A/C4B (MHC class III) allotypes of C2 and C4 have not yet been reported. C4 allotypes appear of major immunogenetic relevance for their potential differences in virus neutralizing potency. In the present study 30 ARC/WR5 patients from the ARC-IVIG project (cf.: *Schrappe-Bächer et al.*), 30 patients with disseminated KS, and 160 HIV-negative control individuals were compared for MHC class I to III allotypes.
Methods: All individuals were of West German origin. Diagnosis of ARC and KS (CDC and WR criteria) was done by clinical and laboratory parameters, MHC testing by standard methods: microlymphocytotoxicity assay for HLA-A,B,C,DR, electrophoretic and haemolytic tests for class III allotypes, Western blots with poly- and monoclonal antibodies for C4A/B.
Results: An *increase* in frequency ($p \leq 0.05$) was observed between ARC/WR5 patients and controls for HLA-B35/CW4, DRW14, a *decrease* for B16, CW6/DR7. In KS CW6 was more frequent than in ARC/WR5 patients. However, values were not significant if corrected for the number of tested antigens. No significant differences were seen between KS and ARC patients or controls for class III allotypes, nor for the previously reported associations e.g. of B8, DR2, DR3, and especially DR5, including the DR5-splits DRW11, 12 .
Conclusions: The results indicate lack of strong MHC-association with the investigated antigens in West German Caucasoids. The contrast of our data to previous findings for classical as well as disseminated KS supports the hypothesis of ethnic dependence of HIV-related diseases.

C.547

CARBOHYDRATE-DEPENDENT EPITOPES OF HIV-1 GP120

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Objective. Carbohydrates may decrease or increase the antigenic activity of viral glycoproteins. In the heavily glycosylated HIV-1 gp120 the carbohydrate content represents one half of the molecular weight. The aim of this study was to identify regions on gp120 where N-linked carbohydrates exert modulating effects on the antigenic activity.

Methods. Secreted gp120 was covalently linked on microtiter plates and exposed to neuraminidase and increasing concentrations of periodate. As a control of sequential removal of peripheral monosaccharides an enzyme-linked lectin assay was used. The alternation in antigenicity, during the neuraminidase/periodate-treatment, was followed in ELISA with a panel of LAV-specific monoclonal antibodies.

Results. Removal of sialic acid and galactose from N-linked carbohydrates on gp120 resulted in significant increase in antigenic epitopes, in the N-terminal region, previosly masked by carbohydrates.

Conclusion. Our results demonstrate that some epitopes of gp120 are modulated by the carbohydrate complement. This phenomenon might, at least partly, be of importance for the ability of HIV to escape immune reactions.

C.548

C.549

MODIFICATION DE LA SECRETION D'INTERLEUKINE 1 PAR L'EPIDERME SAIN AU COURS DE L'AFFECTION VIH+

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Objectif. Dans.le sang, la production spontanée d'interleukine 1 (IL1) augmente chez le patient VIH+ au début de l'affection, puis s'effondre au stade SIDA. Dans ce contexte, nous avons voulu vérifier si aux anomalies quantitatives des cellules de Langerhans (Lc) de l'épiderme s'associaient des modifications de la sécrétion d'interleukine 1 (IL1) épidermique produite normalement par les kératinocytes et les cellules Lc.
Méthodes. 33 patients VIH+ (11 au stade II, 10 au stade III et IVc1, 8 au stade IVc2 et 4 au stade IVd, ainsi que 5 témoins séro-négatifs ont été étudiés. Les biopsies cutanées ont toutes été réalisées en peau saine (face interne de bras) avec en plus un prélèvement en peau lésée (Kaposi) au stade IVd. Une technique d'immunofluorescence indirecte sur coupes congelées avec un anticorps anti IL1 (Biosys) et anti CD1 (IOT6, Immunotech) a été utilisée (chez les témoins Lc = 37,5 ± 7/mm longueur d'épiderme).
Résultats.
- au stade II et en peau lésée de Kaposi, la sécrétion d'IL1 épidermique est augmentée avec un nombre normal de cellules de Langerhans.
- au stade III et IVc1 elle est plus faible mais toujours supérieure à celle des témoins (Lc = 29,75)
- au stade IVd et IVc2, elle est effondrée avec chute des cellules Lc (12,2).

Conclusion. Ce travail confirme donc l'importance de l'atteinte fonctionnelle du système macrophagique cutané par le VIH.

C.550

SYNCYTIUM FORMATION AND DESTRUCTION OF CD4+ BYSTANDER CELLS COCULTURED WITH PERSISTENTLY HIV-INFECTED T-CELLS, AS DEMONSTRATED BY FLOW CYTOMETRY

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To investigate cell fusion and giant cell formation following fusion between HIV-1- or HIV-2-infected (HUT-78) cells and uninfected $CD4^+$ MOLT-4 (clone 8) cells, the two cell populations were mixed and cultured at 37°C, stained with the appropriate monoclonal antibodies (mABs) (FITC- or PE-conjugated), fixed and examined by flow cytometry.

At the moment that syncytium formation started, i.e. after 6-h incubation, the MOLT-4 cell number began to decrease and after a 24-hr incubation period all MOLT-4 cells had disappeared, as demonstrated with specific mABs to antigens expressed on either MOLT-4 or HUT-78 cells. The formation of giant cells and the concomitant disappearance of MOLT-4 cells was blocked by OKT4A/Leu3a mABs, and several parameters of cell fusion such as fusion index, percent of fusion inhibition and 50 % fusion inhibitory concentration of the mABs could be accurately determined.

This flow cytometric method can be readily implemented to evaluate any agents for their capacity to block cell-to-cell fusion and the subsequent destruction of the bystander target cells. Our observations also reveal a mechanism by which a few HIV-infected cells may gradually deplete the pool of uninfected $CD4^+$ cells *in vivo*.

C.551

C.552

DETECTION OF gp120 (HIV-1) AND ANTIBODIES TO DEFINED REGIONS OF gp120 IN HUMAN SERUM: CORRELATION WITH HIV-1 NEUTRALISATION

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We have developed ELISA-based methods for the detection of the HIV-1 surface glycoprotein gp120 in a subset of sera from HIV-infected individuals, and will describe data relating gp120 levels with those of p24 antigen, anti-gp120 antibodies and disease status. In this study, anti-gp120 antibodies are monitored using an extremely versatile, sensitive and specific ELISA that can use a wide range of sources of gp120 as capture antigen, including simple unpurified detergent extracts of divergent HIV-1 strains. We have also developed ELISAs that detect serum anti-gp120 antibodies (i) capable of blocking gp120 binding to CD4, and (ii) that bind to the type-specific neutralising loop (307-320). Data will be presented relating levels of these antibodies to neutralisation titre (eg. below).

Serum	Neut.Titre	Total gp120 Ab	CD4 blocking Ab	Anti-loop Ab
1	160	9000	270	250
2	80	9000	470	300
3	40	380	35	0
4	40	900	70	20
5	320	5700	680	600
6	160	9000	900	200

C.553

NATURALLY OCCURRING AUTO-ANTIBODIES TO CD4 AND THE MHC CLASS II MOLECULE IN HIV-INFECTED PATIENTS

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The natural ligand for CD4 is the MHC Class II molecule. Antibodies to the CD4 binding site of HIV could theoretically cross-react with MHC Class II as both bind to CD4. Such anti-HIV binding site antibodies could also result in anti-idiotype antibodies cross-reactive with CD4. Western blots of EBV-transformed B cells rich in MHC Class II as demonstrated by a murine monoclonal were prepared. Sera from 25 HIV patients and 5 normal individuals did not demonstrate any reactivity suggesting cross-reactive antibodies do not exist or do so in such low titer as to be of no pathophysiologic relevance. Recombinant soluble CD4 was utilized in a direct EIA to determine if antibodies to CD4 are detectable in HIV patients. 3/20 (15%) patients reproducibly demonstrated reactivity compared to 0/5 normal individuals. EBV-transformed B-lymphocytes from patients continued to produce antibody to CD4 in vitro as measured by direct EIA and dot-ELISA. This indicates that a significant anti-CD4 response is present in HIV patients, possibly as a result of an anti-idiotypic response to pg120. These findings may have implications for the therapeutic use of soluble CD4.

C.554

CELL-MEDIATED LYMPHOPROLIFERATIVE RESPONSES BY ADULTS AND CHILDREN TO RECOMBINANT HIV ENVELOPE AND CORE PEPTIDES.

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Objective. To determine if recombinant HIV antigens elicit cell-medirted immune responses in infected adults and children and to compare these responses to those of seronegative individuals.
Methods. Lymphocytes from individuals at risk for HIV infection were cultured with recombinant HIV envelope and core (ENV & COR) antigens, as well as diphtheria and tetanus toxoids (DT & TT). Those with a stimulation index >3.0 were scored as responsive. The response rate among seronegative adults (NegAdu) and seropositive adults (PosAdu) was compared to that of seronegative children (NegPed), seropositive children (PosPed), and seroreverter children (PegPed).
Results. POSITIVE RESPONSES TO HIV AND RECALL ANTIGENS (%)

STATUS	ENV	COR	DT	TT
NegPed	3/32 (9)	4/32 (13)	12/29 (41)	20/29 (69)
PegPed	5/17 (29)	7/17 (41)	9/16 (56)	13/16 (81)
PosPed	9/35 (26)	12/35 (34)	8/31 (26)	16/31 (52)
NegAdu	7/28 (25)	4/28 (14)	18/25 (72)	24/25 (96)
PosAdu	1/13 (8)	3/13 (23)	6/13 (46)	10/13 (77)

Conclusions 1) Infected children are as likely to respond to ENV & COR as they are to recall antigens. 2) Infected children & seroreverting children are more likely to respond to HIV antigens than are noninfected children ($p<0.01$). 3) One fourth of high risk seronegative adults respond to HIV envelope antigen, indicating either antigen sensitization or nonspecificity.

C.555

ANTIGENIC ANALYSIS OF HIV-1 MAJOR CAPSID PROTEIN, p24.

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Objective. Although most HIV-1 seropositive individuals mount a significant immune response to p24, attempts to define one or more major antigenic sites on the molecule have not been successful. We report results of our experiments to identify antigenic site(s) on p24.
Methods. Long synthetic peptides, 50 to 70 residues in length, were synthesized from p24 sequences covering 80% of the molecule. These were used in an ELISA and in a competitive Western Blot assay to identify the immunoreactive peptides.
Results. Most specimens reacted with a C-terminal 70-mer peptide from p24, which included known reactive short sequences, gag329-350. Interestingly, some specimens that did not react with gag329-350, showed reactivity with the long peptide in ELISA and in a competitive assay. A few specimens also recognized another long peptide from p24 in addition to C-terminal 70-mer. A monoclonal antibody to p24 recognized a different peptide, confirming our previous observation that it does not compete with antibodies from seropositive individuals.
Conclusion. Major antigenic site(s) on p24 is contained in a C-terminal 70-mer peptide, while an additional site is present on a second peptide. The need to have long peptides to bind p24 specific antibodies indicate that the major antigenic site(s) recognized by human sera is conformation dependent.

C.556

CHEMOTACTIC ACTIVITY OF THYMOPENTIN (TP) ON LYMPHOCYTES FROM PATIENTS WITH HIV INFECTION.

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Objective. To determine chemotactic activity of TP on lymphocytes from HIV-infected patients. Recently,we showed defective chemotaxis of lymphocytes in patients with ARC and AIDS. In addition,thymic involution occurs early in HIV infection. TP is a immunomodulating drug isolated from bovine thymus that induces T-cell differentiation and has a direct hormonal effect on the functioning of mononuclear cells.
Methods. Lymphocytes from healthy controls and from patients with HIV infection were evaluated. Chemotaxis of lymphocytes was evaluated by a microchamber technique and the leading-front method was used to assess cell migration.
Results. Increased migration of lymphocytes from healthy controls was only observed at concentration of 0.5 mg/ml while decreased migration was observed at various other concentrations. When we preincubated lymphocytes from AIDS and ARC patients and from seropositives with 0.5 mg/ml of TP, further-decrease of chemotaxis was observed.
Conclusion. TP did not show to restore defective chemotaxis in HIV-infected patients. In our opinion, little immunological benefit can derive from the use of this drug in such patients.

C.557

ANTI-VIRAL AGENTS FOR AIDS: LYMPHOCYTE FUNCTION AS A MARKER OF RESPONSE.

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OBJECTIVE. To examine the value of lymphocyte function as a marker of response to Zidovudine and Active Lipid 721 chemotherapy by monitoring PHA induced proliferation.
METHODS. Patient and control peripheral blood mononuclear cells were prepared by density gradient centrifugation, resuspended at 10^6 cells/ml and cultured with PHA (0.5, 0.75, 1.0ug/ml) or RPMI for 72 hours at 37°C, 5% CO_2. Proliferation was determined by [methyl-^{3}H]thymidine incorporation. Cell populations had a viability of greater than 95%. Patients examined were stable without opportunist infection and were studied before and at 4 weeks therapy.
RESULTS. Preliminary studies show that after 4 weeks Zidovudine treatment PHA induced proliferation increases (mean cpm 16730 to 46040). On the other hand with AL721, proliferation decreases (mean cpm 32050 to 17040). All recorded patient values were depressed in comparison to the normal control group (mean cpm 00200).
CONCLUSION. In view of the limited value of CD4 counts as a quantitative marker of immune deficiency in AIDS, such functional studies may prove useful in monitoring established or novel therapies.

C.558

ACTIVATION OF COMPLEMENT BY HIV-INFECTED H9 CELLS

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Objective. To determine whether HIV-infected H9 cells activate complement (C) via the alternative (AP) or classical pathway (CP).
Methods. H9 cells were infected with HIV(RF) or HIV(CDC451). For AP activation, cells were incubated with human AB+ serum as a C source for 30 min at 37°C and washed. The cells were then stained with FITC-labeled goat anti-C3 F(ab')2, washed and analyzed by flow cytometry for C3 deposition. For CP activation, cells were first incubated with heat inactivated (HI) AIDS serum at various dilutions, washed, and then treated with C, stained and analyzed as above.
Results. Infected H9 cells do not bind C directly (AP activation), but do bind C after incubation with HI anti-HIV antibody from AIDS serum. Uninfected cells do not bind C The C3 deposition was inhibited by EDTA and EGTA indicating CP-dependent activation. Maximal C3 deposition occured with 1:4 to 1:16 dilutions of AIDS sera and was undetectable at dilutions of 1:256. Six out of six AIDS sera produced significant deposition while normal serum did not. Infected cells were more easily detected by staining for C3 than by staining for the human immunoglobulin on the surface, probably due to the amplification of the signal by the C cascade.
Conclusion. HIV does not induce H9 cells to become AP activators unlike some other virus-target cell combinations such as EBV infection of B cells. However, expression of HIV proteins on the surface of infected cells makes them susceptible to CP activation via antibody. This has important implications for the behavior of infected cells in vivo.

C.559

C.560

C.561

Evaluation of the role of the soluble CD8 receptor and IL2 receptor (IL2R) in patients with Human Immunodeficiency Virus infection.

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Objective: We evaluated the levels of soluble CD8 and IL2 receptors (IL2R) in patients with HIV infection. **Methods**: 63 patients with HIV infection and 7 normal controls were studied. Of these, 21 were assymptomatic seropositive (ASSYM), 19 had ARC, 13 had KS and 10 had AIDS with opportunistic infection. In previous studies the T8 protein has been shown to be released in direct proportion to the level of activation of T8 positive cells. Serum IL2R is a measure of the activated state of IL2R bearing cells. The levels of T8 and IL2R were compared with each other and with levels of plasma P24 antigen and T4/T8 ratios. Soluble CD8 and IL2R were measured using CellFree® Immunoassay kits from T Cell Sciences. T4/T8 ratios were determined by standard techniques. **Results**: Soluble CD8 levels in plasma of patients with ASSYM, KS, ARC, and AIDS were respectively 1029 ± 89, 1165± 131, 980 ± 118, and 717± 115 while normal controls were 508± 40 units/ml (Mean ± SE). IL2R levels in serum of patients with ASSYM, KS, ARC, and AIDS were respectively 783 ± 98, 970 ± 129, 1011 ± 119, and 1566 ± 157, normal controls were 188 ± 28 units/ml. Using chi-square analysis, comparing each group with normal controls, the majority of patients with AIDS, ARC, ASSYM and KS showed levels of both IL2R and soluble CD8 which were greater than the upper 95% value of normal ($p< 0.00001$). IL2R was better than T4/T8, %T4, and p24, for discriminating ASSYM from AIDS ($p< 0.0001$), ASSYM from ARC ($p< 0.002$) and ARC from AIDS ($p< 0.0001$). Using a combination of both receptors in each patient group, a formula was derived which predicted between normal and ASSYM patients. **Conclusion**: We conclude that there is an increase in soluble CD8 and IL2R in all patients with HIV infection compared to the normal control group. These data suggest that the measurement of levels of IL2R and soluble CD8 in HIV infected patients provides objective and quantitative parameters for clinical researchers studying changes in the immune status in ASSYM, ARC, KS and AIDS and may serve as a surrogate marker of disease in ASSYM patients.

C.562

AN INTERACTIVE RELATIONAL DATABASE FOR HIV AND THE IMMUNE SYSTEM

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Objective. To organize the complex, changing information about HIV and the immune system in a visually oriented, user-friendly, interactive system.
Methods. We are using HyperCard on an Apple Macintosh to create an interactive reference tool on HIV and the immune system. Information is presented on "cards," each of which contains a diagram and/or short description, as well as "buttons" which link the card to related cards. The "mouse" is used to click a button and move from card to card. For example, from the main card describing macrophages, the user can go to a card on the infection of macrophages by HIV, to a diagram of the chemical signals between immune-system cells and to other related subjects. Comment cards allow researchers to remark on contradictory results, difficulties with experiments, etc.
Results. We see one of the primary stumbling blocks to an understanding of how the immune system is slowly destroyed by HIV to be the difficulty involved in organizing the information from experiments and studies on HIV and then organize it within the context of the immune system. This continually expanding relational database can be used by newcomers to the field to get up to speed, by AIDS researchers who are not immune system experts to understand how the studies on HIV relate to the human immune system, and by immune experts to organize the latest information.
Conclusion. This HyperCard system, although still incomplete, will provoke AIDS researchers to develop new ways to organize the growing knowledge base. To obtain this experimental program send us three 2S/2D microdisks: in return we would like comments on its utility, structure, and content.

C.563

CIRCULATING INTERFERON-GAMMA IN HIV-1 INFECTION

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Objective. Progressive HIV-1 infection is associated with diminished in vitro production of lymphokines by T-cells upon antigenic and mitogenic stimulation. However, in vivo markers, e.g. neopterin, indicate hyperproduction of certain cytokines.
Methods. We measured serum concentrations of interferon gamma and neopterin in 43 HIV-1 seropositive individuals and 76 seronegative blood donors. A modified radioimmunoassay procedure for detection of interferon gamma was used with a detection limit of 18 U/l.
Results. 22 of the 43 seropositives exhibited increased serum interferon gamma concentrations. There was a significant association between serum interferon gamma concentrations and CDC-stages of the patients, CDC IV-C patients had the highest concentrations. Further, serum interferon gamma and serum neopterin concentrations were significantly correlated.
Conclusion. Circulating interferon gamma is increased in HIV-1 seropositives compared to seronegative blood donors. Diminished in vitro production of interferon gamma by T-lymphocytes on stimulation contrasts the in vivo findings.

C.564

β ENDORPHIN, A.C.T.H. AND CORTISOL RELATIONSHIP WITH AIDS

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Objective. Study of β. ENDORPHIN, A.C.T.H., CORTISOL plasma concentrations in homosexual HIV infected male groups.
Methods. 72 non drug-abuser males, 20-35 years old. 3 homosexual groups : AIDS=25, SERO+ =15, SERO- =15, one uninfected HETEROSEXUAL group as CONTROLS n=16. 2 blood samples dayly (8 am-5 pm).
β endorphin and A.C.T.H. were evaluated by radio-immunoassay and Cortisol by chromatography.
Data were analyzed by parametric and non parametric tests.
Results. 1) Both in AIDS, SERO+ and SERO- showed plasma β ENDORPHIN to A.C.T.H ratios are higher than equimolecular ratio of CONTROLS.
2) A loss of normal A.C.T.H-TOTAL CORTISOL coupling and relative rise of free CORTISOL level.
Conclusion. 1) The higher relative level of plasma β ENDORPHIN suggests a possible role of HIV products in opioid precursor (POMC) processing and its role in immunity.
2) The similar hormonal and neuroendocrin patterns of the 2 homosexual groups SERO+ and SERO- (living together) suggest either latent HIV infection in SERO- partners or other common factor to these two groups.
3) Possibility to take the higher ratio of β ENDORPHIN to A.C.T.H as, an early sign of HIV infection will be discussed.

C.565

C.566

SUPPRESSIVE EFFECTS OF IMMUNODEFICIENCY VIRUSES ON THE IN VITRO STIMULATION OF HUMAN LYMPHCYTES

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Objective. Animal retroviruses exert a suppressive effect on the in vitro stimulation of lymphocytes. The equivalent effect of primate immunodeficiency viruses (HIV-1, HIV-2, SIVmac, SIVagm) on human cells should be studied and the responsible viral components should be identified.
Methods. In the lymphocyte stimulation assay, PBMCs are incubated with uv irradiated whole virus or with viral components (purified p24 and glycoproteins) and stimulated with PHA. After two days, the ^{3}H-thymidine uptake is measured. After solubilization, viral glycoprotein complexes are isolated by chromatography on lentil lectin and heparin columns.
Results. The most important variable in the lymphocyte stimulation assays is the origin of the human lymphocytes. Depending on the donor a more or less profound inhibition by inactivated HIV-1 can be observed. The extent of inhibition varies between 20% and 80%. However, the effect of HIV-2 and the SIVs is very small, often negligible. Purified glycoproteins give the same results.
Conclusion. The inhibitory effect of different immunodeficiency viruses in the lymphocyte stimulation assay may well be correlated to the pathogenic potential of these virus strains. Therefore, it may play a role in the pathomechanism of AIDS. In addition, lymphocytes of different donors are differently susceptible to this effect. Whether this observation can explain, at least in part, the differences in the time course of the disease in different individuals is an area of further investigation.

C.567

IDIOTYPIC RECONSTRUCTION OF HIV-1 GP41-GP120 INTERACTING STRUCTURES

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Objective. To understand the function of cross-reactive epitopes shared by HIV-1 gp120 and a human lympho-monocytic activation protein.
Results. A monoclonal anti-idiotypic antibody (9G5A) raised against M38 (anti-gp120 and anti-HELP) binds and competes M38, but also binds a bacterial fusion protein carrying the external domain of gp41. This couple of anti-idiotypic Mabs thus behave as "internal images" of two interacting structures located on gp41 and gp120, respectively. The two antibodies were tested in a very sensitive HIV neutralization assay and both proved to have a weak, but significant neutralizing activity. Since M38 defines an epitope shared by gp120 and an activation protein of human lympho-monocytes (HELP, human env-like protein), we propose that HELP might be involved in the virus penetration process as the receptor of gp41. Our data prove that an epitope of gp41, other than the fusogenic domain (which is not contained in the recombinant protein), is involved in the penetration mechanism and that it is a potential target for neutralizing antibodies.
Conclusion. The human env-like protein HELP might be the receptor for gp41 and be involved in the fusion process.

C.568

DIFFERENCES IN KILLING OF CD4 CELLS INDUCED BY HIV ISOLATES FROM ASYMPTOMATIC AND AIDS PATIENTS AS MEASURED BY Cr^{51} CYTOTOXICITY ASSAY.

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OBJECTIVE: To examine differences in HIV-induced cell-contact mediated cell death using isolates from asymptomatic (AS) and AIDS patients (OI), employing a simple and reproducible assay.
METHODS: A cytotoxicity assay using as target cells Cr^{51} labeled CEM cells (CEM) or peripheral blood lymphocytes (PBL) from an uninfected donor. Effector cells (CEM or PBL) were infected with isolates from AS or OI. Effector to target ratios were adjusted relative to number of HIV infected cells, as judged by fluorescence. Results are expressed as percentage of maximal Cr^{51} release.
RESULTS: Cytotoxicity was prevented by Leu 3a (anti-CD4) Ab, but not by AZT and was not mediated by cell free medium from infected cells. Table 1 shows mean results obtained with isolates from 5 OI and 3 AS using CEM cells. Table 2 shows mean results with isolates from 8 OI and 8 AS, using PBL.

Table 1 CEM

% Specific Cr^{51} Release	
AS	OI
4%	35.6%

Table 2 PBL

% Specific Cr^{51} Release	
AS	OI
0.6%	14.6%

CONCLUSIONS: The data indicate that the cytotoxicity is dependent upon infected cell to uninfected cell contact. HIV isolates differ in their capacity to induce cell contact mediated cell killing, and these differences correlate with stage of disease.

C.569

QUALITY ASSESSMENT OF HIV ANTIBODY TESTS IN WEST GERMANY

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Testing for HIV antibodies is subject to continous technical improvement. Therefore permanent monitoring of the tests quality is a major requirement in HIV serology.
A panel of ten sera (three HIV-positive, one HIV-2 positive and six HIV negative) were sent to 77 German laboratories for a quality control test. Serum samples were assayed for HIV antibodies using 13 commercially available ELISAs (12 HIV 1-kits, 1 HIV 2-kit) IFA and Western blot.
The study revealed a high standard of efficacy of the tests as well as an excellent interassay reproducibility. The overall sensitivity of HIV-1 ELISA was 99.5% (96.6% - 100%). By IFA and Western blot the same level of accuracy was achieved. With the exception of the specific HIV-2 ELISA, HIV 2 antibody were consistently recognized only by the Abbott recombinant EIA (48.9% cross-reactivity). Western blot was even more sensitive (78% reactivity) mostly due to the p24 protein band. In an additional series of 43 sera of weak reactivity in our laboratory (60% renal transplant recipients) Western blot and IFA were definitely more specific (91.2%/97%) than most ELISAs (18.9%-100%), emphasizing the importance of confirmatory testing for all equivocal results.

C.570

IN VITRO LYMPHOCYTE PROLIFERATIVE RESPONSES (LPR) IN HIV INFECTED PATIENTS RECEIVING ZIDOVUDINE (ZVD)

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Objective : Since clinical improvement is not associated with a persistent increase in CD4 cell counts, we have evaluated LPR upon ZVD therapy.
Methods : 41 HIV seropositive patients (9 AIDS, 30 ARC and 11 with thrombocytopenia received ZVD with a daily dosage of 1170 ± 240 mg (800 - 1500). Evaluation of LPR was performed before ZVD and after a delay of 116 ± 39 days on therapy. LPR, measured by tritiated thymidine incorporation, were studied in 3-day cultures for pokeweed mitogen (PWM) and in 7-day triplicated cultures for tuberculin (PPD), candidin (CDD), and tetanus toxoid (TT). Results are expressed as Δcpm/0.2 x 10^6 cells ("stimulated" minus "non-stimulated") and as proliferative indexes ("stimulated"/"non-stimulated").

Results	n	Δ cpm before ZVD	Δ cpm upon ZVD	
PWM	25	8 815 ± 10 735	14 355 ± 12 839	$p < 0.05$
PPD	40	14 355 ± 28 338	20 458 ± 44 053	NS
CDD	38	40 066 ± 67 995	38 825 ± 51 453	NS
TET	35	3 705 ± 7 963	7 311 ± 15 902	NS

Among initialy unresponsive patients, some acquired significant LPR (index 3) to PWM = 5/8 and to specific antigens : 8/21 for PPD, 4/7 for CDD and 8/24 for TT. CD4 cell counts were not modified by therapy : 352 ± 338 x 10^6/L (before) to 363 ± 344 x 10^6/l (after).
Conclusion : LPR to PWM increased upon ZVD. Although some patients acquired LPR to specific antigens, mean cpm values were not significantly increased.

C.571

SIGNIFICANCE OF NON-LYMPHOID ACCESSORY CELLS IN ORAL HAIRY LEUKOPLAKIA.

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Objective. To provide further insight into the features of non-lymphoid accessory cells (NLCs), their relationships to lymphocytes, the influence of the epithelial microenvironment on their differentiation and their possible direct viral infection in oral hairy leukoplakia (OHL).
Methods. We studied by immunohistochemistry and electron microscopy (EM) 24 OHL lesions and 5 biopsies from clinically normal mucosa of the lateral margin of the tongue in 2 HIV+ and 3 HIV- control patients.
Results. In the lamina propria, a sparse infiltrate of mainly CD8+ T cells and some CD1a+ dendritic cells was commonly found in OHL lesions and only occasionally in HIV+/- controls. On EM, clusters of lymphocytes and NLCs apposed to each other were found in OHL lesions. In the epithelium, sparse CD8+ cells were common in OHL and occasional in HIV+/- controls. The number od CD1a+ dendritic cells was significantly lower in OHL than in perilesional areas and in controls. NLCs with monocyte-like or indeterminate-like features were found within basal layers. Virus-like particles were seen within these NLCs in 2 cases.
Conclusion. The incomplete differentiation of NLCs and the absence of CD4+ cells in OHL epithelium may be due to the virus-perturbed epithelial microenvironment. The possibility of a direct viral infection of these NLCs is suggested.

C.572

EXPRESSION IN E. COLI, PURIFICATION AND IMMUNOLOGICAL ANALYSIS OF HTLV-1 ENV ANTIGENS.

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Segments of the HTLV-1 env gene were cloned in E. coli expression vectors. The segments expressed contained both gp46 and p21E determinants.

Good yields of an insoluble env-fusion protein were achieved using a trp expression vector. This insoluble antigen was readily purified from disrupted cells by repeated washings and HPLC reverse phase column chromatography.

Expression of an env segment as an unfused antigen was achieved using a high copy number lambda promoter vector which included translational and transcriptional termination signals downstream of the env insert. Antigen from this system was largely in the soluble fraction.

The immunological reactivity of these antigens was investigated with HTLV-1 specific monoclonal and polyclonal antibodies by immunoblot and ELISA. Analysis of the purified env protein using a limited number of normal, HTLV-1 and HIV-1 positive human sera indicated the env recombinant is reactive with a high percentage of the HTLV-1 positive cera tested.

C.573

LYMPHOCYTE STIMULATION IN ARC/WRS PATIENTS DURING INTRAVENOUS IMMUNOGLOBULIN (IVIG) TREATMENT

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Objectives: In a randomized, controlled double blind study 15 ARC/WRS patients were compared during 6 months 0.4g/kg IVIG treatment with 15 placebo treated patients. The project has been described elsewhere (cf.: *Schrappe-Bächer et al.*). Our study was aimed at lymphocyte response to T- and B-cell mitogens.

Methods: ^{3}H-thymidine uptake was determined after stimulation with the unspecific mitogens PHA, PWM, formalinized *S.aureus* - Cowan I (SAC), and with the antigens PPD, and Herpes simplex virus (HSV) at the onset, on day 85 and 183 ; antibodies against HSV were measured by ELISA and CFT. In addition, 30 untreated HIV-negative control individuals were tested.

Results: For T-cell mitogen PHA, T-/B-cell mitogen PWM, and B-cell mitogen SAC no differences between the 2 patient groups were observed at day 1, 85 and 183, but stimulation was significantly lower as compared to the control group (t-test) on day 1. Lymphocytes of 4 patients and 5 HIV-negative control individuals showed PPD response. All patients had IgG-, none IgM-antibodies against HSV (ELISA). In the IVIG-group 8 patients' lymphocytes responded to HSV at some time during treatment, 13 had positive CFT titers; in the placebo group only 3 patients' lymphocytes responded to HSV, 10 had positive CFT titers. Seven HIV-negative individuals showed positive HSV lymphocyte response, 19 with ELISA/CFT titers.

Conclusions: In spite of some clinical improvement regarding fever and fatigue during IVIG treatment, there was no influence on T-/B-cell stimulation by unspecific mitogens. All patients having experienced HSV infections, lymphocyte reactivity to HSV, although statistically not significant, was predominantly seen in the IVIG-patient group.

C.574

"ACTIVE LIPIDS" (AL) IN VITRO: LOSS OF DETECTABLE T- AND B-CELL SURFACE ANTIGEN

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OBJECTIVE: AL have been shown in vivo to increase the percentage of lymphocytes detectable neither by T- nor B-cell markers ="unstained cells" (UNST) (Stockholm 3531). We have investigated if this effect can also be observed in vitro.
METHOD: Blood from patients with AIDS (n=4) and healthy controls (n=3) was incubated without (1) and with (2) a mixture of lipids similar to AL 721 (triglycerides, phosphatidylcholine, phosphatidyethanolamine) for one hour at 37°C. PBMC were stained with anti-CD3, CD4, CD8, CD19 and HLA DR after and prior to incubation with AL and analysed with two-color flow cytometry.
RESULTS: 2 versus 1 resulted in a significant increase of UNST (mean 4.1-fold ±1.9) and reduction of all other cells (mean 0.67-fold ±0.17). In contrast, 2 did not differ significantly from 1 (UNST 0.97fold ±0.13, other subsets 1.03fold ±0.19) when AL incubation was performed after antibody incubation. difference after/prior $p<0.01$). The effect occurred in all 7 subjects without regard to diagnosis.
CONCLUSION: Our results show that in vitro incubation of lymphocytes with "active lipids" unspecifically lowers detectability of cell surface markers by monoclonals. Physiologic lymphocyte function or virus binding might by altered by AL.

C.575

IMMUNO-ADHERENCE OF *MYCOBACTERIUM AVIUM* (*M.AVIUM*) TO U937 IS ENHANCED BY HIV-1 INFECTION

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Objective. To investigate the effect of HIV-1 infection on the function of mononuclear phagocytes. In this study, the interaction of uninfected or HIV-1-infected U_{937} cells with opsonized *M.avium* was compared.
Methods. *M.avium* was directly labeled with FITC, and opsonized with normal human pooled serum (HPS, HIV-negative), or with heat-inactivated HPS. U_{937} and U_{937}/HIV-1 cells were incubated with opsonized *M.avium*, washed and cell fluorescence was measured using flow-cytometry and fluorescence microscopy.
Results. Flow-cytometry showed a 10-fold (10.7±2.5) increase in fluorescence of uninfected U_{937} with HPS-opsonized *M.avium* as compared to non-opsonized *M.avium*. Heat-inactivation of HPS removed this effect. Fluorescence using HPS-opsonized *M.avium* was significantly higher with U_{937}/HIV-1 (1.8±0.4; $p<0.02$) then with uninfected U_{937}, while non-opsonized or heated-HPS-opsonized *M.avium* showed no difference. Microscopy showed that *M.avium* was attached to the cells. Since the increase was complement dependent, complement receptor (CR1 and CR3) expression on U_{937} was measured. Both were significantly higher on U_{937}/HIV-1 (1.8±0.1 and 1.4±0.1 resp.). Inducers of cell-differentiation (PMA, endothelial cell supn.) increased immuno-adherence of opsonized *M.avium* to uninfected U_{937}.
Conclusion. Immuno-adherence of *Mycobacterium avium* to U_{937} is enhanced by HIV-1 infection. This enhancement may be due to upregulation of complement-receptors on U_{937} induced by HIV-1 infection.

C.576

C.577

C.578

A HUMAN env-LIKE PROTEIN: POSSIBLE RELEVANCE IN HIV INFECTION

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Objective. To characterize a human env-like protein.
Results. A 45 kDa human lymphocyte activation-associated protein sharing an epitope with env gp120 has been described and named HELP (human env-like protein). Two monoclonal antibodies reactive with HELP have been produced: one of them (M38) is reactive with both the cellular protein and HIV1 gp120, the other (L31) binds only the human molecule, but its binding can be inhibited by M38, probably because of steric hindrance. The two Mabs have different effects on lymphocyte functions: M38 inhibits proliferation by antigen presentation whereas L31 inhibits IL-2 production by cross-linked OKT3 stimulated lymphocytes. Since HELP acts in negative signalling and an autoimmune response against it induced by HIV infection could be deleterious for the patient, we are now searching for M38- or L31-like specificities in sera from infected individuals to evaluate a possible prognostic significance.
Conclusion. HELP is involved in more than one physiological immune function. Autoimmune responses aganst it are likely to be deleterious to the AIDS patient.

C.579

C.580

Développement de médicaments et de vaccins
Drug Developement and Vaccines

C.581

NMR study of perturbations of phosphatidylcholine bilayers by diacylglycerols. H. DeBoeck and R. Zidovetzki. Department of Biology, University of California, Riverside, CA 92521, USA

Addition of diacylglycerols to the cultured HIV-infected cells was recently shown to significantly reduce cytopathological effects of the virus. We used a combination of ^{31}P and ^{2}H nuclear magnetic resonance (NMR) to characterize the perturbations of phosphatidylcholine bilayers by a series of saturated diacylglycerolos (DAG) (diC$_n$ with n=6, 8, 10, 12, 14, 16) and two unsaturated DAGs; diolein and DAG, derived from egg-PC (egg-DAG). Longer chain (n≥12) saturated DAGs induce lateral phase separation of the lipids forming regions with different fluidities. Decreased order of the DPPC side chains was observed in the presence of diC$_6$ and diC$_8$. Addition of diolein or egg-DAG to PC bilayers induces formation of non-bilayer lipid phases. The observed effects can be correlated with the fact that the shorter chain saturated DAGs (up to diC$_8$) and unsaturated DAGs can activate protein kinase C and various phopholipases.

C.582

EFFECT OF NEUROTROPIN ON A SPECIFIC HOST CELL MEMBRANE PROTEIN, HMP-1, INDUCED WITH HIV-INFECTION AND FUNCTIONALY ASSOCIATED WITH SUPPRESSION OF GIANT CELL FORMATION.

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The effect of Neurotropin®, a non-protein extract from cutaneous tissue of rabbit inoculated with vaccinia virus and contains biologically active substances formed by immuno-inflammatory reaction, on the formation of giant cell in HIV-infected MT-2 cells was investigated. 10-100 µg/ml of Neurotropin introduced to MT-2 cell culture priorto HIV infection significantly inhibited the giant cell formation. Nonidet P-40 extracts of HIV-infected MT-2 cell membrane proteins were analyzed on 2D gel electrophoresis and the electropholetic pattern of protein species were compared. One of the HIV-induced MT-2 protein designated as HMP-1 changed its pI from 5.8 to 5.6 upon treatement with Neurotropin. This change was not due to phosphorylation of HMP-1. It seems that HMP-1 is a fusion-associated molecule and specifically influenced by Neurotropin, thereby suppressing the formation of giant cells.

C.583

NITROPHENYL DERIVATIVES (NP) AS POTENTIAL ANTI-HUMAN IMMUNODEFICIENCY VIRUS (HIV) AGENTS
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Objective. To assess the *in vitro* anti-HIV activity of NP derivatives.
Methods & Results. We report that nitrophenyl derivatives (NP) (dinitrophenyl-glycine, trinitrophenyl-bovine serum albumine) neutralize HIV as assessed by reverse transcriptase activity determination in culture supernatants of peripheral blood monocytes and syncytia formation assay. FACS analysis demonstrated that NP derivatives although they interfered with viral fixation did not compete for the receptor recognized by monoclonal anti-T4 antibodies. Apparently, this in vitro antiviral effect is specific because it is abolished after passage of the NP compounds through immunoadsorbents carrying a monoclonal anti-NP antibody and it is recovered in the acid eluate of the immunoadsorbents.
Conclusion. These results suggest that NP derivatives may interfere with HIV fixation. Whatever the exact mechanism of action is, the antiviral effect of NP derivatives seems to be related to their anionic charges, since reduced NP derivatives lose their anti-HIV activity.

C.584

TREATMENT OF MAJOR DEPRESSION, NEW ONSET, IN PATIENTS WITH HIV POSITIVE SEROLOGY WITHOUT ACTIVE DISEASE WITH FLUOXETINE
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Seven patients were referred from the UCLA AIDS Research Center who met criteria for DSMIII-R Major Depression. All of these patients were participating in an AZT double-blind placebo-controlled study at the Center. Five of the patients had positive HIV serology but no manifestations of the disease; the remaining two patients had positive HIV serology and had one symptom of Early ARC in the past but were no longer actively symptomatic. None of the patients have had previous significant psychopathology before their HIV serologic diagnosis. All seven patients were treated with fluoxetine at 20 mg. per day. All patients tolerated fluoxetine without any long term side effects. (GI upset, increased bowel movements, and sleep disturbances abated after one week at full dose). All patients responded to fluoxetine after one month of administration at 20 mg. per day. Average Hamilton Depression Scales were initially, 26 (range 20-33), 7 (range 2011) after one month, and 2 (range 0-5) after three months of fluoxetine administration. In conclusion, our experience suggests that fluoxetine is an efficacious anti-depressant is well-tolerated in patients with Major Depression and with HIV positive serology patients without active disease.

C.585

CHARACTERIZATION OF TANNINS CONTAINING ANTI-HIV ACTIVITY.

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Objective. To characterize anti-HIV activity of purified tannins. Methods. Tannins were purified from commercial tannic acid by chromatography through Sephadex LH-20 and preparative high performance liquid chromatography with reverse phase columns. HIV-1 reverse transcriptase was purified by immunoaffinity chromatography. Enzyme activity was measured using poly rA-oligo dT_{10} as the template. HIV-1 replication was assayed after infection of H9 lymphocytes. A p24 antigen capture test was used to detect virions released into culture supernatants after a three day incubation following HIV-1 infection. Drug cytotoxicity was evaluated by cell count after a three day incubation with uninfected H9 cells. Results. Four new tetragalloylquinic acids were isolated which inhibit purified reverse transcriptase by 85-90% at 100 uM and 60-70% at 30 uM. They inhibit HIV-1 replication in H9 lymphocytes by at least 50% at 1-6 uM without cytotoxicity to uninfected H9 cells. Drugs were cytotoxic (approximately 50% growth inhibition) at 25-60 uM. Inhibition of HIV-1 replication in H9 cells by tetragalloylquinic acid was assayed in the presence of either AZT or ddC. Inhibition by the combination of drugs was additive at all concentrations of AZT or ddC tested. Conclusion. A new class of plant products which inhibit purified reverse transcriptase and HIV-1 replication in vitro has been isolated and characterized.

C.586

TREATMENT OF AIDS ASSOCIATED CRYPTOSPORIDIOSIS WITH HYPER-IMMUNE COLOSTRUM FROM COWS VACCINATED WITH CRYPTOSPORIDIUM.

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Objective. To assess the efficacy of hyperimmune bovine colostrum against Cryptosporidium in symptomatic AIDS patients.

Methods. Bovine colostrum was obtained from cows hyperimmunized with Cryptosporidium antigens. 5 AIDS patients with diarrhea and Cryptosporidiosis were given the colostrum by continous infusion via feeding tube in a double blind, placebo controlled pilot study. Stool was analyzed for vol.,frequency & consistency. Quant. cryptosporidial oocyst counts were determined by mod.Cold Kinyoun stained smears. Antibody titer of colostrum was assayed by IFA.

Results.

Patient	Antibody Titer of Colostrum	Conc. of Oocysts/ml 1st day	Conc. of Oocysts/ml Last day	Diarrheal Symptoms
A	1:25,600	1.4×10^7	2.2×10^6	Improved (2 mos.)
B	1:3200	8.4×10^4	2.0×10^3	Resolved (6 mos.)
E	1:3200	1.6×10^6	1.8×10^6	No change
C	Placebo	2.0×10^7	6.0×10^6	No change
F	Placebo	1.9×10^6	4.0×10^6	No change

Conclusion. Placebo showed no effect on the diarrhea. Two of three patients receiving hyperimmune colostrum showed clinical improvement/resolution accompanied by a reduction of oocysts in the stool. One patient receiving the hyperimmune colostrum failed to respond. A combination of low antibody titer and high oocyst concentration may be responsible. Therefore, higher antibody titers may be required for treatment of high oocyst concentration.

C.587

THE EFFECT OF OZONE(O3) ON LYMPHOCYTE POPULATIONS IN NORMAL AND HIV1-INFECTED BLOOD.

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Objective. Measure the effect of varying O3 concentrations on lymphocytes in whole blood from an uninfected and a Walter Reed Stage 2 HIV1 patient. Methods. Heparinized whole blood samples were exposed in triplicate to [O3] of 20, 40 and 60 ug/ml with an oxygen control. Coded, blinded blood samples were gently agitated for 10 min. and incubated for 1 hr. at 27 C. Mononuclear cells were separated using Ficoll-hypaque gradients and stained for FACS analysis using labelled monoclonal antibodies. Results. O3 had no effect on lymphocyte populations of the uninfected donor as numbers of total T cells, CD4, CD8, and B cell subpopulations did not change. In contrast, there were marked changes in the lymphocyte populations of the HIV positive donor with increasing [O3]:

$[O_3]$ (ug/ml)	B cells %CD20	T cells %CD3	CD4* %	CD8* %	T4/T8*	DR positive* % T cells	IL2 receptor* %CD25
0	8.5	82	34	43	.01	12.3	1.0
20	8.6	79	34	41	.05	14.9	0.0
40	8.4	82	40	38	1.10	10.3	0.5
60	6.9	83	42	36	1.20	7.0	0.2

* Correlation with increasing O3 concentration ($p < .05$)

Conclusions. Ozone, at concentrations previously shown to inactivate HIV1, may alter lymphocyte surface markers in HIV1 infected patients. Further studies are indicated to examine this effect.

C.588

DEC AND PER CAPITA AIDS CASES

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Objective: Administration of the antifilarial/immunomodulator drug diethylcarbamazine (DEC) frequently alters virologic, hematologic, serologic, and clinical parameters in cats infected with feline leukemia virus--an animal model for AIDS. DEC is an orally bioavailable drug, and some experiments suggest that DEC is concentrated in brain tissue. The present study examines, on a country-by-country basis, the relationship between filariasis control programs involving administration of DEC and per capita reported AIDS cases.

Methods: Numbers of known AIDS cases (WHO 2/88) in each of 161 countries/geographic entities were combined with population data to obtain per capita figures for known AIDS cases. The countries were divided into 3 subgroups according to DEC status: Group 0, no evidence of filariasis (52 countries); Group 1, DEC use sporadic or unknown to author (97 countries); and Group 2, program initiated to administer DEC to carriers of filariasis or to larger proportion of population on a national scale subsequent to development of DEC as an antifilarial agent (12 countries). The null hypothesis that DEC has no effect on numbers of per capita AIDS cases was tested by the 1-sided rank-sum test against the alternative hypothesis that use of DEC is associated with fewer per capita cases.

Results: The null hypothesis was rejected (a) when group 2 countries were compared against the remaining 149 countries ($p<.003$), and (b) when group 2 countries were compared against the 52 countries in group 0 ($p<.0005$).

Conclusion: These preliminary observations suggest that the effect of DEC on HIV infection warrants additional study.

C.589

C.590

WOMEN UNDERREPRESENTED IN AIDS CLINICAL TRIALS

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Objective. To monitor the access of women to experimental AIDS treatments in the United States. Method. We collected data on women enrolled in U.S. Government ACTG clinical trials to identify hindrances to health care. Results. Current Food and Drug Administration (FDA) policy restricts access of all patients to experimental therapies for AIDS on the theory that easy access to drugs will prevent patients from entering trials. Yet historically, women have been prohibited from participating in clinical trials. Even AZT, the one anti-HIV drug approved in the U.S., has not been adequataly tested in women to show beneficial as well as adverse reactions as required by the FDA. Although in November 1988 women represented 9% of CDC-defined AIDS cases, women at all stages of disease comprised only 5.8% of total trial enrollment. In February 1987, 142 women were enrolled in ACTG trials; by August 1988, 200 women were enrolled. Over 60% of women in ACTG trials are enrolled in ACTG trial 019 which is testing AZT versus placebo in asymptomatic HIV-infected subjects. As of December 1988, 52% of women with AIDS in the U.S. were infected through IV drug use. Nationally, 70% of women with AIDS are black and hispanic. Most of these women are poor and have access only to public hospitals. Conclusions. Government and medical establishment policies restrict the access of women to experimental treatments. These results imply inadequate drug approval policies, poor health care on the local level, and many unsolved bioethical issues.

C.591

IN VITRO EVALUATION OF EFFECTS OF LF1695 ON HIV INFECTED CELLS, ALONE OR IN ASSOCIATION WITH ANTIVIRALS.

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Objective : To determine the cellular target of an immune modulator drug, LF1695, in HIV infected PBL and infected cell lines, and to evaluate potential interactions with antivirals.
Methods : Interactions of LF1695 with lymphocyte membrane have been studied by Spin Label Method and competition assays between monoclonal anti CD4 antibodies and LF1695 (Immunofluorescence). Dose response curves of LF1695 action on HIV Reverse Transcriptase activity have been established (poly rA-oligo dT). In vitro toxicity of the drug on normal human PBL has been determined. Effects of LF1695 on cell growth and HIV replication has been explored using RT assay on cell culture supernatants. Potential interactions between LF1695 and antivirals (AZT, ddC) have been assayed by measurement of RT activity in supernatants of cell cultures which where doubled treated with both drugs at different concentrations.
Results : Biophysical effects of LF1695, such major interactions with the external part of cell membrane has been demonstrated, and might explain both the antiviral effect observed in few HIV infected PBL cultures, and the competition with antiLeu3a antibodies noted in around 10 per cent of healthy donors. No direct anti reverse transcriptase effects could be demonstrated for LF1695. Immune modulating concentrations of LF1695 do not exhibit either cellular toxicity or reproductible antiviral effects, as demonstrated in IL2 stimulated HIV infected PBL cultures. However, some inhibition of HIV replication was noted in a cell line of monocyte origin,U937. LF1695 does not interact with antiviral effect of dideoxynucleotides : furthermore, it allows a normal cell growth in cell cultures treated with a 100 per cent antiviral dose of AZT.
Conclusion : LF1695 is an immune modulator drug which cellular target is the cell membrane : despite the lack of direct antiviral effect, this drug might be used in association with dideoxynucleotides, as a compensator of the antiviral cellular toxicity.

C.592

INHIBITION OF HIV-1 AND HIV-2 REPLICATION IN FRESH AND CHRONICALLY INFECTED CELLS WITH ANTIVIRAL AGENTS

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We have examined and compared the inhibition of HIV-1 and HIV-2 replication in fresh and chronically infected cell cultures by a number of drugs directed towards various stages in the virus life cycle. We have evaluated the effect of these drugs, including AZT, DDC, foscarnet, amphotericin methyl ester (AME) on HIV-1 and HIV-2 replication in freshly infected and chronically infected Molt-3 and H9 cells. It appears that some drugs can inhibit both HIV-1 and HIV-2 replication at similar drug concentrations, whereas others require a higher drug concentration to inhibit HIV-2. Similar differences were observed between the potency of these drugs on freshly infected cells as compared to chronically infected cells. These studies indicate that it may be extremely important to select antiviral agents which are equally active on both freshly infected and chronically infected cells for the treatment of AIDS.

C.593

BIOCHEMICAL PHARMACOLOGY OF AZT IN HUMAN T-LYMPHOBLASTOID CELLS (CEM).

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The purpose of this study was to investigate the biochemical pharmacology of AZT and to examine the effect of AZT on nucleotide triphosphate pools in virus-free human T-origin line (CEM) cultured in vitro. Although the inhibitory concentration 50% (IC_{50}) of AZT in this cell line averaged 3.90 ±2.9µM (n=5 determinations ± S.Dev.), the readily obtained plasma concentration of AZT in patients (1 µM) was used in these studies. CEM cells were incubated with 1µM of [^{3}H]AZT for 24 hrs in vitro and at various times triplicate aliquots of 10^7 cells were removed and extracted with perchloric acid for nucleotides and metabolites of AZT. The extracts were assayed by HPLC SAX-10 column for nucleoside, mono-, di-, and tri-phosphate anabolites of [^{3}H]AZT. The cellular concentration of AZT ranged from 0.98 to 1.8µM (mean 1.28 ±0.3µM) throughout the 24 hr experiment. The [^{3}H]AZTMP cellular concentrations exceeded 1.3µM at 2 hrs and declined gradually to 0.12µM by 18 hrs. The [^{3}H]AZTDP was on average 17.5 ±11.4 fold lower than the AZTMP, strongly indicating that a rate-limiting step in the activation of AZTMP to AZTDP exists at the dTMP kinase level. The triphosphate, [^{3}H]AZTTP, peaked 4 hrs after initiation of drug treatment at 14.5 nM in CEM cells and declined biexponentially with a $t½_{\alpha}$ of 5.2 hrs and a $t½_{\beta}$ of 10.1 hrs. NTP cellular concentrations declined rapidly in the cells after exposure to AZT and by 9 hrs reached a nadir of 21.2% CTP, 8.1% UTP, 13.2% ATP and 14.4% GTP, in comparison to control values. Consequently, phosphorylation of AZT to AZTMP and AZTMP to AZTDP declined 2.9- and 2.4-fold, respectively. The depletion of NTP pools may be responsible for the host toxicity that has been observed in patients. The amount of AZT anabolite incorporated into purified DNA peaked at 0.066 pmoles/10^7 cell DNA 1 hr after AZT treatment and declined with a t½ of 12 hr. We conclude that 1µM AZT is sufficient for activation to the triphosphate which is associated with depletion of NTP pools and is incorporated into DNA.

C.594

C.595

DIFFERENTIAL ANTIRETROVIRAL ACTIVITY OF DEXTRAN SULFATE, PENTOSAN POLYSULFATE AND HEPARIN AGAINST HIV-1 (HTLV-III_B) AND HIV-2 (LAV-2 ROD) in MT-4 CELLS

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Objective. Since sulfated polysaccharides interfere with the interaction of the highly variable envelope glycoproteins of HIV with the cellular CD4 receptor, we wondered whether these compounds may have differential effects on different HIV-1 and HIV-2 strains.
Methods. Anti-HIV activity was determined 5 days post-infection by a tetrazolium-based viability assay. All HIV strains were used at the same multiplicity of infection and all experiments were done in MT-4 cells.
Results.

	50 % Effective dose [µg/ml, except for AZT (µM)]			
	AZT	Dextran sulfate	Pentosan polysulfate	Heparin
HIV-1(III_B)	0.0013	0.7	0.3	0.7
HIV-2(ROD)	0.0013	0.03	0.005	28
Ratio	1:1	23:1	60:1	1:40

Conclusion. Whereas AZT was equally effective against both HIV-1 and HIV-2, dextran sulfate and pentosan polysulfate were significantly more inhibitory to HIV-2 than HIV-1. Heparin, however, was more inhibitory to HIV-1 than HIV-2. These findings point to a specific interaction of sulfated polysaccharides with the HIV envelope glycoproteins. As pentosan polysulfate and dextran sulfate could be detected in the ng/ml range by using HIV-2(ROD) as the challenge virus, the HIV-2(ROD)/MT-4 system could be used as a bioassay for the detection of these compounds in biological specimens.

C.596

GLQ223: AN INHIBITOR OF HIV REPLICATION IN ACUTELY AND CHRONICALLY INFECTED T CELLS AND MACROPHAGES

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OBJECTIVE. To evaluate GLQ223 for ability to inhibit HIV replication in acutely and chronically infected cells and cells of both lymphocyte and mononuclear phagocyte lineage.

METHODS. GLQ223 is a highly purified plant derived protein used, in crude form, in traditional herbal medicine for a variety of clinical indications. GLQ223 was tested for ability to inhibit HIV replication in assay systems employing target cells of both lymphocyte and mononuclear phagocyte lineage, in acute and chronic infection models. Viral replication in treated cultures infected with laboratory isolates of HIV was assessed, as were effects of GLQ223 on cultured cells from HIV-infected donors. Viral replication was monitored by flow cytographic immunofluorescence analysis, antigen capture immunoassay of culture supernatants, and northern blot analysis.

RESULTS. GLQ223 showed concentration dependent inhibition of HIV replication in acute infectivity assays using a CD4+ T cell line as target. Complete inhibition of viral replication was obtained at concentrations of GLQ223 which were not toxic to parallel cultures of uninfected cells. Northern blot analysis showed a selective proportional decrease in the amount of viral RNA compared to levels of a representative cellular RNA species in treated cultures. Treatment of chronically HIV-infected monocyte/macrophage cultures also showed selective inhibition of HIV antigen expression. A single 3 hour exposure of whole blood from HIV-infected patients to GLQ223 was sufficient to prevent the expression of HIV antigens which occurred upon subsequent culture when the cells were not treated.

CONCLUSION. GLQ223 is a compound with encouraging in vitro anti-HIV activity in both acute and chronic infection, in both T cells and monocyte/macrophages. The mechanism of action is under investigation.

C.597

IN VITRO INHIBITION OF HIV REPLICATION BY CHOLIC ACID

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Objective: To determine whether the physiological constituent of the non-receptive endometrium cholic acid (CA) which is displaying both ovotoxic and spermatoxic activity, could also inhibit HIV replication

Methods: Different concentrations of CA were incubated with either the HIV reverse trancriptase (RT) enzyme or with an infectious viral preparation which used subsequent for infection of permissive cells. The effect of the agent was determined by measuring the enzymatic activity as well as the RT activity and p24 antigen in the supernatant of infected cultures, respectively.

Results Dose response curves showed that CA was capable to inhibit in a dose-dependant manner the RT activity of HIV. Moreover, CA also inhibited the DNA polymerases. RT inhibition was 99% at 40 mM CA concentration. When HIV virions were incubated with CA before testing the RT activity, an increase of the enzymatic activity was observed at low concentrations (2.5 mM) which was completely inhibited at higher concentrations (25 mM), suggesting a detergent-like effect of the agent. This effect was further supported by the decreased cell viability induced by CA. Incubation of infectious viral prepatations with CA for 10 min, extensive washing and cell infection, resulted in about 80% decrease of the infectivity capacity of HIV at 25 mM of CA as determined by the RT activity and p24 Ag in the culture supernatant

Conclusions: The above results indicate that CA has a relatively potent anti-HIV effect which is due to both the detergent-like and the anti-polymerase effects of CA. Since CA is a physiological constituent of the organism with little toxic effects, this agent could be used to develop protective measures against HIV infection

C.598

SUPPRESSION OF HIV RESERVOIR CELLS BY MEMBRANE-ACTIVE SUBSTANCES

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Objective: HIV can productively infect several cell types such as monocytes/macrophages and lymphocytes *in vivo* without subsequent cytolysis, thus creating a "virus reservoir". Strategies to suppress or to eliminate virus reservoir cells have been designed using the HIV-induced membrane alterations.

Methods: The influence of Phosphatidylcholine (PC) and related substances on viability and growth of HIV-1-infected lymphoid cells and the effects of PC on HIV-2-infected macrophages were investigated.

Results: Incubation of HIV-1-infected lymphoid cells with PC and related substances resulted in selective growth inhibition and lysis of the infected cells and in suppression of viral spread in HIV-2-infected macrophages. These substances had no direct effect on the virus itself and did not interfere with the infection of new target cells.

Conclusions: PC and related substances have the potential to suppress and to eliminate HIV-infected cells and may thus be of therapeutic value to control the virus reservoir early in infected persons.

C.599

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C.601

COMMUNITY-BASED RESEARCH IN AIDS: CRI AS MODEL

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U.S.A.

OBJECTIVE. To demonstrate how community-based research can represent a successful alternative model for the design and conduct of clinical research in AIDS, expanding the number of study participants and increasing compliance (especially including minorities and groups normally underrepresented in trials), employing community physicians and incorporating the perspective of people with AIDS in the process.

METHOD. The CRI is registered and approved by the New York State Department of Health to sponsor well-designed, meaningful, clinical trials of promising AIDS/ARC treatments conducted in a community setting by qualified physicians in cooperation with informed volunteer subjects recruited from their practices. The CRI has its own Board of Directors, an impressive Institutional Review Board (IRB) and a Scientific Advisory Committee composed of scientists and clinicians thoroughly experienced in the field of AIDS.

RESULTS. Although the CRI has been in existence for little more than one year, it already has 5 IRB-approved clinical trials fully enrolled and underway, as well as 4 other important formal studies about to begin. In addition, the CRI has an informal monitoring project of antabuse, the results of which were presented at the IVth International Conference on AIDS in Stockholm. The CRI has also generated a report submitted for publication on the endocrine abnormalities in AIDS of low DHEA levels. Both reports represent evidence of CRI's ability to collect and present meaningful data quickly.

We are prepared to present the procedures for development of research projects from potential sources, approval process and actual conduct of trials, emphasizing practical aspects and concerns unique to community-based research conducted in an AIDS context.

C.602

DHEA AND DHEAS IN AIDS

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Objective. To describe results of a study of dehydroepiandrosterone (DHEA) and DHEA-sulfate (DHEAS) in people with AIDS (PWAs).

Methods. Blood samples were drawn between 2:00 and 5:00 PM from 17 PWAs; they were submitted to a commercial laboratory for radioassay-determinations of DHEA and DHEAS levels as well as for determination of other blood parameters. Results were corrected for age and compared to normal values. Other variables potentially affecting DHEA and DHEAS levels were evaluated.

Results. DHEA and DHEAS levels were significantly lowered in PWAs as compared to healthy, age-matched controls. The statistically significant (p 0.01) difference was not attributable to other variables such as concomitant medication, length of time since diagnosis, initial AIDS-defining diagnosis, etc. Decreased levels of DHEA and DHEAS were not correlated with number of CD4+ helper cells or with levels of other blood parameters.

Conclusion. Our results suggest a relationship between AIDS and steroid metabolism, though our data provide no information on the nature or direction of that relationship. Nevertheless, they provide a preliminary rationale for the current practice of attempting to elevate DHEA and DHEAS levels by exogenous administration of DHEA as replacement therapy. Further, these results suggest that structural adrenal abnormalities, so commonly found on postmortem examination of PWAs, though not paralleled in vivo by functional abnormalities as assessed by usual measures of adrenal function, are paralleled by another, perhaps more sensitive index of that function: DHEA and DHEAS levels.

C.603

MM-1 IN THE TREATMENT OF AIDS. REPORT ON 172 TREATED PATIENTS.

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, *, **** University of Kinshasa, Kinshasa, Zaire.

The result of treatment of 172 AIDS patients with MM-1, an antiviral drug, is presented. Twenty AIDS patients were treated with the standard treatment for opportunistic infections and were considered as controls.
Patients were monitored for clinical and laboratory changes before, during and after treatment. MM-1 was given in a dose of 0.07 ml/kg body weight, one injection every other day for 10 injections, and every third day for another 10 injections.
Of the 172 patients treated with MM-1, 24 died: 6 of cryptococcal meningitis, 8 of electrolyte imbalance from diarrhea, and 10 of Kaposi's sarcoma. Improvement achieved in 148 patients. Follow-up varied from 4 to 14 months. MM-1 showed no side effects except fever after each of the first 3 injections. The patients showed clinical improvement and immunologic restoration to normal. The 20 control patients died within the follow-up period.

C.604

C.605

C.606

INHIBITION OF EXPRESSION OF NATURAL UAC SUPPRESSOR GLUTAMINE tRNA IN HIV- AND MOLONEY VIRUS-INFECTED HUMAN H9 CELLS IN VITRO BY AVAROL

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Objective. To study the mode of action of the anti-HIV compound Avarol. Methods. Human T cells (H9), infected with HIV-1 and NIH-3T3 cells, infected with Moloney Murine Leukemia Virus (Mo-MuLV) have been used for the studies. Results. Avarol is a sesquiterpenoid hydroquinone, which causes a strong antiviral effect on HIV and Mo-MuLV in vitro. It was found that in HIV- or Mo-MuLV-infected cells a high level of the UAG suppressor glutamine tRNA-UmUG is present. In Mo-MuLV-infected cells this tRNA is required for the synthesis of the RNA, coding for the viral protease; the function of this tRNA in HIV-infected cells is not yet known. Avarol causes at virostatic concentrations a reduction of the virus-induced UAG suppressor tRNA to normal levels. The functional consequence of this event is an inhibition of the processing of the viral polyproteins, very likely due to an inhibition of the readthrough of the Mo-MuLV protease gene; in the HIV system the molecular explanation is not yet possible. Conclusion. This study demonstrates that an inhibition of HIV production can be achieved also by a selective inhibition of the expression of a cellular gene. Refs.: Müller et al., AIDS Res. Human Retrov. 4, 279 (1988); Kuchino et al., Virology 165, 518 (1988). Supported by grants from the Bundesgesundheitsamt.

C.607

INHIBITION OF HIV REPLICATION BY XYLAN-POLYHYDROGENSULFATE: HOE/BAY 946, A NEW ANTIVIRAL COMPOUND IN CLINICAL TRIAL.

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Objective. HOE/BAY 946, a xylenpoly-(hydrogensulfate) disodium salt, inhibited HIV-1 and HIV-2 replication and virus-induced cell fusion in lymphocyte cultures at concentrations above 25 μg/ml (4.2 μmol/l) totally. The drug was found to be an inhibitor of the HIV-enzyme reverse transcriptase. Experiments were performed to find out which step of the virus life cycle was inhibited by the drug in the living cell.
Methods. HIV-infection of lymphocytes was detected by determination of syncytia formation, reverse transcriptase activity and antigen release.
Results. 1) An inactivating effect of the compound for free virions could not be demonstrated. 2) Lymphocytes incubated with HIV in the presence of 100 ug/ml HOE/BAY 946 followed by the removal of both the drug and unbound virus were found to be infected. Thus, inhibition of virus adhesion to the cells may not be sufficient to avoid their infection. 3) Several experiments showed that the permanent presence of the drug was necessary for its full antiviral activity. 4) Treatment of a permanently HIV-infected monocytic cell line resulted in a drastic reduction of virus shedding and points to an additional mode of action. It is discussed that HOE/BAY 946 has an influence on virus assembly or virus release.
Conclusion. Based on the anti-HIV activity of the compound, a clinical pilot study with HOE/BAY 946 was started recently in Germany with AIDS-patients and asymptomatic virus carriers.

C.608

Hypericin mediates Anti-HIV Effects in Vitro:

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Objective: To examine the ability of two aromatic polycyclic diones hypericin and pseudohypericin to control HIV infection in vitro. Methods: Evaluation of syncytia formation, reverse transcriptase activity, Viral RNA production, biochemical as well as electron micrographic studies of HIV-1 and HIV-2 have been studied. Conclusion: The low in vitro and in vivo toxicity of these compounds, the ability to interfere with infectious virus particle production, the fact that humans have been treated with these compounds with no serious side effects as well as the widespread availibility of these agents, suggest further examination of hypericin for future AIDS patient therapeutic regeims may be warranted. Results: Both HIV-1 and HIV-2 were sensitive to the effects of hypericin. Hypericin posesses at least two different antiviral components antisyncytia and blocking of viral infectivity. Morphological examination demonstrates a significant difference in the number of virus particles exhibiting the mature HIV-1 virus phenotype after hypericin treatment. Hypericine does not have direct effects on several commercially available viral reverse transcriptases. Viral maturation appears sensitive to the presence of this compound at doses that manifest no anti-cellular activities. Studies in our laboratory have demonstrated synergistic anti-viral effects between this class of compounds and other inhibitors of HIV infectivity. Further examination of the mechanism of anti-viral effects of these compounds is in progress.

C.609

EVALUATION OF erythro-9 (2-hydroxy-3-nonyl) adenine (EHNA) TREATMENT ON HIV-1 REPLICATION

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Objective. To evaluate the efficacy of EHNA treatment on viral replication in HIV-1 infected cell lines *in vitro*.
Methods. HIV-1 infected or uninfected H9 cell lines were treated with varying concentrations of erythro-9(2-hydroxy-3-nonyl) adenine(EHNA), an inhibitor of the common Adenosine deaminase(ADA) isozyme(s)(ADA1 and ADA1+CP). Several different concentrations of deoxycytidine (dC) were also added to the cell cultures. Cell viability was assessed by vital dye exclusion. Reverse transcriptase (RT) activity in the supernatants and in the cell lysates was determined by standard RT activity assays.
Results. RT activity in the supernatant was inhibited by nearly 50% in EHNA-treated HIV-1 infected H9 cells, when compared with the untreated but infected H9 cells. There was also a significant decrease in cell viability, but this was reversed following the addition of dC to these cultures. This combined treatment had no effect on RT activity in the cell lysates, suggesting an inhibition of HIV-1 replication, and release from the infected cultures. This combined treatment was also effective in suppressing HIV-1 release of HIV-1 from infected U937 cells.
Conclusions. The combined treatment with EHNA+dC may be one means of suppressing viral replication in HIV-1 infected cells. Also, since EHNA inhibits adenosine deaminase, HIV-1 release from infected cells may be regulated by purine metabolic pathways.

C.610

CONTROLLED EVALUATION OF THE EFFECT OF ZIDOVUDINE ON NEUROPSYCHOLOGICAL TEST PERFORMANCE IN CDC GROUP IV HIV INFECTED INDIVIDUALS

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Objectives: To evaluate the effectiveness of Zidovudine in reversing cognitive impairment in CDC Group IV HIV infected patients and to judge the speed of drug effectiveness.

Method: Monthly evaluation on a battery of neuropsychological tests was carried out on Zidovudine treated patients (N=20) and control groups: (1) HIV infected ARC patients treated for non-current syphilis (N=15) (2) CDC Group IV patients treated with AL721 (N=10) (3) HIV seronegatives. Tests used included (CANTAB), Trail-Making, Work Fluency, Rey Auditory Verbal Learning and St. Mary's Computerised Dual Attention task. Multivariate analysis of variance was used to look at changes over testing sessions for each of the groups.

Results: On an overall impairment score calculated by summing standardised (zscores) over the individual tests there was a significant ($p<.03$) interaction between group and improvement on testing. This was mainly due to greater initial improvements in the Zidovudine treated group as compared to the other groups. They did not however continue to improve in all cases. Further follow-up is continuing.

Conclusion: Zidovudine does appear to improve overall neuropsychological test performance in those with AIDS. Where improvement is seen it is likely to be greatest in the first few months of treatment.

C.611

C.612

ANTI-HIV-1 ACTIVITIES OF SULFATED MONOSACCHARIDES (SMS) AND POLYSACCHARIDES (SPS): THERAPEUTIC INDICIES (TI)

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Objective. To compare the TI *in vitro* of anti-HIV SMS and SPS.
Methods. SPS including dextran sulfates (DS) of various mw, heparin, heparin sulfate, chondriotin sulfate (shark and bovine) pentosan polysulfate, Fucoidin, and carrageenan as well as SMS including D-glucosamine 2 sulfate, D-glucosamine 6 sulfate, D-glucosamine 2,6 disulfate and inositol hexasulfate were examined for their direct inhibitory effects on HIV-1 reverse transcriptase, syncytia formation (SF), and infection of preincubated target cells as well as on partial thromboplastin and prothrombin times.
Results. (1) All of the SPS inhibited HIV reverse transcriptase (25-99%) at 50 μg/ml of the SMS, only glucosamine 6 sulfate had significant anti-RT activity (30%). (2) Syncytia formation was inhibited by as low as 6 μgm of DS, carrageenan, fucoidin and pentosan polysulfate. D-glucosamine 6 sulfate completely inhibited SF at 50 μg/ml. Other SMS had no significant anti-HIV activity at this concentration. (3) All SPS had significant anticoagulant activity, whereas SMS had no anticoagulant activity up to 1 mg/ml concentration except inositole hexasulfate.
Conclusion. SPS have broader and more consistent anti-HIV activity but potential low TI because of anticoagulant activity. SMS, particularly glucose 6 sulfate, have higher *in vitro* TI and deserve clinical trial.

C.613

BLOCKING OF HIV-1 BINDING SITE BY LECTINS

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Objective. Blockade of the interaction of HIV-1 gp120 molecule with CD4-ligands is one of the many stratagems for blocking HIV-1 infection and possibly cytopathicity. The use of purified lectins, which are specific for one or two sugars, as a blocking agent may provide a rather simple way of HIV-neutralization.
Methods. (1) Sup-T, cells (CD4+ cell line) were pre-incubated with various lectins, washed, and degree of inhibition of FITC-CD4-ligands (OKT4A, OKT4F, Leu-3a) were evaluated by flow-cytometry and microscopy. (2) Anti-HIV activation of various lectins was examined by a sycytia-inhibition assay using Sup-T_1 and H9/III_B cells (J Infec. Dis). (3) Western blot analysis were performed to determine the possible site of binding of the lectins.
Results. (1) Five lectins; VVA, HPA, HAA, WFA and SBA completely or partially blocked the binding sites of HIV-1. (2) VVA, HPA, HAA, WFA, PWA, PHA, ConA, PSA and PNA blocked syncytia formation. (3) Western blot analysis revealed that two lectins, VVA and PSA have affinity for certain components of HIV-1.
Conclusion. (1) Lectins have specificity for a certain sugar or oligosaccharide. Therefore, they can be used as a mapping agent(s) for "anti-epitope" which will bind the "critical" HIV-CD4 site. (2) Theoretically, such sugars can be used to block HIV-1 from binding to CD4 and has therapeutic potential.

C.614

C.615

C.616

C.617

THE DEVELOPMENT OF NEW DRUGS TO TREAT HIV INFECTION: THE ROLE OF GOVERNMENT AND PRIVATE SECTOR INSTITUTIONS

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Objective. To examine the role of government and the private sector in the development of new drugs to treat HIV-associated infections and cancers.
Methods. We reviewed: the organization and function of the U.S. Public Health Service (PHS), funding mechanisms for PHS agencies responsible for AIDS, implementation of AIDS drug research programs, number of drugs identified as potentially effective, results of clinical trials, number and characteristics of AIDS patients involved in new drug trials, the roles of academia and industry.
Results. The 3 agencies most directly involved in development of new AIDS drugs are the NCI, responsible for pre-clinical screening of drugs for anti-HIV activity; the NIAID, designs and funds clinical trials of proposed drugs; and the FDA, approves new drugs after safety and effectiveness have been established. Few children with AIDS (62 of 1134 in Sept 1988) and a low percentage of women and IV drug users with AIDS have participated in NIAID-sponsored drug trials. Despite some "pro-active" measures to expedite the review of AIDS drugs, the FDA causes significant delays in the approval process.
Conclusion. We recommend that community-based clinical trials would provide access to new AIDS drugs for a much larger population, and would have the advantages associated with a more personal physician-patient relationship. The NIAID announced such an approach on 22 November 1988. Community support is vital to the successful development of new AIDS drugs and vaccine development. Leadership at the Presidential level is required to solve the funding, staffing and administrative difficulties which continue in our national AIDS program.

C.618

FACTORS AFFECTING PARTICIPANT COMPLIANCE WITH ZIDOVUDINE CLINICAL TRIAL PO19

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Objective. To determine what factors correlate with adherence or non-adherence to protocol PO19 of zidovudine, so that recommendations can be made regarding the structure of AIDS clinical trials.
Methods. 50 adherents and 50 dropouts from the San Francisco sites of clinical trial PO19 were interviewed and administered questionnaires. In conjunction with medical records, additional data was gathered on two sets of factors: 1) Patient factors; Social support, sources of clinical trial information, psychological and somatic symptoms, perceived drug efficacy, personal efficacy, perceived threat of AIDS deterioration, alcohol and recreational drug use, and perceived AIDS loss in the participant social network; and 2) Study site perception factors; patient evaluations of study site structure and procedures, knowledge and attitudes about placebo, and attitudes toward researchers. Continuing volunteers were then compared with dropout on the above variables.
Results. Patient factors as well as study site factors were found to relate to adherence or non-adherence with PO19. Adherents were more likely to report social support for being in a clinical trial. Continuing participants and dropouts were nearly universally opposed to the use of placebo dose.
Conclusion. Dropout rate from AIDS clinical trials may be influenced by increasing the rigor of screening procedures on psychosocial and behavioral criteria: and by more thoroughgoing patient orientation and the need for placebo.

C.619

DISULFIRAM AS AN IMMUNOMODULATING AGENT - FOLLOW UP.

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Objectives. To describe the results of an expanded trial of disulfiram in AIDS/ARC patients of CRI community physicians.
Methods. We initially monitored 53 AIDS/ARC patients who were taking disulfiram. Results of that monitoring included 1) significant increases in CD4 cells, 2) reduction of clinical symptoms, and 3) mild, reversible GI disturbance. We have continued our monitoring—and have increased the number of participants—following the same protocol: most individuals were treated with disulfiram 500mg p.o. twice weekly (some were prescribed 750mg p.o. once weekly); laboratory and clinical data were obtained on average every three months.
Results. The pooled data continue to show a considerable rise in T-helper cells and reduction in clinical symptoms. Abdominal cramps and/or diarrhea continue to be the most frequent side effects occurring in approximately 20% of our sample. A metallic taste has been infrequently reported.
Conclusion. Disulfiram continues to show promise as an immunomodulator. Our results suggest that large-scale, controlled clinical trials are warranted to test this hypothesis, which is based on preliminary findings in an open study.
Note: The CRI, while collecting data from community physicians who are prescribing disulfiram, does not itself endorse the use of any given product.

C.620

SYNERGISM AND POTENTIATION EFFECT OF A COMBINATION OF DIFFERENT DRUGS, DIRECTED TOWARDS VARIOUS STAGES OF THE VIRUS LIFE CYCLE, IN THE TREATMENT OF AIDS

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A number of antiviral agents that inhibit human immunodeficiency virus (HIV-1) in cell culture (MOLT-3, H9) have shown unacceptable levels of toxicity in human clinical trials. We have evaluated a number of drugs, including AZT, DDC, foscarnet and amphotericin methyl ester (AME), at levels much lower than traditionally employed to inhibit HIV replication. In our studies, we find that a significant potentiation/synergistic effect is observed when AZT, DDC or foscarnet are mixed with AME at approximately one-tenth the dose level required for complete inhibition of HIV replication by a single agent alone. Similar results have been obtained when antisense oligonucleotides directed towards two different target sites on the HIV genome are used in combination. These studies suggest that combination therapy using inhibitors of different stages of the virus life cycle may be beneficial in the treatment of AIDS.

C.621

ANTI-HIV ACTIVITY OF DEXTRAN SULFATE AS DETERMINED UNDER DIFFERENT EXPERIMENTAL CONDITIONS

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Dextran sulfate is a potent and selective inhibitor of HIV-1. Its anti-HIV-1 activity has been investigated under varying experimental conditions. MT-4 cells were infected with HIV-1 at different multiplicities of infection (m.o.i.), and treated with either dextran sulfate, 3'-azido-2',3'-dideoxythymidine (AZT) or anti-HIV-1 serum (obtained from an ARC patient). Dextran sulfate suppressed HIV-1 replication (as monitored by viral antigen expression) when the m.o.i. was 0.01 or 0.1. It was ineffective at a m.o.i. of 1.0. The anti-HIV-1 serum was only partially effective at a m.o.i. of 0.01 and ineffective at a m.o.i. of 0.1 or 1.0. AZT proved effective at all three m.o.i.'s. Cocultures of uninfected and HIV-1-infected MT-4 cells were protected against destruction by dextran sulfate at a concentration of 10 and 100 μg/ml. A 1-hr contact of dextran sulfate (100 μg/ml) with the cells during the virus adsorption period sufficed to suppress HIV-1 antigen expression. In this sense, dextran sulfate behaved like anti-HIV-1 serum. Dextran sulfate also behaved like OKT-4A in that they both inhibited HIV-1 attachment to the MT-4 cells, whereas OKT-4 failed to do so. However, dextran sulfate did not affect the binding of OKT-4A to the cells. The present results support the concept that dextran sulfate owes its anti-HIV-1 activity mainly to inhibition of virus binding to its target cells.

C.622

AN HIV-1 P24 SCREENING ASSAY FOR DETECTION OF HIV-1 INHIBITORS

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Objective. To validate a sensitive, rapid, and reproducible screening assay for HIV-1 inhibitors.
Methods. H9 lymphocytes are treated for 1 hour at 37° C with an aliquot of a frozen stock of HIV-1 virions at a multiplicity of infection of 0.3 $TCID_{50}$/cell. The infected cultures are washed 3 times to remove unadsorbed virions. Test materials are titrated into both infected and uninfected H9 lymphocytes. After 3 days of incubation at 37° C, the cultures are centrifuged and the supernatants lysed for p24 antigen capture. The antigen capture assay uses a p24 specific, high affinity monoclonal antibody for capture of p24 onto microelisa plates and rabbit sera raised against affinity purified p24 as the detector antibody. Untreated, infected cell supernatants are titrated to the linear range of the capture assay standard curve. The p24 in a dilution of each test supernatant is determined and compared to that in the infected control cultures receiving no test compound to determine antiviral activity. The cell count of each uninfected test culture is compared to that in the uninfected control cultures to determine drug cytotoxicity.
Results. Infectious center assays have shown that 10% of the cells in the culture initially receive an infectious virion. Our antigen capture assay has readily detected virions released after a 3 day incubation, which is long enough for reinfection (40% of the cells contain virions at 3 days). Compounds have been evaluated at different dilutions for cytotoxicity and effectiveness as an inhibitor of p24 release. Anti-HIV-1 activity of AZT, ddC, and PFA in this assay has compared favorably to that observed in CEM-SS syncytia inhibition assays done in our laboratory and to published values obtained from other methods. We are currently testing 50 compounds a week at 3 dilutions each. We have used this assay to guide fractionation from active natural product extracts through HPLC purified fractions.
Conclusion. A sensitive, rapid, and reproducible assay has been developed to screen for possible HIV-1 inhibitors.

C.623

IN VITRO EFFICACY OF THE POLYSULFATED POLYXYLAN HOE/BAY 946 IN HIV INFECTED HUMAN MONOCYTES/MACROPHAGES

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Objective. To present data demonstrating the efficacy of xylan(-hydrogen-sulphate) disodium salt (HOE/BAY 946) in HIV infection of human monocytes/macrophages.
Methods. A system has been developed in which human monocytes/macrophages from the blood of healthy donors are cultured on hydrophobic membranes. Cells which have been infected in Teflon® bags in the presence or absence of HOE/BAY 946, are transferred to 24-well microplates and further cultured in the presence or absence of the drug.
Virus production by the monocytes/macrophages is measured by reverse transcriptase activity or by antigen assay.
Results. The data presented show that HOE/BAY 946 drastically reduces the infection of human monocytes/macrophages in vitro.
Conclusion. Due to the important, possibly central role of monocytes/macrophages in the pathogenesis of AIDS, it is essential to show that drugs with anti-HIV activity are also effective in these cells; the efficacy of HOE/BAY 946 in these culture systems is demonstrated.

C.624

INHIBITION OF HIV REVERSE TRANSCRIPTASE BY 4-QUINOLONES

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Objective. One way to decrease the HIV load in symptomatic patients is to reduce virus replication. We looked for chemical compounds to achieve this.

Material and Methods. Ofloxacin, ciprofloxacin and norfloxacin were used at concentrations of 1 to 5 μM in 0.155 M sodium chloride, 0.01 M glycine-lactate buffer, pH 4.0. In a reverse transcriptase (RT) assay for HIV-1 using concentrated HIV-1, poly rAdT, and ^{3}H-TTP one fourth of the reaction volume was exchanged by the quinolones or appropriate controls, and inhibition of RT activity was measured up to 60 min.

Results. Complete inhibition of RT activity was observed at minimal concentrations of 3 μM ofloxacin and ciprofloxacin and 1 μM norfloxacin. The inhibition kinetics were linear over 60 min, and concentration dependent.

Conclusion. Chemical modification of currently available quinolone-derivatives could lead to substances valuable for clinical trials.

C.625

ENERGY CALCULATIONS ON ANTI-HIV NUCLEOSIDES: ENHANCED STABILITY OF C3'-EXO TWIST CONFORMATIONS IN ACTIVE COMPOUNDS

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We recently reported (Taylor et al., 1989 ACS Abstr., Dallas) that for AZT and 2 other azide analogs, low energy conformers predicted by molecular mechanics (MM) correlate well with the observed crystal structures. The preferred conformations for the furanose ring in these azide analogs are C3'-exo ($_3T^2$ and $_3T^4$); this conformational preference may be a partial basis for the activity of these compounds. We report here the results of theoretical (MM) studies on the C3'-exo vs. C3'-endo preference for the same set of active and inactive compounds studied by Van Roey et al. (see the companion abstract).
Methods: Using MM (TRIPOS force field with COSMIC azide parameters), we have calculated the energies of both C3'-exo and C3'-endo ($^3T_2$) conformations, with optimization of all other conformational parameters (glycosidic angle, etc.), and compared the relative energies of the 2 forms.
Results: The 3 azide analogs (all active) show a preference for C3'-exo over endo of about 1.5 kcal/mole. The dideoxy analogs generally show a preference for C3'-exo (~1 kcal/mole over endo), although this difference is smaller (0.4 kcal/mole) for ddT and the inactive ddU. For other inactive compounds, including 3'-allyl-ddU and 3'-CN-dT, the C3'-endo form is preferred by at least 1 kcal/mole. For thymidine itself, the energy differences are negligible.
Conclusions: The calculations suggest that for good anti-HIV activity, the C3'-exo form should be at least as or more stable than the C3'-endo form. These results also correlate reasonably well with the X-ray observations. The possible electronic stabilization of the $_3T^4$ conformation by the azide rotating to a position underneath the furanose ring will be discussed.

C.626

Mechanisms of the anti-retroviral activity of aromatic polycyclic diones hypericin and pseudohypericin.

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We have recently reported that the polycyclic aromatic dione compounds hypericin (HY) and pseudohypericin (PS) inhibit the replication and infection cycles of a variety of murine retroviruses. These studies have now been extended to include the human HIV.

If a murine leukemia cell line (AQR) infected with and producing Radiation leukemia virus (RadLV), is incubated with hypericin, no detectable reverse transcriptase (RT) positive viruses are detected in the growth medium. This failure to produce RT positive virions is not the result of failure to produce viral mRNA or viral proteins within the infected cells. Rather assembly and/or processing of virions is affected by hypericin. Incubation of intact virus preparations with HY or PS also results in the inactivation of virion-derived reverse transcriptase activity and loss of infectivity of the particles. In all cases hypericin is a more potent antiretroviral agent than pseudohypericin. Clearly, the additional methyl group substitution in HY is important for antiretroviral activity.

C.627

BACULOVIRUS DIRECTED CELL-SURFACE EXPRESSION AND PURIFICATION OF CD4 IN INSECT CELLS

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Infection by the human immunodeficiency virus (HIV), the causative agent of acquired immune deficiency syndrome (AIDS) is mediated by the binding of the viral envelope glycoprotein, gp120, to CD4, a glycoprotein expressed on the surface of HIV-susceptible cells, most notably T helper lymphocytes (Sattentau and Weiss, 1988). In a recent report, we described the stable insertion of CD4 derived from human lymphocytes into red blood cells and its interaction with HIV-1 and HIV-infected H9 cells (Nicolau et al., J. Cell Biochem.12B, 254, 1988). The potential use of a CD4-erythrocyte complex as a therapeutic agent for AIDS requires large amounts of CD4 which contains the hydrophobic membrane-spanning region. To do this, we have produced a baculovirus expression vector (Luckow and Summers, 1988) for the abundant production of full-length CD4 in insect cells. We show that the recombinant protein expressed on the surface of insect cells is chemically, immunologically and biologically similar to CD4 expressed in human cells.

C.628

ESSAIS CONTROLES EN DOUBLE INSU DU LF 1695 CHEZ DES PATIENTS VIH+

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Objectifs. Evaluer et comparer l'efficacité de 2 posologies d'un immunomodulateur, le LF 1695 (Lab. FOURNIER) parmi 38 patients au stade de LPG ou d'ARC.
Méthodes. Dans un essai croisé randomisé en double insu, 20 patients ont reçu 1 gélule quotidienne de 120 mg de LF 1695, 15 jours par mois pendant 3 mois, puis 1 gélule de placebo en continu les 3 mois suivants ; 18 patients ont reçu une gélule de placebo 15 jours sur 30 pendant 3 mois puis une gélule de 120 mg de LF 1695 en continu les 3 mois suivants.Une évaluation clinique et biologique (NF, CD3+, CD4+, CD8+) a été réalisée tous les 45 jours. A la fin du protocole randomisé, les patients ont été traités par placebo ou LF 1695 en continu ou en discontinu selon un arbre de décision (variation de +/- 20 % du nombre de CD4+ au cours de l'essai randomisé).
Résultats. La comparaison du nombre de lymphocytes CD4+ au cours de la phase initiale ne montre pas de différence significative entre le groupe séquentiel et le groupe placebo, seule une tendance s'est manifestée à la posologie séquentielle. En revanche, lors du protocole de suivi, le nombre de lymphocytes CD4+ est significativement augmenté parmi les patients traités en séquentiel (med = 480 à J0 et 635 à la dernière visite) par rapport aux patients traités en continu (med= 411 à J0 et 344 à la dernière visite), ou par rapport au placebo (med = 426 à J0 et 376 à la dernière visite).
Conclusion. Le LF 1695 à la dose de 120 mg par jour, 15 jours par mois, présente un intérêt thérapeutique. Il devra être confirmer dans un nouvel essai randomisé.

C.629

C.630

IN VITRO ANTI-HIV ACTIVITY OF A NEW CLASS OF POLYMERS.

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Objective : We have synthesized a new class of polymers and tested their ability to act as HIV inhibitors.
Methods : We have tested these compounds as HIV replication inhibitors in CEM clone 13 cells and in human peripheral blood lymphocytes (PBL). We have measured the reduction of cytopathic effect (CPE) induced by HIV-1 (LAV-bru strain) - MTT assay - and reduction of reverse transcriptase (RT) activity in supernatants.
Results : Two polymers PS and PC were active. The EC_{50} were 1-3 ugr/ml and 2.5-7 ugr/ml respectively in CEM (7 and 14 days after infection respectively) and the EC_{50} of PS was 6 ugr/ml in PBL. The CC_{50} were in all cases superior to 100 ugr/ml. Both products were active when added to the cells 2 h. post infection ; in these conditions the EC_{50} in CEM were 5 and 10 ugr/ml respectively for PS and PC. RT production in cell supernatant was inhibited at the same concentrations as CPE.
When injected i.v. in mices (1 dose), the LD_{50} were 2-10 mg/kg (PS) and superior to 50 mg/kg (PC). Daily i.v. injection of PC at 2 mg/kg for 5 days was well tolerated.
Conclusions : Our new compounds were active as in vitro HIV inhibitors at doses similar to those reported for clinically used compounds.

C.631

CELLULAR PHARMACOLOGY OF 3'-AZIDO-2'-3'-DIDEOXY-URIDINE (AzddU) IN HUMAN PRIMARY CELLS: EVIDENCE OF A NOVEL METABOLITE

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Objective. To investigate the cellular pharmacology of AzddU (CS-87) and 3'-azido-3'-deoxythymidine (AZT) in human bone marrow (BM) and peripheral blood mononuclear (PBM) cells.
Methods. Human PHA-stimulated PBM or BM cells (2 x 10^6 cells/ml) were exposed to 10 μM (^{3}H) AZT or (^{3}H) AzddU from 2 to 48 hrs. The 60% methanol-soluble fraction of the cell lysate was analyzed by HPLC using a Partisil 10-SAX column.
Results. Within 2 hrs AZT-MP accounted for the majority (87 to 92%) of intracellular metabolites in both PBM and BM cells and remained at steady-state levels for 48 hrs. AZT-DP and AZT-TP increased within 48 hrs to 0.3 and 0.1 pmoles/10^6 cells in PBM and BM cells, respectively. AzddU-MP accumulated at a slower rate reaching 5 to 10 fold lower levels compared to AZT-MP and represented approximately 55 to 65% of intracellular radioactivity in both PBM and BM cells at all times. AzddU-DP approximated similar concentrations compared to AZT-DP in both cell systems, while AzddU-TP had 5-10 fold lower levels than AZT-TP in PBM cells. In contrast to AZT, an unknown ^{3}H-labeled anabolite of AzddU eluted between AzddU-MP and -DP with a different retention time from AZT-MP and -DP in both cell systems. This AzddU anabolite increased over time and represented as much as 25% of intracellular radioactivity in BM cells following a 48 hr exposure. The anabolite was resistant to 5'-nucleotidase, but was a substrate for 5'-phosphodiesterase, yielding AzddU-MP. Incubation of [^{3}H]-AzddU and [^{14}C]glucose in BM cells produced a double-labeled peak with the same retention time as the anabolite, suggesting formation of a AzddU-5'-diphosphate-hexose.
Conclusions. The metabolism of AzddU to a AzddU-DP-hexose in primary human cells, especially in BM cells, may contribute to the decreased toxicity of this anti-HIV drug when compared to AZT.

C.632

IMMUNOSTIMULATORY EFFECTS OF BETA-CAROTENE ON T-CELL ACTIVATION MARKERS AND NK CELLS IN HIV INFECTED PATIENTS.

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Objective. Study the effect of beta-carotene on lymphocytes from patients with AIDS, based on its immunostimulatory effects in normal subjects.
Methods. Eleven HIV infected patients were given 30 mg/day of beta carotene for 4 months. Samples of heparinized peripheral blood were collected prior to, during, and after cessation of supplementation. Changes in the number and percentage of mononuclear cells with various markers were measured with monoclonal antibodies and flow cytometry.
Results. After 3 months of treatment the percentage of cells with markers of NK cells increased significantly (from 3.3 ± 2.8% to 19.4 ± 13.6%) in HIV infected patients. The percentage of cells expressing of IL-2R transferrin receptors, and HLA-Dr antigen was increased from 3.6 ± 48 to 16.8 ± 19.3; from 3.4 ± 3.1 to 29.2 ± 16.9; from 36.5 ± 9.5 to 61.1 ± 13.3 respectively by the treatment of beta-carotene for 3 months in HIV infected patients. No significant changes in T-helper, T-suppressor or total T-cells were observed during the treatment. Similar changes were seen in the numbers of these cells with each subtype. The maximum percentage was reached after 3 months, and had decline some by 4 months of treatment. These results are all qualitatively similar to those previously observed by us in normal subjects. No toxicity attributable to the drug was observed and the effects of cessation of supplementation were also assessed.
Conclusion. Beta-carotene produces an increase in the number of cells with NK markers and markers of activation (IL-2R, transferrin receptors). Clinical studies are warranted to assess if these findings will be of clinical benefit in AIDS or ARC patients. Supported in part by grants from Wallace Genetics and NIH AA-08037.

C.633

REDUCTION OF p24 ANTIGEN IN CDC II/III CASES WITH BD ZIDOVUDINE AND PROGRESSION TO AIDS

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Objective: To study the effect of 1200 and 800 mg Zidovudine given in 6 hrly or 12 hrly dosage on p24 antigenaemia in CDC II/III) patients.

Methods: 36 asymptomatic patients (CDC II/III) with p24 antigenaemia were randomised to receive either Zidovudine or Placebo on a double-blind basis. The results of the first 18 are shown.

Table 1	No of patients	Weeks 1-6	Weeks 7-12
A Zidovudine	7	600 mg bd	400 mg bd
B Zidovudine	5	300 mg qds	200 mg qds
C Placebo	3	6 caps bd	4 caps qds
D Placebo	3	3 caps qds	2 caps qds

Mean age was 35 years, average Hb at entry 14.5 g/dl (range 11.8-17.0) and median T4 cell count 0.50 x 10^9/1 (range 0.20-0.95).

Results: The mean percentage reduction of p24 antigen level was 62% (range 7-79%) in group A, 38% (range 0.87%) in group B and 0% in the Placebo groups. Mean percentage reduction of p24 antigen in the combined treatment group was statistically significant (p=0.01, Mann-Whitney U test), with no difference between groups A and B. Treatment was well tolerated apart from 2 Zidovudine treated patients who required transfusion. Patients were followed up for a minimum of 9 months after cessation of therapy. 7 (5 treated, 2 placebo) have continued with Zidovudine 250 mg or 500 mg bd and remain well. 7 (5 treated, 2 Placebo) have progressed to AIDS or ARC. The remaining 4 patients remain well.

Conclusion: Short-term Zidovudine given 600 mg and 400 mg bd reduces p24 antigen levels but may not influence progression of disease.

C.634

PULMONARY FUNCTION IN INDIVIDUALS WITH AIDS RECEIVING AEROSOLIZED PENTAMIDINE (AP) FOR PNEUMOCYSTIS CARINII PNEUMONIA (PCP) PROPHYLAXIS.

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Objective. To monitor pulmonary function in 205 patients with AIDS enrolled in a 1-year trial of two doses of AP for prophylaxis of PCP, which was fully enrolled by 6/28/88. 75.4% of study participants had experienced a prior episode of PCP.

Methods. Pulmonary function tests (PFTs) including measurements of DLCO, FEV, and FVC, were performed at entry, at 4-6 months, and at 12 months after entry. X-rays were obtained and physical examinations done at the same time.

Results. 125 patients were tested at entry and after 4-6 months (mean = 5.1 months). The mean values for FEV, and FVC did not differ at both times, nor were there significant differences in the distributions for both tests when the first repeat set of tests was compared to baseline. The DLCO, however, showed an increase in mean value on the second test; 73.2% (n=82) of the population showed an improvement in DLCO when retested after a mean period of 4.6 months on AP. The degree of improvement correlated inversely with the time elapsed since diagnosis of a prior episode of PCP. (r = -.214, p = .047).

Conclusion. No deterioration in pulmonary function could be shown in individuals with AIDS receiving AP (100 and 150mg biweekly) for a mean of 4.6 months. Whether AP hastens improvement in patients who have had PCP cannot be determined by this study.

C.635

DEXTRAN SULFATE DECREASES CELL SURFACE GP120, BUT DOES NOT INTERFERE WITH GP120 -CD4 INTERACTIONS

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Objective. Dextran sulfate has been reported to block virus binding to CD4+ cells . To determine if this effect is due to receptor blockage, we examined the effect of dextran sulfate on gp120 to CD4 binding and cell surface gp120 expression.

Methods. Gp120 binding to CD4 was measured by incubating recombinant gp120(Genentech) with Molt-4 T-cells followed by monoclonal anti-envelope antibody and fluorescently-labelled goat antibody to mouse Ig. Binding was also measured in an ELISA format by incubating soluble CD4(Biogen) with gp120 coated plates, developing with anti-CD4 monoclonals. The effect of dextran sulfate on cell surface expression of gp120 on H9 HIV-infected cells was quantitated by immunofluorescence and flow cytometry analysis.

Results. Anti-viral concentrations of dextran sulfate from 10ug/ml to 10 mg/ml were without significant effect on gp120-CD4 binding in both cell surface binding and ELISA assays. In contrast, HIV-1 chronically infected cells treated with dextran sulfate show marked decreases in gp120 surface staining, while CD3 remained constant.

Conclusion. Dextran sulfate does not directly block gp120-CD4 interactions. The rapid decrease in the amount of gp120 on the surface of infected cells suggests that the effects of dextran sulfate include the disruption of gp120 cell surface expression resulting in inhibition of syncytia formation.

C.636

Effect of amphotericin B and its methyl ester (AME) on human immunodeficiency virus infection and phagocytosis in macrophage cultures.

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The polyene antibiotic amphotericin B and its methylated derivative AME were tested in the continuous macrophage cell line U937 for activity against HIV-1. At non-cytotoxic dose levels the expression of HIV-1 was inhibited as shown by the measurement of p24 antigen expression with immunofluorescence. At 10 ug/ml there was complete inhibition of virus activity.

To examine the effect of these drugs on the enhancement of monocyte activity, phagocytosis was measured using primary murine adherent cells. Either Sheep red blood cells, naked or coated with antibody, or Listeria monocytogenes were added to the cultures which had been incubated in the presence of each drug at concentrations of 0.1, 1, amd 10 ug/ml. Tuftsin was added as a positive control. With both systems a significant increase in phagocytic activity was observed in the presence of AME and amphotericin B.

These studies suggest that both AME and amphotericin B could be very useful in the treatment of AIDS due to their inhibition of HIV-1 replication in T cells and macrophages.

These compounds may provide an alternative to AIDS therapies due to their multifunctional cellular activities.

C.637

Effect of the polyene macrolide group of antibiotics on inhibition of Human Immunodeficiency Virus (HIV) replication in cell culture.

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The polyene macrolide family of antibiotics contain several potent antifungal compounds and act by binding to a sterol moiety in the membrace of cells. They have recently been shown to be effective inhibitors of HIV in vitro due to the presence of high cholesterol-phospholipid ratio in this virus. These antibiotics are grouped according to the number of conjugated double bonds in their lipophilic hydrocarbon region. A number of these compounds including the triene, tetraene, pentaene, hexaene and hepaene groups were examined for their cytotoxicity and activity against HIV. Of the compounds tested amphotericin B, its methylated derivative AME, nystatin and the methylated derivative of candicidin proved to be effective inhibitors of HIV-1 replication at non-cytotoxic dose levels. The other compounds tested were not active against HIV at non-cytotoxic dose levels. The results show the importance of structural modification as a means of reducing toxicity of parent compounds in the search for effective compounds for the treatment of AIDS. Current studies show that derivatives of amphotericin B are much less toxic compared to the parent compound without any loss of antiviral activity.

C.638

MECHANISTIC ASSAYS FOR NATURAL PRODUCT ANTI-HIV ACTIVITY

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Objective. To develop rapid quantitative microassays to study the mechanisms of action of compounds with anti-HIV activity isolated from natural products.

Methods. Microculture procedures were utilized to define the various stages of HIV infection in T-lymphoblastoid cells. Quantitative readouts of these assays included several novel colorimetric, enzymatic, and fluorometric endpoints. Interactive laser cytometry was also used to study the effects of anti-HIV compounds at the single cell level.

Results. In addition to developing quantitative tetrazolium and fluorometric assays for the overall cytopathic effects of HIV, microculture assays measuring the effects of compounds on virus/target cell interactions, reverse transcriptase and infectious viral release were also developed. Quantitative measurement of viral antigen expression at the single cell level was accomplished using immunocytofluorometric methods. Antiviral compounds with known mechanisms of action and comparative methodologies were used for assay validation.

Conclusion. Several rapid quantitative assays have been developed and/or modified which allow for the large-scale mechanistic screening and/or analysis of AIDS antiviral activity of natural products. These investigations attempt to determine where in the life cycle of HIV natural products exert their activity. Understanding the mechanisms of action of antiviral compounds will aid in the selection and prioritization of novel anti-HIV agents for clinical trials.

C.639

A TRIAL OF AEROSOLIZED PENTAMIDINE (AP) FOR PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS.

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Objective. To investigate the safety of 100 and 150mg of AP delivered biweekly to individuals with AIDS, as well as the efficacy of these dosages in the prevention of PCP.
Methods. Eligible participants who had CDC-defined AIDS, were randomized to receive either 100 or 150mg of AP biweekly using the Marquest Respigard 2 nebulizer, in a 1-year trial fully enrolled by 6/28/88.
Results. 232 subjects were enrolled, for 198 of whom demographic data was available; 77.5% white, 5.3% black, 14.2% hispanic, 2.4% women. 63.9% had a prior episode of PCP (mean of 7.6 months before entry). 83.4% were gay/bisexual men, 6.5% intravenous drug users, 1.2% blood transfusion recipients. As of 1/89, 46% had discontinued participation (26.4% voluntary withdrawal, 35.8% non-compliance, 12.3% intercurrent illness, 25.5% death). AP was well tolerated with no significant side effects, and results of pulmonary function tests (FVC, DLCO, FEV_1) showed no deleterious effect after a mean of 4.6 months. The number of cases of proven PCP was far less than anticipated for this population.
Conclusion. AP (100 & 150mg biweekly) demonstrated no systemic or localized pulmonary toxicity. The recurrance rate of PCP in those who had experienced a prior episode appeared to be considerably lower than that anticipated for 2nd episode cases.

C.640

A CRITIQUE OF THE U.S. GOVERNMENT AIDS CLINICAL TRIAL PROGRAM

Long,Iris; Kirschenbaum, D.; and Huff, R. AIDS Coalition to Unleash Power, New York, New York, USA.

Objective. To evaluate accessibility of experimental treatments in the AIDS Clinical Trial Group (ACTG) Program to HIV-infected people.
Methods. In January 1989, this program had enrolled over 5,700 subjects in trials at 35 sites and 11 pediatric centers. Government documents related to these trials were reviewed periodically.
Results. There were 24 agents under study and 45 trials open. Twelve trials were closed and 2 completed. There were 12 AZT trials in which 4,625 subjects (80% of total program enrollment) were enrolled. AZT was being tested at many different stages of the disease. There were also 16 trials of AZT in combination with other drugs, with a total program enrollment of 7%. Antivirals other than AZT were in 12 preliminary Phase I or pharmokinetic trias and had enrolled 249 subjects (4% of total program enrollment). Enrollment by sex: Male 94.2%, female 5.8%. Enrollment by race: white 82.5%, black 6.9% and hispanic 8.9%. Enrollment by IV drug use history: never used 88.3%, previously used 11.03% and currently using 0.3%.
Conclusion. The main drug tested in the program is AZT alone or in combination. Access to trials testing other antivirals besides AZT or in combination with AZT is very limited. Women, people of color, children hemophiliacs and prisoners are not represented to the extent that they are HIV-infected. All recently diagnosed people with AIDS have few clinical trial options.

C.641

SPECIFIC INTERACTION OF AURINTRICARBOXYLIC ACID WITH THE HIV/CD4 RECEPTOR

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Considering the essential role of the CD4 receptor in the replicative cycle of HIV, it would seem important to find appropriate marker molecules that specifically interact with the CD4 receptor and thereby block HIV attachment to the cells.

$CD4^+$ cells (MT4, U-937, peripheral blood lymphocytes and monocytes) were incubated in the presence or absence of the test compounds, stained with various monoclonal antibodies (mABs), washed, fixed and examined by flow cytometry. To investigate virus-cell binding, MT4 cells were exposed to radiolabeled HIV-1 virions in the presence or absence of the test compounds.

The triphenylmethane derivative aurintricarboxylic acid (ATA), but not aurin, selectively prevented the binding of OKT4A/Leu3a mABs, and, to a lesser extent, OKT4 mABs to the CD4 receptor of all four cell types at a concentration of 10 µM. The effect was rapid (1 minute), dose-dependent and reversible. It could be neutralized by serum. ATA also prevented the attachment of radiolabeled HIV-1 virions to MT-4 cells, presumably as the result of its specific binding to the CD4 receptor.

These unusual properties of a small molecule of non-immunological origin may have important implications for the study of CD4, HIV, AIDS pathogenesis, and, possibly, therapy and prophylaxis.

C.642

Biologie moléculaire
Molecular Biology

C.643

VARIABILITE DES SEQUENCES DU VIRUS DU SIDA

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Objectif : La variabilité génétique du virus du SIDA peut être utilisée comme un outil d'analyse des protéines virales, justifiant donc une analyse quantitative détaillée. L'objectif de ce travail est, après avoir conclu statistiquement à la non-homogénéité du taux de substitution par site, de caractériser dans les séquences différents ensembles de régions de taux de substitution proche. Les données utilisées sont les séquences publiées de la protéine de l'enveloppe.
Methodes : A partir de l'alignement multiple des séquences HIV-1, HIV-2 et SIV, on construit d'abord une séquence consensus avec les acides aminés les plus fréquents à chaque site; on calcule ensuite le taux de substitutions par rapport au consensus le long de la séquence, ceci constituant la fonction de variabilité. Un ensemble de tests statistiques est effectué sur cette fonction afin de vérifier l'existence de régions homogènes.
Resultats : L'analyse statistique a permis de classer l'ensemble des régions en trois groupes de variabilité et de composition nucléotidique (en position 1 des codons) différentes.

Régions		hyper variable	variable	conservée	global
Longueur en Ac.Am.		33	336	449	818
Longueur (%)		4.0	41.9	54.7	100
Taux moyen (%) de substitutions par site		63	18	6	13
Taux en	bases A, G	55.2 - 33.7	40.0- 27.1	33.3 - 28.5	36.7 - 28.0
	bases T, C	8.3 - 2.8	18.7 -15.0	19.3 - 18.9	18.6 - 16.7

Le découpage de la séquence en régions ne se révèle significatif que pour des tailles inférieures à 15 résidus.
Conclusion : L'analyse des séquences à l'aide d'une telle partition constitue une étape nécessaire qui peut être discutée en termes de relation structure-fonction

C.644

C.645 DIFFERENCE IN LONG TERMINAL REPEAT ACTIVITY OF TWO HUMAN IMMUNODEFICIENCY VIRUS-1 VARIANTS FROM THE SAME PATIENT

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Objective. To compare transcriptional activity of long terminal repeats (LTR) of different HIV-1 variants.
Methods. LTR activity was analyzed by transient chloramphenicol acetyltransferase expression assay or by measuring production of p24 protein.
Results. Two HIV-1 variants, derived from a single parental isolate and termed N1T-E and N1T-A, differ substantially in their ability to replicate in CD4-positive cells. We show that the LTR of the better-replicating N1T-E virus has a 3-5 fold higher capacity than N1T-A LTR to direct gene expression in T cells. The higher activity of N1T-E LTR is due to a combined effect of two mutations: i) a point mutation in position -94 (relative to the CAP site), which is located between the two subunits of HIV-1 enhancer; ii) a duplication of 24 base pairs in positions -128 to -152, which has not been known to be involved in any regulatory function. Presence of these mutations increases the basal level of the LTR-driven gene expression and does not influence the degree of induction caused by the viral tat gene product or by cell activation.
Conclusion. HIV-1 LTR is one of the sites which may determine functional heterogeneity of HIV-1.

C.646 DELAYED & SLOW EXPRESSION OF HIV-1 RNA & tat PROTEIN DURING INFECTION WITH A NON-CYTOPATHIC HIV-1 VIRUS

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Objective: To study the mechanism of infection with a non-cytopathic isolate of HIV-1.
Methods: The non-cytopathic and cytopathic HIV-1 isolates N1T-E and N1T-A, respectively, were obtained from the virus-producer CEM/HIV-1/N1T cell line by molecular cloning. Virus entry was measured as a function of the virus-cell fusion by the membrane fluorescence dequenching assay. Viral RNA was detected in crude cell lysates with ^{32}P-RNA probe from the pol gene. tat and rev proteins, and LTR functions, were tested by CAT assay.
Results: N1T-E and N1T-A entered CD4-positive target cells with equal efficiency by virus-cell fusion. The expression of N1T-E genome was delayed and characterized by slow kinetics, resulting in low levels of N1T-E RNA, structural proteins, and tat protein during the first 7-10 days after virus entry. In contrast, cells infected with the same dose of the cytopathic N1T-A virus began to express high levels of HIV-1 RNA structural proteins and tat protein activity within 48 hours of infection; the expression peaked on day 5, followed by complete cell lysis. Both N1T-E and N1T-A viruses replicated well in chronically-infected cells.
Conclusion: Our results show that slow kinetics of HIV-1 expression during early stages after virus entry is an important determinant in a non-cytopathic infection.

C.647 EXPRESSION OF gag PROTEINS OF HUMAN IMMUNODEFICIENCY VIRUS USING RECOMBINANT ADENOVIRUS VECTORS

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To develop Ad4-HIV recombinant adenovirus type 4 vaccine candidates, the gag-pol gene of Human Immunodeficiency Virus was inserted into the Ad4 E3 region. In attempts to generate a new late transcription family, an oligomer which contained 32 bp of the splice acceptor from the L5 transcription family was inserted upstream of the gag-pol gene followed by a large E3 deletion and an intact E3B polyadenylation signal. The recombinant adenovirus, WyAd4FSACHgag synthesized gag p55 protein both early and late during infection. Although the protease gene was intact, no protease activity was detectable. The expression of the gag proteins was approximately 50X lower than expression of the hepatitis B virus envelope proteins using Ad4 E3-based vectors. Recent reports suggest that the expression of the gag-pol proteins is positively regulated by the presence of rev. The mechanism will be discussed.

C.648 PURIFICATION OF RECOMBINANT HIV PROTEINS BY ISOELECTRIC FOCUSING.

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A preparative isoelectric focusing (IEF) method using a commercially available apparatus was applied to the purification of recombinant HIV proteins expressed in E. coli. Proteins representing env, gag and pol domains were extracted from inclusion bodies and initially purified through varying sequences of ion-exchange and molecular sieving chromatography. Proteins obtained from the primary purification were desalted and subjected to isoelectric focusing separation. Appropriately solubilized proteins in the presence of various non-ionic surfactants and ampholytes were focused and concentrated at their isoelectric points (pI). Proteins were harvested in fractions after reaching equilibrium. Each fraction was analyzed electrophoretically for purity and further identified by western blot using specific monoclonal antibodies. The results of ELISA testing for HIV antibodies using the IEF proteins showed significantly increased activity and specificity. Our work shows that IEF methodology can yield significant quantities of effectively purified recombinant proteins in a simple, efficient and cost effective process.

C.649 CONSTRUCTION OF HIV-1 INTER-ISOLATE RECOMBINANTS

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Objective. Construction of inter-isolate recombinant HIV-1 viruses using molecularly cloned DNA from viruses with distinct biological properties was undertaken to identify the genes determining those specific biological properties.
Methods. The HIV-1 isolates SF-2 and SF-33 differ biologically in their ability to form plaques in the MT-4 cell line (possibly related to their cytopathicity) and their host range. The SF-2 isolate replicates in peripheral blood lymphocytes and CD4+ established T-cell lines such as HUT 78 and CEM, whereas the SF-33 isolate additionally replicates in human and baboon peripheral mononuclear cells as well as human fibroblasts such as HOS. By making constructs exchanging specific regions between the two molecularly cloned HIV-1 genomes, it should be possible to follow the biologic characteristics. The construction series was transfected into cells and infectious virus was rescued from all combinations for comparison studies.
Results. Biologic assays performed on the recombinant viruses indicate that plaquing in MT-4 cells and cytopathicity segregate with the env-3'orf region of the genome. Host range specificity is being examined.
Conclusion. The env-3'orf region of the HIV genome appears to be directly responsible for the cytopathicity characteristic of the isolate.

C.650 NO PRIMARY DETECTION OF HIV AMPLIFIED DNA SEQUENCES IN URINE SEDIMENTS OF SEROPOSITIVE INDIVIDUALS.

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** Institute of "Patologia Speciale Medica" - University of Verona -Italy

Objective. To validate the data on urine infectivity in seropositive individuals, searching HIV DNA by "polymerase chain reaction" (PCR) technique in their urine sediments.
Methods. We collected 50 ml urine and 20 ml peripheral blood from five HIV seropositive drug addicts. The cell pellet was resuspended in 500 ul water and boiled for 10 min. Cell debris were eliminated by centrifugation and the clear supernatants were directly used for the PCR. Primers pair from the gag region of the HIV genome were used to achieve maximum sensitivity of provirus detection. The reaction was carried out, for 30 cycles, in 1x Taq DNA polymerase buffer, 20 nmol dNTP mix, 50 pmol of each oligonucleotide primer made up to 100 ul with distilled water and 5.0 U of Taq polymerase. Control reactions were run with two other primers which amplified the polymorphic region of the CS.7 probe, a marker tightly linked to the Cystic Fibrosis gene. The amplified viral DNA was detected on a dot-blot, with a P32-labeled DNA probe. In the case of the CS7 control amplification, the DNA fragments were visualized after gel electrophoresis.
Results. HIV sequences were detected in peripheral blood specimens from seropositive persons, but not in their urine. Control seronegative samples proved, as expected, negative both in the blood and urine samples. On the contrary, positive direct DNA amplification of the CS.7 region was obtained from each sample of the urine, confirming the feasibility of this physiological liquid as a source of material for PCR analysis.
Conclusions. The absence of proviral amplified sequencies in all urine sediments, in the presence of HIV amplification in the blood, and of CS.7 amplification in the urine, is in accord with the report of the very low probability of viral presence in the urine, and with the lack of epidemiological evidence of infection through this body fluid. Our results confirm the potential utility of the PCR technique in complementing or replacing virus isolation procedures as a routine means of determining the presence of HIV in blood cells.

C.651

HIV/STD-CONTAMINATED HUMAN SPERM MOTILITY; DIAGNOSIS AND "EXPERIMENTAL ISOLATION OF SPERM USING "SWIM UP" TECHNIQUE IN WANG'S TUBE AND COMPUTERIZED IMAGE ANALYSIS

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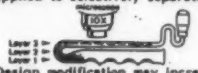
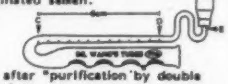
The human semen contains high titers of HIV/STD's. Little is known about the mechanisms of the life cycle of HIV in semen heterosexual transmission and its role in HIV particles, released from infected lymphocytes in the semen, blinds randomly is seminal plasma in HIV, attached to specific "domains" on the surface membrane of sperm, can penetrate specific segments of sperm head/midpiece computerized image analysis of sperm motility patterns may lead to early identification of HIV-STD's contaminated semen. HIV virons are attached to sperm surfaces, the physiological integrity of the membranes of the acrosome/mitochondrial sheath, are damaged leading to significant change in sperm motility patterns. Based on swim up concept, Wang's tube; originally designed to separate highly motile sperm for clinical use in artificial insemination and IVF, is applied to selectively separate HIV/STD's contaminated semen.





Design modification may increase sperm numbers after "purification by double assurance" during sperm migration within the device.

C.652

MOLECULAR ANDROLOGY AND HIV HETEROSEXUAL TRANSMISSION: AN OVERVIEW

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"HIV reservoirs" in serpositive people seem to include: a) the epithelium of testis/epididymis, colorectum; b) monocytes/macrophages/endothelial cells of the uterine cervix; c) macrophages, antibody-producing B cells, endothelial cells of blood vessels, neuronal and non-neuronal brain cells. There are remarkable variations in HIV infectivity rate: some couples may be infected after 10 - 20 sexual contacts, whereas others can resist infection after thousands of sexual encounters. In asymptomatic seropositive healthy and HIV-carrier men, the titers of HIV in the semen is higher than most of other body fluids. Monocytes/macrophages and CD_8/T lymphocytes concentration and reverse transcriptase activity in semen are very variable. The molecular mechanisms of HIV-heterosexual transmission and the rate of infectivity/susceptibility have been evaluated in the semen using sensitive techniques such as immunofluorescent microscopy, TEM/SEM/and immunoelectron microscopy, flow cytometry, northern blot, reverse transciptase activity, and coculture/co infection of HIV from mononuclear cell fractions in seminal plasma. Monoclonal antibodies have been extensively applied to identify various antibody-binding sites on plasma membranes of mammalian spermatozoa. Various potential membrane barriers and different antigens patters include different segments of the acrosome post-acrosomal region, the midpiece, mitchondrial sheath.

C.653

ROLE OF HIV ENVELOPE GENE IN THE PATHOGENESIS OF HIV

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The role of HIV envelope gene in the pathogenesis of HIV was studied following two approaches. First portions of the envelope gene were mutagenized and their effect on the biological properties of HIV analyzed following the rescue of the virus from transfected cells. In a second approach, naturally occurring mutants of HIV which lack the cytopathic effects were characterized by molecular cloning, nucleotide sequence analysis and construction of recombinants between wild type proviral DNA and mutant proviral DNA. These studies indicate that mutations in multiple domains affect the cytopathic nature of HIV.

C.654

ALTERATION OF (2'-5')OLIGOADENYLATE METABOLISM AND RIBONUCLEASE L ACTIVITY IN H9 CELLS BY HIV

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Objective. To study the alteration of the 2',5'-oligoadenylate <(2'-5')A> metabolism in HIV-1-infected cells in relation to HIV production. Methods. Human T cells (H9), infected with HIV-1, have been used for the studies. Results. The synthesis of (2'-5')A was found to proceed in close association with the nuclear matrix. After HIV infection the (2'-5')A synthetase activity increased from 1.1 pmol (2'-5')A synthesized per 100 µg of nuclear matrix protein to 8.2 pmol at day 3 p. i. Then the activity dropped to the initial value. Simultaneously with the decrease of the (2'-5')A level the cells start to release HIV. At the time of maximum synthetase levels the (2'-5')A-activated Ribonuclease L (RNase L) activity strongly increased. Experimental evidence is provided revealing that RNase L degraded HIV transcripts. Conclusion. A correlation could be established between high levels of (2'-5')A and RNase L and a failure of the cells to release HIV. These results open a novel molecular pharmacologic approach on the level of (2'-5')A metabolism to screen in a rational way for new anti-HIV compounds. Refs.: Schröder *et al.*, Biol. Chem. Hoppe-Seyler 369, 985 (1988); Schröder *et al.*, J. Biol. Chem. 264, in press (1989). Supported by grants from the Bundesgesundheitsamt.

C.655

DIFFUSE INFILTRATIVE CD8 LYMPHOCYTOSIS IN HIV INFECTION IS ASSOCIATED WITH A PARTICULAR SUBTYPE OF HLA-DR5.

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Objective. A disorder characterized by circulating and diffuse infiltrative CD8 lymphocytosis (DILS), predominantly involving the lungs and salivary glands, has been associated with HLA-DR5 in HIV-infected individuals. We sought to determine the relative risk conferred by HLA-DR5 to developing DILS, and to define the particular allele associated with this host immune response.
Methods. HLA typing was performed on patients with DILS and a control black population. HLA-DR5 subtype characterization was performed in three patients, using the polymerase chain reaction to obtain DNA sequence analysis of DRβ1 chains.
Results. HLA typing of nine black men with DILS revealed all (9/9) to be DR5. The frequency of HLA-DR5 in black control populations has been reported to be approximately 20-30%; DR5 was present in 33% of our local New York black control population. Thus, in black individuals with HIV infection, HLA DR5 confers an estimated relative risk for DILS of 35 ($p=0.001$). Four different subtypes of HLA-DR5 have been defined by mixed lymphocyte culture and DNA sequence analysis. One of these, designated JVM, is characterized by distinctive amino acid substitutions at positions 67 (Phe→Ile), 71 (Arg→Glu) and 86 (Gly→Val), in the third hypervariable region of the DRβ1 chain. This allele is present in approximately one third of all blacks typed serologically as DR5 (A.H. Johnson, unpublished results). All three patients that have been analyzed to date contained the identical JVM sequence in the third hypervariable region.
Conclusion. The data indicate that a distinct MHC class II allele, DR5 JVM, is associated with susceptibility to DILS in individuals infected with HIV. Furthermore, specific sequence polymorphisms in the third hypervariable region of the DRβ1 chain, which form the α helical rim of the MHC class II molecule, appear to be responsible for this effect. One interpretation of these findings is that a specific MHC-restricted immune recognition event is able to modify the host immune response in HIV infection.

C.656

SYNTHESIS, PROCESSING AND SECRETION OF AN IMMUNODOMINANT EPITOPE OF THE GP41 OF HIV EXPRESSED IN YEAST.

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Aim. We describe a very efficient method for the production of a glycosylated peptide which is an immunodominant epitope in the gp41 of HIV.
Method. We used a new expression vector pSE-X which allows the synthesis and secretion of foreign gene products in *S. Cerevisiae*. The foreign DNA is inserted downstream the leader sequence of the mating pheromone α-factor. The secreted peptide is processed through a similar way to that of the α-factor (cleavage at the first KR site by the endoprotease KEX2 followed by removal of $(EA)_2$ by STE13 to generate the N-terminal matured peptide). N- or O-glycosylation may occur when potential sites are present in the sequence of the peptide.
Results. The HIV1 gene fragment (nucl.7573-7730) we inserted in pSE-X encoded for a peptide (51 a.a) containing the major viral epitope (WGCSG-KLICT) of the gp41 currently mapped as well as potential glycosylation sites. Time-course of the secretion in culture medium revealed an optimal production at 30h.(overall yield ≈ 200nmol/l). Western-blot, protein microsequencing and RIA analysis showed an heterogeneity of secreted recombinant peptide, probably due to different post-translational modifications. In ELISA assays, 1 µl/well of crude supernatant is sufficient for detection by monoclonal antibodies or sera from HIV infected individuals.
Conclusion. Recombinant (glyco)peptides produced by this system should be considered as antigens of interest usable in ELISA diagnostic tests and if strongly immunogen, in the development of vaccines.

C.657

C.658

A RAPID AND SENSITIVE MICROASSAY TO DETECT HIV-LTR ACTIVITY IN HUMAN CELL LINES USING LUCIFERASE LUMINESCENCE

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Objective. To develop a rapid, sensitive and unexpensive microassay that allow study of transactivator or inhibitor factor effects on HIV promoter.
Methods. Plasmids were constructed with the reporter gene firefly luciferase under the control of different versions of HIV-LTR. These plasmids were transfected in different cell lines: lymphoid, monocyte/macrophage and various adherent cell lines, using either DEAE-Dextran or Calcium Phosphate methods. These plasmids were also cotransfected with a vector expressing the autologous transactivator Tat-3 gene driven by the CMV immediate early promoter/enhancer. Assays were done in quadruplicates using 96 well microplates. After 24 or 48 hours incubation, cell viability was monitored by the MTT absorbance assay, and luciferase activity was measured in cell extracts as described elsewhere. Luciferase activity index was defined using the formula: [Mean(sample luciferase activity)-Mean (mock luciferase activity)]/Mean(sample MTT absorbance assay).
Results. For the different cell lines the following parameters were studied : cell concentration, plasmid amount, incubation time. Optimal conditions were obtained with 2.10^5 cells and 10 to 50 ng of plasmid(s), 2.10^4 cells and 5 to 10 ng of plasmid(s) in 250 µl culture medium per microwell, for adherent and non adherent cell lines respectively. Fold amplifications (ratio: transactivated LTR activity/basal LTR activity) were in the same order of magnitude as determined in a classical CAT assay, using 5 µg of each plasmid (LTR-CAT, CMV-Tat) for 15 millions cells.
Conclusion. Our microassay system allows determination of LTR driven luciferase activity using 100 to 1000 time less plasmids, 75 to 100 time less cells than classical CAT assay . Results can be obtained within 24 h incubation, without use of radiolabelled molecule. This method appears to be usefull for the study of the effects of antiviral drugs or immunological signals on the functionning of the HIV-LTR.

C.659

SEQUENCE VARIATION WITHIN AND BETWEEN HIV-INFECTED PATIENTS

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In early 1984 33 haemophiliac patients were treated with a batch of a factor VIII subsequently shown to have been contaminated with HIV-1; 18 of these patients have since seroconverted. There is good evidence that these patients were infected only from this source. These patients form a useful set for the quantitation of the rates of sequence change in HIV.

Lymphocyte DNA was prepared from early isolation material or buffy coats from several patients in the cohort and amplified by PCR. Several clones were made from each PCR product and sequenced. Amplifications of the env, gag and gag-pol junction region, were made. No variation has been seen at the putative ribosomal frame shift heptamer in the gag-pol junction DNA (Jacks et al., Cell 55: 447-58).

Estimates have been made both of the sequence divergence between patients and of the divergence between sequences within a single sample. The observed average inter-patient nucleotide distance of 0.07 is not significantly higher than the observed average intra-patient distance of 0.04. These distances agree well with the estimated nucleotide divergences from restriction enzyme mapping of other patients (Saag et al., Nature 334: 441-4).

C.660

HIV2 IDENTIFICATION THROUGH PCR.

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Objective. 1) To detect HIV2 DNA sequences in uncultured PBL from infected subjects. 2) To analyze the genetic variability of different HIV2 isolates.
Patients. 12 subjects with serological results clearly consistent with HIV2 infection. For 10/12 both PBL and cell cultures and for 2/12 only cell culture was available.
Methods. PCR with 40 cycles and 4 sets of primers (LTR, Gag, Pol, Env). Cloning of amplified products and sequencing.
Results. HIV2 DNA sequences were identified in 10/12 subjects including 8/10 PBL. In PBL samples only 2/8 scored positive with all primers tested while 6/8 scored positive with only 1-3 sets of primers.
When results with PBL and cell cultures were compared, the overall results were identical although cell culture samples scored positive for more sets of primers than PBL.
Conclusions. PCR can be used for HIV2 identification. Combination of several sets of primers appear critical to obtain reliable results. Sequence analysis of the amplified products is ongoing for analysis of genetic variability.

C.661

C.662

AUTOMATIZED FLUOROMETRIC SCREENING ASSAY FOR HIV-1 ASPARTYL PROTEASE INHIBITORS

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Objective. To devise a fluorometric assay of HIV protease which allows automated random screening of inhibitors.
Methods. HIV-1 aspartyl protease was expressed to high levels in *E. coli* using a T7 expression system (Rosenberg *et al.* 1987). The fluorometric assay was based an analogous renin assay (Murakami *et al.* 1981).
Results. About 50% of insoluble proteins was composed of aggregated protease. Subsequent renaturation and purification yielded a homogeneous enzyme able to cleave various heptapeptidic substrates *in vitro*. with a K_m around 2.5 mM. We used the synthetic intramolecularly quenched fluorogenic substrate Suc-TLNFPIS-4MCA (the heptapeptide TLNFPIS which encompasses the protease/reverse transcriptase junction is coupled to the fluorophore 7-amino-4-methylcoumarin and blocked at the NH_2-terminus). The enzyme cleaves this substrate between Phe and Pro, conditions were optimized for liberation of 7AMC from the generated PIS-4MCA. 7AMC was monitored with a microplate fluorescence scanner.
Conclusion. The known aspartyl protease inhibitor pepstatin A consistently gave $K_i = 2.10^{-6}$ M. Other synthetic and natural compounds are currently being tested.

C.663

EPITOPE MAPPING OF THE HUMAN IMMUNODEFICIENCY VIRUS gag GENE PRODUCTS p24 AND p26 WITH MURINE MONOCLONAL ANTIBODIES.

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Objective. To map immunogenic domains of HIV-1 p24 and HIV-2 p26 using murine monoclonal antibodies and to define epitopes conserved between the two proteins.
Methods. Overlapping synthetic and recombinant peptides of p24 were prepared and tested for reactivity with each monoclonal antibody (Mab) using ELISA and Western blotting techniques.
Results. Sixteen murine monoclonal antibodies reactive against native viral p24 were also reactive with a full-length recombinant clone of p24 generated from a cDNA library of HIV-1$_{RF}$. The Mab map within four discrete ranges along the 230 amino acid length of p24:

Map Group:	Amino acid residues (within gag open reading frame)
A	264-344
B	345-363
C	143-209
D	133-142

In addition, two of the Mab are cross-reactive with HIV-2 p26. Three of the Mab have proven useful in a sandwich ELISA for the detection of p24 and p26 in sera/plasma from infected patients and cell culture supernatants.
Conclusion. A large variety of epitope specificities are represented by the Mab and this has proven useful for the development of an in vitro assay.

C.664

HIV INFECTION OF THE GASTROINTESTINAL TRACT: COMPARISON OF THE SENSITIVITIES OF HYBRIDIZATION AND IMMUNOASSAY

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Objectives. To use hybridization and immunoassay for detecting evidence of HIV in rectal mucosa; to compare the results with histopathologic features in the tissues.
Methods. Rectal biopsies from 25 HIV seropositive subjects (19 AIDS, 6 ARC) were examined by RNA in situ hybridization, polymerase chain reaction (PCR), a quantitative p24 ELISA, and p24 immunohistologic stains. Coded sections were examined for specific histologic features.
Results. Positive results were obtained by in situ hybridization in 24%, by PCR in 70%, by quantitative p24 Elisa in 73%, and by p24 immunoperoxidase stains in 80%. Only one AIDS patient was negative by all methods used. In situ RNA hybridization was demonstrated only in lamina propria lymphocytes and macrophages. By immunoperoxidase, p24 antigen could be detected in lamina propria lymphocytes and macrophages in 64% of cases. Antigen also could be detected in epithelial cells in 40% and intraepithelial lymphocytes in 24%. There were no correlations between the presence of HIV nucleic acids or tissue p24 content and specific histopathologic features.
Conclusions. Evidence of HIV in rectal mucosa is common. Of the methods used, in situ hybridization with viral RNA was the least sensitive technique for detecting virions. PCR was the most sensitive method for detecting viral genome. Methods to detect p24 antigen in mucosal homogenates or in tissue sections also are sensitive means of revealing evidence of HIV infection in the intestine.

C.665

ENZYME IMMUNOASSAY OF RECOMBINANT HIV PROTEINS.

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Three enzyme immunoassays were developed to specifically quantitate 6 recombinant Type 1 HIV proteins in support of our development of ASQ-HIV assay for antibody to HIV.
- Using a direct solid phase sandwich technique, antigen under study was precoated in microtiter plate wells and reacted with specific mouse monoclonal antibody (Mab). After incubating in turn with rabbit anti-mouse alk. phos. conjugate and pNPP substrate, antigen was quantitated photometrically at 410 nm.
- In the second method, soluble antigen was studied using a competitive sandwich technique. This assay used precoated control antigens to react simultaneously with antigen specific Mab and the soluble antigen under study. Competition between soluble and bound antigen for Mab generated signal which was inversely correlated with concentration of soluble antigen.
- Finally, a more complex solid phase direct sandwich method was developed which featured the use of 1) avidin/biotin enhancement; 2) Mab to HIV proteins of both G1 and G2 subtypes and 3) rabbit, alkaline phosphatase conjugated antibody to the mouse monoclonal subtypes. The competitive assay was needed to speed analysis by alleviating the need to precoat plates with the antigens under test. The multistep avidin/biotin technique was employed when competitive displacement curves were difficult to obtain.

C.666

PROTEOLYTIC CLEAVAGE OF THE 66-Kd FORM OF THE HIV-1 REVERSE TRANSCRIPTASE.

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Objective. We wished to test the ability of viral and non-viral proteases to convert purified 66-Kd reverse transcriptase (RT) to the 51-Kd form.
Methods. The 66-Kd form of HIV-1 RT and the viral protease were separately purified to homogeneity from two recombinant strains of *E. coli*. Proteolytic cleavage sites on HIV-1 RT were mapped using a battery of monoclonal antibodies that recognize known positions in HIV-1 RT.
Results. Using a viral protease produced in *E. coli* we have been able to reproduce the specific conversion of the 66-Kd form to the 51-Kd form in a reaction that contains only HIV-1 RT and the protease. However, this poses the question of whether the specificity of cleavage resides in the protease or in the structure of the properly folded 66-Kd form of the RT. We have found that certain other proteases produce cleavage products closely related to the 51-Kd protein produced by the viral protease.
Conclusions. Of the tested proteases, the viral protease most closely reproduces the cleavage event seen in virions; however, unrelated proteases make similar cleavages suggesting that the structure of the 66-Kd form of the RT plays a significant role in defining the the site of protease cleavage.

C.667

STUDIES ON THE MECHANISM OF ENHANCEMENT OF HIV-ENVELOPE (env) EXPRESSION BY HIV-rev GENE USING ADENOVIRAL EXPRESSION VECTOR SYSTEM

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The enhanced expression (30-70 fold) of HIV-env gene in human cell line, by co-infection of Adenovirus recombinants (Ad7-env and Ad7-rev) is a good vector system to explore the direct mechanism mediated by HIV-rev gene, since no other HIV-proviral gene(s) are present in these vectors. By comparing the steady state levels of mRNAs isolated from Ad7-env and also after co-infection with Ad7-rev, revealed that: 1) the env-specific mRNA(s) present in the cytoplasmic fraction after the co-infection with Ad7-rev, were qualitatively and quantitatively different from that in Ad7-env recombinant; 2) however, in the nuclear fraction of the above experiment, the env-mRNA(s) showed only a qualitative difference. Addition of Actinmycin D, 20 hr post-infection with Ad7-env for 1- 6 hr prior to mRNA extraction, resulted in a significant reduction in the cytoplasmic env-mRNA(s). In a similar experiment, but in presence of rev, there was no decrease in the cytoplasmic env-mRNA(s). Using these replicating Adenoviral recombinants in understanding the direct interaction of rev on env-mRNA processing will be discussed.

C.668

HIGH LEVEL EXPRESSION OF THE ENVELOPE GLYCOPROTEINS OF THE HUMAN IMMUNODEFICIENCY VIRUS (HIV) USING RECOMBINANT ADENOVIRUS VECTORS

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Recombinant adenoviruses containing either the envelope (env) or the rev (art/trs) genes of the human immunodeficiency virus type 1 (HIV) were constructed by inserting the genes into a cassette which contained adenovirus major late promoter, tripartite leader containing intervening sequence and the polyA. The cassette was then inserted between the E4 and ITR region on adenovirus genome. A549 cells infected with the env recombinant virus produced the envelope glycoproteins gp160, gp120, and gp41. HIV envelope gene expression made by the env-adenovirus recombinant can be greatly enhanced (30-70 fold) in A549 cells that were simultaneously infected with the rev-adenovirus recombinant as measured by ELISA, western blotting, and immunoperoxidase staining of infected cells. A double recombinant adenovirus which contains both rev and env genes was also constructed by inserting the rev gene in the deleted E3 region and the env gene in the terminal cassette. This double recombinant virus expressed high levels of env antigen in A549 cells similar to that expressed by cells that were doubly infected with both the env and rev recombinant viruses.

C.669 HPLC PURIFICATION OF p24 ANTIGEN FROM HIV-1 AND HIV-2 LYSATES

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Objective: To develop HPLC methods for the preparative isolation of the major internal core protein, p24, from HIV-1 and HIV-2 viral lysates.
Methods: Doubly inactivated, gradient purified HIV-1 lysate was chromatographed on a weak anion-exchange HPLC column. Fractions were analyzed by a combination of Western Blot, SDS-PAGE, and antigen ELISA methods. The pooled active fractions were further fractionated via reverse-phase HPLC and samples were analyzed for p24 immunoreactivity. HIV-2 viral lysate was treated in a similar manner.
Results: Anion-exchange chromatography of HIV-1 viral lysate afforded a complex profile in which the major peak contained p24 activity. Analysis of the active fractions by reverse-phase HPLC demonstrated that two viral components were present. These were separated by direct injection of the anion-exchange eluant onto a preparative reverse-phase column. A single component had p24 immunoreactivity and was shown to be homogeneous by SDS-PAGE and Western Blot analyses. HIV-2 viral lysate was initially analyzed by the same HPLC sequence. Subsequent experiments demonstrated that it was possbile to isolate homogeneous HIV-2 p24 by reverse-phase HPLC alone.
Conclusion: HPLC is a fast and efficient technique for the purification of the major viral core proteins from HIV lysates. Problems associated with other techniques such as immunoaffinity chromatography are avoided.

C.670 MEASUREMENT OF HIV GENE FUNCTION IN NORMAL HUMAN MONOCYTES/MACROPHAGES BY TRANSFECTION.

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**Fairfield Hospital, Melbourne Australia.

Objective. To understand the function of individual HIV genes in normal human peripheral monocytes/macrophages.
Methods. Both adherent and non-adherent macrophages as well as human foreskin fibroblasts were transfected with the constitutive CAT (chloramphenicol acetyl transferase) expression vector RSV-CAT and HIV LTR-CAT by three different transfection assays: lipofectin (BRL, Bethesda, Maryland, USA), calcium phosphate and DEAE dextran. Cell lysates were then assayed for CAT activity.
Results. CAT activity was detected in cell lysates from adherent macrophages transfected with RSV-CAT using the lipofectin reagent. No CAT activity was detected in cell lysates from adherent macrophages transfected with RSV-CAT by calcium phosphate or DEAE-dextran. Cell lysates derived from non-adherent macrophages transfected with RSV-CAT by all three methods did not exhibit CAT activity. Cell lysates from human fibroblasts transfected with RSV-CAT by the three transfection procedures were all positive for CAT activity. The effects of cytokine treatment and cell injury on HIV-LTR activity will be presented.
Conclusion. Transfection of human monocytes/macrophages by lipofectin using the HIV LTR-CAT expression vector will permit us to further understand activation and replication of HIV in this important population.

C.671 EXPRESSION, PURIFICATION AND IMMUNOREACTIVITY OF $pr17^{gag}$ in E. COLI

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Plasmid pGag17, which specifies the expression in *E. coli* of the mature, unfused $pr17^{gag}$ protein was constructed by extending the gag coding sequence from the Pvu II site at nucleotide 692 of Ratner*et al.* (Nature, 316, 277, 1985) with a synthetic oligonucleotide linker which introduces a stop codon after the TYR codon at the p17-p24 junction of $pr55^{gag}$. In pGag17, the coding sequence corresponding to nucleotides 334 to 729 of the BH10 isolate of HIV-1 is under transcriptional and translational control of the lambda P_L promoter. *E. coli* induced with a temperature shift express $pr17^{gag}$ in soluble form at a level of 5% of total soluble protein. Purification of $pr17^{gag}$ was achieved by ammonium sulfate fractionation, size exclusion chromatography, cation exchange chromatography and reverse phase HPLC. The purified protein has a pI of 6.5 to 7.0 and yields the expected sequence by Edman degradation and carboxypeptidase Y digestion. Sera from normal, healthy sero-positive, ARC and AIDS donors react in ELISA and Western Blot with this $pr17^{gag}$.

C.672 COMPLETE SEQUENCE OF A HIV-1 ISOLATE DETERMINED FROM cDNA CLONES OF VIRAL RNA;

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Objective: Oligo dT primed cDNA cloning of HIV viral RNA, allows fast analysis of virus variation.
Methods : Supernatant virus from a continuous HIV-1 producing Molt 4 # 8 cell line was pelleted and the precipitate was dissolved in GuHCl solution and centrifuged through a CsCl cushion. The resulting RNA pellet was further purified by phenol extraction and used for oligo dT-primed cDNA synthesis. The resulting DNA was electrophoretically sized and cloned into a plasmid vector. Recombinants were identified using colony hybridization and the inserts were mapped on the HIV-1 genome by restriction analysis and by sequencing both ends and comparison with the BH10 isolate.
Results : Screening of the HIV-1 cDNA library with HIV-1 subgenomic fragments yielded about 20 % positive colonies the inserts of which were scattered over the HIV-genome. A combination of five clones selected from this library contained sequences which covered the entire HIV-1 genome. The abundance of cDNA clones with internal priming at A-rich sequences was striking, indicating preference even over priming at the 3'end. Analysis of several clones covering the same area will allow us to estimate the importance of the variation present in the genome of a virus produced by a continuous infected cell line.
Conclusion : cDNA cloning of HIV-1 viral RNA provides a rapid way to analyze the variability of HIV from a producing cell line.

C.673 CHRONIC ACTIVATION OF THE INOSITOL POLYPHOSPHATE PATHWAY IN HIV INFECTED H9 LYMPHOBLASTOID CELLS

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Objective. To examine the metabolism of inositol polyphosphates, together with associated calcium changes, in H9 lymphoblastoid cells chronically infected with Human Immunodeficiency Virus (HIV) following stimulation, in order to determine whether any changes found may explain the functional defects seen in these cells.
Methods. Infected and uninfected H9 cells were labelled to equilibrium with myo-$[2-^3H]$ inositol, washed and resuspended in Earles Balanced Salt Solution at 2×10^6/ml with 10mM lithium chloride and stimulated with PHA (2ug/ml) for 10, 30, 60 or 120 seconds. The reaction was terminated by the addition of iced trichloroacetic acid, the cell debris removed by centrifugation and the supernatants extracted into diethylether. The water soluble inositol polyphosphates were separated on a Dowex AG1-X8 formate form anion exchange resin column using the method of Berridge et al.,(Biochem. J. 212; 473-482 1983). Intracellular free calcium levels were determined by the method of Tsien and coworkers (J.Biol.Chem. 260; 3440-3450 1985) using the fluorescent calcium probe INDO-1.
Results. Both inositol trisphosphate, inositol tetrakisphosphate and intracellular free calcium levels were elevated in resting, HIV infected H9 cells. On stimulation the $InsP_3$ level fell while the $InsP_4$ level increased threefold and the calcium level remained unchanged. The uninfected H9 behaved as a normal T-cell, stimulation causing an increase in $InsP_3$ followed by an increase in $InsP_4$ with an associated elevation in calcium level, similar to findings in lymphocytes from patients.
Conclusion. Infection with HIV chronically activates the inositol polyphosphate metabolic pathway and so impairs signal transduction response to receptor mediated activation. This suggests a common pathway whereby HIV can interfere with cellular function.

C.674 HAS THE MAJOR ENVELOPE GLYCOPROTEIN OF HIV-1 A LECTIN -LIKE ACTIVITY ?

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Objective. To determine whether gp120/160 expresses carbohydrate binding properties and thus behaves as a lectin. Methods. The effects of various carbohydrates on the binding of HIV-1 or of gp120/160 to CD4+ CEM cells was investigated by indirect immunofluorescence with gp120-specific mouse mAbs or purified human IgG. Binding of 125I-labeled gp120/160 to various affinity matrices was also investigated. Results. β-D-galactosyl, α-D-mannosyl, β-D-glucosyl, β-D-N-acetylglucosaminyl,sialosyl derivatives were devoid of effects on the binding of HIV-1 or of gp120/160 to CEM cells. However, preincubation of HIV-1 or of gp120/160 with β-D-GlcNac47-BSA, 1-33 μM (a gift from D. Bladier) completely abolished the binding (n = 10) of mouse mAb 110-4 (recognizing sequence 303-323 of LAV BRU gp120), but not that of other antibodies specific for other epitopes. Binding of Mab 110-4 was not affected by β-D-Gal-23-BSA and was only slightly decreased by α-D-Man16-BSA. The fact that preincubating CEM cells with β-D-GlcNac47-BSA followed by washing prior to the addition of HIV-1, did not modify labeling with Mab 110-4 further demonstrates that this neoglycoprotein competed with fixation of mAb 110-4 to gp120/160 and did not interfere with gp120/160 binding to the cells. In addition gp120 /160 was able to bind β-D-GlcNac47-BSA Sepharose and this binding was significantly inhibited when gp120/160 was preincubated either with soluble β-D-GlcNac-BSA (10-30 μM) or with asialoagalactoorosomucoid (16 μM), whereas no inhibition occured with α-D-Man-BSA or with β-D-Gal-BSA. Conclusion. Gp 120/160 behaves thus, as a β-D-N acetylglucosaminyl binding protein. This property may be used by HIV to attach to cell membranes independently of CD4, and it may be one of the explanations that HIV can infect CD4-cells under some circumstances.

C.675

SELECTION OF PRIMERS OF MAXIMUM HOMOLOGY FOR THE DETECTION OF HUMAN IMMUNODEFFICIENCY VIRUS SEQUENCES USING THE POLYMERASE CHAIN REACTION.

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Most of the oligonucleotide primers which have been proposed for the detection of human immunodefficiency virus (HIV) sequences using the polymerase chain reaction (PCR) contain mismatched bases for several HIV strains. This is particularly true for african HIV-1 and HIV-2 strains. Depending on the prevalence of the mismatched strains the use of these primers in PCR of clinical specimens is likely to cause different proportions of false negative results. Our objective was to optimize the design of primers maximizing their degree of homology to all available HIV sequences. In particular we have been interested in designing a pair of primers suitable for the amplification of HIV-1 and HIV-2 sequences.

We developed and implemented algorithms and computer programs not depending on multiple sequence alignement for the detection of the longest regions of homology within groups of related sequences. These tools were then used to detect the longest regions of maximum homology among all complete sequences available for HIV strains.

Based on this information we identified and synthetized a pair of "universal" oligonucleotide primers which in reconstruction experiments have allowed the specific amplification of the HIV sequences flanked by the primers. Work is under way to test the use of this pair of primers for the detection of HIV sequences in clinical specimens.

C.676

USE OF A CASSETTE EXPRESSION VECTOR FOR THE EXPRESSION OF HUMAN IMMUNODEFFICIENCY VIRUS TYPE 1 gp160 IN MAMMALIAN CELLS.

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The surface glycoprotein of the human immunodefficiency virus (HIV-1) has already been expressed in vitro using different expression vectors. We have chosen the pORFEX cassette vector expression system which contains a powerful cytomegalovirus (CMV) promoter to express the entire gp160 in mammalian cells.

Our design required the excision of a Bbv II 2.9 Kbp fragment of HIV-1 DNA from plasmid pBH10R3. This fragment contains the entire open reading frame in the env region of the HIV-1 genome. The Bbv II enzyme cuts the molecule 5 bases before the first ATG in the env region of HIV-1 and 323 bases after the TAA stop codon in the same open reading frame. This 2.9 BbvII fragment was blunt ended by filling-in with Klenow polymerase and EcoR I linkers were added. The new EcoR I fragment was cloned into the EcoR I site in the polylinker of the pORFEX vector such that the first ATG in the open reading frame of the insert was in frame with the first ATG after the capping site of the CMV promoter.

Cells expressing the HIV-1 gp160 are being tested as target cells for immunocytolitic assays.

Acknowledgements. The authors wish to thank Dr. M. Harper (N.I.H, MD, USA) for making available the pBH10R3 construct, Dr. U. Bernard (Singapore University) for providing the pORFEX expression vector system, and Dr. N. I. Matvienko (Institute of Protein Research, Academy of Sciences of the U.S.S.R., Moscow Region) for his kind gift of restriction enzyme Bbv II.

C.677

SYNTHESIS AND PROCESSING OF HIV mRNA IN THE PRESENCE OF ANTIVIRAL AGENTS

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Objective. Several antiviral agents inhibit the replication of HIV *in vitro*. Ribavirin (RBV) has been shown to interfere with post-transcriptional processing in vaccinia. We examined effects of RBV in combination with other antiviral agents on the size and amount of RNA synthesized in infected cells. Methods. Cytoplasmic (HIV) RNA isolated from infected cells treated with RBV was analysed by northern blot using a ^{32}P labelled DNA env probe. Virus replication was assayed in cultured lymphocytes using the p24 antigen assay. Results. Previous data has shown that RBV treatment of HIV infected T cells suppresses viral protein synthesis and DNA replication (Crumpacker et al. Abs. 1st Int Conf AIDS 1985). Envelope proteins are suppressed by 70% in the presence of 20 ug/ml of RBV. An HIV env gene probe was used to measure the size and abundance of HIV cytoplasmic RNA isolated from infected cells synthesized in the presence of increasing concentrations of RBV. A marked decrease in the amount of 3.5 kb env RNA occurred with increasing concentrations of RBV. In addition, there was a dramatic increase in the 38S genomic RNA species in RBV treated cells as compared to non-treated cells. When ddA was used in conjunction with RBV, a similar decrease in env specific RNA occurred with only 20% the RBV concentration as when used alone. Conclusion. RBV and other drugs may result in altered amount and size of HIV RNA. Direct measurement of viral RNA is useful to study effects of antiviral agents. The combined effects of RBV and other anti-viral agents on transcription and translation of pol and env RNA species *in vitro*, are being studied to better understand the mechanism of action of these agents

C.678

C.679

A MOUSE MONOCLONAL ANTIBODY AGAINST THE REV-PROTEIN OF HIV-1

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The rev-protein of immunodeficiency viruses has an important function in structural gene expression. A β-gal-rev fusion-protein containing the aminoterminal part of β-galactosidase was synthesized in E. coli. It was used to raise a rev-specific immune response in mice. After fusion with the SP2/O cell line stable hybridoma clones were established. Clones were isolated that secreted monoclonal antibodies specifically recognizing the rev part of the fusionprotein. They were identified by ELISA and Western blot. Data demonstrating recognition of the eukaryotic protein and intracellular localisation will be presented.

C.680

CHARACTERIZATION OF AN HIV-1 POINT MUTANT BLOCKED IN ENVELOPE GLYCOPROTEIN CLEAVAGE

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The envelope proteins of retroviruses are derived from a polypeptide precursor protein by cleavage adjacent to a cluster of basic amino acids. Site specific mutagenesis was used to construct a mutant of the human immunodeficiency virus type 1 (HIV-1) in which the arginine residue at the carboxy terminus of the gp120 was changed to a threonine residue. This single substitution was sufficient to abolish all detectable cleavage of the gp160 envelope precursor polypeptide. Immunofluorescence assays showed that gp160 was transported to the surface of transfected CD4+ HeLa cells. No envelope proteins of known size could be detected in the media of cells transfected with the mutant virus, suggesting that functional virion release was impaired. Binding of the mutant gp160 to the CD4 receptor molecule was unimpaired. In spite of this and the presence of gp160 on the cell surface, neither growth of virus-transfected CD4+ HeLa cells nor cocultivation of transfected cos-1 cells with H9 cells resulted in significant syncytium formation. The data indicate that the carboxy terminal arginine residue of HIV-1 gp120 is necessary for envelope protein cleavage, and suggest that a lack of cleavage inhibits the virus life cycle at the steps of both virus release and membrane fusion.

C.681

COMPARISON OF REVERSE TRANCSRIPTASE OF HIV-1, HIV-2 AND SIV

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Objective. To compare the structural and biochemical properties of reverse transcriptase of HIV-1, HIV-2 and SIV.
Methods. An activity gel method was used allowing identification of the active components of reverse transcriptase on polyacrylamide gel, after electrophoresis under denaturing conditions.
Results. We have confirmed the presence of three active polypeptides of 165, 66 and 51 kDa in HIV-1 reverse transcriptase (F. Lori et al, AIDS Res. and Hum. Retrov. 4: 393, 1988). A similar three active band pattern was also observed for RT from HIV-2 (with sizes of 175, 75 and 62 kDa) and SIV (with sizes of 175, 70 and 59 kDa). The migration and the band intensity of the high and the low reverse transcriptase forms of HIV-2 and SIV appear to be closer than those of HIV-1.
Conclusion. In all three AIDS related retroviruses a high Mr putative precursor and two lower active peptides of reverse transcriptase are present. The structural properties of reverse transcriptase from HIV-2 and SIV are similar and tend to differ from those of HIV-1.

C.683

HIGH LEVEL EXPRESSION OF HIV PROTEASE IN *E. COLI*

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We have obtained high level expression of the HIV protease in *E. coli* using the trp promoter and a runaway vector. Upon induction of the runaway function to increase plasmid copy number, the protease production results in the accumulation of inclusion bodies. In a pBR322-derived vector, the expression level is greatly decreased. Fusion of the protease to its pro-sequence, to β-galactosidase, or to bovine growth hormone gave only low level accumulation of the product as the fusion form or the auto-processed form. Low level expression was also obtained by fusion of the protease to *E. coli* signal peptides to expression the protease by secretion.

To monitor expression and to test if the HIV protease made in *E. coli* is active *in vivo*, two truncations of the HIV gag protein containing parts of the p24 region were used as substrates. These gag truncations have been expressed to high levels using the trp promoter in a pBR322-derived vector. The sequence coding for protease was placed immediately downstream of the gag sequence in an operon fusion arrangement. Activity of the protease can be directly measured by its ability to cleave the gag protein into the product p24 which is detected by Western analysis.

Inclusion bodies containing HIV protease were dissolved in urea or guanidine-HCl. Upon dilution of the chaotropic agent, the protease is active on synthetic peptide substrates. For comparison, the *E. coli*-derived gag truncations are being tested as substrates.

C.685

C.682

BIOPHYSICAL CHARACTERIZATION OF REVERSE TRANSCRIPTASE(RT) FROM HIV

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Objective. In order to find conditions for the growth of single crystals suitable for x-ray structure analysis, various experimental techniques were applied to characterize the properties of RT in solution, especially with regard to dimerization equilibria. Methods and Results. Protein preparations from E.coli cultures carrying a plasmid with the full p66 sequence were analyzed, comparing pure p66 samples with p66-p51 mixtures. Analytical ultracentrifugation shows 2 species at 3.9S and 5.9S in a p66 solution. Chemical crosslinking with Dimethylsuberimidate indicates strong dimer-formation in p51-p66 mixtures, and weaker dimer-formation with more higher aggregates in pure p66 samples. FPLC runs on a size-exclusion column give one peak for p51-p66 samples and 2 clearly separated peaks for pure p66. Both peaks show high activity in a specific assay for reverse transcription activity, and yield a single band under denaturing conditions on PAGE with SDS. Fractions of each of these peaks give the corresponding single peak when reinjected within a few hours at room temperature. Conclusion. In solutions of pure p66 RT homodimers coexist with monomeric species in a slow equilibrium. Under similar conditions, mixtures of p51 and p66 form heterodimers with significantly stronger affinity.

C.684

A GENE FAMILY WITH HIV-LIKE POTENTIAL REGULATORY MOTIFS

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Objectives. To understand the molecular basis by which HIV establishes, maintains and escapes from, latency. To identify genes in T-lymphocytes which regulate, are regulated by, or are coregulated with HIV.
Methods. "Latent" peripheral blood lymphocytes in the G0 phase of the cell cycle were activated by culturing with lectin and cycloheximide for 2h. cDNA libraries enriched for G0/G1 switch (G0S) genes were screened by differential cDNA hybridization (Forsdyke, 1985; Biochem. Biophys. Res. Comm. 129, 619-625).
Results. Among the recombinants one, G0S19, is the first identified human homologue of the mouse "activation gene" family (MIP, JE, TCA3; Burd et al. 1988, Cell. Immunol. 115, 481-483) and is identical to LD78 (Obaru et al. 1986; J. Biochem. 99, 885-894). We have identified 3 genes in Lambda Charon 35 libraries which hybridize with G0S19 cDNA. Three of these have been restriction mapped and two sequenced. One has the identical sequence to the cDNA. Of particular interest are two sequences in the 3' non-coding region which are conserved in MIP: (i) TTTTTGTAATTTATTTT which differs only by a purine transition from a 3'HIV pol sequence and (ii) GGGACTCTTC which differs only by 2 pyrimidine transitions from the NFkB-binding HIV 5'enhancer.

Conclusion. We speculate that genes concerned with latency in HIV and in G0 lymphocytes are coregulated by similar transacting factors.
(Supported by the American Foundation for AIDS Research)

C.686

NEEDLE/SYRINGE EXCHANGE SCHEME BASED ON COMMUNITY PHARMACIES, TRONDHEIM, NORWAY

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Objective. To evaluate exchange scheme based on community pharmacies and local Aids clinic during 10 months trial period. Injection equipment could otherwise be purchased by ordinary sales from all pharmacies. Methods. All syringes exchanged or sold carries a label stressing the importance of sterile equipment and use of condoms together with an introduction to the scheme. No. of syringes sold or exchanged were recorded, questionnaires were presented to IVDA and pharmacy employees. Results. Total no. of syringes/needles showed no increase during the trial period, while the return rate increased to 19%. Pharmacies reported no conflicts, IVDA reported a positive attitude to the scheme, but showed no significant change in risk behaviour. No significant change in the incidens of HBV and HIV were reported. No syringes were returned to the Aids clinic. Conclusion. An exchange scheme based on community pharmacies were favoured by IVDA to specialised clinics run by HCW. Only marginal effect on the prevention of HIV and HBV transmission can be expected where syringes are already easily available.

C.687

HIGH LEVEL EXPRESSION IN *E. COLI* OF A TRUNCATED CD4 AND ITS PURIFICATION, REFOLDING AND ACTIVITY

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To develop a CD4 molecule as a potential therapeutic agent for the treatment of AIDS, we have produced a truncated sCD4 containing the N-terminal 183 amino acid residues of CD4 preceded by a methionine. The expression of this CD4-183 is in *E. coli* from a pBR322-based vector under the control of a trp promoter for transcription and a ribosome binding site rich in A and T bases for efficient translation initiation. High level expression results in the accumulation of CD4-183 as insoluble inclusion bodies, amounting to greater than 20% of total cell protein.

The aggregated, denatured product does not solubilize well under conditions effective with some other *E. coli*-derived recombinant proteins. Use of chaotropic agents at alkaline pH substantially enhances solubilization. The solubilized material can be renatured and purified with a CD4 monoclonal antibody affinity column followed by gel filtration chromatography. The purified CD4-183 is homogeneous in SDS-PAGE stained with silver, has the predicted amino acid composition, and has one N-terminal amino acid sequence, beginning with met-lys-lys-val--.

This purified CD4-183 appears to have the conformation and disulfide bridges for the native molecule, judged by its ability to bind to 2 CD4 monoclonal antibodies specific for domain 1 or 2 and to purified HIV gp120.

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C.690

IMMUNOREACTIVITY OF A RECOMBINANT POLYPEPTIDE CONSISTING OF THE AMINO HALF OF HTLV-1 p21E.

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Objective. To determine the immunoreactivity of recombinant polypeptide consisting of the amino half of HTLV-1 p21E.

Methods. A DNA clone was derived that codes for the amino-terminal 132 amino acids of the HTLV-1 p21E protein (307-313 and 331-420). The clone was expressed in *E. coli* using a vector containing the bacteriophage lambda pL promoter. The polypeptide expressed (CBre1) was purified to greater than 99% purity by a variety of chemical and chromatographic methods. The purified polypeptide was employed in a microwell indirect enzyme immunoassay (EIA). 175 samples from geographically diverse, high expected incidence groups were tested with this assay and with one or more of the commercially available EIAs, and some samples were tested by a commercial HTLV-1 blot and a gp46 Western blot.

Results.

		Commercial EIA	
		Pos[a]	Neg
CBre1 EIA	Pos	100	1[b]
	Neg	30[c]	44

[a] Positive by any one of three manufacturers.
[b] HTLV-1 blot positive
[c] 19 HTLV-1 blot negative or no p24
11 HTLV-1 blot not done, negative by gp46 blot

Conclusion. The p21E recombinant antigen reacted with only the clearly positive samples, which may make it useful as an HTLV-1 serological "confirmatory" test.

C.691

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CLONING AND EXPRESSION OF HIV-1 AND HIV-2 PROTEASES IN E. COLI

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Objective. To produce active recombinant HIV proteases for the rational design of specific HIV inhibitors.
Methods. A gene representing the region of the HIV-1 *pol* gene up to the start of reverse transcriptase was constructed using seven synthetic oligonucleotides. This region codes for the 11kDa viral protease and an additional 8kDa at the amino terminus. The synthetic gene was inserted into an expression vector behind the bacteriophage lambda pL promoter such that a 45kDa fusion protein was produced upon induction in E. coli cells. During expression, the HIV-1 protease faithfully processed itself away from the precursor. By amino acid sequencing, it was shown that the bacterially expressed protease had the correct amino terminus, and in Western blot analysis it was recognized by antisera raised against a synthetic peptide of the last 13 amino acid residues of native protease. A synthetic gene for HIV-2 protease was similarly cloned and expressed.
Results. Following induction, E. coli lysates of the HIV-1 protease expression system were mixed with lysates of an HIV-1 $Pr55^{gag}$ expression system and incubated at 37°C. The reaction mixture was electrophoresed on SDS/PAGE, Western blotted, and immunostained using monoclonal antibodies to p17 and p24. Faithful processing of the recombinant $Pr55^{gag}$ to p17 and p24 by the bacterially expressed HIV-1 protease was demonstrated. Both the protease and $Pr55^{gag}$ were purified from their respective bacterial expression systems. When incubated together and then electrophoresed on SDS/PAGE, bands apparently representing p15, p17 and p24 were observed by Coomassie staining. This assay has been used to identify inhibitors of the HIV-1 protease.
Conclusion. Recombinant HIV protease can be expressed in E. coli as fusion proteins which may be autoprocessed to produce active, full-length enzyme which faithfully processes a recombinant polyprotein substrate, $Pr55^{gag}$. Assays utilizing $Pr55^{gag}$ and synthetic peptide substrates are being employed to assess HIV protease inhibitors.

C.695

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CHARACTERIZATION OF A MOLECULAR SIVagm CLONE

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SIVagm is a lentivirus closely related morphologically and genetically to HIV. 40% of African Green Monkeys (AGM) in the wild are found to be seropositive without any signs of disease. We have isolated SIVagm from several naturally infected AGMs harbored in our colony at the Paul-Ehrlich-Institut, FRG.
Molecular cloning of SIVagm was performed by Eco RI digest of Hirt DNA obtained from infected Molt 4/8 cells. After ligation of single cut viral DNA into lambda-gtWES, positive clones were detected by hybridization with an HIV-1 derived gag-pol probe under conditions of low stringency.
The complete nucleotide sequence of a full length clone (pSIVMB1) will be presented. Biological activity was demonstrated by transfection of pSIVMB1 into Molt 4/8 cells and detection of RT activity and viral antigens in the cell supernatant. Infectivity was tested in vitro by cell free infection of Molt 4/8 and in vivo by seroconversion of AGM after inoculation with virus from the transfected cultures.
Reisolation and characterization of SIVagm from monkeys infected by cloned virus will provide us with a valuable model system for lentivirus infection in its natural host.

C.697

A CD4-IMMUNOGLOBULIN FUSION PROTEIN AS A CANDIDATE FOR AIDS THERAPY

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Objective: An new antibody-like molecule (CD4H23) containing the soluble part of the HIV receptor CD4 coupled to the constant part (Fc) of human IgG1 immunoglobulin was synthesized and tested as an anti-HIV reagent in vitro. The molecule may combine the specific binding properties of CD4 to the virus with functions of an antibody's Fc-part (long plasma half-life, complement and antibody dependent cell toxicity).
Methods: CD4H23 was expressed in BHK cells, purified by affinity chromatography on Protein A-Sepharose and tested for its ability to neutralize HIV and for its action on HIV infected T-cells.
Results: CD4H23 is a disulphide linked dimer with a subunit molecular weight of 80 KDa which binds to HIV gp120. In this fusion protein the binding of the human Fc-part to Protein A as well as to Fc-receptors is retained. When injected intravenously into mice and monkeys CD4H23 has a serum half-life of about 12 hours. The CD4H23 molecule blocked infection of T4-cells with HIV-1 and HIV-2 as determined by reverse transcriptase assays and microscopical cell fusion analysis for at least four weeks. H9 cell cultures containing 10 % virus producing cells were treated with CD4H23: infection of further cells was significantly reduced, giant cells disappeared and reverse transcriptase activity remained low or became negative in the presence of complement.

C.698

SPORULATION PROMOTER *SPO*VG CONTROLED EXPRESSION OF P41 GENE OF HIV-1 IN *BACILLUS MEGATERIUM*.

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Objective ... Expression of full length recombinant HIV-1 p41 protein from *E. coli* results in marginal production of a partially degraded protein. Here we describe the successful expression of this full length hydrophobic protein from a gram positive bacteria.
Methods ...The promoter PspoVG for the gene encoding the sporulation protein SpoVG present in a chimeric plasmid pAS5 was placed in phase with the reading frame to direct full length HIV-1 p41 expression in *B. subtilis* and *B. megaterium*. The resultant plasmids pAS14, containing the erythromycin resistance gene for selection or the modified plasmid pOM10 containing the chloramphenicol resistance gene for selection, expressed the p41 gene at detectable levels in *B. subtilis* in the beginning of the stationary phase and at high levels in *B. megaterium* as judged by Western and Dot blot assays.
Results ...When *B. megaterium* was grown in a 10L fermentor under standardized conditions, p41 antigen expression was observed transiently in log phase growth (6-9 hrs.), and for a second time much later during the sporulation cycle (48-72 hrs.). This second peak of p41 antigen activity as determined by both Bead and Dot blot assays was much higher than the first peak. The antigen from *B. megaterium* was found to be of higher quality than that currently available from similar *E. coli* clones and the purfication of the antigen was simplified as the antigen stayed as an insoluble pellet.
Conclusions ... Higher expression levels, ease of growth resulting in higher cell density (4-5 fold over *E. coli*), negligible product degradation, and ease of purification makes *B. megaterium* an attractive system for the production of recombinant DNA derived products.

Oncologie
Oncology

C.699

HISTOPATHOLOGICAL STUDY OF HIV ASSOCIATED NON HODGKIN'S LYMPHOMAS. THE VALUE OF MORPHOLOGICAL CLASSIFICATIONS.

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°° E.Herriot, °°° CIRC. Lyon France.

High grade of malignancies Non Hodgkin's Lymphomas (NHL) are associated with AIDS. Using the international working formulation and Kiel classification, large cell, Burkitt's and Immunoblastic NHL were recognized.
Objectives and methods : to describe NHL in AIDS patients, a multicentric study was organized to obtain slides from NHL cases. 101 cases were registred. For all cases the slides were reviewed by at least three hematopathologists.
Results : In only 57 % of case the histologic concordance were obtained identifying subcategories of NHL : large cell (7 %), immunoblastic (30 %) and Burkitt's (20 %). In 32 % of cases the histologic concordance was not obtained especially between immunoblastic and Burkitt's ; most cases have shown intermediate aspects with pleomorphous proliferation of small non cleaved cells with plasmacytic differentiation or associated with immunoblasts. In some cases histological changes (immunoblastic to Burkitt's or Burkitt's to immunoblastic) were observed.
All cases were B cell type monoclonal or polyclonal CD10 and CD23 were variously expressed - HLA-DR, TrR and Ki 67 mAb were positive in most cases. The EBV genome was not constant in a small series of cases tested.
Conclusion : Thus, morphologic features, immunologic phenotype and molecular biology are necessary to distinguish subcategories of NHL in AIDS patients.

C.700

AIDS-ASSOCIATED EARLY STAGE SYNOVIAL KAPOSI'S SARCOMA (KS) OF THE KNEE.

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Objective. To describe by optical and ultrastructural techniques a synovial KS with evidences of lymphaticovenous anastomoses.
Methods. Light and electronmicroscopy were applied to synovial biopsy specimens of the knee of a 26 year old HIV infected homosexual man with clinical diagnosis of polyarthritis (knee, ankle and elbow).
Results. In semithin sections,a multifocal proliferation of capillaries and few spindle cells among a discrete mononuclear (lymphocytes, plasma cells) infiltrate, few neutrophils and rare degranulating mast cells were present. Multiple abnormal anastomoses of blood-lymphatic vessels with intense lipid embolisation and venular thrombosis were also observed. Ultrastructurally; bloodless, blood-filled, lipid-filled or blood-lipid-filled irregular vascular spaces were frequently bordered by discontinuous pleomorphic endothelial cells, having few atypical spindle shaped endothelial-like cells in its neighbourhood. Entrapping of matrix elements (e.g. collagen), prominent filament bundles, tubuloreticular structures in enlarged rough endoplasmic reticulum, strongly convoluted nuclei, multiple prominent nucleoli and necrosis of individual cells were features observed in these endothelial cells.
Conclusions. These ultrastructural findings and microcirculatory aberrations provide sufficient cytologic and architectural support to define this new site for KS and recommend ultrastructural examinations of synovial biopsy specimens of HIV-infected patients.

C.701

C.702

ABSENCE OF ANTIBODIES TO HTLV-I/II IN FRENCH PATIENTS WITH HEMATOLOGICAL MALIGNANCIES

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Objective. To evaluate 334 (191 males and 143 females) French patients with hematological malignancies for evidence of HTLV-I/II reactivity.
Methods. The leukemia and lymphoma cases included 163 and 132 cases, respectively. None of these patients was diagnosed as having adult T-cell leukemia/lymphoma. Other cases included 16 cases of multiple myeloma, 9 of sarcoma, 6 of macroglobulinemia, 5 of histiocytoma, 2 of mycosis fungoides (MF), and one of agnogenic myeloid metaplasia. Sera were screened by ELISA (DuPont). All reactive sera were confirmed by Western blot (WB) testing (DuPont). Sera from patients with hairy-cell leukemia (HCL; 14 cases) and MF were subjected to WB regardless of the results of the screening test.
Results. Sera from 7 patients with leukemia and 8 patients with non-Hodgkin's lymphoma (NHL) (15/334=4.5%) were positive by ELISA, but none of these results was confirmed by WB. Three of these sera had weak reactivity in the WB on the p19 and p28 bands in a patient with chronic granulocytic leukemia, and on the p55 band only in a patient with NHL and another with Hodgkin's disease. All WB on the sera from patients with HCL and MF were negative.
Conclusion. The absence of HTLV-I/II reactivity in these Caucasian French patients confirms the earlier report from the Federal Republic of Germany that this virus is not associated with hematological malignancies in Western Europeans.

C.703

GENETIC ANALYSIS OF BURKITT'S LYMPHOMA CELLS FROM A PATIENT WITH AIDS

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Objectives: To identify genetic sequences that may contribute to the development of B-cell lymphomas in patients with AIDS.
Methods: B-lymphocytes naturally infected with the Human Immunodeficiency Virus (HIV) were established in vitro from the peripheral blood of patients with AIDS-related lymphomas. Cells were characterized for the cell-surface markers, karyotypes and genetic sequences related to several viral and cellular genes.
Results: All cells established in culture displayed B-cell surface markers, exhibited 8:14 chromosomal translocation and trisomy of chromosome 12, characteristic of Burkitt's-like lymphomas. Although no reverse transcriptase activity or HIV p24 antigen was detected in the culure, Southern blot hybridization of the cellular DNA with HIV, HTLV-1, HIV-2 and EBV molecular probes revealed the presence of EBV-DNA and HIV-provirus integrated in the tumor DNA. No hybridization was detected with HTLV-1 and HIV-2 viral DNA. In addition, we have detected enhanced expression of the c-myc proto-oncogene in the cellular RNA and rearrangements of both the bcl2 and the c-myc genes in the B-cell lymphoma DNA. Moreover, by immunoblot analysis of lymphoma cell extracts, we have identified a protein of about 40,000 dalton that cross-reacts with sera from individuals infected with HIV-1 or HIV-2.
Conclusions: Although no direct involvement of HIV is implicated in the development of B-cell lymphoma in patients with AIDS, integration of the viral genome, chromosomal defects and rearrangement of proto-oncogenes could account for changes in the regulation of cell growth resulting in the progression of the disease. Since no long-term cell line currently exists from the AIDS patients, the availability of naturally HIV-infected B-lymphocytes would be valuable for analysis of genes that may be responsible for the high frequency of malignant B-cell lymphomas in patients with AIDS.

C.704

AIDS LYMPHOMA: REGULATION OF CELL PROLIFERATION

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Objective: To establish AIDS associated non-Hodgkin's lymphoma (NHL) cell lines in stable culture and determine their clonality with the original tumor tissue. To determine cell surface antigenic phenotype, the role of DNA tumor viruses, the effects of lymphokines and monokines on cell proliferation and whether receptors for growth factors exist on the cell line.
Methods: Single cell suspensions of tumor involved lymph nodes have established long term cultures of AIDS NHL cell lines. Southern blot analysis of immunoglobulin gene rearrangements will be performed to establish that the cell line is a clonal representation of the tumor. Probes for EBV, *c-myc* oncogene rearrangements and Human Herpes virus VI (HHV-VI) will be utilized. T and B cell immunophenotyping on the tumor derived cell lines will be performed. Growth factor requirements and assessment for their receptors will be determined.
Results: Experiments on one of the AIDS NHL cell lines, derived from a patient with Burkitt's lymphoma revealed the presence of cell surface IgM kappa and CD4 by flow cytometric analysis. Suspension from confluent culture using a quantitative ELISA procedure revealed IgM concentrations of 1-3 ug/ml. Southern blot analyses with an immunoglobulin J_H probe on DNA isolated from the original tumor, and on the derived cell line after a double endonuclease digestion with EcoR1 and Hind III revealed identical J_H rearrangement patterns.
Conclusions: Ig gene rearrangement analysis of an AIDS NHL cell line revealed a clonal rearrangement pattern identical to the predominant clonal rearrangement seen in the studies of the patient's freshly excised tumor tissue. These results indicate that the cell line represents an *in vitro* outgrowth of the original *in vivo* tumor and was not an artifact of the culture procedures used to isolate the cell line. The cells secrete and express on their surface Ig molecules IgM K. Additional studies involving this and other AIDS NHL cell lines will be used to assess the role of growth factors in cell proliferation.

Pathogenèse
Pathogenesis

C.705

LYMPHOKINES IN DIFFERENT STAGES OF HIV INFECTION

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HIV causes a progressive loss of CD$_4$ cells and their functions,subsequently IL-2 synthesis is decreased with the evolution of the disease.Although monocytes are also infected ther is no cytolysis of this cells,and then we were interested to know the synthesis of IL-1 in different stages of this infection and the relation with other lymphokines.

We have measured the synthesis of IL-1,IL-2 and γ-IFN in 36 HIV + drugaddicts in different stages of HIV infection and 10 controls.Lymphokines were produced by PBL cultures stimulated with LPS/ 24 h.(IL-1) or PHA/ 48 h.(Il-2 and γ-IFN) and measured on the supernatants with ELISA and RIA methods respectively.Lymphocyte subsets,Ig levels and lymphocyte blastogenis responses to PHA and PWM were also studied in these patients.

IL-1 synthesis is very high until advanced states of immunodeficiency,and is also high in unstimulated cultures in the first stages of the infection. There is some correlation between these levels and clinical symptoms.

IL-2 and γ-IFN synthesis decreases more rapidly with the progression of the disease and,toghether with other immunological parameters,has prognostic value.

Therapeutic protocols to modulate lymphokine synthesis must be taken into consideration to improve clinical conditions of these patients.

C.706

HIV-2 CHRONIC INFECTION OF PROMONOCYTIC CELLS

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Objective. To establish chronic infection in cells of the mononuclear phagocyte system, with HIV-2,and compare it to HIV-1 infection ; to study the phenotypic variations throughout the infection.

Methods. Two clones of the promonocytic cell line U 937, with 30 % and 90 % CD4 + respectively, were each infected with HIV-2 ROD strain and with HIV-1 BRU strain (multiplicity of infection : 10 000 cpm RT/10^6 cells). Cell cultures were studied for > 30 days in terms of cytopathic effect, and presence of p24 and RT activity in the supernatant. The expression of p24 in cells was assessed by immunofluorescence and, when necessary, viral genome detection was carried out with the polymerase chain reaction. Fluorocytometry was used to measure the expression of CD4.

Results. Data are summarized in the following table :

p24 production (ELISA, O.D.)

U 937	% CD4	HIV-2				HIV-1			
		D1	D7	D21	D42	D1	D7	D21	D42
Clone 1	30	0.0	> 2.5	> 2.5	> 2.5	0.8	> 2.5	> 2.5	> 2.5
Clone 2	90	0.0	0.6	> 2.5	> 2.5	1.3	> 2.5	0.0	0.0

Although a same amount of virus was used to infect cells, a latent period before the production of p24 Ag was only observed with HIV-2. Chronic infection was obtained with HIV-2 whatever the CD4 percentage, as opposed to HIV-1.

Conclusion. This study showed that, in monocytic cells, there was a difference in the pattern of multiplication between HIV-1 and HIV-2, which seemed to be independant of the amount of CD4 in the case of HIV-2.

C.707

SUPPRESSOR EFFECT OF CELL SUPERNATANTS FROM HIV-POSITIVE PATIENTS ON NORMAL LYMPHOCYTE FUNCTIONS.

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Objective.The aim of the study was to determine of ConA can induce an increase of the NK cell activity of HIV-infected subjects (IS) similar to that of normal subjects (NS). Also, we investigated if the factors that normally regulate the NK function, released by cells from IS differ from those released by NS cells.

Methods. We studied 12 IS and 19 NS. Mononuclear cells were incubated with and without ConA (50ug/ml) at 37°C for 18-20hr. The cell supernatants (Sn) were stored; the cells were washed and the NK activity measured by the 51Cr release assay using K562 cells as target.

Results. The NK function and response to ConA of IS cells were similar to NS cells. Sn from IS cells suppressed the normal NK activity, Sn without ConA suppressed ($\bar{x}$ ± SD) 37% ± 24 and Sn with ConA 34% ± 11. On the contrary, Sn without ConA of normal cells did not modify normal NK activity while Sn with ConA increased the NK function (24% ± 8).

Conclusion. The results indicate that NK effector cell function of IS does not differ from NS. However,the mononuclear cells from IS spontaneously release NK suppressor factors and although ConA can increase the NK effector function,it can not modify the release of suppressor factors. The altered release of soluble factors is prior to the decrease of the NK activity observed in IS and may contribute to the development of opportunistic tumors.

C.708

AIDS - PANERGIC IMNESIA AS PATHOGENIC MECHANISM

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We propose a model whereby HIV component(s) cause immune dysfunction by mimicry of the physiologic ligands of CD4, molecules of the Major Histocompatibility Complex (MHC), binding to CD4 molecules and causing lymphocyte activation of a generalized and uncontrolled nature (panergy). The symptoms of mediator disease, autoimmune phenomena, lymphadenopathy and hyperglobulinemia are obvious manifestations of such activation. The anergy seen early in HIV infection prior to T cell depletion can be attributed to functional desensitization through this T cell receptor pathway. Continuous activation signals in the form of HIV component(s) finally disrupt T cell homeostasis by the interference with filing of memory cells resulting in clonal deletion and net T cell loss (imnesia). Thus, HIV disrupts immune function by violating the rules of MHC restriction and the adverse result of this interaction establishes the significance and underlying purpose of MHC restriction.

The model can account for the findings of both AIDS-related-complex and frank AIDS without widespread T cell infection, is consistent with a prolonged "incubation period" and provides a role for antigen specific cofactors. In contrast to immunostimulatory approaches, therapy aimed at suppression of aberrant activation via the CD4 molecule and/or the generation of resting cells may have beneficial effects in HIV disease.

C.709

CHARACTERIZATION OF HUMAN B CELL (DK) AND PROMONOCYTE (U937) AFTER HIV-1 EXPOSURE

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Objective. Comparison of HIV-1 infection-kinetics among human B (DK), promonocyte (U937), T-B hybrid (CEMx174), and T(H9) cell lines.

Methods. SupT1 (HIV1 susceptible CD4+T) cells were used as targets to analyze syncytia induction capacity of various cell lines. Reverse transcriptase (RT) activity in the supernatant (eRT) and in the cell lysates (iRT) was determined by standard RT activity assays.

Results. CEMx174 and H9 cells indicated strong syncytia inducing capacity against SupT1 and high extracellular RT (eRT). DK and U937 exhibited syncytia inducing capacity at 3 days. Intracellular RT (iRT) became detectable at 12-15 days but eRT appeared much later. The syncytia inducing capacity and inverted e/i RT ratio were also observed in chronically infected DK(DK-IIIB), U937(U937-IIIB) and subclones of U937-IIIB. Further, coculture of H9 with DK-IIIB (which exhibits no detectable eRT) showed remarkable increase in eRT with significant increase of T-B double marker hybrids (H9-DK-IIIB).

Conclusions. Our results suggest that the B cells and/or monocytes may acquire fusing capacity against CD4+ T cells in early stages of the infection, and that these cell to cell interactions may lead to a reduction in the number of CD4+ T cells. Further these T-B and T-monocyte hybrids may serve as temporal sites for viral replication. These in vitro studies may provide clues to the possible immunopathological roles of HIV-1 infected B cells and monocytes and may help in understanding the mechanisms of viral burden on an infected host

C.710

DETECTION OF CD4/CD8 EXPRESSION ON HIV INFECTED T CELL CULTURES

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Objective: The study describes the expression of CD4/CD8 on T cell culture lines at early and chronic stages of infection.

Methods: We examined T cell cultures by the techniques of dual color immunofluorescence flow cytometry, ferritin labelling for electron microscopy visualization and reverse transcriptase for virus expression.

Results: CD4 expressed markers remained depressed at post-infection as predicted previously and into the chronic stages. RT activity and absolute number of virus particles being generated did not significantly influence the surface markers once the culture was infected. CD8 when co-expressed remained demonstrable.

Conclusion: Using quantitative doses of HIV strains we find the variation of expressed membrane markers can be seperate elements from cell function and maturation of the virus. We are presently using cytokines in modulating surface marker activation and virus induction.

C.711

BIOLOGICAL ROLE OF COCAINE IN THE DEVELOPMENT AND EXPRESSION OF AIDS

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Objective. To determine the effect of cocaine on the immune system.
Methods. In order to obtain a better understanding of the effects of cocaine on immune function, inbred male rats were treated daily for ten days with 1.25, 2.5 or 5.0 mg/kg of cocaine. Rats were then immunized with T-helper independent (TI) and T-helper dependent (TD) antigens. Splenic plaque-forming cell (PFC) and serum antibody responses were measured 5 days post-immunization.
Results. The ability of rats treated with cocaine to mount primary PFC and antibody responses to TI were elevated several fold when compared to control animals. The magnitude of the elevation was directly related to the dose of cocaine administered. Antibody responses to TD antigens were increased at lower concentrations of cocaine (1.25 and 2.5 mg/kg) and were suppressed at the higher concentration of the drug (5.0 mg/kg). Exposure of isolated lymphoctes from rats and humans to cocaine in vitro did not result in a stimulation of B-cell populations indicating that a metabolite of cocaine or the release of some other host factor(s) was responsible for the observed immunomodulation.
Conclusion. The prevalence of AIDS in substance abusers is very high. It is also well documented that activation of CD4+ cells in HIV+ individuals also activate proviral (dormant) stage of AIDS. The present studies provide data to indicate that the immune system is stimulated by cocaine.

C.712

CHARACTERISTICS OF HIV-1 IN MONOCYTE-MACROPHAGES

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Objective. To investigate infectivity and localization of HIV in monocyte-macrophages.
Methods. HTLV-IIIB producing cells, U937 subclones, THP-1 and T cell lines, were used for this experiment. HIV-1 in the cells were collected after mechanical destruction of cells by freezing and thawing. Amount of HIV-1 in the solution was compared between cell lines by measuring reverse transcriptase activity and the amount of p24. Infectivity of HIV-1 in the solution was determined by infecting HIV-1 sensitive T cells, MT-2 and MOLT-4. Infection of the target cells was checked by cytopathic effect and amount of p24 in culture supernatant.
Results. Solution obtained by freezing-thawing of monocytoid lines showed higher reverse transcriptase activity and larger amount of p24 compared with T cell lines. The solution showed high infectivity to T cell line.
Conclusion. Monocyte-Macrophages can harbour large amount of infectious virus inside the cells.
Localization of the virus will be also discussed.

C.713

PRESENCE OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) IN THE ALVEOLAR MACROPHAGES (AM) FROM BRONCHOALVEOLAR LAVAGE (BAL) FLUID OF PATIENTS WITH AIDS.

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Previous work in our laboratory has shown that HIV can be recovered from the BAL fluid of all patients with AIDS, but has only detected p24 antigen directly in the BAL fluid of a patient with lymphocytic interstitial pneumonitis. To determine which cells in the BAL fluid contain the virus, BAL cells were separated into glass adherent (alveolar macrophages) and non-adherent populations and were cultured in random donor peripheral blood mononuclear cell cultures. Five consecutive AIDS patients were cultured and the BAL fluid from all were positive for HIV. Both adherent and non-adherent cells contained HIV, but adherent cell cultures were either positive before non-adherent or had higher levels of p24 antigen on days 6-8. Only one non-AIDS patient has been cultured and, in contrast to the AIDS patients, HIV was not recovered. These studies suggest that HIV appears at levels detectable by culture in the bronchopulmonary secretions of HIV infected patients later in the natural history of the infection, and, even though virus can be recovered from both AM and lymphocytes, it appears to be in higher titer in macrophages. Studies on the effects of HIV infections of AM on macrophage function are underway. Production of tumor necrosis factor (TNF) by HIV infected AM has been evaluated. Spontaneous release of TNF was detected from AM of 2 of 5 AIDS patients, while all 5 released normal amounts of TNF when stimulated with lipopolysaccharide.

C.714

POSSIBLE ROLE OF GENETIC,IMMUNOLOGICAL AND VIRAL FACTORS IN THE ACQUIREMENT AND/OR PROGRESSION OF HIV INFECTION

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Objective.To evaluate the role of genetic,immunological and viral factors in the acquirement and/or progression of HIV infection.
Methods. Five seronegative regular sexual partners of HIV seropositive subjects and 5 HIV seropositive patients without HIV infection progression (during the last 5 years, were included in our study. We carried out HLA-A,B, C,DR,DQ antigen phenotypes and surface phenotypes of PBMCs; we also performed "in situ" hybridization, P.C.R. and in vitro response to recall Ag,PHA and PWM.
Results. A higher frequency of HLA-2 Ag in seronegative and in HIV seropositive subjects without infection progression was found; an increase of CD4^{+}M3^{+} cells in HIV seropositive was also observed. All seronegative subjects were positive at "in situ" hybridization and, at performed follow-up, the seronegativity has been lasting for more than one year.
Conclusions. Could HLA-A antigens and CD4^{+}M3^{+}cells play a role in the acquirement and/or progression of HIV infection?

C.715

HIV-1 INFECTION OF HUMAN FETAL THYMOCYTES

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Objective. Some infants with congenital HIV-1 infection are immunocompromised. This suggests that fetal thymocytes may become infected by HIV-1 resulting in immune dysfunction. To examine this hypothesis, normal human fetal thymocytes were established in culture and exposed to HIV-1. The potential for this virus to affect thymocytes was determined by measuring T4/T8 subset ratios and functional assays.
Methods. Fetal thymus was obtained from abortuses with no risk factors for HIV-1 infection. After isolation, untreated fetal thymocytes were analysed by flow cytometry and functional assays. Thymocytes were exposed to either infectious or heat-inactivated HIV-1 isolates. The presence of HIV-1 infection was determined by immunocytochemistry, molecular hybridization and an infectious cell center (ICC) assay using the CEM-SS cell line. Treated cultures were analysed by flow cytometry and functional assays.
Results. Untreated thymocytes responded to T- but not to B-cell associated-mitogens and were comprised of over 90% double (CD4, CD8) positive cells. After 5-7 days in culture, immunocytochemistry revealed the presence of gp41 in the HIV-1 exposed cells and the ICC assay was positive. In addition, there was a significant change in the subset ratios of infected cells. Furthermore, thymocyte infection was dependent, in a dose dependent fashion, upon the titer of the HIV-1 inoculum.
Conclusion. Cultured fetal thymocytes can be infected with HIV-1 and this infection causes significant cytopathology. As a model, this system may permit a better understanding of the pathogenesis of pediatric AIDS.
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C.716

AIDS IS A NON-INFECTIOUS "OCCUPATIONAL" SYNDROME

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Objective. To find answers to the following questions: a) Is AIDS an infectious disease? b) Can it be considered a sexually transmitted disease? c) Is HIV the etiological agent? d) What is the prophylaxis for AIDS? e) What is the possible cure for people at high risk for AIDS, with PGL, ARC or AIDS?
Methods. Three years research conducted through: a) study and analysis of more than 5,000 AIDS research studies; b) study and analysis of the U.S. AIDS cumulative statistical official data during the period 1981-1988; c) study and analysis of clinical aspects and results in groups at high risk; d) study and analysis of the components and properties of the clotting factors and heroin and fecal material; e) analysis of the AIDS epidemiology between industrialized and developing countries.
Results. These studies have shown that: a) AIDS is a non-infectious syndrome. b) HIV is not the etiological agent. c) How the cause/effect inversion made possible the misunderstanding of HIV as the etiological agent of AIDS. d) What are the causative factors of AIDS.
Conclusions. a) A new postulate for the AIDS pathogenesis: what are the causative factors and how they work. b) A new postulate for AIDS prevention. c) A new postulate for the cure of PGL,ARC, and AIDS.

C.717

TIME COURSE OF IGG REACTIVITY WITH SYNTHETIC PEPTIDES DERIVED FROM HIV-1 GAG AND ENV IN HIV-1 SEROPOSITIVE INDIVIDUALS.

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OBJECTIVE: To evaluate the development of the immune response to epitopes simulated by synthetic peptides during the course of HIV-1 infection.

METHODS: EIA:s with synthetic peptides from HIV-1 gag (1-20, 320-338,335-351 and env (503-520,581-599,583-599,586-606,602-622,848-863) were performed on consecutive sera from 39 HIV seropositive persons. A time period of 0.5 - 5 years was covered. Results were correlated with clinical status.

RESULTS: As previously noted by us, the pattern of reactivity with HIV peptides was individual. However, also a temporal pattern of variability was observed. Antibodies to certain peptides increased rapidly after an acute HIV infection, and then declined rather rapidly. Antibodies to some peptides varied more, independently of other HIV antibody parameters. Antibodies to env 583-599 were more frequent in asymptomatic individuals than in patients with HIV-related disease. In individuals with more advanced disease, several peptide antibody parameters, both from gag and env, were low. The independent temporal variability implies epitopes can be both abandoned and recruited during HIV-1 infection. Absorption by antigen probably also contributes.

C.718

PATHOGENESIS NK DEFICIENCY IN AIDS

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Objective To give a model explaining NK defect in AIDS
Methods PBL from AIDS patients were assessed for NK activity on the 51Cr labelled K562 cell line Cytoskeletal tubulin polarization in these conjugates was studied by monoclonal antibodies (MoAb) and immunofluorescence Tubulin is responsible for an effective NK lysis Results from these experiments were compared with those obtained on PBL from normal donors.which were treated.before the assays with an anti/CD16 MoAb
Results NK activity and tubulin polarization were deficient in PBL from AIDS patients as well as in normal controls.pre-treated with anti/CD 16 MoAb
Conclusion Pathogenesis of NK deficiency in AIDS may be explained on the basis of this model.assuming that some HIV-1 env proteins mimick the action of anti/CD 16 MoAb

C.719

A RAPID AND IMPROVED 2',5'A SYNTHETASE ASSAY BY POLYACRYLAMIDE GEL ELECTROPHORESIS.

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Induction of 2',5'oligoadenylate (2,5A) synthetase activity is an accurate and sensitive parameter for viral infection of mammalian cells. It could be used clinically to monitor circulating interferons. The enzymatic assay ideally involves chromatographic separation of 2,5As, which range from di- to oligomers, from each other and from the unincorporated substrate of radiolabeled ATP. However, this procedure is not done routinely, and the enzymatic activity is measured instead by the amount of radiolabeled AMP incorporated into total 2',5'As. We developed a rapid and improved assay using a 0.3-mm denaturing 20% polyacrylamide gel to separate the different species of $[^{32}P]$-labeled 2,5As from each other, and from the substrate $[^{32}P]$ATP. 2,5A species were visualized by autoradiography and the amount of incorporated $[^{32}P]$ can be quantitated. To confirm the 2',5' linkage of the reaction products, the predominant species which comigrated with a trimer standard was shown to be resistant to T2 RNase but readily digested by phosphodiesterase. The current method is sensitive, fast and can assay a large number of samples simultaneously. Most cells we examined, including human T cell lines CEM and H9, had a low 2,5A synthetase activity. HIV infection of H9 cells did not induce this enzymatic activity. This assay will be useful clinically to monitor circulating interferons in AIDS patients before and after therapy.

C.720

KINETICS OF HIV INFECTED CELL-TO-CELL FUSION

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Objective. To define the mechanism and timing of the cell-to-cell fusion process important in the pathogenesis of AIDS.
Methods. A cytopathic effect assay to measure serum fusion inhibition activity has been developed that utilizes H9/HTLV-IIIB as fusion effector and the CD4+ cell line, MT2, as target for syncytium formation. Serum is added to wells containing cells in a ratio of 1:5, respectively. Percent protection is determined by neutral red uptake by viable cells = [(Test A540 - virus control A540)/(cell control A540 - virus control A540)] X 100. The kinetics of the fusion process was investigated by adding a dilution of serum known to have fusion inhibition activity to wells simultaneously, and 15, 30, 60, 90, 120, 180, and 360 minutes after cells were mixed. An equivalent dilution of non-immune serum was added to another series of wells mixed by repeated pipetteing at the same intervals. Control wells included non-immune serum without mixing, and immune serum with mixing. Assays were done in triplicate.
Results. Anti-fusion activity of serum was unchanged when added simultaneously or up to 120 minutes after cell mixing. However, at 180 minutes there was a diminished anti-fusion effect and at 360 minutes there was no anti-fusion effect when the assay was terminated at 20 hours. Mechanical disruption of cells retarded the onset of syncytia formation and thereby increased percent protection at 20 hours. The effect of mechanical disruption on fusion inhibition was diminished when performed at the 360 minute time point. Non immune serum had no protective effect.
Conclusion. There is a point in the fusion process at which antibody is unable to inhibit syncytium formation. The data suggest that in the fusion process there are evolving cell-to-cell interactions that attain sufficient stability to diminish antibody interference by 3 hours and to resist mechanical disruption by 6 hours.

C.721

TROPICAL SPASTIC PARAPARESIS: SEROLOGIC AND HISTOLOGIC ANALYSIS

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OBJECTIVE. To identify and further characterize by sural nerve biopsies, HAM/TSP in a neurological patient population from New York City.
METHODS. Serum and CSF from 150 patients were assayed for antibodies to HTLV I by EIA. Repeat reactives were confirmed by Western blot and SDS-PAGE RIPA. WB was also performed on paired EIA positive serum and CSF. Sural nerve biopsies were performed on 7 TSP patients; these were analyzed by immunofluorescence, PCR and light and electron microscopy.
RESULTS. 15 patients were HTLV I seropositive; 12 of these had clinical features of HAM/TSP and all except one (black patient from S. Carolina) originated from the Caribbean. No differences in WB banding pattern were observed in matched serum and CSF. Surprisingly, a sensorimotor peripheral neuropathy was observed in 7 of the TSP patients. Two of the nerve biopsies revealed epineural and endoneural inflammatory lesions containing plasma cells, but no giant or multinucleated cells. A mild demyelinating process and abnormal giant axonal mitochondria were observed.
CONCLUSIONS. TSP is prevalent in the U.S. among Caribbean migrants and often associated with peripheral neuropathy. No evidence of intrathecal synthesis of anti-HTLV I Ab was observed when comparing CSF and serum by WB. Nerve biopsies provide the means to assess the role of HTLV I in the pathogenesis of myelopathy.

C.722

HOST IMMUNOGLOBULIN MOLECULES ARE ON THE SURFACE OF PNEUMOCYSTIS CARINII

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Objective: To define the organism and/or host factors that explain the pathogenesis of P. carinii pneumonia in AIDS.
Methods: (1) Immunochemical labeling of whole organism preparations of P. carinii in bronchoalveolar lavage fluid sediment with enzyme-tagged polyclonal and monoclonal antibodies to human immunoglobulins and to P. carinii. (2) Analysis of electrophoretically-separated components of density gradient-purified P. carinii from human autopsy lung material by SDS-PAGE and Western blotting with same antibodies as in (1).
Results: Anti-human IgG (but not anti-rat or anti-mouse IgG) labeled whole organisms in 2/2 preparations. Monoclonal antibody to the Fab fragment of human IgG also labeled whole organisms. Anti-human IgG, one of two monoclonal antibodies to the Fc fragment of human IgG, and a monoclonal antibody to P. carinii all labeled a 40k band that was present in: (a) purified preparations of P. carinii, (b) 4/4 bronchoalveolar lavage fluid supernatents from patients with (2) and without (2) AIDS, and (c) IgG purified from 2/2 human sera (1 HIV -, 1 HIV +).
Conclusion: A host-derived IgG fragment is present on the surface of P. carinii. Its role in the pathogenesis of P. carinii pneumonia in AIDS is currently unknown. It may conceivably interfere with the ability of an already compromised immune system to clear the organism or recognize it as foreign.

C.723

INFECTION OF MONOCYTES WITH A T CELL TROPIC CLONE OF HIV.

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Objective. To determine if an HIV clone derived from infected T cells can infect normal human monocytes in vitro.
Methods. The HIV infectious clone (pNL4-3) was developed by combining the 5' GAG-POL region of the NY5 strain construct and the 3' ENV region of the LAV strain construct. The pNL4-3 construct was transfected into SW480 (colon carcinoma) cells, with a subsequent passage onto a T cell tumor line (A3.01). Elutriated monocytes were infected with the passaged pNL4-3 clone. The monocyte passaged pNL4-3 and original clone were equilibrated by reverse transcriptase levels (RT) and titrated onto monocytes and PHA blasts.
Results. The initial passage of pNL4-3 onto elutriated monocytes resulted in RT positivity on day 30 post infection. The culture remained RT positive through day 65 when the experiment was ended. Ultrastructural analysis of these cells revealed virus particles budding intracellularly as well as from the plasma membrane. pNL4-3 showed a much greater ability to replicate in PHA blasts than in monocytes. Of particular note, a single passage onto monocyte culture resulted in an increased (2 log infectious units) ability of the virus to replicate in monocytes. In parallel, a 3 log decrease in ability to infect PHA blasts was noted with this single-passage HIV.
Conclusion. A T cell tropic HIV clone can infect monocytes. Moreover, a single passage of the clone onto monocytes is sufficient to markedly increase the tropism of the virus for monocytes at the same time as it decreases the tropism for T cells.

C.724

MONOCYTE CHEMOTACTIC ACTIVITY IN THE SUPERNATANTS OF IN VITRO INFECTED HUMAN MACROPHAGES.

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Macrophages (MØ) are an important target for HIV infection and probably play a major role in the establishment and propagation of AIDS. Following infection, the virus is found in tissue MØ and blood monocytes. At present, the mechanism of infection and spreading of HIV in these cells is not known. We present results that address this issue.
Human blood monocytes cultured in presence of 1,000U/ml of Colony Stimulating Factor-1 (CSF-1) differentiate into macrophages and are permissive to the infection with HIV-1 (ADA strain). Following infection, viral replication with minimal cytopathic effect can be demonstrated. When supernatant from infected MØ were examined for their ability to attract freshly isolated not infected blood monocytes, they were found active at levels comparable to those observed with optimal concentration of the standard chemoattractant F-Met-Leu-Phe. Control supernatants obtained from not infected MØ did not show this activity. A 48-microwell chemotaxis chamber was used for the measurements.
These results can be of relevance to explain the initial rapid spread of the virus from primarily infected MØ to circulating monocytes.

C.725

DETECTION OF HTLV-I IN ALVEOLAR LYMPHOCYTES OF PATIENTS WITH TROPICAL SPASTIC PARAPARESIS (TSP) WITH BRONCHOALVEOLAR LYMPHOCYTOSIS.

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Objective. To specify the type of alveolar cells detaining HTLV I genome in the TSP patients with bronchoalveolar lymphocytosis.
Methods. After bronchoalveolar washing of TSP patients serologically HTLV I associated ,with bronchoalveolar lymphocytosis, the adherent and non-adherent cells were separated,identified and HTLV I genome was detected in the different cell populations
- by Polymerase Chain Reaction (PCR) after cellular DNA extraction of each cell population.
- by coculture of the two alveolar cell populations with lymphocytes of HTLV I seronegative subjects.

Results : PCR was done with two different types of primers in pol and pX regions ; HTLV I genome was present only in lymphocytes and never in adherent cells.
After coculture, we obtained immortalized T cell lines producing complete HTLV I only with the alveolar lymphocytes and never with the alveolar adherent macrophages.
The immortalisation of T cell cultures will be presented and these cell lines will be phenotypically and virologically characterised. The biological properties of the HTLV I isolated from alveolar lymphocytes and from peripheral lymphocytes of the same patient will be analysed.
Conclusion : HTLV I DNA is detected in alveolar lymphocytes and never in alveolar macrophages of these TSP patients, while in HIV infected patients with bronchoalveolar pathogenesis, HIV genome is currently present in the two types of alveolar cells.

C.726

PLASMA VALUES OF FIBRONECTIN (FN) AND ANGIOTENSIN CONVERTING ENZYME (ACE) IN KAPOSI'S SARCOMA (HIV-RELATED AND CLASSICAL)

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Objective. To investigate plasma values of FN and ACE as putative markers of endothelial proliferation in HIV-related and classical Kaposi's sarcoma (KS).
Methods : Plasma FN (ELISA, Stago Lab) and ACE (Radiochemical technique of Rohrbach) were determined in patients with AIDS-related KS, classical KS and the lymphadenopathy syndrome (LAS).

RESULTS	FN ng/ml ± SE	P	ACE nmol/ml/min ± SE	P
CONTROLS	138 ± 28 n=30		12.5 ± 3.5 n=30	
LAS	153.5 ± 76.6 n=18	NS	21.4 ± 10.1 n=40	$<10^{-4}$
AIDS - KS	227.3 ± 60 n=21	$<10^{-4}$	16.9 ± 6.1 n=31	$<10^{-2}$
CLASSICAL KS	244 ± 126.9 n= 7	$<10^{-4}$	15.9 ± 5.5 n=15	0,05

The increase in plasma values of FN is highly significant in both HIV-related and classical KS ($P<10^{-4}$). Plasma Von Willebrand Factor (VWF) gave similar results (Janier. J. Invest. Dermatol. 1988, 90, 703). On the other hand, ACE increase is highly significant in LAS patients ($p<10^{-4}$) and moderate in both forms of KS ($p<0.01$ and $p = 0.05$).
Conclusion : Fibronectin and ACE are both partly released by endothelial cells. They are both, besides VWF, markers of endothelial damage or proliferation in KS. Their prognostic significance in LAS patients remains to be ascertained.

C.727

CD4+ CELL HELPER AND SUPPRESSOR FUNCTION IN HIV INFECTED PATIENTS

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Objective. To investigate helper and suppressor functions of CD4+ T cells in HIV infected hemophilia patients.
Methods. We assessed T cell functions in 61 hemophilia patients (21 HIV-, Group 1; 27 HIV+ without ARC/AIDS, Group 2; 13 ARC/AIDS patients, Group 3). PWM-stimulated allogeneic cocultures of CD4+ T cells and control B cells were evaluated by assessment of immunoglobulin secreting cells (ISC) in a reverse hemolytic plaque assay and by ELISA-determination of IgM and IgG secretion.
Results. We found no significant differences between HIV- patients and controls whereas CD4+ cells of HIV+ patients showed reduced helper activity for generation of ISC ($p<0.01$, Group 2; $p<0.0001$, Group 3), IgM ($p<0.005$, Group 2; $p<0.001$, Group 3) and IgG secretion ($p<0.02$, Groups 2,3). CD4+ cell suppressor activity was enhanced with respect to ISC generation ($p<0.01$, Group 2; $p<0.0001$, Group 3) and IgM secretion ($p<0.02$, Groups 2,3). Preliminary data in 38 patients show that autoantibodies against CD4+ cells were associated with a CD4+ cell helper defect ($p<0.01$).
Conclusion. Considering the central role of CD4+ cells in the immune response CD4+ cell dysfunction may play a role in the development of the immunodeficiency state of ARC/AIDS patients. CD4+ cell autoantibodies might be involved in the pathogenesis of CD4+ cell helper defects.

C.728

Virologie
Virology

C.729

On the pathogenesis of severe HIV-related Thrombocytopenia (TP) in intravenous drug abusers (IVDAs).

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Objective.To evaluate the pathogenesis of severe HIV related TP in IVDAs, by kinetic studies of platelet survival.

Methods.Platelet kinetic study was carried out in 20 HIV-positive IVDAs with severe TP (Plt <25x10^9/L) by 111-InOxine labelled autologous platelets (method of Thakur, partially modified). The results were compared with those obtained in classical ITP and hepato-splenic pooling respectively (the statistical significance was measured by a Student's T-test).

The relevant clinical data are summarized in table 1:

Sex	Platelets	Splenomegaly	ALT(>2N)	AntiHBc+
M:15F:5	12±5x10^9/L	5/20(25%)	10/20(50%)	17/20(85%)
25±3y	18/20(90%)	15/20(75%)	3/20(15%)	15/20(75%)
Age	MegakaryoN/>	Hepatomegaly	HBs+	AntiHBs+

Results.Kinetic studies of platelets survival:

	Classical-ITP		HIV-related-TP		"pooling"-TP
n	18		20		16
T/2	1.2±0.3	<0.001	4.1±1.4	<0.001	6.0±1.6
SDI	1.8±0.5	<0.01	1.3±0.3	<0.01	1.1±0.1
HDI	1.2±0.2	ns	1.2±0.2	ns	1.4±0.3
rec%	34.6±14.2	<0.01	26.2±16.6	ns	27.3±13.8

T/2 : platelet survival time ; SDI : splenic destruction index ; HDI : hepatic destruction index.
Rec% : recovery% .

Conclusions.Platelet kinetic data are intermediate between classical ITP and "pooling" TP and indicate that hepato-splenic pooling concurs to induce the TP in IVDAs.

C.730

C.731

C.732

HIV-2 NEUTRALIZATION EPITOPES ARE LOCALIZED IN THE CARBOXYL TERMINAL PORTION OF THE EXTERNAL ENVELOPE

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Objective. To localize HIV-2 external envelope domains binding neutralizing antibodies.

Methods. Five hundred overlapping peptides that covered the complete amino acid sequence of the external envelope of the HIV-2 ROD strain were synthesized with the antibody-reactive peptide scanning (PEPSCAN) technique. Sera of HIV-2 infected individuals were used as probe for antibody reactivity. Rabbits were immunized with KLH coupled peptides of domains reactive with human sera.
Sera were tested for HIV-2 neutralization.

Results. Fifteen domains were identified that bound serum of HIV-2 infected individuals. The majority of the sera reacted with two regions: one in the amino terminal half (aa 108-132) and one in the carboxyl terminal half (aa 303-507) of the external envelope. Each of the human HIV-2 neutralizing sera reacted with several carboxyl terminal epitopes. Sera of rabbits immunized with peptides covering the extreme terminal part of the external envelope neutralized HIV-2.
Cross-neutraliziation with HIV-1 of these sera is under investigation.

Conclusion. Epitopes localized in the extreme terminal carboxyl part of the HIV-2 external envelope bind natural neutralizing antibodies and immunization of rabbits with these domains results in HIV-2 neutralizing capacity of their serum.

C.733

VARIABLE STRINGENCY HYBRIDISATION OF PCR AMPLIFIED HIV-1 DNA FRAGMENTS

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DNA isolated from the lymphocytes of atypically seropositive individuals has been used for PCR amplification of envelope regions expressing atypical antigens. Eight aliquots of the amplified DNA fragment have been subject to Southern/Dot blot analysis, hybridising with 32P labelled B10 at 45°C using 2ssc medium. This was followed by a low strigency wash in the same buffer at 45°C for one hour. The filters were then exposed to Kodak XAR film and a photographic record obtained of the bound probe radioactivity. The filters were then cut so that each hybridised band/dot could be subject to variable stringency washing using various ionic concentrations (0.05 - 2.0 ssc) at a temperature 55° for one hour. After this time the filter was reconstructed so that the effect of the variable strigency wash might be visualised following a second exposure to a Kodak film. The level of activity for each band/dot was measured by image analysis of the photographic record and by scintillation counting of the 32P in each band/dot on the filter. The results allow a plot to be made of decrease in bound activity against ionic strength from which an equivalent Tm is calculated. By comparison with a standard curve obtained for H9V3 amplified fragments, subject to similar hybridisation and analysis, an estimation of the degree of nucleotide mismatch relative to the B10 DNA probe can be obtained.

C.734

C.735

C.736

NEUTRALIZING EPITOPE OF HIV-1: ANTIBODY SPECIFICITY, IMMUNOGENEICITY, AND PROTEIN LOCALIZATION

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Antibodies from seropositive patients reduced the number of infectious HIV-1 plaques in a new plaque forming assay. Several HIV-1 isolates (IIIB, RF_{II}, and Z-84) were incubated with sera from asymptomatic seropositive patients and then used to infect a $CD4^+$ HIV susceptable monolayer. Neutralization of IIIB and Z-84 was measured at 99.7%, while RF_{II} was determined to be >95%. These findings indicate that:
(1) Human antibodies recognize a neutralizing epitope on most HIV isolates.
(2) The neutralizing epitope is conserved among many HIV isolates.
(3) The neutralizing epitope is immunogenic in nearly all infected patients.
(4) Antibody resistant variants are quite rare.
Human sera adsorbed with gp120 or gp160 lost neutralizing activity for the homologous isolate, while adsorbtion with p24 or control proteins had no effect on neutralizing antibodies. This indicates that gp120 contains all or nearly all of the neutralizing epitopes recognized by antibodies from infected patients.

C.737

C.738

DIRECT DETECTION OF A NEWLY IDENTIFIED VIRUS-LIKE INFECTIOUS AGENT BY PCR IN BLOOD (PBL) FROM PATIENTS WITH AIDS.

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Objective. To study the infection of the recently discovered virus-like infectious agent (VLIA) (Am J Trop Med Hyg, 40(2), 1989) in patients with AIDS, using the highly sensitive technique of selective gene amplification.
Methods. Peripheral blood lymphocytes (PBL) from 23 patients with AIDS and 22 normal healthy donors were isolated from Ficoll gradients. DNA was then purified from these PBL and subjected to 35 cycles of polymerase chain reaction (PCR). A pair of synthetic oligonucleotides (RS47 and RS49) with VLIA-specific DNA sequences were used as primers for selective gene amplification in the reaction. The amplified DNA products were analyzed by hybridization with a p^{32} end labeled oligonucleotide probe (RS48) with VLIA-specific DNA sequences which occurred between the pair of primers. PBL from the patients were also cultured for the isolation of HIV.
Results. Twelve of the 23 patients with AIDS were tested positive for VLIA specific DNA in the PBL, by PCR. In the same assay, none of the 22 normal healthy donors had evidence of VLIA infection. In this study, all AIDS patients were HIV seropositive and 75% of those PBL tested (15 of 20 patients) were also HIV culture positive.
Conclusions. A high prevalence of infection (52%) with the previously unrecognized pathogenic VLIA was detected in the blood of patients with AIDS.

C.739

HIV GENOME IN SERONEGATIVE REGULAR SEXUAL PARTNERS OF HIV INFECTED SUBJECTS

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Objective. The aim of our research was to evaluate the presence of HIV genome in peripheral blood mononuclear cells (PBMCs) from 15 seronegative (ELISA test Westrn Blot confirmed) regular sexual partners of HIV infected subjects. The T4/T8 ratio, determined by Flow Cytometer, ranged between 0.08 - 2.10.
Methods. PBMCs were "in situ" hybridized with three probes: 1) an SP 64 plasmid containing the 9 kb SstI-SstI viral insert from lambda BH 10 recombinant clone able to regnize both viral mRNA and proviral cDNA; 2) the whole HBV genome, near 3.3 kb, purified from pAO1 plasmid; 3) the pBR 322 plasmid lacking viral insert. The probes were tagged by inserting an antigenic sulfone group in cytosine moieties and visualized by a double antibody immunohistochemical reaction using a monoclonal antibody against the sulfone group and an anti-mouse alkaline phosphatase conjugate antibody (Chemiprobe, Organics). The controls were performed using HIV infected and non infected H 9 cell culture lines and PBMCs from healty blood donors.
Results. The HIV genome sequences were observed in the cytoplasm of mononuclear cells of all the subjects studied as a granular staining and in some cases a nuclear positivity was observed. The number of hybridized cells ranged between 0.01 - 5.0 per cent.
Conclusions. Anti-HIV seronegative individuals, as partners of infected subjects, may be HIV infected.

C.740

SERIAL ANTIBODY (ABY) REACTIONS TO HUMAN HERPESVIRUS-6(HHV-6) IN HIV-1 INFECTION

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Objective. To study Aby responses to HHV-6 in HIV-1 infection.
Methods. Sera collected serially over the course of 1-4 years from a cohort of HIV infected patients(pt) was tested for Aby to HHV-6 strain Ds. Virally infected HSB2 and uninfected cells were fixed to slides and tested for IgG and IgM antibody using immunofluorescent technology. Radioimmunoprecipitation of 35S methionine labeled viral proteins (RIPA) were analysed using gel electrophoresis (PAGE).
Results. Pattern 1.Stable titers over 2-4 years Sero converter to HIV: 3pts.(<1:20-320),Stable lymphadenopathy: 7 pts. (<1:20-1280), Progressive T cell depletion: 10 pts.(<1:20-1280)
Pattern 2. Rise in IgG Titer without rise in IgM titer initiated with AZT therapy: 3 pts. Case 1. titer rise- <1:40 to 1:320, Case 2. <1:20 to 1:5120, Case 3. <1:20 to 1:1280
Pattern 3.Primary HHV-6 Infection concommittant with primary HIV infection. Pt developed mono like illness and seroconverted to HIV and at same time HHV-6 IgG Aby of 1:10,240 rose to 1:80,000 over 4 weeks with IgM Aby of 1:140 fall to 0 after 1 year.
Patients with Aby rise intensified gp110, and p80 and p8 bands.
Conclusion:Perturbation in HHV-6 antibody occurs in HIV-1 infection especially after initiation of AZT for treatment.

C.741

MACROPHAGES SIMULTANEOUSLY DERIVED FROM VIRUS-CONTAINING PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMC) IN HIV-1 IIIB INFECTED CHIMPANZEES DO NOT CONTAIN VIRUS

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Objective: To extend our previous *in vivo* and *in vitro* studies of the fate and biology of the HIV-1 IIIB virus in persistently infected chimpanzees.
Methods: Various sub-populations of cells were derived from different anatomic sites in persistently infected chimpanzees. These were evaluated for viral expression by co-cultivation/virus isolation, gag/env polymerase chain reaction (PCR), viral-specific immunohistochemistry (VSIH) and in situ techniques.
Results: Proviral DNA was detected by PCR in variable amounts in animals from their PBMC. Virus was recovered from all PHA stimulated PBMC having PCR reactivity. No PCR reactivity or virus re-isolation was obtained from macrophages simultaneously derived from the PBMC cultures or sternal bone marrow aspirates. Rare VSIH and in situ positive "lymphocyte-like" cells and megakaryocytes were found in the lymph nodes, spleen and bone marrow.
Conclusions: Should the absence of virus in macrophages and the absence of an "AIDS-like" disease be an uniform finding among all experimentally HIV-1 infected chimpanzees than understanding the mechanism(s) may give insight into pathogenesis, as well as, interventive therapeutic and vaccine-based strategies.

C.742

CHARACTERIZATION OF HIV VIROSOMES.

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Objective. Topology of HIV viral proteins in reconstituted systems (virosomes).
Methods. After virus lysis in OGP and addition of exogenous lipids, virosomes were obtained by dialysis of detergent. Virosomes were layered on top of continuous glycerol gradient and ultracentrifuged (120000g, 16h.) in order to remove free proteins and lipid vesicles. Viral proteins and lipids were detected by specific ELISA or ^{3}H radioactivity counting in each recovered fractions. The orientation of viral proteins were determined by trypsin treatment.
Results. Virosomes were detected at the bottom of the gradient whereas liposomes (virosomes without proteins) eluted at the top of the same gradient. ELISA analysis of protein profile along the gradient shows that the two viral envelope glycoproteins (GP120, GP41) and the P17 core protein were associated to the lipidic vesicles. The viral nucleocapsid protein (P25) was not detected in virosomes. GP120 and GP41 were digested after trypsin treatment while uncomplete cleavage of P17 suggests that it is partially oriented to the inner face of virosomes. Preliminary electron microscopy studies revealed virosomes as spherical vesicles of approximately the same size as viral particles but with an empty aqueous internal cavity.
Conclusions. Virosomes mimicking the virus envelope as envisaged as a possible way to get information about the mechanism of the fusion between virus and host cell.

C.743

BIOLOGICAL CHARACTERIZATION OF HIV ISOLATES FROM DIFFERENT BRAZILIAN AIDS PATIENTS

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Objective: To evaluate the biological characteristics such as citophatic effect (CPE), syncytium formation and replication rate of five isolates obteined from Brazilian patients with different clinical forms of infection in cells of lymphoid and monocytoid origin.
Methods: Lymphoid (H9, CEM, MT-02, Jurkatt), monocytoid (U937) cell lines, normal peripheral lymphocytes and adherent cells were used. All infected cultures were monitored for the presence of the HIV, using a Organon antigen HIV capture assay, indirect immunofluorescence, electron microscopy and "western blot" of pelleted isolated viruses.
Results: The "Western blot" analysis showed a similar pattern for all isolates, undistinguishable from that observed in HIV-1. It was noted that one isolate showed a high replication capacity, inducing CPE and syncytia in lymphoid cell lines around 7 days of the culture and killing the cells in 15 days. Another isolate also showed a high replication capacity but did not induce a significant CPE or syncytium formation in the cultures. The characterization of three more isolates are underway.
Conclusion: HIV-1 isolates obteined from Brazilian AIDS patients seem to display a different patterns of infectivity, replication, induction of syncytia and CPE in different cell lines. In addition it was observed that the peripheral lymphocytes were more suceptible to infection by HIV isolates.

C.744

C.745

Geographical variation in cross reactivity of HIV2 sera on HIV1 assay

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Objective : To study the reactivity of HIV2 positive sera on HIV1 antigens according to the geographical origin of the patients.
Methods : We tested HIV2 positive sera collected in subjects from Cape-Verde Islands (n=64) and Mali (n=68). The 64 Cape Verdian sera included all the specimens detected as HIV2 positive in these Islands since 1986. Clinical status of these 2 groups of subjects is comparable (CDC group II, III). HIV2 positivity was assessed by HIV2 Elisa (Diagnostics Pasteur: DP) and HIV2 Western Blot (DP). All these sera were tested on HIV1 assays by :
1) Elisa$_{(s)}$: Elavia 1 DP, Abbott EIA, Vironostika-Organon, Enzygnost-Behring, Wellcozyme-Wellcome, Dupont HTLVIII.
2) Latex agglutination assay, Fujirebio.
3) Western Blot (DP).
4) Transmembrane glycoprotein dot (Peptilav 1, DP).
5) RIPA CEM-HIV$_{BRU}$
Results : The rate of positivity on HIV1 Elisa$_{(s)}$ and latex agglutination assay is significantly ($p < 0.01$) higher in sera from Mali than from Cape Verde Islands. By HIV1 WB, synthetic peptides and RIPA none of the 64 cape Verdian sera reacts on the HIV1 env-products. By HIV1 WB and synthetic peptides, 26/64 of the Malian sera demonstrated an obvious reactivity on HIV1 glycoproteins (gp160-gp120 and transmembrane peptide).
Conclusion : This significative different reactivity between Cape Verdian and Malian sera could be interpreted in different ways. It should be more likely due to HIV2 strain geographical variation but we cannot excluded double infection in Malian sera or differences in host immune responses.

C.746

CHEMICAL INACTIVATION OF PURIFIED SIV WITH B-PROPIOLACTONE AND FORMALIN

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Objective. B-propiolactone (B-PL) and formalin were tested for ability to inactivate Simian Immunodeficiency Virus (SIV).
Methods. 500 ug lots of sucrose-gradient purified SIV$_{mac}$ were treated with 0.025%, 0.1%, and 0.2% B-PL for 5 hours at 4C. One 500 ug sample was treated with 0.025% formalin at 30C for 48 hours. One 500 ug sample of SIV was first treated with 0.2% BPL as above followed by 0.025% formalin as above. The samples were inoculated onto HuT-78 cells. Culture supernatants were assayed weekly for reverse transcriptase activity.
Results. SIV treated with 0.2% B-PL, 0.025% formalin, or a combination of both was inactivated; 0/12 cultures became positive for SIV in four weeks. Lower concentrations of B-PL, however, were ineffective in inactivating SIV; 12/12 cultures of the 0.025% B-PL treated material and 7/12 cultures of the 0.1% B-PL treated material became positive for SIV in four weeks. Immunoblot analysis of the inactivated SIV preparations revealed greater preservation of antigen following B-PL treatment.
Conclusion. 0.2% B-PL is effective for inactivating SIV and is the method of virus inactivation for a vaccine study currently in progress.

C.747

HBV INFECTION IN HIV INFECTED SUBJECTS

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Objective.The aim of our study was to investigate the concomitant HBV infection in HIV infected subjects.
Methods. We observed 143 simptomatic and asimptomatic anti-HIV seropositive subjects (ELISA test, Western Blot confirmed). All patients were tested for HBV antigens (HBsAg and HBeAg), for antibodies (anti-HBs, anti-HBc, anti-HBe and anti-HBcIgM) and for delta infection (anti-delta) using RIA method. The HBV DNA was performed by dot blot hybridization using a pAO1 plasmid contaiming the whole HBV genome (near 3.3 kb) tagged by inserting an antigenic sulfone group in cytosine moieties and visualized by a sandwich chemical reaction using a specific monoclonal antibody against the sulfone group and an anti-mouse alkaline phosphatase conjugate antibody (Chemiprobe, Orgenics).
Results.67/143 (46.8%) were anti-HBs positive (14 of them 20mIU/ml), 16 were anti-HBc positive only, 13 were affected by chronic active hepatitis (CAH) HBsAg and HBeAg positive (eight of them also anti-delta positive), two by acute B hepatitis anti-delta positive and 45 susceptible to HBV infection. HBV DNA, performed in 93 subjects, was positive in 17 : 13 of them were anti-HBs positive, one affected by CAH and three negative for all HBV markers.
Conclusion. The alterate response to conventional HBV serum markers may be due to the complex HIV-host interaction in patients HBV infected. The HIV infecion may play a role in the pathogenesis of the HBV disease.

C.748

C.749

HIV-1 INFECTION OF HUMAN FETAL DORSAL ROOT GANGLIA GLIAL CELLS IS INDEPENDENT OF THE T4A EPITOPE OF CD4

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Objective. To examine the role of CD4 or related molecules in infection of human fetal dorsal root ganglia (DRG) glial cells by human immunodeficiency virus type 1 (HIV-1).
Methods. Monoclonal antibodies directed against the CD4 protein were used to inhibit infection of primary human fetal DRG glial cell cultures by HIV-1. Fluorescence-activated flow cytometry and radioimmunoprecipitation were used to detect the physical presence of the CD4 protein. Ribonuclease protection and RNA blot hybridization analysis with CD4-specific probes were used to detect novel CD4 RNA species in the developing human nervous system.
Results. We have previously demonstrated that treatment of human fetal DRG glial cells with monoclonal antibodies directed against the T4A epitope (but not the T4 epitope) resulted in only a slight reduction of the number of HIV-1 gag-positive glial cells. These cells do not synthesize CD4 or express detectable amounts of CD4 at their cell surface. However, total RNA extracted from human fetal spinal cord and DRG contained CD4 RNA, as demonstrated by ribonuclease protection analysis. RNA blot hybridization with an antisense CD4 RNA probe demonstrated two unique CD4 RNA species of approximately 5.6 and 6.4 Kb in size in addition to very low levels of 3.0 Kb CD4 message. The two unique CD4-related RNA species were not present in human fetal heart or when a sense strand probe was utilized in hybridization analyses. Utilization of CD4 exon-specific probes demonstrated variable hybridization patterns to these two unique CD4-related RNA species.
Conclusion. These data suggest that HIV-1 infection of human fetal DRG glial cells is independent of the T4A epitope of CD4; the functional significance of novel CD4 RNA species in relation to this T4A-independent entry pathway is being explored.

C.750

UTILIZATION OF SYNCYTIUM-FORMATION MICROASSAY FOR QUANTITATION OF INFECTIVE HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1)

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Objective. To describe a method for quantitating infective HIV-1.
Method. Detection of syncytium formation in the infected CEM-SS cells cultured in an adhesive-protein coated, 96-well plate. The syncytium formation was compared with the production of HIV-1 core antigen--p24.
Result. Infective HIV-1 was detected and relatively quantitated in the original sample and in H9 cell cultures inoculated with the sample. The syncytium formation in the test occurred simultaneously with the development of p24.
Conclusion. The syncytium-formation microassay was rapid and accurate in calculating syncytium formation and determining the number of infective HIV-1.

C.751

C.752

CONTINUOUS EPITOPES ON GP 120 WITH SPECIAL REFERENCE TO THE CD-4 BINDING SITE.

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Objective To study continuous epitopes on GP 120.
Methods A large panel of sera was obtained from guinea pig immunised with synthetic peptides representing various regions of GP 120. These serawere tested for binding to native ,fully glycosylated GP 120. RIPA, inhibition of of binding between GP 120 and CD-4 and testing of these sera in a fusion inhibition assay was performed.
Results Two out of four sera directed against peptides representing the CD-4 binding site on GP120 was shown to immunoprecipitate native GP 120. Also peptides representing certain other regions of GP 120 i.e. the dominant neutralizing epitope were also shown to be able to immunoprecipitate native GP 120.
Conclusion Some epitopes on the native GP 120 are recognised by sera obtained from guinea pig immunised with synthetic peptides representing various parts of GP 120.

C.753

GROWTH OF HIV IN CELLS FROM VARIOUS DONORS

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Peripheral blood mononuclear cell (PBMC) preparations were prepared from 27 individuals and the growth of Japanese HIV isolates, JH/3 and JMH/1, in those PBMC preparations was studied. There was significant diversity in infectious virus yield among PBMC preparations. The virus yield did not correlate with the ratio of CD4 lymphocytes in PBMC or growth ability of the cells. In some PBMC preparations, p24 antigen levels did not correlate with infectious virus yield. When E-rosette forming cells were used instead of whole PBMC, similar phenomena were observed, but the production of p24 antigen was much reduced without decrease of infectious virus yield. These results indicate that each individual donor has lymphocytes with capacity to allow the growth of HIV different from others, and that E-rosette forming cell-depleted PBMC produces excess p24 antigen.

C.754

DETECTION BY POLYMERASE CHAIN REACTION OF HIV-1 DNA IN HOMOSEXUALS, HEMOPHILIACS, AND AIDS PATIENTS IN TAIWAN

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Objective. To detect HIV-1 proviral sequences by polymerase chain reaction (PCR) with DNA samples obtained from seropositive Taiwanese subjects.
Methods. Peripheral lymphoid cells from an AIDS patient, an asymptomatic homosexual male, and two hemophiliacs, as well as formalized spleen tissues from two autopsied AIDS patients were tested. The presence of proviral sequence in the Southern blot was detected by specific probes following PCR-amplification procedures. Results. All of the 6 samples exhibited a positive reaction when primer pairs from *gag* region and gp41 domain of *env* region were used. Primer pairs derived from a relatively conserved region of gp120 domain of *env* region also functioned to produce amplified fragments for all samples. However, when primer pairs covering gp120 through gp41 domains were used, only four samples gave a definite amplified band, and one yielded a faint band. When primer pairs derived from *nef* and 3' LTR regions were used, all were negative. The degrees of hybridization signal intensity for each of the samples PCR-amplified at *gag* region did not correlate exactly with those PCR-amplified at various *env* regions.
Conclusion. The results suggest that these six samples contain various copy numbers of HIV-1 proviral sequences which exhibit heterogeneity in their *env* sequences, divergent from those of HXB2 clone of HIV-1.

C.755

CONSTRUCTION OF A RECOMBINANT RETROVIRAL INTERFERING PARTICLE CONTAINING A DEFECTIVE HIV-1 GENOME

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Objective. By infecting Hut-78 cells with an RT positive supernatant of PBL from an AIDS patient, we have isolated a non-producer HIV-infected cell clone (F12), which exhibits a viral RNA pattern superimposable with that of productive cell clones, and shows resistance to HIV-1 or HIV-2 superinfection. In order to study the phenomenon of viral interference, the whole genome will be transferred in HIV-sensitive cell lines via transfection of a retroviral vector construct in an amphotropic packaging line.
Methods. From an Sst I genomic library of F12 clone we have molecularly cloned the whole provirus in pUc-19 and then subcloned it in retroviral vectors bearing the G418 resistance gene such as pLJ (MLV LTRs promoter), Ntk (thymidine kinase promoter) and NSV (SV40 promoter).
Results. The pLJ construct has been transfected in an amphotropic retrovirus packaging line (PA 317), in order to recover a recombinant retrovirus containing the provirus originally integrated in F12 clone. More than 30 G418-resistant PA317 clones have been obtained. Indirect IFA analysis using a pool of human positive sera was clearly positive in two PA317 clones also showing an integrated construct by Southern Blot. A more detailed molecular characterization will be discussed.

C.756

C.757

C.758

REPLICATION OF A LETHAL VARIANT OF SIV/SMM IN MACAQUE PBMC IN THE ABSENCE OF EXOGENOUS IL-2 OR ACTIVATION BY MITOGENS

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Objective: To identify mechanisms by which SIV/SMM(PBj$_{14}$) replicates in and induces proliferation of PBMC from normal macaque and mangabey monkeys.
Methods: Resting or PHA-stimulated PBMC from normal monkeys, chimpanzees or humans were infected with SMM(PBj$_{14}$) or the parent, SIV/SMM-9; cultures were monitored for RT activity, cell viability, total cell number, percentage of cells expressing the IL-2 receptor, and production of various cytokines.
Results: Infection of PBMC from pig-tailed macaques or mangabeys, but not from chimpanzees or humans, with SIV/SMM(PBj$_{14}$) resulted in as much as 5-fold increases in total viable cells. This phenomenon was not observed in parallel cultures infected with the parent SIV/SMM-9. In addition, SMM(PBj$_{14}$), but not SMM-9, replicated in and induced proliferation of resting macaque PBMC, irrespective of whether exogenous IL-2 was added to the medium. The proliferative response paralleled virus accumulation in culture medium and increases in IL-2 receptors. Experiments are in progress to assess the possible role of various cellular activation pathways in the proliferative response to SMM(PBj$_{14}$).
Conclusions: SMM(PBj$_{14}$) has escaped the requirement that cells be activated before productive infection can occur. Also, the induction of cell proliferation during *in vitro* infection is manifest as lymphoid hyperplasia *in vivo*, leading to the speculation that the *nef* gene product, which has some sequence homology with and functions similar to pp60-*src* and v-Ha-*ras*, has acquired mutation(s) that render it "oncogenic-like." (NIH RR-00165)

C.759

HIV-1 SEQUENCE ANALYSIS OF BRAIN AND BLOOD LYMPHOCYTES FROM NEUROLOGICALLY SYMPTOMATIC AIDS PATIENTS USING PCR TECHNIQUES

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To determine whether there are specific neurotropic strains of HIV-1 which result in brain dysfunction and the location of possible functional gene loci conferring neurotropism and neuropathogenicity, we have isolated and partially characterized HIV-1 from the brains and blood lymphocytes of six AIDS patients with neurologic dysfunction using the polymerase chain reaction (PCR) technique. PCR permits direct enzymatic amplification of proviral DNA which can then be directly characterized. All neurologically symptomatic HIV-1 infected patients at our institution are treated according to published algorithms; in patients undergoing CT-guided stereotactic brain biopsy, two tissue cores (1.2 X 0.2 cm) are placed on sterile foil and frozen in liquid nitrogen and 10 cc of blood is collected and blood mononuclear cells are then isolated and stored. Histopathologic diagnoses for the six patients include HIV-1 encephalitis (2), progressive multifocal leukoencephalopathy (2), toxoplasmosis (1) and primary CNS lymphoma (1). Four of the six study patients have died (mean survival after biopsy = 2.8 months); the remaining two are stable 2 months after biopsy.

Using oligonucleotide primers which flank a region of the second conserved domain of the envelope gene of the HIV-1 genome (which has been implicated in previous studies as being related to neurotropism), PCR has been used to amplify this region in both neural and non-neural HIV-1 isolates. In phase one of the study, this amplified region has been sequenced for several cloned inserts and we are determining the degree of sequence variation in these isolates and comparing them by source, neurologic diagnosis and clinical findings. Phase two of the study involves the insertion of this region into an infectious "cassette" derived from both LAV and HBX2. Studies are underway to determine whether the product of this insertion has the preferential ability to infect neurons in culture, an in vitro demonstration of neurotropism.

C.760

THE MORPHOLOGY OF A NEW LENTIVIRUS

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HIV is, to the best of our knowledge, the first lentivirus ever to infect mankind. We show the unveiling of its structure by scanning and transmission electron microscopy, by thin section and tilt series, by stroboscopic analysis of surface symmetries under rotation, by cristallographic and computer based strucural analysis using gra-phic simulation of random sections. The results from several laboratories are combined to create a three-dimensional model, which represents today's knowledge about the HIV particle. The structure found for HIV seems to be essentially the same as for the known animal lentiviruses SIV (STLV-3), BIV (BVLV), FTLV (FIV), MVV (Maedi-Visna virus, Zwoegersiekte), CAEV (GLV, CSR) and EIAV. Some morphological details have implications for the virus' life cycle, for its pathogenesis, for possible targeting of therapy, and for the chances to develop a vaccine.

C.761

ANTI-HIV-IgG PRODUCTIONS IN VITRO DURING VIRUSISOLATION.

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Objective: Influence of anti-HIV production "in vitro" on HIV-isolation.
Methods: Fresh Peripheral Blood Lymphocytes (PBLs) of 45 European ARC patients were collected monthly and cocultivated with PHA-stimulated PBLs from healthy donors. 136 viruscultures were screened for anti HIV-IgG production after 3 and 14 days. Screening was performed with Line Immuno-Assay (LIA) strips (Innogenetics N.V.) which permits screening for gp41, endonuclease p32, p24 and p17 at one time.
Results: From 136 cultures tested 82 % produced IgG in vitro after 3 days. The strongest reactivities were observed with the p24 antigen. 17 % of the cultures were still producing low levels of IgGs after 14 days.
No correlation was seen between IgG production in vitro and the final evaluation of the cultures for virusproduction by antigen detection, reverse transcriptase or immunofluorescence, which suggests that virus production is not significantly influenced by possible neutralizing antibodies which may be secreted into the medium.
It was also clear that the level of antibody production in vitro is patient dependent and remained stable for most patients during the period we tested (up to 6 months).
Conclusions: IgG production in vitro is patient dependent and had no significant influence on virus isolation results.

C.762

VARIANT RETROVIRUS INFECTION IN AFRICAN PRIMATES

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Objective: To define the extent of retrovirus infection in the primate population of East Zaire, then to isolate and characterize retroviral variants from seropositive species.
Methods: All available sera from wild monkeys were tested for HTLV1, HIV1 and HIV2 reactivity using Western Blot analysis.
Results: Sera from three species of primates (Cercopithecus l'hoesti, Cercopithecus denti and Cercopithecus hamlyni) show evidence of cross reactivity with HIV1 and/or HIV2.

Species	Total Number	Env pattern of reactivity		
		HIV1 + HIV2 -	HIV1 - HIV2 +	HIV1 + HIV2 +
C. l'hoesti	21	1	4	1
C. hamlyni	15	0	4	2
C. denti	4	1	2	1

Conclusion: Cellular material from these animals is under investigation for isolating primate retroviruses to be compared to HIV.

C.763

HIV-LIKE PARTICLES IN NEURONS OF THE BRAIN.

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Objective. To identify HIV infected neurons by electron microscopy.
Methods. Specimens of brain autopsies of patients which died of AIDS were prepared for routine electron microscopy and systematically analysed.
Results. Investigating several hundred neurons on ultrathin sections we could observe on rare occasions an HIV-like particle inside a vacuole or a multivesicular body in few neurons of the temporal lobe grey matter of a brain with toxoplasma and HIV-related pathologies. Beside a relative high content of neuronal lipofuscin the studied region presented a normal aspect.
Conclusions. The localization of the HIV-like particles was similar to HIV inside endosomes during the endocytotic uptake into culture lymphocytes or to intracellularly produced HIV being stored in vacuoles. The low quantity of detected particles may explain the negative results of other techniques in relation to neuron infection by HIV. The present data may contribute to the knowledge about cell infection and neuropathology of HIV.

C.764

REACTIVITY OF HUMAN HIV-2 ANTIBODIES WITH NATIVE AND SYNTHETIC HIV-1 AND HIV-2 ANTIGENS.

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Objective. To characterize the reactivity of human HIV-2 antibodies with viral antigens and synthetic polypeptides from the gag, env, and pol genes of HIV-1 or HIV-2 as a means to distinguish HIV-2 infection from HIV-1.
Methods. Samples confirmed positive for HIV-2 antibodies by differential response on whole virus Western blots for HIV-1 and HIV-2 were further tested with the various specific antigens in Western blot, ELISA, and RIPA assays.
Results. HIV-2 sera from 15 asymptomatic individuals gave the following reactivities (shown as the number positive/number tested):

ELISA		WESTERN BLOT		RIPA	
HIV-1 LYSATE	11/15	HIV-1 rGAG	12/15	HIV-1 rGAG	12/14
HIV-2 LYSATE	15/15	HIV-1 rGP41	2/15		
HIV-1 rENV	11/15	HIV-1 rPOL	10/10	r-Recombinant Ag	
HIV-2 sGP41	15/15	HIV-1 rP17	4/15	s-Synthetic Ag	

Conclusion. Evidence for reactivity with both conserved and HIV strain specific antigen domains was found. These observations should be useful in the design of both broadly reactive HIV screening assays and more convenient diagnostic tests for serotype confirmation.

C.765

SCREENING ET TYPAGE HIV-1 ET HIV-2 GRACE A UN TEST RAPIDE (3 MINUTES) UTILISANT DES PEPTIDES SYNTHETIQUES (CLONATEC TARGET HIV TEST).

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Objectif : Evaluation d'un test Elisa rapide (3 minutes) utilisant des peptides synthétiques HIV-1 et HIV-2 dérivés de la séquence de la glycoprotéine transmembranaire de chacun des deux virus HIV-1 et HIV-2.

Matériels et méthodes :

Sérums : L'étude a porté sur 237 sérums provenant de sujets vivants en Afrique de l'Ouest.

Test : Le sérum dilué au 1/10 est filtré à travers une membrane sur laquelle ont été déposés chaque peptide HIV-1 et HIV-2. Après addition du conjugué (anti IgG humaine conjugué à la peroxydase) et lavage, on ajoute le substrat (TMB). Le résultat (spot bleu) est visible à l'oeil en une minute environ.

Résultats :

WB	TOTAL	PEPTIDES		
		HIV-1	HIV-2	Négatif
1	7	6	-	1
2	72	1	68	3
1+2	12	12	8	-
Neg	146	2	-	-

Conclusion : Les résultats montrent une bonne sensibilité (HIV-1 : 94,7 % et HIV-2 : 90,5 %) et une très bonne spécificité (HIV-1 : 98,6 % et HIV-2 : 100 %). Ces résultats, très intéressants pour un test rapide, sont encourageants, une augmentation de la sensibilité doit pouvoir être obtenue.

C.766

ABSENCE OF P24 ANTIGEN AND ANTI P24 ANTIBODY DECREASING IN AFRICAN AIDS : COMPARISON BETWEEN EUROPEAN AND WEST AFRICAN POPULATIONS.

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Objective : to compare virological pronostic factors (p24 antigenemia, anti p24 antibody titer) in European and west African patients

Material and Methods : 508 HIV positive patients from Limoges France (106 sera) and Abidjan Cote d'Ivoire (402 sera) were tested for p24 antigenemia by Abbott HIV-1 antigen p24 assay and for anti p24 by recombinant Envacore EIA Abbott.

Results :

Virus	Area	Cl. Status (Nb)	Anti p24 % compet* 0-50%	50-100%	Ag p24 % positivity
HIV-1	AF	AIDS(100)	7%	93%	9%
		HEALTHY(136)	2%	98%	0%
	EUR	AIDS(18)	50%	50%	50%
		ARC(10)	20%	80%	20%
		HEALTHY(78)	23%	77%	4%
HIV-2	AF	AIDS(19)	42%	58%	0%
		HEALTHY(96)	2%	98%	0%
HIV-1+ HIV-2	AF	AIDS(29)	0%	100%	0%
		HEALTHY(22)	0%	100%	0%

Conclusion : AIDS African patients have higher titers of core antibodies than European individuals. The pronostic value of HIV antigenemia is not the same for seropositive patients in Europe and in west Africa.

C.767

INFLUENCE OF BLOOD VOLUME AND TRANSPORT ON HIV CULTURES IN INFANTS AND CHILDREN

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Objective. To determine the influence of blood volume and specimen transport on pediatric HIV cultures.

Methods. Blood cultures for HIV were obtained with 1-3 cc of heparinized whole blood from 28 patients (PO-P2) with an age range of 3 mos. to 11 yrs. Each culture was evaluated with a standard number of the patient's mononuclear cells (10^6) and a lesser number of cells (10^5) using a modification of the method of D. Gallo, et.al. Laboratory personnel were blinded to the patient's status and origin of specimen.

Results. Cultures from 9 children were positive and all symptomatic infants and seropositive children had positive cultures. Eight of 9 had positive culture with 10^5 and 10^6 cells. One child had a positive culture with 10^6 cells only. Most cultures were positive at 7 days incubation and 7 of 8 parallel samples were positive at the same time interval. Six specimens were shipped at ambient temperature (3ml of heparinized blood) and cultured over 24 hrs. after phlebotomy. Cultures from 3 of these 6 patients were positive.

Conclusion. Prompt and reliable diagnosis of HIV infection in infants is a major problem. There preliminary data suggest that HIV cultures may be a valuable diagnostic tool despite a small volume of blood (1-3ml) and delay between phlebotomy and culture processing.

C.768

PRIMARY ISOLATION OF HIV FROM LYMPHOCYTES, MONOCYTES, AND MACROPHAGES WITH A PERMANENT T-CELL LINE AS A MODEL TO STUDY VIRUS REPLICATION AND CELL TROPISM IN VITRO

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Objective: To establish a standardized HIV isolation procedure where PMBC can be replaced by a permanent T-cell line in order to study primary HIV replication and transmission of HIV from monocytes/macrophages to T-cells.

Method: Under optimal conditions primary HIV isolation gave an overall positive result in 84%. Using the permanent T-cell line SupT1 as the cocultivating system, instead of negative donor PMBC, HIV isolation was positive in 68% of cases. In contrast to SupT1, negative donor PMBC's showed suppressive influence on primary virus replication in vitro. Direct transmission of HIV from infected patients blood monocytes to SupT1 was observed in 9 out of 20 isolations. However, the monocytes had to be stimulated with GM-CSF. In one case the virus could be isolated directly from alveolar macrophages to the permanent T-cell line.

Conclusion: SupT1 as a cocultivating system in primary HIV isolation are not as sensitive as PMBC, but revealed to be a good model to study virus replication and cell tropism of HIV wild isolates in vitro.

C.769

HUMAN IMMUNODEFICIENCY VIRUS (HIV) MUTLIPLIES IN PRIMARY CULTURES OF HUMAN KUPFFER CELLS

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OBJECTIVE. Given their localisation in the liver sinusoid, the Kupffer cells (KC), which represent the largest reservoir of fixed macrophages in the body, are ready candidates for early infection following contamination. However, until now, the role of KC in HIV infection has never been studied and no attempt has ever been made to infect KC in culture.

METHODS. Isolation of KC was carried out according to the method we have previously described (Kirn et al., C.R. Acad. Sci. Paris, 1980, 291, 249). The purity of the cell culture attained 98 %. Primary cultures of 24-to 72-hour-old KC were infected with HIV 1 (isolate LAV 1- Bru).

RESULTS. In 3 different experiments syncytia detectable under optical microscopy appeared between 4 and 10 days. EM observations showed typical viral particles released either in vacuoles or outside the cell as well as characteristic budding figures. Except from the syncytia, no obvious cytopathic effect could be found. Furthermore, a reverse transcriptase activity increasing with the time of infection was demonstrated in the supernatant of the infected KC.

CONCLUSION. Our results, which demonstrate that KC may constitute a target for HIV, suggest that these cells may play a crucial role in the physiopathology of the disease. They may not only constitute a reservoir for the virus but, given their strategic position in the liver lobule, they may also be involved actively in the dissemination of the virions.

C.770

PRODUCTIVE INFECTION OF PRIMARY CULTURES OF HUMAN HEPATIC ENDOTHELIAL CELLS (EC) BY HUMAN IMMUNODEFICIENCY VIRUS (HIV)

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OBJECTIVE. The presence of CD 4 antigen on the surface of human liver EC renders them susceptible to infection by HIV.

METHODS. Hepatic EC were isolated from liver specimens obtained after partial hepatectomy in secondary liver cancer by a method we developed several years ago (Steffan et al., C.R. Acad. Sci. Paris, 1981, 292, 809). The cells were purified by centrifugal elutriation. The well flattened out EC could be easily characterized under SEM by their typical fenestrae.

RESULTS. Primary cultures of 24-hour-old EC were infected with HIV 1 (isolate LAV 1-Bru) for 3, 4 and 5 days and processed for SEM and TEM. Under SEM, a great number of virus particles were detected at the plasma membrane as early as 3 days after infection. One or two days later, the number of viruses in close contact with the plasma membrane or in the vicinity of the cell had considerably increased. Moreover, numerous pictures strongly suggestive of virus budding were observed. TEM observations confirmed these results and demonstrated the presence of typical virus particles as well as the different steps of virus budding.

CONCLUSION. These results demonstrate that liver EC in culture may be infected with HIV and are able to produce large amounts of virions. This suggests that the EC could play an important role in the dissemination of HIV particles.

C.771

A HUMAN MONOCLONAL ANTIBODY AGAINST HIV-1 TRANSMEMBRANE GLYCOPROTEIN GENERATES COMPLEMENT-MEDIATED, ANTIBODY-DEPENDENT ENHANCEMENT (C'-ADE) OF HIV-1 INFECTION *IN VITRO*.

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Objective: To evaluate ten human monoclonal antibodies (mAb) against HIV-1 for their abilities to neutralize or enhance HIV-1 infection *in vitro*.
Materials: Ten human lymphoblastoid cell lines producing mAb against HIV-1 were generated *in vitro* by infection of peripheral blood lymphocytes from HIV-1 seropositive subjects with Epstein-Barr virus. All ten IgG were tested in an MT-2 cell microtiter infection assay for HIV-1 neutralizing and enhancing activities.
Results: Of the ten, 4 reacted with *gag* protein (p24) and 6 reacted with *env* protein (gp41), by radioimmunoprecipitation. None of the mAbs were neutralizing. It was determined that one mAb, 120-16, could enhance HIV-1 infection to a dilution of 1:648 (approximately 25 ng/ml). This mAb is an IgG$_{2\kappa}$ which recognizes gp41 and is directed against an immunodominant region of the virus. Enhanced HIV-1 infections were characterized by increased cytopathic effect, reverse transcriptase release, antigen synthesis, and progeny virus production.
Conclusions: Since only 1 of 6 human mAb tested mediated C'-ADE of HIV-1 infection *in vitro*, this phenomenon probably depends on recognition of one or more specific epitopes. The epitope(s) can be mapped and should, perhaps, be eliminated from recombinant vaccines.

C.772

IDENTIFICATION OF PROTEIN INTERMEDIATES IN THE PROCESSING OF THE p55 HIV-1 gag PRECURSOR.

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Objective: To analyze the cleavage pathway of the 55 kDa (p55) HIV-1 gag precursor.
Methods: HIV-1 gag proteins isolated from [^{3}H]leucine labeled, recombinant HIV-1/vaccinia virus infected H9 T lymphocytes by immunoprecipitation with anti-p24, anti-p17 or anti-p6 antibodies were subjected to one- and two-dimensional SDS-PAGE.
Results: SDS-PAGE analysis revealed that the initial cleavage of the p55 gag precursor gives rise to three processing intermediates (p41a, p41b and p39). p41a and p39 proteins contain the p17 and p24 protein segments, and p41b is comprised of p24 and p15 proteins. On two-dimensional gels, these intermediates as well as the mature p24 and p17 proteins migrated as distinct species. [^{3}H]myristic acid labeling of the HIV-1 gag proteins revealed that in addition to p55 and p17, the p41a and p39 intermediates, but not p41b, are myristylated, confirming that myristylation occurs at the N-terminus before cleavage of the p55 precursor.
Conclusion: The myristylated HIV-1 gag p55 precursor is initially cleaved at random either at the p17/p24 junction or at two sites between p24 and p15 proteins, resulting in three intermediates which are subsequently cleaved to yield mature gag proteins.

C.773

EARLY DIAGNOSIS OF HIV INFECTION IN CHILDREN AND NEWBORN BY LYMPHOCYTE CULTURES AND DNA/RNA DETECTION IN THE POLYMERASE CHAIN REACTION (PCR).

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Objective. In order to diagnose early HIV infection in newborn and children from seropositive mothers, we have looked for HIV in their peripheral blood mononuclear cells (PBMC).
Methods. 16 seropositive children were studied, age one day to 2 years and HIV was detected in lymphocyte cultures by P24 Ag ELISA (Abbott). HIV DNA and RNA in PBMC were demonstrated by PCR.
Results. HIV was isolated from lymphocytes in 5/16 cases (in 2/5 the first day of life). HIV DNA was detected in 13/16 children with two pairs of primers. HIV RNA was found in PBMC in 8/14 cases including the five with a positive HIV culture. Furthermore HIV RNA was present in 6/6 cases of children with clinical and/or immunological abnormalities but only in 2/8 of those with no clinical or biological changes.
Conclusion. PCR appears as the most sensitive method to diagnose HIV infection anytime after birth. Since HIV RNA detection in infected children does correlate with immunological abnormalities and positivity of lymphocyte cultures, it is likely that it may also be a clue in the assessment of active HIV replication and therefore of prognostic value in newborn HIV infection.

C.774

C.775

COMPARISON OF SINGLE AND DOUBLE-LABELLING OF SLB1 AND MT2 CELLS IN THE DETECTION OF HTLV-1 ANTIBODIES BY RADIOIMMUNO-PRECIPITATION ASSAY

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OBJECTIVE. 1.To determine if the sensitivity to HTLV-1 antibodies can be enhanced by a double-labelled lysate of infected cells. 2.To evaluate Leu as a substitute for Cys in the labelling of viral antigens. 3.To compare RIPA profiles from MT2 cells to a cell line of non-Asian origin (SLB1).
METHODS. Samples known to display various patterns of antibody reactivity were combined with either 5x10^6 cpm of ^{35}S-Cys labelled MT2 or SLB1 lysate, 1x10^7 cpm of ^{3}H-Leu labelled SLB1 lysate, or 5x10^6 cpm of both ^{35}S-Cys and ^{35}S-Met labelled SLB1 lysate. Antigen-antibody complexes were precipitated by protein A-Sepharose. Pellets were electrophoresed by SDS-PAGE and autoradiographed.
RESULTS. No samples displayed any additional antibody reactivities with Cys-Met than with Cys alone, and there was no observable difference in the intensity of bands. Lanes representing double-label treatment had greater non-specific background. Leu, substituted for Cys, did not improve the detection of any viral-specific antibodies, despite the fact that Leu is 5 times as common in the coding sequence. Using SLB1, viral products p24, p40, p55, and gp61 were reliably present. MT2 did not produce detectable p40, but exhibited p24, p55 and gp68. The representation of viral antibodies in 25 positive samples was p24/80%, p40/76%, p55/52%, and gp61/100%.
CONCLUSION. 1. ^{35}S-Cys-labelled-lysate is as effective in the detection of HTLV-1-specific antibodies as is ^{3}H-Leu or Cys-Met. 2. The SLB1 cell line provides better detection of anti-p40x than MT2.

C.776

HIGH CAPACITY DRUG SCREEN FOR INHIBITORS OF HIV TAT TRANSACTIVATION: EFFECT OF INTERFERONS

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Transactivation of the HIV LTR by the virally encoded tat protein is an essential step in virus replication. As such, tat transactivation is an attractive target for antiviral therapy. Transfection of HeLa cells with recombinant DNA plasmids expressing the HIV tat protein and linking E.coli beta-galactosidase to the HIV LTR has been used to generate human cell lines which express high levels of E. coli beta-galactosidase activity from a tat transactivated HIV LTR. One such cell line, 3B9, expresses sufficient beta galactosidase to allow the detection of the activity from 2000-5000 cells grown in a microtitre well. A high through put, virus free, microtitre format based drug discovery screen has been devised using the 3B9 cell line, and is being used to search for inhibitors of HIV tat transactivation. Compounds which inhibited HIV tat transactivation of the viral LTR would be expected to reduce B galactosidase expression in this cell line.

Alpha, beta, and gamma interferons are potent inhibitors of beta galactosidase expression in this assay. In order to differentiate between effects of interferons and other active compounds on tat transactivation and other effects which result in reduced beta-galactosidase expression, we derived a control cell line which expresses significant levels of beta-galactosidase from a different promoter, unrelated to HIV and not subject to transactivation by HIV tat. The effects of interferons and other "active" compounds on the expression of B galactosidase in this control cell line, as well as the effect on transactivation of a second LTR linked indicator gene introduced by transient transfection will be described.

C.777

SEROLOGIC ANALYSIS OF PROTEINS ASSOCIATED WITH AND PRELIMINARY SEROPREVALENCE STUDIES OF TWO NOVEL RETROVIRUSES ISOLATED FROM AIDS-ASSOCIATED LYMPHOMAS.

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Objectives: To determine the serologic relationship of the proteins associated with two novel retroviruses, 2F7 and 10C9, isolated from primary AIDS-associated lymphoma tissue to other known retroviruses, and to determine prevalence of exposure to these viruses in various populations at risk for retroviral infection.
Method: Immunoblot.
Results: Purified 2F7, 10C9, HTLV-I (C91/PL), and bovine leukosis viral (BLV) proteins were used as antigen sources for immunoblotting. Antibodies raised against 2F7/10C9 p27 (candidate major virion core proteins) recognized HTLV-I p24, and antisera raised against HTLV-I envelope proteins recognized 50 kd proteins present in 2F7/10C9 virus preparations. A small subset of sera obtained from individuals at risk for retroviral infection (women with PID, pregnant women, intravenous drug users) reacted with 2F7/10C9 viral proteins; this same subset of sera had limited reactivity with HTLV-I virion core proteins and BLV envelope proteins (gp55/31), and did not react with HIV-1 proteins.
Conclusion: These results demonstrate that the 2F7/10C9 viruses are serologically related to oncoviruses, not to lentiviruses, and provide evidence that exposure to these viruses has occurred in individuals in groups at risk for retroviral infection.

C.778

BUDDING FEATURES OF DIFFERENT MORPHOLOGIES OF HIV-1 PARTICLES FROM CELL CLONES ISOLATED FROM HIV-1-INFECTED MT-4 CELLS

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Objective. To elucidate the viral maturation process.
Methods. Cell clones were isolated from HIV-1-infected MT-4 cells. Cloned cells were observed by electron microscopy, and immunoelectron microscopy was also carried out using monoclonal antibodies and HIV-1-seropositive serum.
Results. The cell clones produced particles with different kinds of morphologies. Normal particles were produced from the cell surface by a budding process in which crescent shape structures first appeared beneath the cell membrane, and subsequently matured to a complete form with an electron dense core just before being released from the cell surface. Doughnut-shaped and teardrop-shaped particles were respectively produced by budding of the crescent shape with double-layers from the cell surface, and by the budding of a teardrop form with an electron dense core from the cell surface.
Conclusion. The morphological maturation of HIV-1 particles appeared to be completed just before their release from the cell surface in several cell clones producing differently shaped particles.

C.779

NON-SPECIFIC HIV P24 ANTIGEN REACTION DUE TO BACTERIAL CONTAMINANTS

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Objective. To determine the source of HIV p24 reactivity in a sample of tissue culture growth medium (TCM) used as matrix negative control in capture assay.
Methods. A putative microbial contaminant in a macroscopically clear TCM was amplified at 37°C for 48 hrs. The microbe was re-isolated on blood-agar and identified. The isolate was grown in fresh sterile TCM. P24 antigen reactivity was determined with commercial (DuPont) kits in the TCM prior to and after centrifugation (3000g, 30min), and in the filtered (0.45 μM) centrifugate. P24 reactivity was also evaluated in samples from a culture of *Pseudomonas aeruginosa* in TCM. P24 specificity test was as per kit directions.
Results. The contaminant in the original TCM was identified as *Alcaligenes faecalis*. The centrifugate and filtrate derived from the TCM with the microbial growth had p24 reactivities of 326 and 426 pg/ml respectively. P24 reactivity of 110 pg/ml was associated with the centrifugate from TCM with *P. aeruginosa* growth. In specificity tests, the kit confirmatory reagent reduced the p24 reactivity of a known positive control by over 94%. The same reagent, however, had no effect on the p24 reactivities associated with the samples from the bacterial cultures.
Conclusion. False positive HIV p24 reactivity in the antigen-capture assay may be related to microbial growth in test samples. Measurement of p24 antigenemia in samples from HIV-infected patients should be adequately controlled for possible bacterial contamination.

C.780

MACROPHAGE CULTURES DO NOT INCREASE FREQUENCY OF HIV ISOLATION OVER LYMPHOCYTES FROM HEMOPHILIACS

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Objective. To determine whether macrophages (MØ) of hemophiliacs preferentially harbor HIV, since the frequency of virus isolation from hemophiliacs in many studies is lower than that from infected asymptomatic homosexuals.
Methods. Monocytes and lymphocytes from asymptomatic seropositive hemophiliacs and homosexual controls in Ficol-Hypaque fractionated blood mononuclear cells were separated by adherence to plastic culture dishes and panning of the unattached cells. The MØ fraction was subjected to complement-mediated lysis with MAb Leu 5b to remove residual T cells. The two populations of cells were cocultured with GM-CSF treated MØ or PHA-stimulated lymphocytes from seronegative donors. Harvests from the cultures obtained weekly for 4 weeks were tested for p24 by the antigen-capture assay.
Results. Under comparable cultural conditions, HIV recovery from the blood mononuclear cells of 5 homosexual controls and 5 hemophiliacs studied was as shown.

	Monocytes	Lymphocytes
Controls	4+/5 (80%)	5+/5 (100%)
Hemophiliacs	1+/5 (20%)	2+/5 (40%)

Conclusion. The reported lower frequency of HIV recovery from hemophiliacs is unlikely to be due to the virus being preferentially harbored in their monocytes.

C.781

BIOLOGICAL FACTORS AFFECTING TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS

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OBJECTIVE: To assess biological factors which affect heterosexual transmission of HIV, with particular reference to biological markers of infectivity.
METHODS: 15 couples were identified where one partner (13 male, 2 female) was infected with HIV, and the other confirmed seronegative. The couples had been in a sexual relationship for an average of 23 months (3-84). There was no evidence of barrier methods of contraception. All patients were investigated at least once in the 10 month period. 21 (70%) were tested at least twice. At each visit venous blood samples were drawn and tested for antibody to HIV, p24 antigen and lymphocyte culture. In all cases, tests were carried out using commercial kits.
RESULTS: Virus was detected in lymphocyte cultures from 5 index cases, of whom 3 (60%) also had p24 antigen. One other index case also showed antigen but no virus. Among their sexual contacts 2 seroconverted during the study period 2 and 6 months after virus was first detected in culture. A third patient also yielded virus on culture and later had evidence of HIV DNA on hybridisation but 12 months after the original test is still HIV antibody negative. In 2 out of 3 couples where transmission occurred the index patient was antigenaemic and all 3 index cases yielded virus from lymphocyte culture on two or more occasions. In all 3 cases who showed evidence of infection, virus detection was the earliest marker of infection.
CONCLUSIONS: 2 female partners seroconverted during the study period, and a third showed evidence of infection but a short course of AZT may have delayed seroconversion. Virus isolation was present in all transmitters, p24 antigen in 2 out of 3. The use of virus isolation as an early indicator of infection (before antibody detection) is important, and the implications for subsequent heterosexual spread are discussed.

C.782

EXPRESSION AND TRANSACTIVATION OF HIV PROMOTER IN BACTERIA

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Objective. To study the expression and transactivation of HIV long terminal repeats (LTR) in a bacterial system.
Methods. A recombinant plasmid containing the HIV-LTR linked to an indicator gene, chloramphenicol acetyl transferase (CAT), was transformed into *E. coli*. The expression and transactivation of the HIV promoter, in the presence and absence of tat, was followed by measuring the level of CAT enzyme.
Results. We have demonstrated that HIV-LTR can also function as a promoter in *E. coli*. The HIV-CAT plasmid can express the enzyme efficiently upon transformation into bacteria. The bacterial transcriptional start site was mapped by mung bean nuclease analysis. HIV-LTR, besides being fully functional in *E. coli*, can also be specifically transactivated by the HIV-tat gene product. Transactivation can be demonstrated by an increase in CAT enzyme activity as well as an increase in the level of CAT mRNA.
Conclusion. This specific transactivation of HIV-LTR by tat protein in bacteria will provide a useful system to further investigate the specific interaction between the *tat* protein with the HIV-LTR and the mechanisms used for transactivation.

C.783

IMPORTANCE OF STRUCTURAL ELEMENTS OF HIV GP120 TO CD4-BINDING ABILITY

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Objective. The CD4-binding region of HIV gp120 has been mapped to a peptide stretch situated between aa 370 and aa 480. The aim of this study is to identify structures within this region, which are important for the ability of gp120 to bind to the CD4-receptor.
Methods. Site-directed mutagenesis was used to introduce mutations within the CD4-binding region of gp120. Target structures were 1) cysteins, which are very conserved among HIV-1 isolates, hence indicating that they could be involved in disulfide bonds important for the three-dimensional conformation of the protein. 2) glycosylation sites, which surround the putative binding loop of gp120, thereby maybe protecting the binding region. Mutants were analysed in vitro by transfecting a gp160 expression vector, containing the mutant gene, onto CV-1 cells. CD4-binding ability was examined in an in vitro assay.
Results. Changing cys₄₀₃ to a serine resulted in a protein unable to bind to the CD4-receptor in the in vitro assay. Moreover, the protein had an altered electrophoretic mobility probably due to intracellular degradation by proteases. If the loss of CD4-binding ability is a direct effect of the mutation or is caused indirectly by protease degradation is currently under investigation.
Conclusion. Cysteins are important for the three-dimensional conformation and thus for the biological function of gp120. Our results show that gp120, which is a very variable protein, is extremely sensitive to changes in its conserved regions, since mutating only one cystein results in a protein susceptible to protease attack.

C.784

HUMAN IMMUNODEFICIENCY VIRUS (HIV) EXAMINED BY NEGATIVE STAINING: MORPHOLOGY AND ANTIGENICITY.

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Negative staining EM has proved less rewarding than thin sectioning in the study of HIV morphology and antigenic structure. This may, in part, be due to the close association of HIV with the propagating cell making it difficult to obtain good preparations of isolated virus. However, when HIV-2 infected cells (CB L-20/C8166) are gently homogenised in a Tenbroek-type, glass/teflon homogeniser surface located virus is sheared off and can be concentrated by simple differential centrifugation. The particles so obtained are mostly clumped and very little internal morphology is visible. However the greater number of particles isolated make it possible to visualize the immature virus particle which contains a spherical, doughnut shaped core.
Subsequent treatment of the semi-purified virus with a mixture of detergent (Nonidet P40) and glutaraldehyde both releases and stabilises the internal cone shaped component. Concentrations of both detergent and glutaraldehyde are critical, but when conditions are correct reasonable amounts of antigenically reactive cores are available for immune EM. These HIV-2 cores react positively with their corresponding human antisera, giving rise to classical immune complexes. These complexes contain various aberrant forms of the cone shaped core ranging from a squat triangular form to elongated rods. Their presence within the aggregates establishes that, antigenically, they are similar to, if not identical with, the standard cone shaped internal component. The isolated cores also reacted positively with a mouse monoclonal antibody directed against p24 (HIV-1) which reacts also with p25 (HIV-2).

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C.786

FAILURE TO DETECT HIV-1 PROTEINS AND DNA IN ENTAMOEBA HISTOLYTICA STRAINS ISOLATED FROM PATIENTS WITH HIV-1 INFECTION

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Objective: To detect HIV proteins and proviral HIV DNA in Entamoeba histolytica strains, isolated from patients with HIV-1 infection and from E. histolytica cultures fed with HIV-1 infected lymphoblasts.
In order to characterize E. histolytica strains from HIV infected persons, it is important to know, wether these amoebe can transmit HIV. To answer this question, we characterized 3 E. histolytica strains isolated from 3 patients with HIV-1 infection and tried to infect E. histolytica cultures (HM 1:IMSS) by feeding them with HIV-1 infected lymphoblasts (H9). Immunofluorescence microscopy and the polymerase chain reaction for the detection of viral proteins and proviral DNA were applied.
Methods: Isolated E. histolytica strains were cultured in TYSGM-9 medium, HM-1 was cultured in TYI-S-33 medium.
Immunofluorescence microscopy was applied to detect viral antigenetic material in the amoeba.
For the Polymerase Chain Reaction (PCR) DNA was extracted from blood cells and from E. histolytica, both isolated from three HIV-1 infected patients. For the DNA amplification we used different regions of the HIV-1 genome for proviral detection (-gag- region: SK 19, SK 38/39, and -env- region:SK 7o, SK 68/69) according to the probes and primers described by Ou et al.. Amplification was performed within 35 cycles. DNA was denaturated at 95° C, primer annealing was done at 50° C and elongation at 60° C.
Results: By immunofluorescence microscopy viral proteins were not detectable neither in the isolated strains nor in the E. histolytica cultures, fed with HIV-1 infected H9 cells after two weeks of cultivation. Applying the PCR, we could point out, that all three patients were positive using the -gag- (SK 19) and the -env- (SK 7o gene fragment as a target. However, no proviral DNA could be detected in DNA samples extracted from E. histolytica, isolated from these patientsand in the infected E. histolytica cultures.
Conclusion: E. histolytica can be excluded from transmission routes of HIV-1 and concern about a possible HIV transmission by E. histolytica is not justified.

C.787

RELATIONSHIP OF OTHER INFECTIONS TO PROGRESSION OF DISEASE IN HIV INFECTED MEN

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To determine the relationship of other infections to changes in immune status and risk of AIDS, specimens for isolation attempts for CMV, HSV-2, adenovirus, Ureaplasma urealyticum, and Mycoplasma hominis were collected 6 months apart in 222 HIV-1 antibody positive men participating in a cohort study of HIV-1 infection since 1984. Corresponding antibody titers to CMV (IgG and IgM), HSV-2, adenovirus, EBV, Chlamydia, HBV, and measles are being determined. At baseline, CMV was isolated from 45% of semen specimens, 5% of urine specimens, 0% of rectal swabs, and 0% of buffy coat cells. Isolation of CMV from semen at the baseline visit was associated with receptive anal intercourse, but not with isolations of HSV, M. hominis, U. urealyticum, HSV or adenovirus. The mean number of CD-4 cells and the mean CD-4/CD-8 ratio was significantly lower among HIV antibody positive men who shed CMV in their semen than in men who did not ($p < .0005$), but there was only a weak correlation between the titer of CMV virus in the semen and number of CD-4 cells. Semen excretion of CMV has persisted for six months in most men with positive cultures at baseline. Rates of isolation of HSV-2, adenovirus, U. urealyticum and M. hominis were low. Results of serologic and isolation studies at both visits will be presented in relation to other factors in these men. Implications of the association of low levels of CD-4 cells with isolations of CMV from semen will be discussed.

C.788

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REGULATION OF REPLICATION OF HIV-1.

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Regulated growth of the Human Immune Deficiency Virus Type-1 (HIV-1) is the hallmark of infection with this virus. Prolific replication followed by a prolonged period of controlled replication followed once again by prolific replication is characteristic of most HIV-1 infections. The controlled aspect of the HIV-1 infection represents interactions between the virus and host immune system as well as viral regulatory genes which determine where, when and how much virus will be produced within a particular cell lineage. A systematic discussion of these interactions which occur at the level of control of synthesis and processing of messenger RNA, and of virion assembly and budding, and of the specific infectivity of the viral particle will be presented. Specifically the role of the vif, vpu, tat, rev and nef genes in the control of viral replication will be explored.

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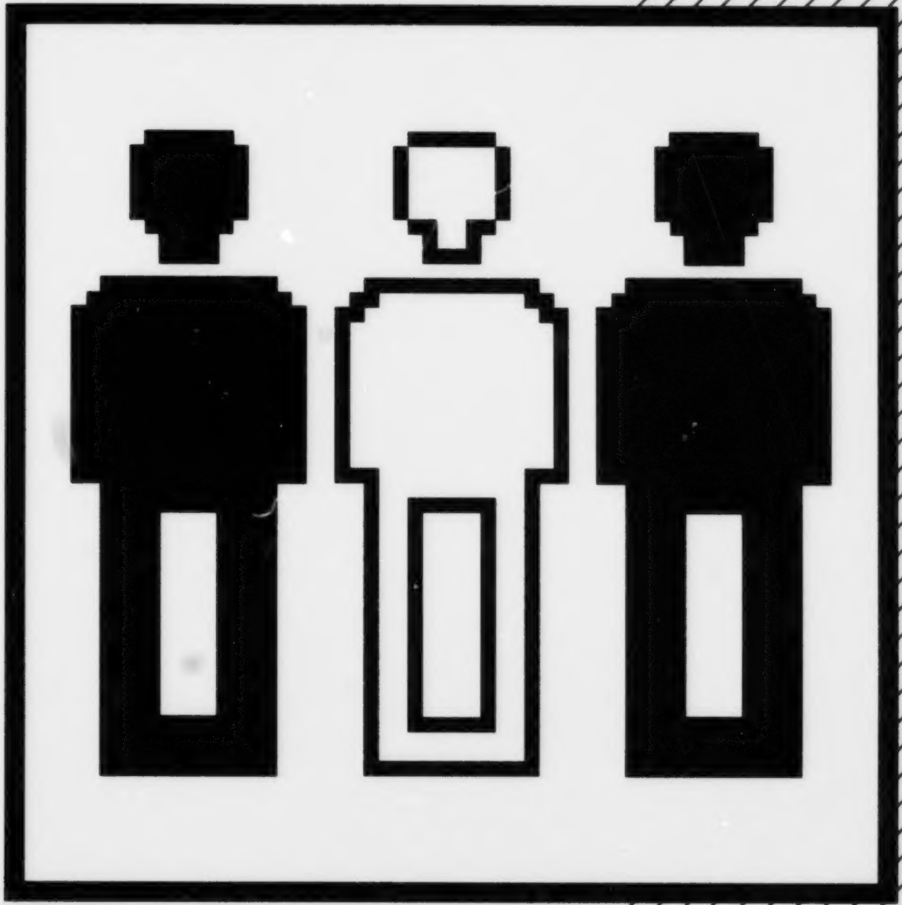
SECTION D



Le SIDA et l'individu

AIDS and the Individual

Recherches sur le comportement (partie 1)
Behavioural Research (Part 1)

M.D.0.1 POPULATION PREVALENCE OF AIDS HIGH RISK BEHAVIORS IN FRANCE, THE UNITED KINGDOM AND THE UNITED STATES

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Objective: To assess the prevalence of AIDS high risk behavior in France, U.K., and U.S.
Methods: Researchers drew a random probability sample of the population and an oversample from high HIV prevalence areas in each nation. Response is as follows: France (N=2294), U.K. (N=2204), U.S. (N=2263). Interviewers administered face-to-face interviews about AIDS knowledge and self-completed questionnaires about sexual orientation, sexual behavior, and drug use. AIDS risk is based on gay or bisexual orientation, number of partners, practice of anal intercourse, and risk of partners (prostitutes, IV drug users, bisexuals), or IV drug use. Gay/bisexual orientation is defined as intercourse with same sex in past 5 years or self-identification as exclusively homosexual.
Results: Preliminary unweighted results for the U.S. sample are distributed as follows:

	National Cross-Section			High Prevalence	
Personal Risk	Gay,Bi-sexual Men	Hetero-sexual Men	Women	Gay,Bi-sexual Men	Hetero-sexual Men
LOW	50%	91%	86%	8%	85%
MODERATE	22%	2%	9%	13%	5%
HIGH	9%	5%	3%	14%	7%
VERY HIGH	19%	1%	3%	65%	2%

In the population, rates of high or very high risk are: heterosexuals, 6% and gay/bisexual men, 28%. In high prevalence areas of New York, San Francisco, Miami, comparable rates are: heterosexual men, 9% and gay/bisexual men, 79%. Similar analyses for France and the U.K. are forthcoming. Final results will be weighted to the national populations and confidence intervals provided.
Conclusion: In the U.S., AIDS risk behavior among heterosexuals is substantial, gay/bisexual men outside high prevalence engage in risk behaviors less than those in high prevalence areas.

M.D.0.3 SEXUAL BEHAVIOR AND BEHAVIOR CHANGES IN KINSHASA: IMPLICATIONS FOR AIDS COUNSELLING

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Objective. To determine who engages in risky sexual behavior and who has changed their behavior because of AIDS.
Methods. 2516 employees and spouses of a Kinshasa bank were surveyed between 11/87 and 3/88 as part of an annual exam.
Results. For the preceding 12 months, 21% reported >1 sexual partner (SP), including 33% of (monogamous) married men and 1% of married women. Those with >1 SP were primarily males ($p<10^{-6}$); 30-49 years old ($p<10^{-6}$); at higher employee grades (p=.02) or higher educational levels ($p<10^{-6}$); and not in monogamous relationships ($p<10^{-6}$). Half of presumed extra-marital contacts among men were with prostitutes; for only 11% of these were condoms used, only half the time regularly. Thirty-one percent of the total population and 65% of married persons with >1 SP had made appropriate changes in their sexual behavior because of AIDS.
Conclusions. Both HIV(+) and (-) persons are beginning to change their sexual behavior. Men are tending toward more stable sexual relationships, albeit extramarital. Given the low frequency of condom use, further counselling should be directed toward changing the number and type of partners.

M.D.0.5 COMPLIANCE WITH AIDS PREVENTION MEASURES AMONG INTRAVENOUS DRUG USERS: HEALTH BELIEFS OR SOCIAL/ENVIRONMENTAL FACTORS?

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Objective. To examine the relative influence of health beliefs and social/environmental factors as they affect compliance with AIDS prevention behaviors (needle hygiene and condom use) among intravenous drug users (IVDUs).
Methods. Subjects were 578 IVDUs recruited from 3 street sites and 2 drug treatment settings in San Francisco. Respondents were verbally administered self-report instruments which measured: (1) health locus of control; (2) health beliefs (perceived threat, perceived benefits of compliance, perceived barriers to compliance, and perceived self-efficacy in complying); (3) social/environmental factors associated with compliance; and (4) frequency of compliance within the previous 6 months.
Results. In separate stepwise multiple regression equations for men (N=356) and women (N=171), social/environmental factors predicted a statistically significant proportion of variance in needle hygiene (Adj.R^2=0.06,p<.0006). For women, internal health locus of control accounted for an additional 2% of the variance (p<.05). Social/environmental factors also predicted the largest amount of variance in condom use for both men (Adj.R^2=0.21,p<.0001) and women (Adj.R^2=0.24,p<.0001). For men, perceived self-efficacy in using condoms and internal health locus of control each accounted for an additional 1% of the variance (p<.01 and p<.05, respectively).
Conclusion. In our study of IVDUs, compliance with AIDS prevention behaviors was strongly associated with social/environmental factors, and only weakly associated with health beliefs. By implication, further research and intervention with this population should emphasize the social/environmental factors that facilitate or impede "safer sex" and "safer needle hygiene" compliance.

M.D.0.2 BEHAVIORAL DETERMINANTS OF BLOOD DONATIONS AMONG HIV-SEROPOSITIVE PERSONS: A MULTI-CENTER STUDY

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Objective. To assess why HIV-seropositive persons attempt to donate blood.
Methods. Between June-Nov. 1988, 147 seropositive donors from 17 donation sites were interviewed regarding risk behaviors and reasons for donation. Comparisons were made between those who reported no identified risk (N=36), and those whose personal (N=77) or partner's (N=34) behavior put them at risk. Perceptions of risk for HIV infection prior to donation were measured on a scale of 1 to 10 with 10 highest.
Results. 82% of all seropositive donors reported reading self-deferral information provided by the blood bank. Although 17.2% said they didn't know blood would be tested, 88% of these persons said they read the materials. 35% felt pressure to donate, primarily at the worksite. Only 7% indicated donating to be tested for HIV. Mean risk score was 2.9 for those with an identifiable risk and 2.4 for those with no identifiable risk (p>.05). Reasons for low risk perception among the first group included: no recent or few high-risk partners (31%), being healthy (33%) and no drug use (27%). Among the 59 men with same sex contacts, 25% self-labeled as heterosexual, 36% as bisexual, and 39% as homosexual with 23% reporting discomfort with their attraction to men. 25% were married or had a female primary partner.
Conclusions. Self-deferral materials should emphasize that infrequent risk behavior and feeling healthy do not rule out HIV infection. Education programs that do not rely solely on written materials and that help persons counter pressures to donate should be developed.

M.D.0.4 AN ETHNOGRAPHIC SURVEY OF NONPENETRATIVE SEXUAL BEHAVIOR

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Objective: An ethnographic literature survey representing a first step toward identifying existing indigenous 'safer' sex practices that could eventually help form the core of culturally-sensitive interventions to control the spread of AIDS.
Methods: Because sexual behavior is integrated with all other behavior and beliefs in societies, and does no occur in a vacuum, we asked four questions of the available data for each society: What are the 'safer' and 'unsafe' practices? Who has sexual relations with whom? Who teaches whom about sex? What are typical attitudes to sex, and sexual behaviors? The first question addresses the central issue of the research. The second suggests routes of contagion in the society. The third and fourth provide information relevant to intervention planning. Data for this research was collected using computer searches of the National Library of Medicine Medline files, Catline files, Human Relations Area files, and reference lists of published ethnographies and survey texts of sexual behaviors. Additional areas to be searched include Human sexuality journals, unpublished files of organizations such as the Kinsey Institute, unpublished reports of sex behavior research on file in the health ministeries of governments of target countries, and original manuscripts in the Human Relations Area Files.
Results: The concept that sexual practices can be subdivided as 'penetrative' and 'nonpenetrative' and that these roughly also follow the distinction 'unsafe' and 'safe' is uniquely Western and biomedical, a recent construct aimed at containing sexually transmitted diesases. This research shows that variance among sexual habits and attitudes worldwide is extremely broad, and that even neighboring peoples may maintain very different practices. Where the detail of existing data permits, it is clear that safer sex practices exist in all societies, and that many of these are indigenous.
Conclusion: Intervenors must take time and care to understand the cultural meaning of biomedically 'safe' practices in the cultural setting in which they want to encourage them. The fact that a practice is known to a society does not mean that it is acceptable in that society. Or, it may be acceptable but only for strictly delimited groups, such as women (or men), the aged, unmarried youths, infants, or the widowed. Erotic sexual practices vary along a culturally defined contiuum from the egregiously unsafe to the thoroughly safe.

M.D.0.6 THE NATIONAL SURVEY OF HEALTH AND SEXUAL BEHAVIOR: THE PRETEST EXPERIENCE

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Objective. To describe the numerous survey methods used in the 1989 pretest of the National Survey of Health and Sexual Behavior (NSHSB) and evaluate the the outcomes of the methodological tests.
Methods. This pretest of a nationally representative sample of 2300 respondents was conducted to evaluate methods of collecting detailed data on sensitive topics related to HIV transmission including sexual history and partner characteristics, drug use, and HIV testing. Obtaining accurate data on these topics is critical for modeling the spread of HIV, designing appropriately targeted behavior modification and information programs, and estimating the impact of the AIDS epidemic on society. Personal, telephone, and self-administered interviews were compared as were structured and unstructured lines of questionning. Interviews were conducted either in the home or at a neutral site and gender and race matching of interviewers to respondents was used in half of the interviews.
Results. The relative efficacy of the various methods will be evaluated using tests of validity, reliability, and internal consistency.
Conclusion. Approriate survey methods are critical to producing accurate data especially in the conduct of surveys on sensitive topics. Estimates based on flawed surveys severely hamper research efforts and the development of successful prevention programs.

Les adolescents (partie 1)
Adolescents (Part 1)

M.D.0.7

EPIDEMIOLOGY OF AIDS IN ADOLESCENTS, U.S.A.

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Objective. To describe the epidemiology of AIDS in adolescents in the United States.
Methods. We analyzed demographic features and transmission categories for adolescents (13-19) with AIDS reported to CDC.
Results. Adolescents 13-19 years of age comprise 0.4% of the total reported AIDS cases; 50% of these cases have been diagnosed since 1986. Most of the adolescent AIDS cases (54%) were reported from 5 states and Puerto Rico and 74% from urban areas with populations greater than 1,000,000 inhabitants. Eighty-two percent of adolescents with AIDS are male and 51% are black or Hispanic. Overall, 56% of cases were attributed to sexual contact or intravenous (IV) drug use, 39% to exposure to blood or blood products and 4% to undetermined exposure. Heterosexual contact was the most frequent route of transmission for females, accounting for 39% of cases. Sexual contact or drug-use accounted for >70% of cases for blacks and Hispanics and 40% for whites. The proportion of cases due to sexual contact or IV-drug use increased from 10% for 13-14 year olds to 56% for 17-19 year olds.
Conclusions. Although adolescents comprise <1% of all AIDS cases, many adolescents may be at risk for HIV infection now and in the future. Our findings suggest that urban youth, particularly minorities may be at highest risk of exposure to HIV infection. Targeting interventions to adolescents with behaviors that place them at high risk of HIV infection is important. Helping all adolescents to develop safe sexual behaviors and avoiding drug use will have a major impact on the future of the AIDS epidemic.

M.D.0.8

ADOLESCENTS AT RISK OF HIV INFECTION

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Objective. To describe the AIDS-related knowledge and attitudes, and the risk-taking behaviours, of youth who had dropped out of school and lived on the streets of large Canadian cities.

Methods. Over 1,000 "dropouts" and over 700 "street youth" across Canada were interviewed by telephone and face-to-face, respectively. The data were analyzed to assess the extent to which they were at risk of HIV infection.

Results. Many of these young people were knowledgeable, yet anxious, about AIDS, intolerant of homosexuals, sexually permissive and highly active sexually, and some of them were using illicit drugs.

Conclusions. The high incidence of unprotected sexual intercourse with numerous partners and the sharing of injection-drug needles indicates that these young people are at risk of HIV infection. Persuading them to abandon behaviours that are integral to their lifestyles will be difficult, but must be attempted.

M.D.0.9

THE SIGNIFICANCE OF THE AIDS PANDEMIC FOR HOMELESS ADOLESCENTS

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Objective. This paper will discuss social epidemiological research on AIDS related attitudes, beliefs, and behaviors among street youth in the Western United States and in Rio de Janeiro, Brazil. This discussion will focus on the risk of HIV infection among street youth in developing countries, within the context of the larger world problem.
Methods. Ethnograpny and participant observation, structured and unstructured interviews with street youth and service providers in natural and institutional settings in Los Angeles, San Francisco, Seattle and Rio de Janeiro.
Results. While the majority of youth in the United States flee abusive or rejecting families, Brazilian youth leave their homes because of extreme poverty and familial misery to make what living they can on the streets - many through prostitution. Street youth in Rio, especially those from the slum areas or favelas, lack the long history of health education in schools, the community, and the media as compared to the United States. They are at risk for HIV infection because of their perception that AIDS is only a homosexual disease, concurrent expense and discomfort they associate with condom use, and subsequent unprotected sexual activity. Bisexual activity and anal intercourse are common among both hetero and homosexual street adolescents in Brazil, while cultural beliefs would dictate otherwise.
Conclusion. International collaboration and emergency economic support can assist greatly in the development of education material and outreach to prevent HIV among the growing number of street youth in the developing world.

M.D.0.10

INFECTION WITH HIV AND HBV IN ADOLESCENTS LODGED IN SECURITY INSTITUTES OF BUENOS AIRES CITY. IVDA AS A RISK FACTOR OF INFECTION.

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Objective. To determine the prevalence of infection with HIV and HBV in adolescents lodged in Security Institutes and relate it to different risk factors.
Methods. The sera of all adolescents lodged by court order in 3 National Institutes of Buenos Aires City between December 1987 and July 1988 were studied. In every case there was previous consent of the adolescent, as well as from the entity which legally protects them, to detect anti-HIV and HBV antibodies and to fill in the questionnaire about the risk factors. Anti-HIV and HBV antibodies were studied by EIA methods; anti-HIV were confirmed by Western blot.
Results. 156 adolescents (44 females and 112 males) whose ages ranged between 13 and 20 years were studied; 25.6% were positive for HIV and 29.5% for HBV. Among the IVDA of both sexes 53% was HIV positive and 52% HBV positive while there was a prevalence of 2.3% for HIV and 10.5% for HBV among non-addicts or non-intravenous addicts. Of all the adolescents studied, 14 stated they were homo-bisexuals of which one was HIV positive and 2 HBV positive.

	Number	HIV+/ Total	%	HBV+/ Total	%
IVDA	71	38/71	(53.5)	37/71	(52.1)
Non-addicts or non-IV DA	85	2/85	(2.3)	9/85	(10.5)
TOTAL	156	40/156	(25.6)	46/156	(29.5)

Conclusion. HIV antibodies were detected in 1/4 and HBV in 1/3 of the adolescent population in Security Institutes. Of the total population 45% was IVDA and this was, by far, the main risk factor found for infection with HIV and HBV.

M.D.0.11

Sex, Drugs and AIDS: Two Innovative Approaches to HIV/AIDS Prevention Education and Outreach for Minority Adolescents.

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Objective. To provide HIV/AIDS educational and outreach services to minority adolescents and to determine their knowledge, attitudes, behaviors and beliefs concerning sex, drugs and HIV/AIDS through two innovative programs in Newark, New Jersey and Brooklyn, New York.
Methods. The Newark Department of Health program has four components. Three directly involve adolescents which are: (1) a citywide "Rap Off" contest on sex, drugs and AIDS with educational sessions for all entrants required: (2) a teen theatre company who will perform an original scripted production on AIDS for adolescents and adults; and (3) peer counseling will be provided for adolescents. The fourth component, a professional video rpoduction will document the prior 3 components. The Brooklyn-Brownsville program trains 10 peer educators in sexuality, substance abuse, HIV/AIDS information and risk reduction strategies, and improvisational theatre techniques. Peer educators present role plays and skits on sex, drugs and HIV/AIDS to yout groups, organisations, community centers and parent associations. KABB surveys are distributed by both programs.
Results. Initial results indicate that minority adolescents: (1)are concerned about their risks of HIV/AIDS; (2) have some AIDS specific knowledge but also have misinformations; and (3) want to help educate their peers.
Conclusions. Culturally sensitive and relevant HIV/AIDS information for minority adolescents must use innovative approaches to educate them on risks.

M.D.0.12

THE DEVELOPMENT OF A STREET BASED OUTREACH PROGRAMME TO REACH YOUNG MALE, FEMALE AND TRANSSEXUAL, STREET BASED PROSTITUTES IN SYDNEY, AUSTRALIA

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Objective. (a) To ascertain the prevalence of HIV infection within a group of street based male, female and transsexual prostitutes; and (b) To develop an intervention programme to minimise transmission of HIV by this group. Methods. In November 1985 a mobile outreach bus program was established to provide HIV screening, counselling, education and the provision of free condoms and needles and syringes to street based prostitutes. The programme operates 365 nights a year, early evenings to early mornings on the streets of Sydney's "red light" districts. The outreach service is staffed by nurses and counsellors. Results. As at December 1988, 313 clients had been screened for HIV. 19 were HIV antibody positive (15 male prostitutes; 1 female prostitute; 3 transsexual prostitutes). 187 had used IV drugs, 152 were current users, 17 were HIV antibody positive. Five clients seroconverted during the 3 year period. An average of 2,000 condoms and 1,500 needles/syringes are given out per week. This paper will examine the risk factors associated with the client group and highlight educational issues raised by the seroconversions. Conclusion. A street based outreach project is an effective way of minimising transmission to and from its client group, who are otherwise disenfranchised from existing health services due to, illiteracy, low socio-economic grouping and general alienation from established health services.

Travailleurs de la santé
Health Care Workers

M.D.0.13 THE IMPACT OF AIDS ON ACUTE CARE HOSPITALS: A SURVEY OF INFECTIOUS DISEASE TEACHING HOSPITALS IN THE UNITED STATES

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Objective. To determine the hospital-wide impact of AIDS at key hospitals in the U.S., as follow-up to a previous survey (JAMA 1988;259:1819-22), and to assess differences related to geographic variation in AIDS incidence.
Methods. In February 1988 surveys were sent to the infectious disease departments at the 200 U.S. hospitals which conduct infectious disease (I.D.) fellowship training. For analysis, responses were placed into one of three groups: hospitals located in high AIDS-incidence states ($>200/10^6$); medium AIDS-incidence states ($50-199/10^6$); or low AIDS-incidence states ($7-49/10^6$).
Results. Response rate was 45% (90/200); response rate did not vary significantly in relation to geographic variation in AIDS incidence. Eighty-nine percent of the respondents were MDs. Problems experienced in relation to HIV testing include: MDs ordering HIV tests without patient consent (68%); employees demanding patient testing (61%); MDs refusing to care for patient if not tested (28%); threat of lawsuit by patient (11%). Twenty percent felt that AIDS issues had adversely affected house staff and medical school recruitment at their hospital; ANOVA showed that this effect increased as the AIDS incidence category of the hospital increased ($p < .05$). Nineteen percent of the respondents reported that hospital personnel had resigned due specifically to AIDS-related fears and frustrations; ANOVA also showed a tendency for this activity to increase with the AIDS incidence category ($p = .067$). The level of staff morale within ID departments varied in relation to category of AIDS incidence; ANOVA showed a stepwise decline in the estimated morale level as the AIDS incidence category increased ($p < .05$). One-third (36%) felt that AIDS issues had created an adversarial relationship between ID staff and hospital personnel. It was estimated that ID department personnel devote an average of 36% of their time to AIDS-related activities; 55% of the respondents believe that their department's AIDS-related activities are underfunded. Risk reduction counseling in conjuction with HIV testing was estimated to occur 57% of the time; only 13% of the ID departments are reimbursed for the provision of patient HIV counseling services.
Conclusion. Numerous effects on staff recruitment and morale have occurred due to AIDS issues. A large proportion of missed opportunities for AIDS education and risk reduction counseling at hospitals may be due to lack of reimbursement.

M.D.0.14 PREDICTORS OF INTRAOPERATIVE BLOOD EXPOSURES

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OBJECTIVES: 1) Describe intraoperative exposures to blood/body fluids in surgical personnel (SP), & 2) Identify factors predictive of exposure.
METHODS: Observation of 1307 consecutive OR procedures in 2 months at SFGH by trained OR circulating RNs to obtain: procedure data (type, service, elective vs emergent, blood loss, duration, etc.), patient data (dx/high risk HIV vs no risk HIV; dx/high risk HBV vs no risk HBV), & exposure data (personnel exposed, protection, source, site, mechanism, & magnitude).
RESULTS: SP sustained 110 exposures to blood in 84/1307 (6.4%) cases. Parenteral exposures (10 needlesticks, 5 cuts, 7 mucosal & 3 open wound splashes) were less common (1.9% of cases) than cutaneous exposures (22 glove leaks, 21 saturated clothing, 42 splashes). Blood loss > 300cc & duration > 4 hours predicted exposure. Parenteral exposure rates did not differ between services, but overall exposure rate was highest during ortho cases (10.7%). HIV was dx/suspected in 29% of cases; exposure rate (7.8%) was not decreased in these cases compared to exposure rate (5.8%) when no risk for HIV was apparent.

CONCLUSION: Parenteral exposure to blood occurred in less than 2% of OR cases at SFGH; the majority of intraoperative blood exposures due to cutaneous contamination (glove leaks, saturated clothing, splashes) are potentially preventable by improved barrier precautions. Suspicion of HIV infection did not decrease exposure to surgical personnel in this cohort.

M.D.0.15 *IMPROVING THE CARE OF AIDS PATIENTS: ROLES OF PROVIDER GENDER AND SPECIFICITY OF TRAINING*

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Objective. To identify mechanisms at work in Health Care Professionals' (HCPs) desire to avoid AIDS patients.
Methods. In four sequential studies we have surveyed 343 senior medical students, 140 college undergraduates, and 87 HCPs to assess their AIDS knowledge, attitudes, beliefs and practices. Primarily we used a Likert-type scale with responses factor analyzed to derive scales as linear functions using unit weights of items with factor loadings > 0.40 in absolute value. For analyses, derived scales (alpha > 0.89) were used either as dependent variables or covariates.
Results. Fear of infection is the principal cause of these respondents' desire to avoid an AIDS patient. But, important gender differences were also found that have relevant implications for improving AIDS patient care. Males express more homophobia ($p > 0.0002$), more fear of infection ($p > 0.0003$), and more antipathy toward AIDS patients ($p > 0.01$) than do females. Antipathy toward AIDS patients was associated with other maladaptive attitudes (homophobia [+0.56], thanatophobia [+0.45], authoritarianism [+0.39], positive self-image [-0.38] and psychological-mindedness [-0.44]). Medical students planning careers in internal medicine scored 30% higher on the homophobic scale than future psychiatrists ($p < 0.02$). We next investigated if the socialization that occurs among specific HCP occupations can reduce HCPs' sex dysphoria. By comparing attitudes of female MDs, nurses and midwives, ANOVA revealed that midwives were more at ease discussing birth control practices than either female MDs ($p > 0.01$) or nurses ($p > 0.01$).
Conclusion. More attention, both to gender differences in how HCPs perceive AIDS patients and to the desensitization that can be induced during health professions training, should produce better care for AIDS patients.

M.D.0.16 AIDS-RELATED KNOWLEDGE, ATTITUDES AND BEHAVIOR OF NURSES AND PHYSICIANS: A COMPARATIVE ANALYSIS

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Objective. To describe differences and similarities of AIDS-related knowledge, attitudes, and behaviors and other variables between registered nurses and physicians located at one hospital.
Methods. In September 1987 an anonymous survey was delivered to all physicians and nurses at a 455-bed acute care teaching hospital. The survey included scales measuring AIDS-related knowledge, attitudes, behaviors, homophobia, and homosexual bias, and items related to other variables.
Results. Responses were obtained from 174 MDs and 629 RNs. Demographically, the two groups did not differ significantly in age (mean age = 37.2 years); race (97% caucasian) and sexual preference (97% heterosexual). Other comparisons revealed that MDs tended to report more desirable attitudes ($p < .001$) and behaviors ($p < .001$) in relation to AIDS patients, and demonstrated a higher level of knowledge about AIDS transmission ($p < .001$). No difference in level of homophobia was noted, but MDs tended to be less biased in their opinions regarding homosexuality ($p < .001$). MDs were more likely to know an HIV-infected person ($p < .00001$), more likely to have cared for an AIDS patient at work ($p < .01$), more likely to be confident in the AIDS information given to the public ($p < .0001$), and less likely to be willing to attend a 1-hour AIDS educational program at the hospital ($p < .000001$).
Conclusion. Differences in educational background between MDs and RNs may account for much of the differences noted in AIDS-related knowledge, attitudes and behaviors. Other factors that may also contribute include whether or not one knows an HIV-positive person or has previously cared for an AIDS patient at work, and one's level of confidence in the AIDS medical information provided to the public. Since nurses provide much of the direct care given to AIDS patients, those who develop AIDS-related curricula for health care workers might consider these findings in order to maximize the effectiveness of AIDS educational programs.

M.D.0.17 SEXUAL BEHAVIOR AND PERCEIVED AIDS RISK AMONG 3500 ZAIRIAN HEALTH WORKERS

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Objective. To describe risky behavior, perceived risk and factors related to risk among Zairian health workers (HW).
Methods. We surveyed 3462 physicians, nurses, health facility workers, community HW and traditional healers.
Results. Extra-marital sexual relations (EMR) were reported by 54% in 1987 and 40% in 1988 ($p<10^{-4}$). EMR were more commonly reported by males ($p<10^{-4}$) and by younger personnel ($p<10^{-4}$). Forty-six percent use condoms for their EMR, 51% of these regularly. Only 60% who would counsel the use of condoms for AIDS actually use them for their own EMR. Nearly half of HWs (43%) view their own risk for AIDS as very high or high, in particular those who are: nurses ($p<10^{-4}$); in an urban environment ($p=.00037$); younger ($p=.0002$); less educated ($p<10^{-4}$); female ($p=.0203$); from Shaba or Equateur Region ($p<10^{-4}$); had attended a course on AIDS ($p=.00087$).
Conclusions. (1) HWs in Zaire engage in risky sexual behavior, though behavior may be changing because of AIDS. (2) Nearly half of HWs view themselves at high risk for AIDS. (3) AIDS courses may prove useful in further educating HWs, who can in turn educate the general public.

M.D.0.18 PREVENTING HIV INFECTION IN ENGLAND AND WALES: WHAT HAS PRIMARY CARE TO OFFER?

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General practitioners and community nursing staff are excellently placed to provide health education and advice in relation to HIV infection and AIDS. However, there may be obstacles that prevent the utilizing of opportunities that exist in primary care for the prevention of HIV infection and AIDS.
This paper will present findings from the first two United Kingdom national studies of HIV Infection and General Practice (sample of 5,359) and HIV Infection and Community Nursing Staff (sample of 5,243) undertaken in mid 1988. The findings, which include qualitative data from interviews, cast light on the preparedness of general medical practitioners and nursing staff who work in the community to undertake health education about HIV infection.
Findings will be presented that relate to the extent of contact that practitioners and community nursing staff have with people with HIV infection, people with AIDS and people with worries about HIV or AIDS.
Findings relating to medical practitioners' and community nurses' difficulty in discussing sexual behaviour, sexuality and injecting drug use, and in dealing with gay or bisexual men and women and with injecting drug users, will be discussed in the light of obstacles that exist to the effective provision of HIV-related health education and prevention. Strategies to overcome these obstacles will be discussed.
The paper will conlcude by discussing the implications of our findings for primary health care in Britain and for health education and prevention on HIV infection and AIDS.
Both studies funded by the Department of Health.

Détenus : contraintes et défis
Prisoners: Constraints and Challenges

T.D.0.1

HIV IN PRISON : A TEST CASE FOR HUMAN RIGHTS

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The AIDS epidemic has revealed grave deficiencies in prison health care. Prisoners are a vulnerable group, subject to an authoritarian regime and with little public sympathy. In over half the countries surveyed in a European study, inappropriate management of HIV-infected prisoners was described as routine: segregation, limited access to work places, lack of confidentiality. Compulsory screening of prisoners is also carried out in many countries, and results are frequently communicated to prison administrations without the prisoner's consent or knowledge.

Prisoners have a right to preventive and curative health care on the same level as in the community.

All prisoners should (i) receive adequate information on HIV/AIDS, (ii) be free to request or refuse HIV-testing, after counselling, (iii) benefit from pre-release education and guidance.

HIV carriers should (i) receive appropriate psychosocial support, (ii) be housed and treated as other prisoners, (iii) benefit from normal parole procedures.

Prisoners with AIDS should (i) receive adequate care, (ii) be considered for early release, (iii) be allowed to die in dignity.

The degree to which prisoners' human rights are respected will demonstrate the authenticity of governmental committment to human rights promotion in AIDS-related activities.

T.D.0.2

RISK BEHAVIOUR IN PRISON: SEXUAL ACTIVITY

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T.D.0.3

AIDS AND INTRAVENOUS DRUG USERS: THE CHALLENGE FOR THE JAIL ADMINISTRATOR

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An administrator of a correctional system is confronted with a difficult challenge: to provide appropriate AIDS prevention and treatment services to a large number of inmates with a history of IV drug abuse, without compromising the operation of a secure correctional setting.

Over 80% of New York City's jail population abuses illicit drugs and/or alcohol regularly, and about 50% of them have used drugs intravenously. Given these extraordinary rates of drug abuse and addiction, an estimated 25% of the inmates are infected with HIV.

The New York City Department of Correction has implemented an extensive range of AIDS and drug prevention and treatment services, which reflects a willingness to respond to this epidemic in a creative and flexible manner. The use of illicit drugs in the jails is prohibited and strict enforcement measures are used to ensure compliance by both staff and inmates. But, in addition, the Department offers methadone detoxification and methadone maintenance programs for opiate addicts and an array of intervention programs (including acupuncture) for crack/cocaine abusers.

Although significant, the services for intravenous drug users provided by the New York City Correctional system are only as effective as the long-term treatment and other services available in the community. Most inmates leave jail and return to the same high-risk activities because no substantive treatment and other preventive services are available.

T.D.0.4

CONSTRAINTS ON IMPLEMENTATION OF PREVENTIVE MEASURES IN PRISON

Hynes P J, Deputy Director of Prison Medical Services, England and Wales, Home Office, London,

The factors which influence AIDS prevention strategies for prison systems, and how they are implemented, will be discussed by reference to experience in England and Wales.

The environment.

The population.

Attitudes of prisoners (uninfected and infected) to AIDS/HIV.

Attitudes of staff.

Attitudes and preoccupations of management.

Limits to confidentiality.

Credibility of information and education.

The law and the prison discipline code.
The closed single sex institution.

T.D.0.5

APPROACHES TO THE SEROPOSITIVE PRISONER
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OBJECTIVE To review current practices in the identification and management of seropositive prisoners. To suggest a rational, safe and humane approach.
METHODS A review of current policies in United States correctional facilities of screening and testing inmates for HIV antibody will be undertaken with reference to National Institute of Justice and American Civil Liberties Union surveys. Policies and procedures for special management of identified seropositive prisoners will be reviewed, with the rationales forwarded for policies of segregation. A review of the San Francisco Jail policy and procedure will be presented.
RESULTS In the prison environment, limited resources tend to be directed either towards procedures of testing and segregated housing, or towards education and counselling. Rationales for policies of segregation are frequently correctional rather than medical. Proper correctional classification and supervision of prisoners are essential for a safe prison environment.
CONCLUSION The essential information which AIDS education programs impart: HIV infection may be prevented by safe behavior, HIV is not casually transmitted, are contradicted by policies of segregation. Policies should be based upon medical rather than correctional reasoning.

Recherches sur le comportement (partie 2)
Behavioural Research (Part 2)

T.D.0.6

PERCEIVED NEED FOR BEHAVIORAL CHANGE: DISTINGUISHING BETWEEN GROUPS AT RISK OF HIV INFECTION IN A LONGITUDINAL COHORT OF GAY AND BISEXUAL MEN. Cohn, David*; Bartholow, B.*; O'Reilly, K+; Judson, F.* Denver Disease Control Service*, Denver CO., Centers for Disease Control+, Atlanta, GA., USA.

Objective: In a longitudinal cohort study of gay and bisexual men, to assess the relationship of perceived need for behavioral change with knowledge, attitudes and beliefs (KAB), and with actual modification of high-risk behaviors.
Methods: A questionnaire assessing HIV risk behavior and KAB was administered to study participants at initial visit and six month intervals. From December 1986 through December 1988, 996 men were enrolled, of whom 254 had returned for at least 3 visits. Subjects were grouped according to their perceived need for change at each of 3 time points, and those falling in the extreme categories (persistent need to change [PNC] versus no need to change [NNC]) were selected for analysis. Between group comparisons were made regarding risk-related behaviors and discriminant function analysis was used to determine the discriminating KAB characteristics of each group.
Results: The PNC group had 2.7 times as many sexual partners at each time point (p<0.001) and used condoms less frequently than did the NNC group (p<0.05). Discriminant analysis of KAB successfully classified 88% of subjects into the PNC or NNC groups. Factors which discriminated PNC over NNC included lack of perceived validity of education from local gay organizations, difficulty meeting one's sexual needs, absence of assertiveness and communication regarding safe sex practices, concerns over drug/alcohol use, and need for condoms during anal intercourse.
Conclusion: Gay men are able to correctly assess personal risk of HIV infection and it is possible to predict those who need to change their high-risk behavior by assessment of KAB systems. Specific behavioral interventions regarding negotiation, communication skills, and coping should address issues that predispose to high-risk sexual behaviors.

T.D.0.8

RISKY SEX RELAPSE, THE NEXT CHALLENGE FOR AIDS PREVENTION PROGRAMS: THE AIDS BEHAVIORAL RESEARCH PROJECT
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Objective. Research on other health-related behaviors such as smoking, drinking and weight loss has shown that initial health behavior change is often followed by relapse. This study was designed to examine the stability of individual behavior change following initial adoption of safe sex as well as psychosocial predictors of relapse.
Methods. A sample of 453 gay and bisexual men were followed anually from 1984 to 1987. High risk sex was defined as unprotected anal intercourse with multiple partners. Predictor variables included social support, personal efficacy, sexual self control, knowledge of health guidelines, and openness about one's sexual orientation. These were examined in a multiple logistic regression comparing subjects who relapsed to those who were able to maintain low risk behaviors over time following initial behavior change.
Results. The individual behaviors over time were grouped into the following behavior patterns:

BEHAVIOR PATTERN	PERCENT
Stable low risk throughout the study	50.8%
Changed to and maintained low risk behaviors	29.8%
Relapsed after initial behavior change	15.7%
Stable high risk throughout the study	3.8%

Subjects who relapsed reported lower levels of self efficacy and less social support for safe sex behaviors than did subjects who were able to maintain safe sex behaviors.
Conclusion. It is clear from these data that future AIDS prevention programs need to include relapse prevention components to increase the likelihood that behavior change will be maintained over time. The predictor analysis suggests that it may be beneficial to address social support and self efficacy issues in these interventions.

T.D.0.10

TENSION REDUCTION EXPECTANCIES UNDERLIE THE EFFECT OF ALCOHOL USE ON AIDS-RISK BEHAVIOR AMONG HOMOSEXUAL MALES
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Objective. Alcohol use is associated with AIDS-risk sexual behavior. Alcohol "disinhibition" is cited as underlying this association, but has not been well defined. We found tension reduction expectancies of alcohol effects to induce risk for abuse among homosexual males. We hypothesized that such expectancies would also underlie the sexually disinhibiting effects of alcohol. Our objective was thus to assess the co-occurrence of alcohol and high risk sex, and to examine expectancies as an explanatory mechanism.
Methods. A large (n=2600) diverse sample of homosexual men were given an anonymous survey regarding alcohol use, sexual behavior, and psychosocial variables. This was accompanied by a smaller (n=87) in-depth interviewing sample.
Results & Conclusions. 54% of respondents reported some unsafe sex. A majority of these respondents reported alcohol disinhibition, an inducement that was independent of "passion" or other factors. Alcohol problems, intoxication rates, alcohol use in sexual contexts, and tension reduction expectancies consistently predicted number of sexual partners and unsafe sexual practices. Tension reduction expectancies were strongly related to alcohol use in sexual contexts, with either habitual or new partners. Finally, alcohol use variables significantly interacted with expectancies in predicting unsafe sex, consistent with the hypothesis. These findings suggest a mechanism of alcohol disinhibition, and an avenue for prevention or intervention.

T.D.0.7

SITUATIONAL FACTORS ASSOCIATED WITH, AND RATIONALIZATIONS EMPLOYED TO JUSTIFY UNPROTECTED INTERCOURSE IN GAY MEN.
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Objective. Investigated (a) the situational variables that distinguish between sexual encounters in which gay men (i) engage in, (ii) refrain from, unprotected anal intercourse; and (b) the rationalizations these men employ at the time to justify unprotected intercourse.
Methods. Gay men were asked to recall two sexual encounters in the past year: one in which they had unprotected intercourse ("unsafe encounter" or UE) and one in which they resisted a strong desire to do so (the "safe encounter" or SE). For each encounter the respondent was asked when it took place and with whom. Each encounter was then divided into (a) when the "evening" (or morning, etc.) began; (b) when the respondent met his partner; (c) at the start of sex; (d) during sex. For each of these, the respondent was asked about location, his desires, alcohol and drug consumption, and whether the question of safe sex was raised. For UE the respondent also identified any rationalizations he used for unprotected intercourse.
Results. Key findings were: (a) For respondents who described both SE and UE (n = 181) the latter was more likely with a lover, the former with a casual partner. (b) With the difference controlled (n = 108), factors which distinguished UE from SE were: in UE there was a greater desire for unprotected sex from the start of the "evening", greater feeling of being alert and relaxed but restless and desiring excitement, greater physical attraction and less communication about safe sex. Consumption of alcohol and drugs did not distinguish UE from SE.
(c) Respondents reporting UE (n = 219) employed many rationalizations, the most common being the thought that intercourse would take place without ejaculation.
Conclusion. The findings can be used to inform AIDS education strategies.

T.D.0.9

PSYCHOLOGICAL STATUS AND RISK BEHAVIOR IN MEN SEEKING HIV TESTING
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Objective. To examine the hypothesized relationships between HIV risk behavior, psychological variables and effects of HIV testing.
Methods. 154 physically asymptomatic gay/bisexual men voluntarily sought HIV testing and were evaluated with clinical ratings of psychiatric diagnosis (SCID,PDE), and self-report measures of risk behavior, hardiness, social support, attributional style and distress (Beck Depression, Brief Symptom, and Spielberger Anxiety Inventories). Risk behavior and distress measures were repeated 9 weeks after notification and counseling.
Results. 132 subjects (86%) reported no Unprotected Anal Sex (UAS) in the month prior to HIV testing; of 79 subjects seen 9 weeks later (25% HIV+), 75 continued to abstain from UAS. 22 subjects (14%) engaged in UAS in the month prior to testing; of 11 subjects seen 9 weeks later (27% HIV+), all had abstained from UAS in the past month. Psychological variables and serological status did not distinguish the two behavior groups at either measurement point.
Conclusion. Most participants ceased high risk behavior at least one month prior to HIV testing. This "floor effect" impeded determining the relation between risk behaviors, psychological variables, and effects of HIV testing and counseling. This study documents the need for prospective studies to determine if risk reduction surrounding HIV testing is sustained over time, and how psychological factors and known HIV status predict possible relapse.

T.D.0.11

HIV RISK BEHAVIOR SCREENING: CONCORDANCE BETWEEN ASSESSMENTS THROUGH INTERVIEWS AND QUESTIONNAIRES
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Objectives: To determine level of agreement between assessments by self-administered questionnaires and face-to-face interviews, of HIV risk behaviors in groups and individuals.
Methods: A sample of 334 women attending a family planning clinic responded to the same questions through a self-administered questionnaire and a face-to-face interview. For each item, interviewer coded reasons for discrepancies between the two responses were recorded.
Results: 1. Prevalence of HIV risk behaviors in the group, as determined by the two methods were remarkably similar; the maximum difference between the two estimates for any risk behavior was 1.5 percentage points, for the proportion of individuals reporting more than 5 partners in the last 10 years. 2. Individuals' risk behaviors were assessed with less agreement between the two methods; 12 women (4%) reported risk behaviors on the questionnaire which they denied during the interview; 6 women (2%) did the reverse. Also, twice as many women (8%) reported greater numbers of sex partners during the interview compared to those who reported greater numbers on the questionnaire (4%). 3. Discordance between assessments did not vary by demographic characteristics and education.
Conclusions: Prevalence of HIV risk behaviors in a group are similarly assessed by self-administered questionnaires and face-to-face interviews. However, these two methods can yield highly discrepent findings in assessments of individuals' risk behaviors.

Minorités
Minorities

T.D.0.12 IDENTIFICATION, RECRUITMENT AND RETENTION OF BLACK AND LATIN COMMUNITY LEADERS IN AIDS PREVENTION RESEARCH

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Objective. This presentation examines the issues related to identification, recruitment and retention of Black and Latin community leaders in a research effort designed to evaluate the impact of AIDS education on the AIDS-related activity level of those leaders.
Methods. A list of Black and Latin community leaders in San Francisco was compiled consisting of elected officials, directors and administrators, appointed officials, clergy, and persons who were acknowledged as community leaders by two or more persons of the other categories. Subjects were contacted by letter with a follow-up telephone call to solicit participation. Reasons for not participating were recorded. Those agreeing to participate were randomly assigned to one of two conditions, a four session workshop on AIDS in their respective communities (Black or Latin) or receiving an AIDS information manual.
Results. Of the 168 leaders identified, 84 (50%) agreed to participate; of those 46 (27%) formally entered the trail, of whom 22 were Black and 24 were Latin. Reasons for non-participation were examined and included: reluctance to be involved with an AIDS activity, "burnout" from AIDS work, bias against people with AIDS and reluctance to commit time to the research activity.
Conclusions. While it is widely agreed that increased involvement of Black and Latin community leaders would improve AIDS treatment and prevention activities, this study identified major obstacles to their involvement. Minority community leaders may not see AIDS as a pressing issue and may have biases against people with AIDS. These attitudes require recognition in developing AIDS prevention activities.

T.D.0.13 AMERICAN INDIANS/ALASKA NATIVES: ARE THEY AT HIGHER RISK OF HIV INFECTION?

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National Native American AIDS Prevention Center, Oakland, CA, USA

Objective: To highlight the risk factors which make American Indians and Alaska Natives particularly vulnerable to HIV infection.

Method: The National Native American AIDS Prevention Center has gathered secondary data from the U.S. Centers for Disease Control on rates of primary and secondary syphilis and gonorrhea and conducted knowledge, attitudes and behavior surveys of Native people in substance abuse programs, at national pow-wows and other venues; and conducted structured interviews concerning sexual behavior among Native Americans and of Native American people with AIDS.

Results: Sexually transmitted disease rates are from 2 to 10 times higher for Native Americans in some geographical areas than for the non-Indian population as a whole. Interviews with substance abuse providers, tribal officials and youth indicate a growing but unmeasured problem with intravenous drug use. Although comprehensive sexual behavior research has not yet been done, preliminary findings indicate a higher rate of bisexuality than among any other American ethnic group.

Conclusions: American Indians/Alaska Natives are at high risk for infection.

T.D.0.14 INVOLVEMENT OF NATIVE HEALTH-CARE PROVIDERS IN DEVELOPING AN AIDS PREVENTION STRATEGY FOR NATIVE PEOPLES

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*Division of STD Control, Province of British Columbia, Vancouver, British Columbia, **Vancouver Indian Centre Society, Vancouver, British Columbia, CANADA

Objective To develop an AIDS prevention strategy for Native population of the province of British Columbia.
Methods A representative Planning Group of Native health-care and human service providers from around the province was convened to develop a proposal for an effective AIDS program for the Native community. A "non-political" approach was taken in choosing Native providers rather than Native policy-makers to develop the program. A strategy was developed through meetings of the Planning Group. Funding, logistical and advisory support was provided by the provincial and federal governments.
Results Consensus was reached on several general principles to be established as a basis for the strategy. The program would be 1) Native developed, implemented and owned, 2) designed to reach all Natives irrespective of status or place of residence, 3) generic in graphic design while remaining recognizably Native, 4) focussed on AIDS while also addressing other forms of social malaise in the Native community and, 5) followed by a sustained AIDS prevention resource. Based on these guidelines a proposal was developed that included videos, posters and pamphlets, community presentations and workshops, and a large conference.
Conclusions Giving the task to health-care providers from the Native community is an effective way to develop AIDS prevention strategy for the Native population.

T.D.0.15 A VIDEO AIDS PREVENTION TRAINING PROGRAM FOR PEOPLE WHO ARE MENTALLY RETARDED/DEVELOPMENTALLY DISABLED

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Objective. To teach adults who are mentally retarded/developmentally disabled (MR/DD) to better protect themselves from AIDS through the practice of safer sex.
Methods. A video training program with a staff training manual was developed by the Young Adult Institute to change sexual behaviors for people who require a multi-sensory mode of learning due to their impaired learning abilities. Participants who functioned in the mild and moderate range of MR were taught in small groups: 1.What AIDS is; 2.How it is sexually transmitted; 3.How to put on and take off a condom; 4.How to negotiate safer sex when pressured to have unsafe sex.
Results. The video training program was presented to 113 of our clients in small groups. Staff conducted a survey 3 months after their clients were educated, which revealed that 82% of our clients in the mild range of MR retained crucial information taught in the session. Additionally, before the training, our clients were not using condoms. Subsequently, 52% of those clients who are sexually active asked for condoms now being supplied in their program.
Conclusion. This study indicates that people with MR/DD do need protection from AIDS and can learn through education specifically designed for their learning needs.

T.D.0.16 DEAF OUTREACH PROJECT ON AIDS

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** Canadian Hearing Society, Toronto, Ontario, Canada
***AIDS Committee of Toronto, Toronto, Ontario, Canada

Objective: To describe the formation and development of a joint project on AIDS and Deafness established to enable the deaf community to access AIDS information.
Method: Information gathered during the initial phase of the project revealed: 1) the 28,000 profoundly deaf persons in Toronto whose primary language is Americal Sign Language generally have limited english skills, usually below grade 4 level. Thus, current AIDS materials are inaccessible. 2) AIDS information is passed socially from 1 deaf person to another rather than through mass media. Misconceptions are spread quickly and are extremely difficult to challenge withour direct access to deaf social networks.
3) Models of community development used by most AIDS organizations are not appropriate for the deaf community. Evaluation with key deaf leaders led to the restructuring of the project design.
Results: The service delivery model developed is congruent with the structure and process of the deaf community and utilizes a cross-cultural approach of mediation, advocacy and culture-broking. 14 deaf men and women from a variety of social groups (deaf gay networks, sports groups, clubs and informal groups based on ethnicity, communication modality and educational background) are trained as paid consultants to provide actual services.
Conclusion: Consistent leadership from the deaf community is critical to the development of a culturally-relevant, cost-effective and efficient AIDS and Deafness Program.

T.D.0.17 AN AIDS EDUCATION PROGRAM FOR BLACK AND LATINA WOMEN

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Objectives. To test the effects of an AIDS education & prevention program on the knowledge, attitudes & practices of low income Black & Latina women.
Methods. The study used a pretest-posttest nonequivalent control group design with a 2-3 month retest of the experimental group. The sample consisted of 256 experimental & 105 control Black women & 250 experimental & 101 control Latina women who were clients of the Public Health Foundation Nutrition Program for Women, Infants & Children in Los Angeles. The program consisted of a slide-tape presentation, educational and resource brochures. Knowledge, attitudes, sexual & drug use practices were measured using a structured pretest, posttest & retest that was developed in both English & Spanish languages. Content validity of the questionnaire was established & it was pilot tested on each group. Reliability was determined using Cronbach's alpha.
Results. Using a 2-way repeated measures ANOVA, there were significant differences in pretest-posttest knowledge, attitudes & practices for both racial/ethnic experimental groups that were retained on retest. Control groups did not show significant pretest-posttest differences. Blacks & Latinas differed on pretest knowledge & attitudes but not practices. Blacks had more knowledge & positive attitudes on pretest. The posttest improvements for both knowledge & attitudes were greater in Latinas then in Blacks. A multiple regression analysis revealed the best predictors of knowledge, positive attitudes & practices.
Conclusion. A didactic audio visual program can positively affect the knowledge, attitudes & practices of participants that are retained over time.

Psychologie et sexologie
Psychology and Sexology

T.D.0.18

THE WORRIED WELL: IDENTIFICATION BY SIMPLE CHECKLIST

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OBJECTIVE: The "Worried Well", who misattribute somatic symptoms to HIV infection despite repeated negative clinical and serological investigations, can benefit more from appropriate congnitive-behavioural intervention than from further medical investigations and reassurance. The development of a checklist to aid identification of the "Worried Well" for alternative intervention is described.
METHODS: Patients presenting to a genito-urinary medicine clinic seeking counselling with respect to anxiety about having contracted HIV infection were scored on items relating to presenting symptoms, style of presentation and psychosocial history. Differences between those accepting the negative results of clinical and serological investigations and those continuing to believe they are infected were examined. A checklist based on these differences was constructed and its ability to predict the "Worried Well" assessed using a further sample of forty similar patients.
RESULTS: The "Worried Well" were found to be characterised by a number of items, particularly presentation of symptoms and psychosocial history. The checklist developed using these items demonstrated a high predictive ability, high test-retest reliability and good inter-rater reliability.
CONCLUSION: It is possible to identify the "Worried Well" accurately and reliably using a simple checklist. The potential usefulness of early identification is discussed.

T.D.0.19

SOCIAL SUPPORT, HIV SYMPTOMS AND DEPRESSION AMONG GAY MEN

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Objective. To examine the impact of objective HIV status, knowledge of HIV status and AIDS-related symptomology on depression among a community sample of gay men and identify which of three types of social support (emotional, informational, practical) most effectively buffered that depression.
Methods. Longitudinal questionnaire data come from 455 gay and bisexual men who participated in 1986 and 1987 waves of the San Francisco Men's Health Study, a population-based sample drawn from the census tracts with the highest incidence of AIDS in 1984 .
Results. The number of AIDS-related symptoms experienced significantly predicted depression cross-sectionally (*r*= .25) and one year later (*r*= .17). Objective HIV status and knowledge of one's status were not significantly associated with depression. The three types of social support all showed significant negative correlations with current and later depression (all *r*s ranged from -.25 to -.37). Multiple regression analyses showed a significant interaction between symptoms and informational support, suggesting that men with high symptom levels benefitted most from informational support.
Conclusion. Gay men are at highest risk for depression when they begin to experience AIDS-related symptoms. While all types of social support are associated with reduced depression, informational support may be especially beneficial for those in early stages of disease progression.

T.D.0.20

MODIFICATIONS OF SEXUAL BEHAVIOUR DUE TO AIDS IN FRENCH HETEROSEXUAL "AT RISK" POPULATION.

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(1) INSERM Unit n° 240, Paris, France - (2) French Committee for Health Education (CFES) - (3) INSERM Unit n° 31 , Marseille, France-

A survey has been carried out in France by CFES in a national sample (n = 1 000, Sept. 1988) of "sexual multipartners" : identification of individuals recognizing a priori that they had more than one sexual partner during the last six months was done using a random walk procedure ; a questionnaire was then submitted to them through personal interview.

46.9 % of the sample declared use of condoms (10,3 % declaring systematic use) ; *38.7 % of users were new users of the last six months, mainly motivated by fear of Aids*. 33.3 % of sexual multipartners declared that they made some change of sexual behaviour because of Aids but 41.7 % of these only quoted "being more careful in choice of partners" without any condom use. Condom use was significantly more frequent for men (52,3 %) than women (41,6 %) (p < 0,01), and for individuals under 35 years of age.

Multivariate analysis (using logistic regression model) shows that the following factors are the main predictors of condom use in that population : *high school level of education* [OR = 1.32 - 95% IC = 1,00 - 1,74], *being single* [OR = 1.42 - 95% IC = 1.10 - 1.85], *sex* [OR for women = 0.64 - 95% IC = 0.49 - 0.83], *knowing a HIV carrier in personal relations* [OR = 2.04 - IC = 1.55 - 2.69], *having voluntarily undergone a HIV test* [OR = 2.91 - 95% IC = 1.90 - 4.44].

Although interpretation of results is limited by the absence of data on the real degree of exposure to sexual transmission of HIV in such French population of sexual multipartners, conclusions will be drawn for information campaign about condoms and screening policies.

T.D.0.21

THE PREVALENCE OF AIDS-RISK-RELATED SEXUAL BEHAVIORS AMONG WHITE, MIDDLE-CLASS, URBAN AMERICAN ADULTS: A SURVEY OF RESEARCH FROM KINSEY TO THE PRESENT

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Objective. To provide a comprehensive view of sexual behavior patterns among American men and women, data from selected studies were combined to provide estimates of the prevalence of behaviors implicated in the transmission of Human Immunodeficiency Virus (HIV).
Methods. Drawing from 17 of the most thoughtfully designed scientific investigations and the largest, most comprehensive commercial studies published between 1948 and 1988, we derived estimates of the prevalence of AIDS risk-related behaviors for White, middle-class, relatively well-educated, primarily urban Americans between 20 and 50 years of age. These estimates are conservative. They represent weighted means derived by multiplying the results from each of the relevant studies by the sample size, summing across studies, and dividing this sum by the total number of subjects across all studies.
Results. Results indicate that a substantial proportion of the participants in the studies reviewed had engaged in (a) extramarital sexual interactions, (b) anal intercourse, (c) sex with prostitutes, (d) sexual interactions across nominally distinct sexual orientation groups, and (e) sexual contacts during visits to cities with a high prevalence of HIV.
Conclusion. Accurate data on sexual behavior and the attitudes related to these behaviors are essential to the development of behavior change programs vital to stemming the tide of AIDS. In the absence of sufficiently large and unbiased samples, our estimates based on 17 scientific and commercial studies provide important insight into the prevalence of sexual behaviors which place Americans at risk for infection with HIV.

T.D.0.22

HIV-POSITIVE GAY MEN: SEXUAL DYSFUNCTIONS

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Objective. To evaluate HIV positive men for sexual functioning expected to be impaired because of the emotional, systemic, and/or neurological effects of HIV disease.
Methods. 120 HIV-positive gay men with no or few symptoms and 80 HIV-negative gay men (all mostly white, middle class, age range 19-59 years) underwent a detailed semi-structured interview, the Sexual Risk Behavior Assessment Schedule (SERBAS-A-HOM-1, Meyer-Bahlburg et al., 1988).
Results. Preliminary analyses show high interindividual variability in frequency and practices of sexual behavior. Two-fifths of the men reported diminished sexual satisfaction, more than half some degree of negative feelings during sex, and about one-sixth some degree of sexual aversion. As to classical sexual dysfunctions as listed in DSM-III-R, about one-fifth of the men reported the presence of hypoactive sexual desire, two-fifths some degree of erectile failure, one-half some degree of retarded orgasm, one-fifth some degree of premature orgasm, and one-quarter other sexual dysfunctions.
Conclusions. The prevalence of sexual dysfunctions among HIV-positive gay men with no or few symptoms of HIV disease appears to be relatively high.

T.D.0.23

CHANGES IN LYMPHOCYTE PHENOTYPE AND FUNCTION IN HIV SEROPOSITIVE HOMOSEXUAL MEN FOLLOWING THE DEATH OF A PARTNER

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Objective: To determine whether immune parameters relevant to HIV progression were altered in HIV+ homosexual men following the death of an intimate partner. HIV- homosexual men were studied as a comparison group.
Methods: 25 subjects whose intimate partners had died over the past year were selected from among participants in the UCLA Multi-Center AIDS Cohort Study (MACS). Blood samples drawn prior to and following the death of the partner were compared. Age- and HIV serostatus-matched non-bereaved subjects provided blood samples over an equivalent time period. Immune parameters relevant to HIV progression were evaluated (e.g., CD4 cell levels, measures of immune activation such as the percent of CD8 cells expressing DR).
Results: Preliminary results from phenotypic analyses indicated that there was a significant increase in the percent of CD8 cells expressing DR following the death of the partner among HIV+ subjects; this change over time was not seen in the non-bereaved subjects. This change was also not seen among HIV- bereaved subjects.
Conclusion: The loss of a partner in HIV seropositive homosexual men was associated with increased evidence of immune activation. This pattern was not seen among the HIV- men who had lost a partner. Immune activation is relevant to progression of HIV infection.

Les adolescents (partie 2)
Adolescents (Part 2)

T.D.0.24 Do Health Belief Model Beliefs About HIV Infection and Condoms Predict Adolescent Condom Use?

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OBJECTIVE: To test whether beliefs about HIV and condoms outlined in the Health Belief Model predict adolescent condom use.
METHODS: In August 1988, 1,762 Massachusetts 16-19 year olds were surveyed using anonymous random digit dial telephone interviewing: response rate, 82%. Logistic and multiple regression analyses tested whether after social and demographic characteristics were controlled, perceived susceptibility to HIV infection, severity of HIV if infected, effectiveness of condoms in preventing infection, and barriers to condom use such as reduction of sexual pleasure, embarrassment or difficulty obtaining condoms predict condom use. Whether school education or medical counseling predict use was also assessed.
RESULTS: Respondents who believed condoms are effective in preventing AIDS and worry they could get AIDS were 3.1 and 1.8 times more likely to use them all the time. Those who believed condoms reduce pleasure and who would be embarrassed were 3.1 and 2.4 times less likely to use them. Respondents who carry condoms with them and those who discussed AIDS with a doctor were 2.7 and 1.7 times more likely to always use condoms. Average daily alcohol consumption and frequency of other drug use were also independently associated with less condom use. One-fifth of the variation in condom use was predicted by the Health Belief Model.
CONCLUSION: Those trying to persuade sexually active adolescents to use condoms should discuss with them beliefs in the Health Belief Model. Beliefs about pregnancy, other sexually transmitted diseases, partners preferences, alcohol and drug use should also be assessed.

T.D.0.25 PREDICTORS OF CONDOM USE AND STDS IN A GROUP OF SEXUALLY ACTIVE ADOLESCENT WOMEN

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Objective. To identify correlates of condom use and morbity related to sexual activity among 115 adolescent women who attended a family planning clinic. Methods. A cross-sectional study comparing historical, physical and laboratory findings, and self-reports of sexual behavior, attitudes, and beliefs. Results. Ages ranged from 14 to 20 years (mean 17.9), 92% were Caucasian and 65% lived with parents. Fifty-seven percent had >1 sexual partner during the preceding year, 76% had ever used condoms; only 12% used them consistently. Thirty-two percent had a prior history of an STD (gonorrhea, chlamydia, syphilis, genital herpes or warts, trichomoniasis, abnormal PAP smear or bacterial vaginosis), 16% unplanned pregnancy, and 26% had an STD presently. Condom users were younger than nonusers (mean of 17.3 vs. 18.2 years; p=.007) and had less frequent vaginal intercourse (p=.008). The consistent use of condoms was associated with the practice of always asking partners to use condoms (p=.017). More frequent use of condoms was associated with the perception that peers supported their use (p=.021). Most (65%) believed that use of condoms reduced the risk of AIDS, yet this belief was not associated with greater condom use (p=.22). Anal intercourse (AI), reported by 10%, was associated with a prior history of STD (p=.04), and marginally associated with unplanned pregnancy and total morbidity (p=.06 and p=.05 respectively). The number of morbid outcomes attributable to sexual activity was significantly associated with AI (p=.035). Those with a history of STD or pregnancy reported greater concern about AIDS (p=.036, p=.0006 respectively) but neither were associated with greater use of condoms.
Conclusion. Experience with an STD or unplanned pregnancy was not correlated with subsequent condom use among this group of adolescents; greater communication skill and peer support were. STD and pregnancy morbidity was correlated with the practice of anal intercourse.

T.D.0.26 PEER EDUCATION PROGRAM REACHES HIGH RISK ADOLESCENTS WITH AIDS INFORMATION AND PREVENTION

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Objective: To reduce the transmission of HIV in high risk youth with the use of AIDS-trained volunteer teenage peer educators in small group settings and direct street outreach. Methods: Multi-cultural teenagers are recruited from highschools, group homes and runaway shelters, and youth organizations. After an intense training on basic AIDS information and communication strategies, the young peer educators set up small group discussions and do direct street outreach to homeless and runaway youth in Los Angeles. AIDS issues that are specific to the needs and concerns of adolescents are addressed. As co-speakers, persons with AIDS (PWAs) emphasize the urgency of modifying risk-taking behaviors associated with HIV transmission and bring a 'human element' to the AIDS information-exchange. Conclusions: Youth speaking directly to youth is an effective means for penetrating intergenerational barriers of AIDS prevention through education messages. Post-test questionnaires document an increase in AIDS knowledge and behavioral intentions. Including personal testimonies from PWAs stresses the responsibility of taking precautions to prevent exposure; the PWA's presence not only heightens compassion for those diagnosed but is also empowering and rewarding for him/her. The Adolescent Alliance Peer Education Program is a culturally adaptable model for teenage populations. It is inexpensive and easy to implement and evaluate.

T.D.0.27 AN EVALUATION OF AN AIDS RISK REDUCTION EDUCATION & SKILLS TRAINING (ARREST) PROGRAM FOR ADOLESCENTS

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Objective. To evaluate an AIDS Risk Reduction Education & Skills Training (ARREST) program developed to (a) increase knowledge about HIV transmission and prevention, (b) build decision making, communication and assertiveness skills, and (c) modify HIV risk-related behaviors.
Methods. Sixty-five adolescents (13-16 yrs,mean=14) were recruited from 3 after-school community programs in New York City. All subjects completed self-report measures and videotaped role-play simulations. Subjects were then randomly assigned to an intervention group that received 3 ARREST sessions, or a control group that received no training. All subjects were reassessed 5 weeks later.
Results. The ARREST program is being evaluated using a repeated measures between and within group experimental design. The sample reported a high frequency of unprotected sexual behaviors at baseline; 38% (25/65) were sexually active, of which 56% (14/25) reported a mean of 4.4 (SD± 3.4) sexual encounters and 1.9 (SD± 0.9) partners during the 30 days prior to the study. Preliminary findings suggest increased knowledge and behavioral skills for refusing to engage in high-risk behaviors and negotiating alternative low-risk behaviors among those subjects who received ARREST.
Conclusion. Innovative interventions that provide skills training such as ARREST, and methodology for evaluating their effectiveness are needed to reduce the risk of HIV infection among adolescents.

T.D.0.28 STEPS IN DEVELOPING A SEX EDUCATION, STD AND AIDS PROGRAM FOR ADOLESCENTS IN BRAZIL

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The onset of the AIDS epidemic in Brazil has made evident how scanty our knowledge is about sexuality.
AIDS has open the opportunity for the population at large, adolescents, parents, school teachers to talk about their own sexuality and find ways to approach the issue.
The objectives in developing such a program were: (1) to assess the needs of the teenagers independent of the social economic status and, (2) to address sex and sexuality as an important part of the human life emphasizing responsability and love as component of it.
Methods: In order to prepare a program with the participation of adolescents we used 7 different strategies: (1) survey with different teenagers derived from different social, economic background; (2) debates using topics suggested by adolescents and having as facilitators adolescents elected by them; (3) establishment of an award for the group of teenagers presenting the best way for implementation of the program; (4) definition of the multiplier profile through research; (5) preparation of the manual for multipliers; (6) training for multipliers and (7) manual for adolescents.
Contents: The most interesting topics suggested by the adolescents were:
Biological: anatomy/physiology of the sexual response
unplanned pregnancy
abortion
contraception
sociocultural: sexual preference
violence sexual
homosexualism
bisexualism
Physiologicals: orgasm
masturbation
others sources of satisfaction
The content for STD's and AIDS were based in answering some questions:
What is ?
How to get it ?
What are the major sing and symptoms ?
How to prevent ?
Where to get help and treatment
How to avoid prejudice ?
How to talk to parents about it ?
Conclusion: For the first time we put together governmental institutions, private sector and Fundations to develop an unique and standardized educational material.

T.D.0.29 YOUTH AT HIGH RISK FOR HIV: KNOWLEDGE, SEXUAL PRACTICES, AND INTENTIONS TO INFORM SEXUAL PARTNERS OF HIV STATUS

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Objective. Because youth who come into contact with the juvenile justice system are typically sexually active, prone to drug experimentation, and often have STDs, they are at particularly high risk for HIV infection and transmission. Our aim was to examine their knowledge of behaviors that transmit HIV, their level of risky sexual behaviors, and their stated intention to communicate a positive HIV status to sexual partners.
Methods. 184 juvenile offenders (mean age = 16) at the San Francisco Youth Guidance Center completed anonymous self-report questionnaires. Actual HIV status was not determined.
Results. While 78% of the Ss expected to be told if their sexual partner were HIV+, only 60% would tell their regular, 35% their occasional, and 36% their prospective sexual partners. Ss who reported that they would not inform regular, occasional, or prospective sexual partners if they were HIV+ were significantly less accurate (p < .05 to .005) in correctly identifying unsafe sexual practices than those would. Ss who said they would not tell prospective sexual partners if they tested positive for HIV were more likely (p < .01) to have had sex in exchange for money, drugs, etc. over the last 12 months.
Conclusion. Informing sexual partners of positive HIV status is a crucial behavior in curtailing HIV transmission. Our data suggest that youth most at risk for contracting or transmitting HIV report the least willingness to inform sexual partners of their HIV status. These findings suggest an urgent need to target interventions for specific information and behavioral change in this particularly high risk group.

Counseling
Counselling

T.D.0.30

TRAINING INMATES AS HIV PEER SUPPORT COUNSELLORS IN GAOL

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Objective. To develop a programme to train inmates as HIV peer support counsellors and educators and establish a network of inmates throughout gaols who are available for HIV peer counselling and education.
Methods. Inmates collaborated with HIV workers in the design and implementation of the programme. Topics covered medical, counselling and psycho-social issues. Topics were presented by visiting specialists and information delivered in a variety of ways including lectures, group discussions, role plays and videos. The course was evaluated using interviews and by questionnaire.
Results. The evaluation process involved collecting qualitative and quantitative information. Questionnaires were used to compare participants' AIDS knowledge with that of inmates who had attended general information sessions offered by the gaol. Course participants showed a higher general AIDS knowledge ($p<.001$) and higher positive attitude scores ($p<.005$). As a result of the course, inmates produced an educational play and video on safe needle use for the internal television network of the gaol and were involved in HIV peer education and counselling of other inmates.
Conclusion. The success of the programme is directly attributable to the active involvement of the inmates in its planning and implementation. The programme demonstrates the practical and economic value in using inmates as HIV peer educators and counsellors in gaols.

T.D.0.31

OPTIMIZING INNER CITY PRENATAL AIDS COUNSELING (AC)

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Objective. To compare the effectiveness of 4 approaches to pregnant women to maximize acceptance of preventive AC and HIV antibody testing (AbT), minimize client stress and permit the gathering of risk-behavior data.
Methods. The 4 approaches to AC were pilot-tested in 2 clinics serving predominantly Black and Hispanic women who have an average incidence of perinatal HIV infection of about 0.3% by anonymous umbilical cord blood screening.
Results. 1) Of 97 women who received flyers which described AIDS risk activities and offered AC, 29% requested AC and 16% requested AbT. 2) Out of 149 women interviewed directly by a social worker (SW) for consent to join a research program for anonymous risk assessment and AbT, 36% agreed. 3) Out of 42 women interviewed by the SW with initial focus on the danger of HIV infection to the infant without prior mention of risk behaviors, 57% requested AbT and less distress was verbalized. 4) Out of 34 additional women approached as in method 3 but asked for verbal permission to complete an anonymous risk assessment form, 35% requested AbT. Regardless of the initial approach, confidential risk-assessment interviews were permitted during post-test AC and the resulting data were more complete than, though sometimes discrepant from, those from anonymous questionnaires.
Conclusion. As proposed by Minkoff, et al (New Engl J Med 319:1018, 1988), the initial focus in prenatal and perinatal AC should be on the danger of HIV infection to the infant and not on risk behavior. The consensus of observing professionals, soon to be tested, was that this AC would be most effective if conducted as part of multifocus SW or nursing interviews.

T.D.0.32

PROBLEMS WITH COUNSELING UNDEREDUCATED PEOPLE REGARDING HIV-1 SEROLOGIC RESULTS

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Objective. To describe the difficulties in counseling undereducated men and women in an impoverished Haitian slum about HIV-1 infections and AIDS.
Methods. Women attending prenatal clinics were tested for HIV-1 by ELISA and WB. Men with signs and symptoms suggestive of HIV-1 infections were tested in an STD clinic. Counseling was provided by physicians and social workers.
Results. Of 2952 women, 49.7% had received no formal education and 75% had attended primary school for 4 or fewer years. Of 14 to 19 year old pregnant women, 6% to 9% have been HIV-1 seropositive each year during 1986 through 1988. Adverse reactions to learning that they were HIV-1 seropositive included destruction of household goods, physical threats to the STD clinic physician, hopelessness, anger, despair, and confusion.
Conclusion. Undereducation, illiteracy, and lack of general information about AIDS in the community make counseling regarding serologic status and the complex aspects of HIV-1 infections very difficult. Adolescent girls are acquiring HIV-1 infections soon after becoming sexually active. Education programs and changes in sexual behavior are urgently needed.

T.D.0.33

ARE PATIENTS GETTING THE AIDS EDUCATION THEY WANT FROM THEIR PHYSICIANS?

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Objective. Physicians are positioned in the health care system to counsel patients about AIDS risk reduction. We completed a population-based survey of United States residents to find out the extent to which physicians talk to them about AIDS and to assess their desire for AIDS prevention counseling during their medical visits.
Methods. Telephone interviews were conducted in July and August 1988 with 2000 English-speaking, United States adults using a representative national sample generated by random digit dialing. A 75% response rate was achieved.
Results. Only 15% of respondents had talked with their physicians about AIDS, and in most instances (72%) the patient had initiated the discussion. Most respondents (79%) had never been asked by their doctor about their sexual behavior. Among those who had not discussed AIDS with their physician, only 17% did not want such a discussion. Physicians were rated as the most credible source of AIDS prevention information.
Conclusion. AIDS prevention is not routinely discussed by physicians with their patients. Because patients are not averse to such counseling, we suggest additional research to identify barriers to AIDS prevention counseling in the medical encounter and strategies to increase such counseling.

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T.D.0.34

SPECIAL PROBLEMS INVOLVED IN COUNSELLING OF HIV-INFECTED HOMOSEXUALS AND HEMOPHILIACS

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Objective: Description of special problems involved in counselling of HIV-infected homosexuals and hemophiliacs.
Methods: The coping behaviour of HIV-infected homosexuals and hemophiliacs is descriptively analysed, resulting from records of over 2000 counselling contacts over a period of 3 years.
Results: It was observed that an important prerequisite for an adequate coping with the HIV-infection (minimizing denial, guiltfeelings, depression, feeling victimized and isolation) is the person's successful coping with his groupspecific stress factor: homosexuality or hemophilia. For clients who demonstrated a deficiency in this coping ability, sensitive and non-confronting counselling led in many cases to greater self-acceptance and more ease in dealing with the HIV-infection.
Conclusion: In counselling HIV-infected homosexuals and hemophiliacs the task is, with a large number of clients, to help them accept themselves as homosexuals or hemophiliacs as well as to cope with the HIV-infection in the narrow sense. But equally harmful as ignoring the personal and social implications of homosexuality and hemophilia is forced confrontation with these themes at the wrong time.

T.D.0.35

CONDOM USE AND ASSOCIATED HIV SEROCONVERSION FOLLOWING INTENSIVE HIV COUNSELLING OF 122 MARRIED COUPLES IN ZAIRE WITH DISCORDANT HIV SEROLOGY

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Objective: To prospectively determine condom use and subsequent HIV incidence in discordant couples (one spouse HIV(+), the other HIV(-)=DC) after serostatus notification (Sero-Ntf).
Methods: Following Sero-Ntf of DC, condoms have been promoted, utilization/sex act quantified, and immunologic and clinical profile monitored in 122 DC (80% initially asymptomatic) identified at 2 Kinshasa businesses.
Results:

DC HIV status before Sero-Ntf(n)		M+F-(n=67)	M-F+(n=55)
Mean age in years (M/F)		38.4/30.5	36.4/28.7
Mean years married		12.8	9.2
Mean duration(mos.) of follow-up (FP)		8.4	7.8
Mean T4 count in HIV(+)	Before Sero-Ntf	492	556
	End FP	406	509
Mean No. sex acts/month	Before Sero-Ntf	8	8
	During FP	3	4
% Practicing abstinence	Before Sero-Ntf	1.4	0
	After Sero-Ntf	6.0	7.3
% Sex acts with condoms	Before Sero-Ntf	<10%	<10%
	During FP	99.3%	96.6%
No. Divorcing(%)	End FP	1(1.5%)	1(1.8%)
No. Seroconverting(%)	End FP	0(0)	3(5.4%)

Conclusion: Despite widespread skepticism concerning the acceptability of condoms in sexually active African couples, an intensive counselling program has achieved sustained success with consistent condom use by 112 of 122 DC (2 divorces, 8 practicing abstinence) now followed during 83 couple-years of follow-up. Serostatus notification was not disruptive to most DC and led to marked salutary changes in sexual behavior.

Les femmes
Women

W.D.0.1 HIV INFECTION AMONG WOMEN ATTENDING WOMEN'S HEALTH CLINICS IN THE UNITED STATES, 1988-89

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Objective. To evaluate HIV seroprevalence in women attending family planning, prenatal care and abortion clinics in the United States.
Methods. In 1988 and 1989, blinded surveys are being conducted in clinics providing services to women of reproductive age. After testing blood for routine purposes, individual identifiers are removed and consecutive sera are tested for antibodies to HIV. Age group, race, ethnicity, and type of clinic will be collected on over 100,000 women from 137 clinics in 30 metropolitan areas.
Results. Preliminary results for 10,161 women in 8 areas indicate that the highest seroprevalence rates are in prenatal and family planning clinic clients in densely populated cities. HIV seroprevalence ranged from 0-3.6% (median 0%) in prenatal, 0-4.5% (median 0%) in family planning and 0-0.56% (median 0.19%) in abortion clinics. Rates were 1.0% in black compared to 0.11% in white and 0% in hispanic women. Seroprevalence was highest in the 25-29 year age group and lower among adolescent and older women.
Conclusions. These results suggest that HIV seroprevalence rates in women attending family planning, prenatal, and abortion clinics vary, but are generally low. Rates are higher in black women and in more populated areas. Surveillance of HIV seroprevalence in women of reproductive age is essential in directing programs to prevent perinatal and heterosexual transmission and to evaluate the effectiveness of such programs. These programs may need to focus on educating minority and adolescent women.

W.D.0.2 RELATIONSHIP BETWEEN HIV AWARENESS, PARTNER SELECTION CRITERIA, AND EARLY RELATIONSHIP FORMATION IN TWO GROUPS OF SAN FRANCISCO BAR PATRONS

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Objective. To investigate the interaction between awareness of HIV and interpersonal relationship seeking and formation in adult heterosexual women and homosexual men.
Methods. San Francisco bar patrons were chosen, bars being places where awareness of HIV is likely to be high and where a sexual encounter with an HIV antibody seropositive may occur. 50 heterosexual women and 50 homosexual men filled out questionnaires and were interviewed. Twenty five of each group were in an early relationship and 25 were single. Data was gathered on three HIV aware behavioral strategies: 1) assessment of partner characteristics and behavior, 2) safe sex practice, and 3) determination of HIV antibody status of partner Additional data was gathered on partner selection and relationship criteria, awareness of AIDS, sexual behavior, and relationship history and satisfaction.
Results. Single heterosexual women were more likely than single homosexual men to assess surface characteristics of potential partners as an HIV avoidance strategy. Homosexual men were more likely than heterosexual women to know their own HIV antibody status and, for those in early relationships, to know the antibody status of the partner. Single homosexual men were also more likely to engage in safe sex practice than single heterosexual women. Those women who practiced safe sex early in relationship formation suspended the practice upon the establishment of trust that their partner was monogamous.]
Conclusion. Psychosocial factors associated with relationship formation can interfere with effective HIV protection strategies, particularly in single heterosexual women.

W.D.0.3

W.D.0.4 GENDER RULES AS BARRIERS TO RISK REDUCTION FOR BLACK WOMEN

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Objectives. This study was designed to examine gender rules that affect black women in their adoption of risk reduction behaviors. In particular, the study compared drug-using and non-drug-using women's comments about rules for sexual behaviors, drug use, and authority within relationships.
Method. In order to examine the attitudes, beliefs and practices of women in the drug-using world, we conducted 12 focus groups with 75 black teenage and adult women, drug-users and non-drug-users, representing middle-, working- and underclass black women residing in Bayview-Hunter's Point , a black ghetto in San Francisco. The focus groups asked women participants to discuss sexual practices and drug-related behaviors.
Results. The women in our focus groups were able to state explicitly what they believed to be the rules of their environment. The rules for behavior reflected an awareness of strict gender roles in which women were subservient to men and had fewer privileges than men. The gender rules varied with age, socioeconomic status and drug use. Of the women who participated, those addicted to crack cocaine appeared to face not only the highest risk for infection with HIV, but also the most severely limited options for behavior change.
Conclusion. Risk reduction must take into account black women's perception of acceptable gender behaviors. To the extent that these rules support subservience to men, women may be limited in their ability to initiate and maintain prevention activities. The degree to which this perception reflects reality, and the corresponding views of black men, deserve further study.

W.D.0.5 BARRIERS TO AIDS INTERVENTIONS AMONG SEXUAL PARTNERS OF IV DRUG USERS

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Objectives. (1) To develop strategies to locate sexual partners (SPs) of IV drug users so they can receive AIDS education and be enrolled in research studies. (2) To determine barriers to sexual partners' participation in these activities.
Method. Under the direction of an ethnographer, a team of outreach workers attempted to locate and recruit SPs. Barriers to recruiting SPs were identified through (1) conducting in-depth interviews with SPs who were recruited about the reasons that tended to deter them or that had deterred their friends; and (2) constant feedback between the ethnographer and the outreach workers about what obstacles they discovered in their attempts to recruit SPs.
Results. Most SPs are women. The key barriers to their participation are denial, dependency, social isolation, and opposition from their drug-using partners: Many SPs deny their partners' drug use and hope they will eventually stop using drugs. They are emotionally, and sometimes economically, dependent on their drug using partner. Thus, they want to hold on to the relationship, especially if they have children. SPs often lose contact with friends whom they do not want to have know about their partner's drug use. The drug users do not want the SPs to talk with outsiders about their drug use because they are ashamed of their drug use or because they fear these conversations may give the SPs social support to break the relationship.
Conclusion. Outreach based on ethnography facilitates locating sexual partners and identifying barriers to participation. Efforts to reduce HIV infection of SPs can use network techniques to locate SPs. Ways to overcome dependency, denial, and social isolation of female SPs, and to neutralize their drug using partners' opposition, must be developed. Theoretically promising ideas include group processes and counseling that lead to empowerment and collective identity.

W.D.0.6 CONTRACEPTIVE UTILIZATION AND REPRODUCTIVE DESIRES IN A GROUP OF HIV-POSITIVE WOMEN IN KINSHASA.

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Objective: To determine contraceptive utilization and future reproductive desires of women identified as HIV-positive.
Methods: A working population and their spouses were tested for HIV and contraceptive/reproductive data collected.
Results: Fifty-eight (4.5%) of the 1293 women tested were HIV+. Ninety-one % of HIV+ women were married, and 7% currently use modern contraception. No differences in age (33.0/33.2 years), number of children (3.9/4.4) or condom usage (3%/1%) were found between HIV+ and HIV- women. HIV+ women were significantly more likely to use "rhythm" for contraception (26% vs 9%, $p=0.0003$). Of HIV+ women, 71% wanted more children within the next two years (mean desired family size = 5.2), and 5% were pregnant. A majority of women expressed a desire for more accessible contraception options.
Conclusions: Counselling services for HIV+ women in Kinshasa must be prepared to address the current low level of contraceptive usage and the definite pro-natalist sentiment in the population reflected by the high levels of desired and actual completed fertility.

Consommateurs de drogues par voie intraveineuse : réalités changeantes et mythes persistants
Injection Drug Users: Changing Realities and Persisting Myths

W.D.0.7 CULTURALLY CONDITIONED BELIEF SYSTEM

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W.D.0.8 DRUG INJECTING AND SEXUAL BEHAVIOUR

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In the context of the AIDS epidemic, drug injecting has become one of the most dominant public health problems. Drug injectors in North America, Western Europe and, increasingly, parts of Asia and South America represent an important risk group with respect to their own potential infection with HIV and its transmission to other groups. Among drug injectors needle sharing is one of the principle routes of HIV transmission, but sexual transmission also plays an important role, especially with regard to the spread of HIV to the larger community.

A number of studies among drug injectors have found consistent associations between selected indicators of sexual behaviour and HIV seropositivity. HIV positive drug injectors are more likely than HIV negative ones to have had a known seropositive sexual partner and/or to have engaged in male-to-male sex. HIV seroprevalence rates have also been shown to be higher among female than male drug injectors. The sexual transmission of HIV also appears to play a role among non-injecting drug users such as cocaine smokers.

The heterosexual transmission of HIV to non-drug users has also been documented with regard to regular partners, casual encounters, and as a result of sex for money exchanges involving drug injectors.

Studies on the response of drug injectors to the AIDS epidemic, however, suggest that drug injectors are less likely to modify their patterns of sexual behaviour than they are drug injecting practices. Patterns of sexual activity including multiple partners and the consistent use of condoms with casual and regular partners appear more resistant to change than sterilising of injecting equipment and non-needle sharing.

These findings highlight the urgent need to emphasise HIV sexual transmission initiatives among and from drug injectors. They also highlight the inherent problems involved in modification of sexual behaviour especially when associated with risk taking. Information, education, counselling, and other innovative approaches are needed for risk reduction among sexually active drug injectors.

W.D.0.9 IMPACT OF IMPROVED NEEDLE ACCESSIBILITY ON DRUG USE PATTERNS AND DEMAND FOR TREATMENT

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W.D.0.10 THE PREVENTION MESSAGE: AIDS AND INITIATION INTO DRUG INJECTION

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Objective: To assess the impact of the AIDS epidemic in New York on recruitment into IV drug use. In particular, does fear of AIDS prevent persons from starting to inject drugs.

Methods: New York City is an excellent location for assessing effects of the AIDS epidemic on recruitment into illicit drug injecting. There have been over 7000 cases of AIDS among IV drug users, and knowledge that drug injection carries a risk of AIDS has been widespread in the city since at least 1984. Intranasal use of cocaine and heroin, and smoking of cocaine (crack) are readily available alternatives to illicit drug injection. A variety of methods were used to assess possible reductions in initiation into IV drug use: data on persons entering drug abuse treatment programs, observational data from street outreach workers, and a cohort study of persons who were using heroin intranasally.

Results: The available data do not support a conclusion that the AIDS epidemic has led to a decrease in the number of new IV drug users in the city. Smoking of cocaine/crack has not replaced injection of cocaine. Street workers report that it is easy to make contacts with new drug injectors. In the cohort study of persons using heroin intranasally, over 20% went on to injecting within the 8 month follow-up.

Conclusion: In previous research, "scare" tactics have not been effective in preventing persons from starting to use illicit drugs. The same appears to hold for AIDS and injecting illicit drugs. The long time frame from initiation into drug injection until possible development of AIDS, and the social networks within which drug injection starts, appear capable of neutralizing deterrent effects of AIDS on illicit drug injection.

W.D.0.11 AIDS AMONG DRUG USERS IN DEVELOPING COUNTRIES: THE THAI EXPERIENCE

Sakuntanaga, Pratlon. Bangkok, Thailand.

Les femmes dans les pays industrialisés : Questions et options
Women in Developed Countries: Issues and Options

W.D.O.12

Women Injection Drug Users: Issues and Strategies Experiences in New York City - ADAPT
Serrano, Yolanda*; Johnson, P.
*Association for Drug Abuse Prevention and Treatment, Inc.

Objective. To describe the issues and strategies intravenous drug using women encounter in their attempt to reduce risk of HIV infection to themselves, their sexual partners and their children. To examine risk taking lifestyles, needle sharing and sexual behavior, attitudes and beliefs.
Methods. Data was collected through a variety of ways; First, through direct observation and educational intervention of intravenous drug using women, in specific high drug trafficking areas in the City of New York, over a four year period. The women were observed by teams of Ex-users outreach workers and workers referred to as facilitators. Most women were primary opiate injectors using heroin as their main drug, but also injected cocaine and smoked crack. Entrance was made into the women's informal networks (via street corners, shooting galleries, crack houses, shelters, "strolls",). Rapport was established, through incentives, ie. kits containing daily living items such as toothbrush and toothpaste, underwear, condoms), bleach kits, movies, dinners, manicure/facial sessions and provided them with intensive street level AIDS prevention and risk reduction skills (cleaning needle and syringes and proper condom use). Second, by working with addicted women (The Invisible Women), who are forced to engage in "Survival Sex" (sex for drugs) to maintain their drug habit. These women were approached in their environment, the street, the "stroll", the drop in storefront, in cars and other areas. A questionnaire was applied to a group of the women as well as a condom survey to determine the number of clients served and the number of condoms used per day.
Results. The mechanism available to IV drug using women to support their drug habits are limited. They must engage in survival sex to procure money for drugs, resulting in unsafe sexual behavior. Addicted women rarely seeking counseling, do not plan pregnancies, have no regular medical doctor, rely on our emergency rooms for medical treatment, many do not engage in birth control, most do not realize they are pregnant until the fourth or fifth month of pregnancy, restricting the options available to them and delaying pre-natal care.
Conclusion. Through community organization women IV drug users can be motivated to modify their behavior. Appropriate strategies for interventions and reaching women who are IV injectors who are not in touch with other services is a major problem in trying to curb the spread of HIV among IV drug using women. In summary, the evidence appears to be that addicted women are in dire need of specific interventions that will allow them to survive the HIV epidemic. This will involve massive street outreach in their particular environment by individuals who are knowledgeable about their lifestyles.

W.D.O.13

COMMUNITY DEVELOPMENT MODEL FOR INTERVENTIONS WITH PROSTITUTES

Bates, Julie. Australian Prostitutes' Collective Inc., Canberra, Australia.

W.D.O.14

ON BEING HIV-POSITIVE, EUROPEAN, FEMALE, AND "NON-EXISTENT".

Heggs, Amanda. Copenhagen, Denmark.

W.D.O.15

PSYCHOSOCIAL FACTORS THAT HINDER HEALTH CARE IN HIV-INFECTED WOMEN. Ribble, Denise; Bellevue Hospital/ Community Health Project; NY, NY, USA.

At the Community Health Project, a primary care HIV/AIDS clinic, it has been our impression that women experience difficulties in entrance into care and follow-up services. As a result of this observation, we conducted interviews with women to ascertain what some of these difficulties were. Material gathered from these interviews suggested that psychosocial factors hindered care in women. Women cited as hindrances lack of awareness of risk, lack of knowledge about health care resources, lack of knowledge about accessing treatment protocols, caretaker roles, lack of transportation to health care and lack of childcare. Women more often stated concerns about partners refusing safer sex and anticipated illness and death. Women stated concerns about employment, financial resources and stress as did men.

Publications by Fischl and Harder have suggested that women present with more advanced disease than men. Since it is possible that the psychosocial issues outlined above contribute in part or significantly to the presentation of more advanced disease, it raises serious questions on whether our models of clinical care, which were largely develped for gay male populations can adequately address the special needs of women patients.

W.D.O.16

ACCESS TO SERVICES FOR WOMEN WITH AIDS IN POOR MINORITY COMMUNITIES
Melinda Cuthbert. Yale University, USA.

Objective. To conduct an organizational assessment of services for women with AIDS in New York City, 84% of whom are Black or Hispanic.
Methods. Data was gathered in structured interviews with 60 key respondents from 33 government, voluntary and community based organizations. Data was collected regarding the administrative structure and programs, and their relationship with other organizations in their organizational network.
Results. Four factors limit the access of women with AIDS to services. First, most poor minority women are outside the information networks about AIDS services and research projects. Second, the provision of AIDS services has been centered around hospitals and most poor women are limited in access to public hospitals which are overextended and underfunded. Third, due to a shortage of primary care physicians who accept medicaid, these women often utilize emergency rooms for primary care. Fourth, advocates for these women have received little government funding, and faced difficulty utilising networks in minority communities to mobilize community based resources and support.
Conclusion. Community based services form the backbone of AIDS service delivery in the U.S. Limited funding and competing community priorities has prevented the development of a community based infrastructure to service women with AIDS.

Consommateurs de drogues par voie intraveineuse (partie 1)
Injection Drug Users (Part 1)

Th.D.0.1

WHAT THAI INTRAVENOUS DRUG ABUSERS (IVDA) SAY ABOUT THEIR BELIEFS AND BEHAVIOR:REPORT OF A SERIES OF FOCUS GROUP DISCUSSIONS.W.Pokapanichwong*,D.Douglas*, N.Wright**,S.Vanichseni***,K.Choopanya***,*Prog.Approp.Tech.Hlth., **Div.Epid.,Min.Pub.Hlth.,***Bangkok Metropolitan Admin.,Thailand.

Objective. To develop qualitative information on IVDA's knowledge and attitude toward AIDS and their sexual and drug use behaviors. Methods. Focus group discussions were conducted with 235 volunteer IVDA(94% male)from 6 detoxification clinics.Respondents were given token compensation for their participation.For about 1-2 hours, moderators encouraged a free exchange of views organized around a discussion guide.A notetaker recorded verbal and non-verbal reactions.
Results. A rich store of anecdotal responses and reactions documents that Thai IVDA believe that AIDS is transmitted mainly by sexual contact,and that AIDS carriers can be identified by outward appearance and symptoms.Many respondents felt that stopping the sharing of injection equipment(a widespread practice)is less important in preventing AIDS than avoiding close contact.Injection equipment is rarely cleaned adequately,and the use of condoms is not favored by those who remain sexually active.
Conclusion. An intervention program giving accurate information on the transmission and natural history of AIDS,and the risk of equipment sharing and appropriate cleaning is needed urgently.More persuasive condom education also is necessary to help reduce sexual transmission from the more than 44% of male IVDA already HIV+.

Th.D.0.3

EFFECTS OF CHANGES IN DRUGS INJECTED ON DRUG USING ENVIRONMENTS AND ON RISK REDUCTION AMONG IV USERS
Friedman, Samuel R*; Sterk, C.*; Sufian, M.*; Des Jarlais, D.C.**
*Narcotic and Drug Research, Inc., New York; **New York State Division of Substance Abuse, U.S.A.

Objectives. To determine how increases in cocaine injection affect the environments in which drugs are used and AIDS risk behavior.
Method. Data were gathered through ethnographic observation of 125 active IV drug users in six "shooting galleries" in New York City. In-depth interviews were done with 35 of them. Comparisons were made between those injecting heroin only; cocaine only; and those injecting both drugs in a combination (speedball) or sequentially. Data were also gathered about changes in drugs injected over time and in injection practices in shooting galleries.
Results. Speedballing and cocaine injection are becoming increasingly popular, and the injection of heroin alone has become less prevalent. Since use of different substances engenders different moods, tensions arise that make it difficult to be in the same environment. Thus, different types of shooting galleries are developing: (1) galleries where the primary drug is heroin; (2) galleries for cocaine users and speedball injectors. Interpersonal tension is much higher among cocaine and (frequent) speedball injectors, so heroin users and incidental speedball injectors avoid cocaine galleries. AIDS risk behaviors differ among these groups: cocaine and speedball users often inject many more times a day than heroin users, have more difficulty in remembering who owns which syringe, and find consistent bleach use to decontaminate equipment more difficult.
Conclusion. Field observation can be very useful in assessing how changes in drug scenes affect the value of interventions. Strategies such as bleach use as a decontaminant need to be modified for cocaine injecting environments. If these strategies to encourage bleach use among cocaine injectors fail, then large scale increases in the availability of syringes may be necessary.

Th.D.0.5

METHADONE MAINTENANCE AND BEHAVIOR CHANGE IN SEROPOSITIVE DRUG ABUSERS: THE SAN FRANCISCO GENERAL HOSPITAL PROGRAM FOR AIDS COUNSELING AND EDUCATION (PACE)
Sorensen, James L; Batki, SL; Gibson, DR; Dumontet, R; Purnell, S.
Center for AIDS Prevention Studies, UC San Francisco, CA, USA

Objective. To analyze the impact of methadone maintenance (MM) on needle use and sexual activity of seropositive drug abusers in a San Francisco program.
Methods. In an ongoing prospective study, 42 seropositive drug abusers were assessed before entering PACE and at 3-month and 12-month interviews to understand behavior changes associated with MM. Self-report measures were supplemented with physical exams for puncture marks and weekly drug screens.
Results. Heroin use decreased from a mean of 28 days in a month before PACE admission to 7 days in a month before the 3-month interview (p=.001), as did the number of days injecting drugs (p=.001) and cocaine use to a lesser degree (p=.02). Those using needles reported cleaning them with alcohol or bleach 68% of the time. Interviews at 12 months were similar to the 3-month results. Drug and puncture mark exams corroborated the reductions in drug use but indicated smaller decreases than subjects' self-reports. Vaginal intercourse was the most frequent sexual activity, and it decreased by the 3-month interview (p=.04). Subjects used condoms about half the time in vaginal or anal intercourse.
Conclusions. Seropositive opiate addicts reduce their drug use early in MM treatment but make less dramatic changes in sexual behaviors. MM for seropositive drug abusers merits further exploration as a public health intervention.

Th.D.0.2

TEMPORAL PATTERNS OF COCAINE USE AND AIDS IN INTRAVENOUS DRUG USERS IN METHADONE MAINTENANCE (MM). Hartel Diana, Schoenbaum EE, Selwyn PA, Drucker E, Wasserman W, Friedland GH, et al. Montefiore Medical Center/Albert Einstein College of Medicine Bronx., New York, USA.

Objective. To examine the relationship of IV cocaine use over time to HIV infection and AIDS among methadone maintenance (MM) patients in the Bronx, NYC.
Methods. Demography, urine toxicology results and AIDS mortality were examined in 2242 patients in MM treatment from 1972-1988. Drug history, HIV seroprevalence and AIDS incidence were gathered prospectively in 701/2242 beginning in 1985. Data were analyzed using Cox proportional hazards models and log-linear trend models.
Results. Cocaine detection in urine samples increased from 24% of patients in 1981 to 67% of patients by 1988. Polydrug use increased in parallel but no single drug other than cocaine corresponded to this pattern. Cocaine use was associated with dropout from MM (p<.05) and continuing IV injection (P<.05) and was higher in blacks (80%) and Hispanics (72%) than whites (53%) by 1988 (p<.02). Patients enrolled in MM prior to 1981 (early cohort) used less cocaine throughout the study but a significant % changed habits to more closely resemble groups entering MM after 1981 (late cohort). In 1981 18% of the early cohort used cocaine vs. 30% of new 1981 entrants whereas by 1988 59% of the early cohort were using cocaine as were 63% of the late cohort. As of 1988 AIDS incidence in the early cohort lagged behind the late cohort, 8/1000 person-yrs. vs. 21/1000 person-yrs. (p<.001) but seroprevalence in the early cohort (30%) approached that of the late cohort (44%), p<.05.
Conclusions. Temporal patterns of cocaine use among intravenous drug users in MM have substantially increased and are associated with continuing IV injection, race, treatment dropout and increasing rates of AIDS. Treatment stategies and AIDS prevention must focus on cocaine use.

Th.D.0.4

ENDOCARDITIS, SUBCUTANEOUS ABSCESSES, AND OTHER BACTERIAL INFECTIONS IN INTRAVENOUS DRUG USERS AND THEIR ASSOCIATION WITH SKIN-CLEANING AT DRUG INJECTION SITES
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Objective. To examine the relationship between skin cleaning at drug injection sites and history of prior episodes of endocarditis, subcutaneous abscesses, and hospitalizations for other bacterial infections.
Methods. Subjects (N=110) were active intravenous drug users (IVDUs) recruited at an inner-city field site in San Francisco's Mission District using a modified chain-referral method. A standardized interview including questions on skin cleaning, injection practices and medical history was conducted.
Results. 44% reported cleaning injection sites at least part of the time (n=48). 10% had prior history of endocarditis (n=11). Risk of endocarditis among those who never cleaned injection sites was higher than for those that did (O.R.=3.9, 95% C.I.=0.72, 23.9). 38% of the sample had prior history of subcutaneous abscess (n=42). History of subcutaneous abscess was higher among those who reported never cleaning injection sites (O.R. 2.8,95%C.I. 1.1,7.0). Hospitalization for other bacterial infection was slightly lower for injection site cleaners than non-cleaners (21% vs. 24%). Women had a higher risk than men of having at least one abscess regardless of injection site cleaning behaviors (O.R. 3.8,95%C.I. 1.5,9.6). Higher risk for women was also reported in hospitalizations for other ingections (O.R. 2.695%C.I. 1.1,6.6). Whites were more likely than blacks to have history of abscess (O.R. 3.6,95%C.I. 1.1,11.9).
Conclusion. Our data suggest that skin cleaning at injection sites may help prevent a variety of bacterial infections in IVDUs. Moreover, female IVDUs may have fewer usable injection sites than men. When these sites are frequently used, risk of infection is increased due to greater exposure to bacteria. Skin-cleaning guidelines should be incorporated into injection hygiene messages disseminated by health education, drug treatment programs, and health professionals. This may be particularly important for HIV infected persons due to associated immunosuppression and increased susceptibility to bacterial infections. A substantial proportion of IVDUs in our study (44%) report at least occasional skin cleaning at injection sites suggesting that this is a behavior which can be promoted with some success.

Th.D.0.6

INTRAVENOUS DRUG USERS AND MAINTENANCE OF BEHAVIOR CHANGE
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Objective. To identify the predictors of maintenance of behavior change among intravenous drug users. Historically, obtaining behavior change has been relatively easy for IV drug uses, but relapse to previous behavior has occurred in up to 90% of various groups studied.
Methods. 401 IV drug users recruited by outreach workers in the lower east side of Manhattan were interviewed on AIDS risk activity, behavior changes, and components of the health belief model. Regression analyses were used to identify determinants of maintaining behavior change.
Results. 317 subjects reported reducing their risk of developing AIDS by changes in their drug use and/or sexual behavior. 203 (64%) of these subjects reported maintaining the change(s) completely, while 114 (36%) relapsed. Determinants of maintaining drug injection risk reduction and sexual risk reduction were similar, so both types of risk reduction were combined in the analyses. Ethnicity (being Hispanic), having a greater number of sexual partners, and believing that the behavior change would successfully protect against HIV infection (the efficacy component of the health belief model) were all associated with maintenance of behavior change (p's<.05). No differences in maintaining behavior change were found for gender, being in drug abuse treatment, or having friends who made behavior changes.
Conclusion. Over a third of the subjects who reported that they had changed their behavior because of AIDS also reported that they had not maintained AIDS risk reduction. Since social desirability would lead subjects to over report maintenance of behavior change, this one third must be considered a minimum estimate of relapse from risk reduction. Ethnic differences in AIDS risk reduction among IV drug users have been reported previously, though they are not yet well understood. That a greater number of sexual partner was related to maintaining behavior change suggests that those with the greatest need to change behavior were having more success at maintenance and also that changing behavior within a long term dyad is relatively difficult. The efficacy finding indicates the need not only to educate IV drug users on how to change behavior, but also to realistically convince them that the behavior change will be effective in preserving health.

Prostitution
Prostitution

Th.D.0.7 THE IMPACT OF AN EDUCATIONAL PROGRAM ON HIV INFECTION AMONG PROSTITUTES.

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**The Population Council, Lima, Peru.

Objective. To determine the impact of a reproductive health program on the prevention of AIDS among registered prostitutes in El Callao, Peru.
Methods. A reproductive health program with an educational component was implemented in a STD clinic serving almost 800 prostitutes. The program's impact is being evaluated through succesive surveys, program participation, changes in condom use and lab tests to detect serconversion to HIV and infection with other STD's.
Results. To date 783 women have participated in program activities, 483 of them consistently. In the average every woman has attended 4 educational sessions. Changes in attitudes towards condoms have taken place. For instance, higher fees for sex when condoms are used are no longer charged, and condoms are now used in oral sex. More women participating in the program know the correct use of condoms (77% VS 22% among those not participating). The demand for condoms has increased from 1,010 in August 1988 to 32,445 in December of 1988. HIV infection has remained low with two seroconversion between April and November of 1988. In the same period prevalence of gonorrhea decreased from 2.7% to 0.17% and candida infections from 8% to 3%.
Conclusions. The program has had an impact on the sexual behavior of prostitutes, reflected mainly in an increased demand for condoms, low and stable HIV seroconversion risk, and reduction of gonorrhea and candida infection.

Th.D.0.9 WOMEN WORKING AS PROSTITUTES: PARTICIPATORY/CONSENSUS-BASED PLANNING FOR PROVISION OF MOBILE PREVENTION, RISK REDUCTION, AND SEROPREVALENCE ACTIVITIES

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Problem: Provision of educational and risk reduction services and seroprevalence studies within the community of women working as prostitutes raises ethical, scientific, and political concerns. Women in general and sex workers in specific have little trust in the "good intentions" of outsiders. Public Health Departments (PHD's) and community-based organizations (CBO's) often lack credibility with prostitutes. Client distrust may lead to difficulty in reaching target populations, low utilisation, and biased outcome.
Model: Participatory/consensus-based planning minimises conflict and increases cooperation among clients, project staff, and funding agent.
Application: The AIDS Office of MDPH received funding from CDC for a mobile outreach, education, and risk reduction project for women working as prostitutes to be conducted by a CBO at two sites. Consensus groups were formed consisting of AIDS/IVDU service providers and women sex workers. Meeting jointly and separately, the groups seek consensus on program design and procedures, sites, hours of operation, and staffing. The providers and the AO staff seek consensus concerning contractual obligations and political concerns.
Conclusion: The participatory/consensus model offers an alternative to traditional planning and design. This model insures clients a strong voice; CBO's input into issues of local concern; resolution of criminal justice issues; and increased access to technical support and funding. In partnership, this model meets most needs without sacrifice of client anonymity, ethical considerations, or scientific quality.

Th.D.0.11 EVALUATION OF KEY MESSAGES TO INCREASE THE USE OF CONDOM IN SEX WORKERS. A QUASI-EXPERIMENTAL STUDY.

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**AIDSCOM

Objective.- To identify and evaluate key messages and channels of distribution of educational strategies in prostitutes in Mexico to rapidly increase the use of condoms.
Methodology: The study took place in Tijuana, Mexico (border city with California, USA) where approximately 15,000 prostitutes live. A randomly selected survey was undertaken, which investigated sociodemographic characteristics, sexual practices, use of condom and attitudes; a blood sample for HIV-1 was also drawn. Upon the data of the survey, key messages and adequate channels of distribution were identified. Educational material (tryptics, posters, and comics) was pre-evaluated through focal studies with prostitutes. The final material was distributed to 15,000 prostitutes, with their active participation. Six months after the first survey, a second survey in a random sample was undertaken to evaluate changes.
Results. Women under study have an average age of 27 years, with a second grade elementary school level, 88% have children, no IVD use was reported, 97% are afraid of acquiring AIDS, and only 48% used condoms. The image of themselves is as: attractive women, prostitutes for social reasons and mothers worried for their children's health. Key messages were: 1)HIV is a STD; 2) Condom prevents infection; 3) When avoiding sexual transmission, perinatal transmission is prevented; 4) Prostitutes who use condoms are responsible mothers. The use of condom increased 69% ($p<0.05$) after 6 months; its use was associated to the messages received through the educational material. Seroprevalence of infection by HIV-1 was <1.0% in both serosurveys.
Conclusion: The identification of adequate key messages and channels of distribution improves the efficiency of educational programs of AIDS on female sex workers. This strategy must be evaluated in an educational program for prostitute clients.

Th.D.0.8 YOUNG MALE PROSTITUTES: SAFE AND UNSAFE SEX AND AIDS KNOWLEDGE

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Objective. To assess sexual behavior and AIDS awareness in young male prostitutes, a group at potentially great risk for acquiring and disseminating infection with the etiologic agent of AIDS.
Methods. 50 New York male prostitutes (for men), aged 14-27, were recruited in their operating locales (streets or bars and theaters) and systematically interviewed for 2.5 hours using semi-structured instruments to assess demographics, detailed sexual behavior, and knowledge and attitudes about AIDS/HIV.
Results. Preliminary results show an average age of 20.7 years. In erotic fantasy, 50% were predominately homosexual, 20% bisexual, and 30% predominately heterosexual. Only one reported being HIV antibody positive. The subjects' sexual behavior with their male customers for pay included rates of condom use of 50% with fellatio and 85% with anal intercourse. With their non-paying male partners these rates fell to 20% with fellatio and 55% with anal intercourse, and fell further with their (non-paying) female partners to 2% with fellatio and 12% with vaginal intercourse. The safety of their sexual behavior did not appear to be related to their knowledge and awareness of AIDS/HIV, which was quite high overall. Differences between the street and the bar/theater hustlers exist, with street hustlers being younger, less knowledgable about AIDS/HIV, less likely to use condoms with women, and more likely to use drugs.
Conclusion. Male prostitutes' sexual behavior is safest (use of condoms, abstinence from cert higher-risk activities) with their male customers, where perceived threat is highest, and most unsafe with female partners where perceived threat is lowest. Knowledge of AIDS, while quite high, appears unrelated to safeness of sexual behavior.

Th.D.0.10 THE AGGLUTINATING APPROACH TO JOINT STD/AIDS PREVENTION AND CONTROL IN FEMALE SEX WORKERS IN THE DOMINICAN REPUBLIC

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Objective. To describe and analyze the conceptual approach to STD/AIDS prevention in Dominican female sex workers (FSW), as well as the detection, diagnosis and treatment strategies and their results from 1987 to mid 1989.
Methods. On the basis of an agglutinating approach that incorporates FSW leaders elected by their peers to the National Struggle against AIDS, sex workers receive educational preventive training, at-cost monthly physical exams, laboratory tests and treatment for STD, in 12 new sentinnel posts in the Dominican Republic. FSW receive 30 condoms gratis in each visit.
Results. As of December 1988, 22,000 medical exams have been delivered to 5,000 FSW; 12% have been treated for syphillis and 10% for gonorrhoea. Out of 3,000 voluntary HIV tests, 2.6% have been seropositive.
Conclusion. Aggressive control of genital ulcer disease (GUD) through joint peer/professional intervention provides an unique opportunity for educating sex workers, detecting STD at an early stage, treating these diseases opportunely, and reducing the risk of HIV infection.

Th.D.0.12 THE DEVELOPMENT OF MICRO-ENTERPRISES AS WORK ALTERNATIVES FOR FEMALE SEX WORKERS IN THE DOMINICAN REPUBLIC

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Objective. To describe the approach to HIV seropositive female sex workers' (FSW) counselling and provision of training for profitable work alternatives through the Ministry of Public Health and a specialized Catholic Congregation of nuns.
Methods. FSW who voluntarily demand HIV testing and result seropositive are offered counselling services by State psychólogists, who refer these women to the "Hermanas Adoratrices", an international Catholic Congregation of nuns specialized in developing work alternatives for female sex workers.

Results. From the start of this program in 1988, 56 HIV positive FSW have been enrolled for psychological counselling, social support, and training for low risk work alternatives. Twenty-one of them have been able to support themselves and their children without resuming sex work.

Conclusion. HIV seropositive FSW in the Dominican Republic, when provided with appropriate professional counselling, social support and technical training have developed work alternatives capable of providing an income to support themselves and their children without resorting to sex work.

Consommateurs de drogues par voie intraveineuse (partie 2)
Injection Drug Users (Part 2)

Th.D.0.13 DRUG USE TRENDS AMONG PARTICIPANTS IN THE TACOMA SYRINGE EXCHANGE

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OBJECTIVE To examine the relationship between frequency of drug use and participation in a syringe exchange (SE). One of the arguments against SE programs has been that they will promote drug abuse and that the availability of equipment will cause injecting drug users to inject more often. METHODS Retrospective data were collected regarding drug injection frequency on 46 randomly selected SE users, using a standardized interview. Comparisons between the time periods just prior to first using the SE (PRE-SE), and since starting to use the SE (POST-SE) are reported as mean numbers of times each drug was used per month.
RESULTS The majority of participants had been using the SE for 3 months. T-tests show no differences in the frequencies of injection of heroin and cocaine together (PRE-SE 56, POST-SE 69, $p=0.2$), heroin (PRE-SE 56, POST-SE 53, $p=0.3$), cocaine (PRE-SE 45, POST-SE 48, $p=0.5$), or amphetamines (PRE-SE 3.3, POST-SE 3.7, $p=0.4$). Looking at drug use that did not involve injection, no changes were noted in the rate of sniffing heroin (PRE-SE 0.01, POST-SE 0.3), sniffing cocaine (PRE-SE 0.3, POST-SE 0.4), smoking crack (PRE-SE 9.2, POST-SE 9.9), or in the use of non-prescription methadone or marijuana (all $p > 0.2$). Overall, 50% of SE users report injecting less, 15% the same and 35% inject more frequently since using the exchange. The mean age of SE users is 33, and 4 (9%) first injected drugs less than 2 yrs ago, 11% 2-5 yrs ago, and 80% first injected more than 5 yrs ago. No subjects had begun injecting during the time since the SE began.
DISCUSSION Clearly, the majority of SE users have a long history of drug use, and the availability of clean equipment is not recruiting individuals into intravenous use. No immediate effects can be found on the frequency of use of injected or non-injected drugs. The finding that more SE users decreased than increased drug injection is consistent with earlier data from the same and other SE programs, but long-term study is needed to determine trends in drug use with prolonged SE use.

Th.D.0.15 REDUCING HIV TRANSMISSION AMONG RECOVERING FEMALE DRUG USERS

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Objective: To study the effects of a skills-building approach to reducing risks of HIV transmission among recovering IV drug users. Methods: Drawing on extant research and findings of an earlier descriptive study, the authors developed a multi-session group approach to reducing high risk behavior among a cohort of 83 methadone maintained women enrolled in New York City area clinics. A controlled trial carried out by social workers in drug treatment settings involved random assignment to information-only and skills-building conditions. Results: Outcome analyses demonstrated that participants in an information-only condition regularly available in the clinics made fewer gains than skills-building participants in behavior related to HIV transmission. Participants in the skills-building condition were significantly more likely to carry condoms, talk about and initiate discussions around safer sex, and feel comfortable talking about discussing safer sex. From pretest to posttest, skills-building participants reported significant decreases in sex with IV drug users. Discussion: As follow-up data have not yet been collected, these modest preliminary findings must be viewed with a degree of caution. Nevertheless, reported outcomes lend support to the viability of skills-building strategies to reduce relapse and AIDS risks associated with sexual activity and drug use.

Th.D.0.17 HIV IN PRISONS. A DISCRIPTION AND EVALUATION OF A PROJECT DESIGNED SPECIFICALLY FOR WORK WITH IVDA'S IN PRISON.

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NORWAY

OBJECTIVES: IVDU's constitute a large proportion of the prison population in Norwegian prisons. There is a need for new methods in preventive and supportive work among this group. In august 1987 the Department of Aids Prevention employed a doctor, a psychologist, a registered nurse and a pedagogue, two of them with previous experience from work in prisons, in a project to answer the following: - How do you give adequate information? - Under what circumstances can change of risk behaviour take place? - How do you give adequate psycho-social support in a prison? -How you best run support groups in a prison? The project works in the four prisons in the Oslo area, with a total of 780 inmates.
METHODS: The project is, and is percieved by the inmates as, independent of the regular health service and authorities of the prisons, and information received from the inmates is kept confidential. Notwithstanding this separation from the prison system, contact with, and education of, prison employees has been an essential part of the work. The methods employed with the IVDA's are: - Individual counselling, psychological support and medical examinations - Counselling of the inmates' sexual partners - Support groups where former IVDA's take part as paid leaders - Information meetings. The methods are continuously evaluated, and the activities give in themselves knowledge about the "anthropology of prison life".
RESULTS: The project has been in contact with 48 hiv positive inmates. This constitutes 20% of the registered hiv positive IVDA's in Norway. A qualitative evaluation of the methods used will be presented in the paper.

Th.D.0.14 THE PREVALENCE OF HIGH RISK SEXUAL BEHAVIOR IN MALE HETEROSEXUAL IV DRUG USERS

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Objective. To determine the prevalence of high risk sexual behavior in male intravenous drug users (IVDUs) with regular female sexual partners.
Methods. One hundred forty-nine IVDUs (70 whites and 79 blacks) with stable partners were interviewed in early 1987.
Results. During the previous year, 63% had more than 1 female partner and 31% had 4 or more female partners. The median number of female sexual partners was 3 for whites and 2 for blacks. Eleven percent (16/149) had sexual contact with males, with no significant difference between whites and blacks (7% or 5/70 vs. 14% or 11/79, respectively, $P=.14$). Heterosexual anal intercourse was reported by 38% (56/149), with whites more likely than blacks to report this behavior, i.e. 46% (32/70) vs. 30% (24/79) respectively ($P=.04$). Reports of never using condoms were given by 73% (108/148), a proportion similar for the 2 groups of men. Of the 128 men who reported whether their steady female partners injected drugs, 40% (51/128) said their partners were not IVDUs. Blacks were more likely than whites to have non-drug injecting sexual partners, i.e. 54% (37/68) vs. 23% (14/60) ($P<.001$). Blacks were also more likely than whites to report no enrollment in drug treatment programs during the previous 5 years, i.e. 49% (39/79) vs. 20% (14/70) ($P<.01$).
Conclusion. This study demonstrates that educational outreach programs in sexual risk reduction are urgently needed for both IVDUs and their sexual partners. The need for culturally relevant programs is particularly important for black IVDUs and their sexual partners in San Francisco.

Th.D.0.16 IMPACT OF AIDS ON MORBIDITY AND MORTALITY AMONG INTRAVENOUS DRUG USERS (IVDU) IN A METHADONE MAINTENANCE TREATMENT PROGRAM (MMTP)

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Objective. To examine the impact of the AIDS epidemic on morbidity and mortality in a defined population of IVDU's in a longterm outpatient MMTP in New York City.
Methods. We studied trends in overall and cause-specific death rates, AIDS incidence, and medical hospitalizations among IVDU's in a Bronx MMTP for 1984-1987. The midyear population each year was used to calculate crude incidence; incidence rates were also derived by person-time analysis. Outcomes were identified by active surveillance and confirmed by review of hospital and autopsy records.
Results. The midyear population each year ranged from 828 to 891; median age of the entire population as of 1/1/84 was 32 yrs. Population demographics did not differ between study years. Total deaths increased from 13.3/1000 in 1984 to 44.2/1000 in 1987 ($P=.0001$). Deaths from AIDS increased from 3.6 to 14.7/1000 ($P=.009$), and deaths from bacterial pneumonia/sepsis from 3.6/1000 to 13.6 ($P=.018$). Deaths from cirrhosis, overdose, trauma and other causes showed non-significant or no increases over the four years. AIDS incidence rose from 6/1000 in 1984 to 20.4/1000 in 1987 ($P=.007$). Person-time analysis yielded similar results. Hospitalizations for AIDS, pneumonia, tuberculosis, and endocarditis/sepsis increased from 84.9/1000 in 1986 to 144.8/1000 in 1987, with minimal or no increase in other diagnostic categories.
Conclusion. Results indicate that AIDS has had a profound impact on morbidity and mortality among IVDU's in our MMTP, reflected not only in AIDS diagnoses but also in secondary bacterial infections. Data suggest that MMTP's may be important sites for targeting clinical services for HIV-infected IVDU's, which will require expansion of existing resources to meet the growing need for AIDS-related care.

Th.D.0.18 AIDS PREVENTION THROUGH THE CRIMINAL JUSTICE SYSTEM (CJS): REFERRAL OF INTRAVENOUS DRUG ABUSERS (IVDAs) TO DRUG ABUSE TREATMENT

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Objective. To explore the potential contribution of the CJS to AIDS prevention through referral of IVDAs to drug abuse treatment.
Methods. Data from a recent study of IVDAs admitted to methadone treatment were examined, criminal justice and drug abuse treatment literature were reviewed, and relevant experts were contacted.
Results. Drug abuse treatment has proven effective in helping IVDAs stop drug injection, and, thus, is an important AIDS prevention strategy. Yet, only 1 in 7 IVDAs in the US is in treatment. The CJS provides access to encourage IVDAs to enter treatment. A national study found that approximately 80% of all arrestees had used illicit drugs at arrest. Rates of CJS involvement among IVDAs are high. Yet, only about 20% of IVDAs in treatment were CJS-referred. A study of treatment admissions in 5 cities found that 22.1% were CJS-involved, with rates of involvement ranging from 9.5% in New York City to 37.6% in San Antonio, TX. HIV infection rates within each city were similar for CJS-involved treatment admissions and those with no current CJS involvement, suggesting similar risks for HIV infection.
Conclusion. The CJS provides ready access to large numbers of IVDAs for treatment referral and other AIDS prevention programs. Yet, this resource is underutilised. Potential for expansion of treatment referral initiatives is high, especially in cities such as New York where HIV rates are high and CJS-involvement is low.

Les femmes des pays en voie de développement : Où commencer? Que faire?
Women in Developing Countries: Where do we start? What can we do?

Th.D.O.19 AIDS AND THE AFRICAN WOMAN: REPRODUCTIVE ISSUES

Muhondwa, Eustace. Muhimbili Medical Centre, University of Dar es Salaam, Dar es Salaam, Tanzania.

Th.D.O.20 WOMEN WITH AIDS: ISSUES IN PATIENT CARE

Allen, Susan. Center for Aids Prevention Studies University of California at San Francisco, San Francisco, CA USA.

Th.D.O.21 WOMEN AS CARE-GIVERS

Kaleeba, Noerine. Kampala, Uganda

Th.D.O.22 THE RESEARCH AGENDA FOR AFRICAN WOMEN

Mahmud, Fatia. Bethesda, Maryland, USA

Th.D.O.23 EDUCATIONAL INTERVENTIONS FOR WOMEN

Nyonyintono, Rebecca. Uganda

Adolescents (partie 1)
Adolescents (Part 1)

M.D.P.1

HIV INFECTION IN DISADVANTAGED ADOLESCENTS IN THE U.S: FINDINGS FROM THE JOB CORPS SCREENING PROGRAM

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Objective: To evaluate the distribution of HIV infection in a nation-wide sample of socioeconomically disadvantaged adolescents.
Methods: Review of findings from HIV-1 screening of entrants into the Job Corps. Standardization of seroprevalence rates from Job Corps and military recruits according to age, sex, and race composition of the U.S. population.
Results: From October 1987 to November, 1988, 270 (3.9/1000) of 69,233 Job Corps entrants aged 16-21 years were seropositive for HIV-1. Standardized HIV-1 seroprevalence varied sharply by race and region:

	Northeast	Central	South	West	All U.S.	M:F Ratio
White	1.4	1.2	1.4	1.9	1.4	7.8
Black	10.2	4.9	6.6	8.2	7.0	1.2
Hispanic	7.7	-	2.8	0.5	2.4	5.3
All races	2.7	1.6	2.6	1.9	2.2	2.7

The male-to-female (M:F) ratio in HIV seroprevalence differed greatly by ethnic group, and was 1.0 for all Corps entrants aged 16-18 years but 4.1 for all Corps entrants aged 19-21 years. Overall, seroprevalence in Job Corps entrants was 3 times greater than in military recruits of the same age.
Conclusions: The low M:F ratio suggests an important role for heterosexual transmission and/or IV drug use in black adolescents. Seroprevalence among Hispanics is strongly dependent on geographic region. Current infection rates predict a changing future pattern of AIDS cases. Disadvantaged adolescents are a critical target group for AIDS prevention activities.

M.D.P.2

YOUNG PEOPLE'S LAY BELIEFS ABOUT HIV INFECTION AND AIDS

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Objective - To report on findings from the Young People's Health Knowledge and AIDS projects - a study of lay beliefs of HIV infection and AIDS held by young people.

Methods - 1000 young people between the ages of 16 and 21 in schools, training schemes, colleges of further education, full-time employment, lesbian and gay youth groups and undifferentiated youth provision were sampled. Data was collected through semi-structured, in-depth interviews as well as self-completion questionnaires.

Results - During preliminary in-depth work, young people made reference to miasmatic, serendipitous, endogenous and exogenous lay theories when making sense of AIDS and HIV infection. There was a contrast between explanations given by young people in lesbian and gay youth groups and young people in undifferentiated youth provision. Data from questionnaires developed following this earlier qualitative work confirmed that young people have constructed a range of beliefs informed by both bio-medical and non-medicalised sources.

Conclusion - To produce meaningful results, future research methodologies need to consider how young people actively construct their understandings of HIV infection and AIDS. Research agendas overdetermined by bio-medical considerations are unlikely to be able to access the variety of lay beliefs young people share.

M.D.P.3

AIDS RISK BEHAVIOR AMONG SEXUALLY ACTIVE HISPANIC AND CAUCASIAN ADOESCENT FEMALES

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Objective. To describe AIDS risk behavior among teenage females attending a family planning clinic and variables associated with risk behavior.

Methods. Adolescent women (N=104) completed self-administered surveys while attending the clinic.

Results. The adolescents ranged in age from 15-21 years (mean = 18 years); 50% were Caucasian and 43% Hispanic. The majority (65%) were from working class or lower socioeconomic status backgrounds. Eleven percent had more than one sex partner in the previous two months, and 19% had more than 5 partners in their lifetime. Nearly half (44%) had never used condoms, 12% had anal intercourse, 2% had injected drugs, and 21% had a primary partner who had or may have used I.V. drugs. When having intercourse, condoms were used only 27% of the time with primary partners, and 9.4% with secondary partners. Condom use increased with better sexual communication abilities and the perception that unprotected intercourse increased risk for HIV infection adn decreased with the belief that condoms take the fun out of sex, that unprotected intercourse was more fun, and that using condoms would cause relationship problems. Ethnic differences will be described.

Conclusion. It is incorrect to assume that teens attending birth control clinics are also engaging in AIDS protective behavior. Interventions to reduce AIDS risk behavior must be targeted at heterosexual adolescents in general, and towards teens attending family planning clinics in particular.

M.D.P.4

PREDICTORS OF CONDOM USE AND MULTIPLE PARTNERED SEX AMONG HIGHLY SEXUALLY ACTIVE ADOLESCENT WOMEN

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Objective: The development of AIDS interventions for adoescents is hindered by the lack of data on the conditions that influence high risk sexual behavior. We examined psychosicial correlates of condom use and multiple partnered sex for a sample of sexually active heterosexual adolescent women.

Methods: Self-administered questionnaires were completed by 114 adolescent women at a family planning clinic. Measures will be described.

Results: Respondents reported higher levels of vaginal intercourse than the "average" U.S. adolescent. Ten percent were engaging in anal intercourse. Greater condom use was associated with higher levels of perceived enjoyment of condoms, "condom" self-efficacy beliefs, and communication skills. Fewer numbers of sexual partners was associated with higher levels of perceived susceptibility, restrictive social norms, and good sexual communication skills. Knowledge of HIV transmission routes did not predict either outcome.

Conclusions. The findings support the general observation that AIDS interventions with adolescents should build sexual communication skills, address motivational issues, and facilitate enjoyment of safe-sex activities.

M.D.P.5

TITLE: BEHAVIORAL SURVEY AMONG HIGH RISK ADOLESCENTS

AUTHORS: *Huscroft, S., *Morris, R., *Baker, C.J., Roseman, J., Aslanivatan, E., *Re, O.
*Juvenile Court Health Services, Los Angeles County, California, USA

OBJECTIVE: To establish baseline information concerning sexual behavior, medical history, drug abuse habits and state of knowledge of AIDS/risk factors in adolescents.

METHODS: A questionnaire was administered on a one-to-one basis interview. Appropriate counseling was implemented depending on each individual's circumstances and needs.

RESULTS: A total of 417 youngsters, aged 15 to 17 were interviewed. Sex and ethnic distribution were representative of the entire population. More than 90% of the minors were sexually active with small percentages occasionally engaging in rectal or oral sex. Casual sex was common, condom use was rare. One half of the minors admitted to drug abuse with a 10% for I.V. drug use. Awareness of AIDS was high (]90%). 50% of the minors considered themselves at risk and a high percentage (62% to 75%) wished to be tested for HIV infection.

CONCLUSION: This population proved to be universally engaged in sexual activity at an early age. The high incidence of casual sex with multiple partners, low condom use and I.V. drug use places these minors at higher risk for HIV infection. We believe that educational/counseling programs should be intensified in our population to protect/modify high risk behavior.

M.D.P.6

AIDS PREVENTION IN JUNIOR HIGH SCHOOL STUDENTS IN AN AIDS EPICENTER: RESULTS OF A BASELINE SURVEY

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Objective: To describe the interactions of knowledge, attitudes, and self-reported behaviors relevant to AIDS prevention in an ethnically diverse group of junior high school students from a major AIDS epicenter, as background for a new 12 - hour educational curriculum currently being implemented.
Methods: In June 1988, 1,540 students in 3 junior high schools (grades 7 - 9) in Oakland, California completed an anonymous written questionnaire regarding their AIDS knowledge, attitudes and high risk behaviors.
Results: Age ranged from 11 - 16 years; 48% were male. Five % were White, 31% Black, 24% Latino and 33% Asian. Factual knowledge about AIDS varied little by ethnic group or gender, eg. knowing that others beside homosexual men get AIDS (89%), there is no cure (74%), and it is likely to get AIDS from sharing needles (85%) or through sexual intercourse without condoms (85%). Misperceptions included thinking it likely to get AIDS from giving blood (51%), insects (36%), or public toilets (28%). Only 55% felt that persons with AIDS should attend school, with those holding misperceptions about casual contact more likely to hold this opinion. Eight-nine % wanted AIDS education in school. Concerning high risk behaviors, more boys (42%) than girls (18%) engaged in sexual intercourse. Fifty- three % agreed that "Sex doesn't feel as good" with condoms and 56% felt that condoms are "embarrassing to buy." Among sexually active individuals, more who though that condoms work "perfectly" (79%) or "pretty well" (65%) in preventing AIDS reported using condoms "always" (79%) or "sometimes" (65%) during sexual intercourse v. those who thought condoms work only "a little" (47%). Few students (5%) reported using street drugs, but of these, more girls (21/31) did so than boys (31/56).
Conclusions: Junior high school students have substantial factual knowledge about AIDS but harbor misperceptions about casual contact. Those with misperceptions are more likely to engage in high risk behaviors and to express intolerance toward those with HIV. Early and middle adolescents should be taught about AIDS, with emphasis on preventing or modifying high risk behaviors, improving tolerance, and correcting false impressions.

M.D.P.7 SEXUAL ABUSE IN CHILDREN AND HIV INFECTION

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Objective: To describe socio-psychological characteristics in HIV seropositive adolescents.
Methodology: A socio-psychological and epidemiological analysis of twelve male sexually infected adolescents under 18 attending the HIV detection center in Mexico City. Risk factors, sexual behavior, medical and psycological histories were investigated.
Results: Three groups were identified: 1)Homeless children. 119 minors were studied and 5 children were found infected. This population includes abandoned children and orphans, presenting problems such as: family disintegration, pharmacodependency, sexual abuse and occasional male prostitution. Their age ranged from 13 to 18, second grade elementary level, and all dedicated to eventual activities and ocassionally to male prostitution, characterized by a bisexual behavior with homosexual practice among themselves, and no condom use, having an average of 22 sexual partners. 2) Adolescents prostitutes. 2 HIV positive cases were found: 15 and 18 years of age with elementary level, bisexuals, male prostitutes with anal receptive practice without condom use, referred from 2 to 4 sexual contacts daily. 3) Teen-agers living with parents. This group is integrated by 5 individuals of 16-18 years of age, all students, with integrated family, homosexuals with anal coitus practice mostly without condom, having an average of 7 partners in their whole life. These adolescents referred sexual abuse at 12-14 years of age.
Conclusions: Our country registers 5 AIDS cases and 10 HIV infected in sexually abused minors. Although this kind of transmission in children is being reported in other countries, in Mexico we lack information because this situation is usally kept as a secret by the adolescents and their families.

M.D.P.8 DEVELOPMENT AND EVALUATION OF COUNSELING AND INFORMATION-ORIENTED AIDS PREVENTION INTENTIONS FOR ADOLESCENTS AND YOUNG ADULTS

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Objective. To assess the relative effectiveness of counseling and information - oriented AIDS prevention interventions. To date 101 high risk adolescents and young adults (14-24 years) in an inner city health center and in a community center in a low income urban housing project have been studied
Methods. In the health center subjects are assigned to counseling by family practitioners (N = 25) or to individual observation of an educational videotape (RAP) which includes information about AIDS prevention (N = 37). In the community center subjects are assigned to counseling by trained peers (N = 16) or to a group information session (N = 23). Pre and post questionnaires are being used to assess knowledge and attitudes. MANOVAs with repeated measures are used to assess differences between groups and change over time
Results. At the family health center subjects showed significant (.05) increases in the following knowledge areas: 1. casual transmission; 2. modes of transmission; and 3. methods of prevention. At the community center significant increases were observed in knowledge about modes of transmission and methods of prevention. In addition, in this site significant changes in attitude were observed. Specifically, after the interventions, subjects felt more scared about AIDS and attached greater importance to learning about it. There was also evidence that, relative to the information-oriented intervention, counseling was associated with a significantly greater increase in knowledge of transmission, fear of AIDS and importance attached to learning.
Conclusion. Counseling interventions by health care providers or by peers, and information based interventions, can have significant positive impact on knowledge and attitudes about AIDS.

M.D.P.9 EVALUATION OF THE AIDS INFORMATION PROGRAM IN WEST-BERLIN SCHOOLS

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Objective. In order to evaluate the government sponsored AIDS information program for grades 9 to 11 in West-Berlin schools, 981 students were exämined before and after they had received the program. At the time of the post-test a control group of 591 students who had not received the program were examined as well.
Results. (1) After having received the information program students knew significantly more about the ways in which AIDS is transmitted than before. Learning was especially apparent in girls.
(2) Sons and daughters of turkish immigrant workers make up about 17 % of the sutdent population. Before the program started these turkish girls and boys knew significantly less about the transmission of AIDS than their german peers. After the program they had cought up, but still did not reach the information level of the german students.
(3) Students in the control group whose teachers had spent no time or less than two class hours on AIDS knew significantly less than the students in the program.
Conclusion. The Berlin AIDS information program is effective, especially when teachers are not willing or able to include AIDS in their classroom teaching. Subgroups such as the turkish students merit the attention of special information programs.

M.D.P.10 HIV INFECTION IN ADOLESCENTS: CAN WE PREDICT WHO IS AT RISK

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Objective. To determine if HIV screening of adolescents, based on their health care providers' predictions of risk, correctly identifies the patients who are shown to be HIV seropositive.
Methods. An anonymous, blinded seroprevalence study(using EIA screening and Western Blot (WB) confirmation) was conducted for 15 months at an urban referral teaching hospital. All patients ≥ 13 years were included who presented for care to the general adolescent clinic or the emergency room and who had had blood drawn for other reasons. Simultaneous informed screening of a sample of these patients was also conducted, based on a provider's suspicion or knowledge of their risk status. Comparisons were made of seropositivity in each group and between groups.
Results. Of 3520 adolescents tested in the seroprevalence study, 13 or 3.7/1000 were positive. The seropositive rate was higher in females (4.7/1000) than in males (1.7/1000) ($p \leq .05$), and in older adolescents;(15-18, 6.9/1000) than in younger adolescents (<15, 1.1/1000) ($p \leq .05$). Seropositivity did not very significantly by location of service (Clinic, 3.5/1000; ER, 4.7/1000) Based on a provider's suspicion or knowledge of risk, 6(49/1000) of 122 screened patients were found to be positive. This represented only 46% of all positive adolescents seen during this period.
Conclusion. Although HIV infection is present in our population of urban adolescents, strictly clinical identification of those at risk is inadequate. There is need for development of enhanced criteria for informed screening of adolescents.

Comportement (partie 1)
Behaviour (Part 1)

M.D.P.11 PREDICTION DE L'INTENTION D'UTILISER UN CONDOM COMME MOYEN DE PREVENTION DES MALADIES TRANSMISSIBLES SEXUELLEMENT.

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Objectif: Identifier les déterminants de "l'intention" d'utiliser un condom lors des relations sexuelles avec une nouvelle ou un nouveau partenaire.
Méthodes: La théorie de Ajzen a servi de cadre de référence. Les données nécessaires à l'application de cette théorie ont été recueillies par questionnaire auto-administré auprès de 69 jeunes adultes de sexe masculin.
Résultats: Les analyses de régression ont permis d'expliquer près de 70% de la variance de l'intention relative au comportement à l'étude. L'attitude ($p < .001$), la norme subjective ($p < .001$), la perception de contrôle à réaliser le comportement ($p < .05$), la perception des barrières au comportement ($p < .05$) et l'usage antérieur du condom se sont révélés les prédicteurs de l'intention. En outre, les analyses MANOVA ont mis en évidence des différences significatives entre les sujets dont l'intention est faible et ceux dont l'intention est élevée, en regard de la force des croyances comportementales ($p < .001$) et des croyances normatives ($p < .01$), de même que pour la perception des barrières à réaliser le comportement ($p < .05$).
Conclusion: Cette étude montre l'utilité de la théorie de Ajzen pour comprendre l'intention d'utiliser un condom. Il ressort qu'un programme visant la promotion de ce comportement auprès de jeunes adultes devrait accorder plus d'importance au sentiment de sécurité et de confiance associés à l'usage du condom qu'aux dangers pour la santé pouvant résulter de sa non-utilisation. Un tel programme devrait également s'intéresser à la pression sociale et à certaines barrières perçues associées à l'usage du condom.

M.D.P.12 KNOWLEDGE OF RISK FACTORS AND AVOIDANCE OF AIDS IN THE GAMBIA, WEST AFRICA

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Objective. To establish the level of awareness of AIDS and the level of knowledge of basic risk factors and avoidance measures in a predominantly rural and illiterate West African population.
Method. 1704 people (796 males and 908 females) aged 15 and over attending a sample of 12 health facilities throughout The Gambia were questioned on their knowledge of AIDS, risk factors and methods of avoiding infection. The subjects were randomly selected and did not include just those attending for treatment but also women attending ante-natal and infant welfare clinics.
Results. 696 (87%) males and 423 (47%) females claimed to have heard of AIDS. About 20% and 45% respectively of these males and females were unable to identify any methods of transmission or any means of avoiding infection. Thus only 70% of males and 30% of females had any real knowledge. Virtually all those with knowledge were able to correctly identify heterosexual intercourse as the major mode of transmission. Very few could identify other means. Prostitutes/others with many partners were seen as high risk groups. Not associating with them was understood as the best way of avoiding AIDS.
Conclusion. Although some effort has been put into health education in The Gambia there still remains a relatively low level of awareness of AIDS and associated risk factors - females had much less knowledge than males.

M.D.P.13 KNOWLEDGE REGARDING AIDS AMONG EMPLOYEES AND SPOUSES AT A BANK IN KINSHASA, ZAIRE

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Objective. To determine the level of AIDS-related knowledge in this population for purposes of educational programming.
Methods. 2516 employees and spouses were interviewed between 11/87 and 3/88 as part of an annual medical exam.
Results. In general, female employees and their spouses were better educated/informed than were male employees, followed by female spouses. Over 90% spontaneously cited (hetero)sexual relations as a source of transmission. Over 95% of both men and women recognized the 4 main sources of transmission when directly asked. Incorrect sources of transmission included mosquitoes (66%) and routine household contacts (16-35%), with women significantly more likely to give these incorrect responses. AIDS is considered treatable by 70% of men and 44% of women and preventable by virtually everyone. Men were more likely to cite reductions in number of sexual partners or avoiding prostitutes as ways to prevent transmission; women were more likely to cite faithfulness to a single partner.
Conclusions. This population is aware of AIDS and its principal modes of transmission, though serious misconceptions persist. These results should be used to plan AIDS messages.

M.D.P.14 POPULATION-BASED SAMPLE OF AIDS KNOWLEDGE, ATTITUDES AND BEHAVIORS AMONG CALIFORNIA RESIDENTS

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Objective: To assess baseline AIDS knowledge, attitudes and behaviors among a population-based sample of 753 California residents
Methods: 753 California residents were contacted by telephone during a two-week period in October 1988. Previously derived attitudes scales and cluster analyses techniques were used to develop four typologies or respondent types.
Results: Attitude scales (response efficacy, condom comfort level, and empathy) were all found to be positively related to AIDS knowledge and behaviors.

KNOWLEDGE, ATTITUDES AND BEHAVIORS BY CLUSTER

	NON-BELIVERS	UNEDUCATED	HIGHLY EDUCATED	NON SKILLED
KNOWLEDGE	Medium	Low	High	Medium
BEHAVIORS	Medium	High	Low	Medium
PERCEIVED RISK	Low	Low	Low	Low
EMPATHY	Medium	Low	High	Medium
COND. COM.	High	Low	High	Low
RESPON. EFFIC.	Low	Low	High	High

Conclusions: Knowledge level regarding AIDS prevention and transmission is relatively high, mean score for all respondents types was 10.8 out of 14 questions. However, evidence suggests there are attitudes regarding sexuality, efficacy of prevention measures, and condoms which create barriers to the adoption of risk reducing behaviors. Data also suggest that AIDS education programs must focus much more heavily on attitudes and behavior change rather than relying on knowledge acquisition alone to drive desired risk reduction behaviors.

M.D.P.15 HIGH RISK SEXUAL BEHAVIOUR AND CONDOM USE IN A SAMPLE OF HOMOSEXUAL MEN IN ENGLAND

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Objectives To determine the frequency of high risk sexual behaviours and condom usage in a group of homosexual men in four different areas of England in 1988.
Methods Three hundred and fifty seven homosexual and bisexual men were recruited for a prospective study in London, Oxford, Northampton and Manchester. Confidential interviews included questioning about sexual behaviour in the previous month.
Results One hundred and fifteen (32%) men had had passive anal sex in the previous month. Men more frequently had passive anal sex with a regular (94) than with a non regular partner (33). One hundred and thirteen (32%) had had active anal sex in previous month. Active anal sex was more frequent with a regular (96) than with a non regular partner (30). Men having sex with non regular partners only were less likely than men having sex with regular partners only to have unprotected passive anal sex ($p<0.005$) and unprotected active anal sex ($p<0.005$).
Conclusion Major behavioural changes amongst homosexual men have occurred at least partly because they may now regard anal intercourse as more risky if it involves a partner whom they do not know well.

M.D.P.16 Appropriate AIDS Knowledge But Negative Attitudes of College Students

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Objective. To assess the knowledge of and attitudes toward AIDS issues among university students; to determine whether or not knowledge about AIDS is associated with positive attitudes toward persons with AIDS (PWA's) and AIDS-related issues.
Method. One week after listening to a lecture on the biology of AIDS, 332 of the individuals enrolled in an introductory biology class at a major Southern (US) public university completed a carefully constructed anonymous survey of AIDS-related knowledge and attitudes.
Results. Knowledge: 49% of the respondents did not know that "scientists are quite sure that they know what causes AIDS." 14% believed that condoms guaranteed safety from AIDS, and 10% thought that "wearing gloves during sex decreases your chances of getting AIDS." 36% maintained that AIDS can be acquired from mosquitoes, from giving blood (15%), or from kissing (10%). 17% did not know that "there is practically no risk of getting AIDS from blood transfusions today." 43% indicted they believed that they could "get AIDS regardless of what you do to protect yourself."
Attitudes: 61% of the respondents reported they were afraid of getting AIDS and 28% wanted to be tested for AIDS. 10% worried about getting AIDS in public restrooms although 94% knew AIDS could not be contracted from toilet seats or doorknobs. 15% agreed that the media have "overblown" the issue, and 15% do not trust what public officials say about AIDS. 33% agreed that they would be scared to be around a PWA in spite of the fact that 96% knew that AIDS is not passed by casual contact. 54% would be afraid to kiss a friend with AIDS even though 84% knew there had been no proven cases of AIDS from kissing.
Conclusions. Most students in this sample knew much accurate information about AIDS with areas of notable exception. In several areas this knowledge was not translated by these students into positive personal attitudes about PWA's and AIDS-related issues.

M.D.P.17 HIV - ASSOCIATED HEALTH BELIEFS OF ARMY BASIC TRAINEES

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Objective. The U.S. Army is currently engaged in HIV education efforts to curb further transmission of the disease in military populations. The purpose of this study is to investigate health beliefs in relation to decisions to practice preventive personal behaviors to reduce the risk of HIV infection.
Methods. An ex post facto/correlational design study using the Health Belief Model as a theoretical and conceptual framework is underway. A 42- item instrument to assess trainees' perceived susceptibility, perceived severity, benefits of preventive behaviors, barriers to personal preventive behaviors, and motivation to reduce risk of HIV transmission was administered during trainee in-processing at a large Army regional training center. These soldiers were all negative for HIV - Ab and had not received any form of Army HIV education prior to completing the survey. Participation was voluntary and confidentiality and anonymity were assured.
Results. In a six month time period 1000 trainees were surveyed. Preliminary analysis indicates that these soldiers are a representative group and of similar age, ethnicity and education to both military and civilian populations. Findings indicate that many trainees are not currently practicing preventive personal behaviors and do not perceive themselves as susceptible to HIV. Trainee responses assessed indicate that susceptibility to, and consequences of, HIV infection are underestimated.
Conclusions. Education is an important modality to influence the transmission of HIV. It is imperative that Army HIV educational efforts be tailored to the specific needs of soldiers. This project demonstrates that Army HIV education should address individual susceptibility and severity, in particular, as well as benefits, barriers and motivation for preventive personal behaviors.

M.D.P.18 "LES PRATIQUES ET MOEURS SEXUELLES AU SENEGAL (CONTRIBUTION A LA CONNAISSANCE DU SIDA)

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OBJECTIFS: Elle s'interroge sur: la nature des pénétrations sexuelles (vaginale, rectale , orale); les natures des produits utilisés; les idéologies et représentations liées aux moeurs sexuelles.
METHODES: Des entretiens semi-directifs auprès de prostituées, de matrones, de maîtres et maîtresses de cérémonies rituelles sont entrepris dans 4 grandes régions du pays. Un questionnaire centré autour de 14 thèmes relatifs à la sexualité est passé auprès de 1.575 personnes.
RESULTATS: L'étude analyse leur rapport à la contamination du SIDA et tente des propositions de prises en compte de ces réalités dans la prévention des MST. et du SIDA.
CONCLUSIONS: Cette étude permet d'apréhender leur part hautement significative comme mode de contamination du SIDA.

M.D.P.19 DEMOGRAPHICS AND SEXUAL PRACTICES OF MALE BAR WORKERS IN BANGKOK

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Objective- To determine risk factors for directing intervention programs.
Method- We surveyed 141 male bar workers in 5 bars in Bangkok.
Results- 73% of the men were between 17 and 21 years old and 86% were born outside of Bangkok. 49% were living with friends who worked in similar bars. 31% had only primary school education. 6% were rarely or never exposed to the mass media. 55% had never worked in a bar before. 50% had worked in bars for 2 months or less. 82% had chosen bar work to solve their unemployment problem. 51% were introduced to this job by their friends and 36% by reading job advertisements. Only 50% stayed in the bar longer than 2 months. In the 2 week period prior to the interview 100% had sex with male customers, 23% with female customers, 13% with non-customer males, and 50% with non-customer females. In the same period the men averaged 5.8 male customers. 53% of the men did not use a condom the last time they had insertive anal sex. The last time the bar worker had receptive anal sex, 63% of the bar workers' insertive partners did not use a condom. 72% had both insertive and receptive anal sex. 35% had used condoms for oral sex. 99% of the men had not used IV drugs in the last 5 years.
Conclusion- The sexual activities of these young men with little education and rural backgrounds place them at high risk for HIV infection. The potential for rapid HIV spread is high because they have sex with both men and women as customers and non-customers.

M.D.P.20 Peer and Partner Influence and Self-confidence as Correlates of AIDS Preventive Behavior (APB) in a Low Prevalence State

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Objective. To examine the effects of social influence and self-efficacy on a) knowledge and b) the self-reported practice of AIDS preventive behaviors in a heterogeneous sample in a low prevalence state.
Methods. Over a 6-month period in 1988 questionnaire-interviews were conducted with 235 adults tested for HIV antibodies at 2 Counseling and Testing Sites in North Carolina. Emphasized were: perceptions of network behaviors; respondents' own, as well as peers and partners', beliefs about practicing safer sex; and confidence in the ability to alter negative social network influences.
Results. In this largely rural state, our sample was 44% black, 32% female, 67% heterosexual, 12% IV drug users, 10% positive for HIV-1, with a median age of 26. Almost the entire sample (96%) knew that having only one steady sexual partner was protective; however, a third had more than 1 partner in the past month and believed "safe sex" was a "turn off"; over half (54%) believed their peers also had more than 1 partner while 60% felt "safe sex" was hard to practice "in the heat of passion". Over two-thirds (68%) believed their peers engaged in "unsafe sex" and 62% were not certain they could adopt safer sexual practices. Those who believed their peers and sex partners practiced or encouraged safe sex perceived fewer social barriers to change (r=40), reported more preventive behaviors (r=18) and were more confident they could change their behavior (r=31).
Conclusions. In a heterogeneous but predominantly heterosexual, highly aware population in a low prevalence, rural state, imaginative counseling should try to reinforce perceptions of positive social influence, elicit network barriers, emphasize peer support and enhance self-confidence.

M.D.P.21 THE IMPACT OF COMMUNITY-BASED BEHAVIORAL GROUP INTERVENTION TO HELP PERSONS REDUCE HIGH-RISK SEXUAL BEHAVIORS

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Objective: Many individuals still have difficulty implementing and maintaining adequate change in high-risk sexual patterns. Behavioral skills training principles can be used to assist persons reduce high-risk behavior.
Method: In Study 1, 104 men who engaged in risky behavior with multiple partners were randomly divided into experimental and control groups. Experimental subjects participated in 12 group sessions of risk education and self-management, assertion, and cognitive skills training specifically tailored to sexual risk reduction. In Study 2, a second cohort participated in a similar 6-session program. Behavior change was assessed using multiple self-report, self-monitoring, and sexual assertiveness skill measures. Followup data through 24-mos. postintervention were obtained.
Results: Multivariate analyses revealed significant reductions in unprotected anal intercourse to near zero levels and greatly increased use of condoms, risk knowledge, and sexual assertiveness behavioral skills as a result of this training. Change was well-maintained even at long-term followup and was corroborated by change across the measures.
Conclusion: Behavioral principles derived from other areas of health promotion can be adapted for use in AIDS risk reduction. These findings identify a model to help persons acquire the skills to implement and maintain behavior change recommendations. This model is of practical importance for ~~some~~ clients seen in AIDS prevention programs, health and STD clinics, and schools.

M.D.P.22 PSYCHOLOGICAL AND DEMOGRAPHIC CHARACTERISTICS OF GAY MEN WHO DO OR DO NOT ENGAGE IN UNSAFE SEX

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Objective: To determine differences between gay men who still engage in unprotected anal intercourse, a behavior of particular interest because it is strongly predictive of HIV seroconversion even at low rates of occurrence.
Methods: 526 men who patronized 8 gay bars in 3 different American cities (Seattle, Tampa, & Mobile) completed a survey measure eliciting information on sexual practices over the past 3 months and AIDS risk knowledge, beliefs, attitudes, and perceived sexual norms. Over 75% of all men entering these bars on survey nights completed the measures.
Results: 17% of the entire sample reported engaging in receptive or insertive unprotected anal intercourse in the preceding 3 months; 87% did not. Multivariate analyses confirmed significant differences ($p < .0001$) between men who engage or refrain from this activity. Men who engaged in anal intercourse were more likely to attribute AIDS risk to chance/luck and "powerful other" external factors. They scored lower in AIDS risk knowledge, were younger, and had less education than men who did not engage in the activity. Similar patterns were found regardless of whether subjects were insertive or receptive partners.
Conclusion: Some gay men still engage in high-risk sex. In addition, to continued education, there is a need to stress efficacy themes that one's own behavior (rather than chance or others) determines risk for AIDS. Efforts targeted toward young and less educated gay men are now especially needed.

M.D.P.23 PERSISTENCE OF HIGH-RISK SEXUAL BEHAVIOR IN HOMOSEXUAL/BISEXUAL MEN: A MULTI-CENTER STUDY

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Objective. To describe and predict high-risk sexual behavior in homosexual men attending 3 STD clinics.
Methods. 483 men who engaged in unprotected anal or oral sex in the previous 4 months were interviewed from April-Dec. 1988. Risk was assessed by calculating: 1) absolute #'s of unprotected anal and total (anal and oral) exposures and 2) ratios of unsafe to total exposures for the 4-month period. Principal component and cluster analyses were used to arrive at groups of men; regression techniques were used to predict levels of risk.
Results. Preliminary cluster analyses identified 5 subgroups: 1) a relatively-closeted group (N=32) who self-defined as hetero/bisexual; 2) a somewhat-closeted group (N=110) of older, self-defined bisex/homosexuals; 3) a younger, openly-homosexual group (N=109) with male steady partners; 4) an older, openly-homosexual group (N=195) with higher incomes and nonsteady male partners; and 5) a small, openly-homosexual group (N=37) with large numbers of sex partneres and higher cigarette and drug use. regression analyses showed having sex with a primary partner, younger age at first sex, isolation from gay organizations, bisexually, IV-drug use, and "hustling" were related to higher levels of unprotected exposures.
Conclusions. Relatively discrete subgroups continue to have unsafe sex; each subgroup will require targeted education to effect behavioral change.

M.D.P.24 CONDOM USE CAN OCCUR DESPITE USE OF ALCOHOL AND DRUGS

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OBJECTIVE:To examine the use of alcohol and drugs during high and low risk sexual contacts of homosexual and bisexual men attending 3 STD clinics.
METHODS:Enrolled homosexual and bisexual men who had engaged in unprotected anal or oral sex during the previous 4 months. Using a critical incident technique, men were asked to describe the circumstances under which they last engaged in unprotected and/or protected anal sex. Compared the alcohol/drug use of 190 men during their last instance of unprotected anal sex versus their last instance of protected anal sex.
RESULTS:Preliminary analyses (using the McNemar Test for Significance of Change) indicated no significant differences (p.>.05) in alcohol/drug use before or during unprotected and protected anal sex. Percentages of men using were:

	ALCOHOL	MARIJUANA	POPPERS	STIMULANTS	OTHER DRUGS	ANY ALC/DRG
UNPROTECTED(N=190)	45%	23%	20%	7%	4%	64%
PROTECTED (N=190)	43%	20%	19%	5%	2%	60%

In response to a question on reasons for not using a condom during unprotected anal sex, only 9.2% listed alcohol/drugs as the major cause.
CONCLUSIONS:Among high risk homosexual/bisexual men, alcohol/drug use is associated with sexual behavior in general, not exclusively with unprotected sex. Men can and do use condoms when they are drinking and using drugs The role of substance use in high-risk behavior should not be overemphasized to the exclusion of other motivating factors.

M.D.P.25 CASUAL SEXUAL CONTACTS OF SWISS TOURISTS IN TROPICAL AFRICA, THE FAR EAST, AND LATIN AMERICA

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Objective. To determine the frequency and characteristics of casual sexual contacts and the risk of infection with HIV, Hepatitis A, and T. pallidum in Swiss short term visitors to developing countries.
Methods. In 1987/88 future travelers were selected for the high risk group at the Zurich University Vaccination Center if it appeared that they might have casual sexual contacts while abroad. A control group was chosen from respondents having completed a malaria questionnaire during their journey home from Kenya. Within two weeks after their return, these travelers were invited to return to our Center, to sign an informed consent, to be interviewed and to supply a blood sample. The travelers were asked to return for a second interview and blood tests three months later.
Results. In the high risk group 64 travelers accepted our invitation, and 18 consented at least to a telephone interview (total response rate 71%). In the control group 112 plus 54 were investigated (74%). Casual sexual contacts were reported by 55 of 82 (67%) respondents of the high risk and 6 of 166 (4%) of the control group. Of the 44 heterosexual men, 6 women and 5 homosexuals, 14 (25%) had >3 encounters, 27 (49%) had contacted prostitutes, 26 (47%) other autochthones, 2 (4%) other Europeans. Men aged 20-39 y used condoms regularly in 67%, those ≥40y in 27%, women in 0%. No HIV, and no recent HAV or T. pallidum infections were detected.
Conclusion. At least a proportion of "sex tourists" can be identified during pre-travel advise. Within this group, particularly >40y/o men and all women need to be instructed about safer sex.

M.D.P.26 CHANGES IN AIDS KNOWLEDGE ATTITUDES, AND BEHAVIORS IN SAN FRANCISCO'S LATINO COMMUNITIES: 1987 to 1988

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Objective. To measure changes in AIDS knowledge, attitudes, and behaviors in the Latino communites of San Francisco (SF).
Methods. 329 adult Latino residents of SF were randomly selected and interviewed in person between September and December, 1988, using a door-to-door cluster block design. Results were compared to a 1987 baseline survey of 319 adult Latino residents interviewed using the same methodology. We defined high-risk sexual behavior (HRSB) as sex with multiple partners, IVDUs, bisexual men, prostitutes, or people who have AIDS.
Results. The prevalence of HRSB decreased in 1988 compared to 1987 (5% vs 11%, p<.001). IVDU or needle sharing was unchanged (2% vs 1%). More respondents in 1988 reported changing their sexual behavior since becoming aware of AIDS (29% vs 17%, p<.001). Persons reporting HRSB or IVDU in 1988 were more likely than persons who did not report such behavior to be single (p<.01), male (p<.05), speak English rather than Spanish or both languages (p<.01), and have a higher income (p<.001). Persons reporting HRSB or IVDU did not differ by age or educational level from those who did not.
Conclusion. A smaller percentage of Latinos in SF in 1988 were at increased risk for AIDS as a result of potentially unsafe sexual or drug behaviors when compared to 1987. High-risk behavior occurred more often in single, male, English-speaking respondents.

M.D.P.27 COGNITIVE DIFFERENCES BETWEEN BOYS AND GIRLS RELATING TO THE USE OF CONDOMS.

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Objective. The purpose of this study was to assess the cognitive differences between female and male teenagers relating to the use of condoms in the context of sexual intercourse with a new partner.

Methods. A sample of 151 adolescents (49 girls, 102 boys) were asked to complete a questionnaire investigating belief strenght; outcome evaluation; normative beliefs; motivation to comply and perceived barriers relating to the use of condoms.

Results. For each of these constructs (except for motivation to comply), Hotelling'T^2 tests showed significant differences between boys and girls. Regarding specific items within these constructs, analyses (t-test) indicate that boys think more strongly than girls that the use of condoms will diminish their sexual pleasure ($p < .002$). Girls beleive less strongly than boys in the contraceptive efficiency of condoms ($p < .01$) and give more value to the notion of "feeling safe" during sexual intercourse ($p < .001$). Boys perceive girls to be more in agreement with the use of condoms than the girls perceive boys to agree ($p < .002$). Finally, girls give more weight to a number of others barriers than do boys: embarrassment to buy ($p < .003$); fear of breaking during intercourse ($p < .007$) and not being familiar with use ($p < .004$).

Conclusion. Thus, the importance of several cognitive elements relating to the use of condoms seems to be different for boys when they are compared to girls. In our opinion, planners of future persuasive strategies should consider these potential differences and segment their target population appropriately.

This study was funded by the Quebec Council on social research (RS-1453 M88).

M.D.P.28 PREDICTORS OF HIGHER RISK SEXUAL BEHAVIORS AMONG GAY AND BISEXUAL MEN ATTENDING AN STD CLINIC

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Objective. To compare two groups (lower and higher risk sexual behaviors) of gay and bisexual men attending an STD clinic in 1988.
Methods. 198 gay and bisexual men seeking services at the SF STD clinic between April and July 1988 were interviewed and divided into 2 groups based on sexual behaviors; 33 men engaging in safer sex (unprotected oral sex without ejaculation and no unprotected anal sex) and 165 men engaging in higher risk sex (unprotected oral sex with ejaculation and/or unprotected anal sex). Demographic and psychosocial factors, AIDS knowledge, drug use, and partner status were compared.
Results. The median age was 33 years in both groups. The higher risk group had a higher proportion of nonwhites than the lower risk group (41% non-whites vs 23%, p=.05). The only factor other than race associated with higher risk behavior was exchanging sex for money and/or drugs. (24% higher risk group vs 0%, p=.03). Although only 10% (n=21) of the study population used crack, all were among the unsafe group. AIDS knowledge and duration of residence in the SF area were not significantly different between the two groups.
Conclusions. While all gay and bisexual men seeking services at STD clinics need risk reduction counseling, additional prevention programs may be needed for higher risk subgroups such as minorities and prostitutes. Crack use among gay and bisexual men needs further study.

M.D.P.29 FACTORS AFFECTING RETENTION IN A LONGITUDINAL AIDS RISK REDUCTION STUDY OF GAY MEN

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Objective. To identify characteristics of participants that contribute to continuing participation in a longitudinal study in order to plan methods of increasing retention. Methods. Dallas County, along with 5 other areas is participating in a longitudinal study of HIV infection risk reduction of gay men. Men are enrolled through the antibody test site, and asked to complete a detailed survey, participate in risk reduction counseling, and have an antibody test. Each man is to return every six months to repeat the process. The registration is anonymous so no reminders can be used. Results. Of a total of 525 men eligible to return for a second visit, 287 (54.7%) had returned. A number of demographic, risk behavior, and opinion variables plus antibody status were entered into a stepwise linear regression. The variables that contributed to retention rate (r^2= .173) were previous negative antibody test, initial visit negative antibody test, education level, and trust in information from the Federal government. Perceived sensitivity of local gay organizations to concerns of the gay community was inversely related to retention. Conclusions. The study has enrolled 141 persons who were HIV antibody positive at the first visit and 40 with previously positive results. These men require additional encouragement to return. Neither level of risk behaviors or desire to change behaviors contributed to retention.

M.D.P.30 AIDS KNOWLEDGE AND UNSAFE SEXUAL PRACTICES AT AN STD CLINIC

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Objective. To examine knowledge about AIDS transmission among patients seen at an STD clinic, and determine whether differences in knowledge correspond with sexual practices.
Methods. A consecutive sample of 712 patients seen at the San Francisco STD clinic in March of 1988 was obtained using an anonymous, self-administered questionnaire (90% response rate). Overall knowledge was defined by percentage of 27 true/false AIDS questions answered correctly. Multivariate ANOVA was used to compare knowledge score among groups, and the partial F statistic was used to assess significance after controlling for other factors.
Results. Overall knowledge was high (mean for all respondents=67.7%). Knowledge was found to be higher among whites (mean=74.0%) than minorities (mean=63.5%), and higher among homosexuals and bisexuals (mean=73.4%) than heterosexuals (mean=65.9%). After controlling for these differences, no association was seen between knowledge level and consistency of protected intercourse of any type or use of drugs with sex.
Conclusions. For these STD patients, knowledge of AIDS has not translated into behavior changes. Further efforts should focus on behavior modification and not simply on AIDS awareness.

M.D.P.31 PREVALENCE AND CHANGE OF AIDS HIGH RISK SEXUAL BEHAVIOR AMONG BISEXUAL MEN IN SAN FRANCISCO: THE SAN FRANCISCO MEN'S HEALTH STUDY

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Objective. To describe and compare prevalence and change in homosexual and heterosexual behaviors in a cohort of bisexual men in San Francisco.
Methods. All men who identified themselves as bisexual (n=58) were selected from a probability sample of single men in the area of San Francisco hardest hit by the AIDS epidemic in 1984. Prevalence and change in sexual behaviors from 1985 to 1987 with both men and women were examined. Data from 1988 will be reported at the meeting.
Results.

BEHAVIOR	1985	1986	1987
Had sex with men	91.3%	62.1%	41.4%
Had sex with women	34.5%	20.6%	18.9%
Unprotected vaginal sex	29.3%	8.9%	5.2%
Unprotected anal sex (men)	53.4%	20.7%	0%
Multiple male partners	70.1%	41.4%	37.9%
Multiple female partners	12.1%	3.4%	3.4%

Conclusion. It appears that bisexual men in San Francisco have reduced both their homosexual and heterosexual high risk sexual behavior. The heterosexual changes are much more drastic than has been seen among heterosexual men in the same sample. The fact there is still some reported unprotected sex with women may reflect the belief that this is a somewhat less risky activity than unprotected male-to-male anal sex.

M.D.P.32 INTENTIONS TO CHANGE BEHAVIOR, PERCEIVED CHANGE AND REPORTED CHANGE: DO THEY CORRELATE?

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Objective: To examine the correlation between reported intentions to change, perceptions of change, and actual reported behavior change in a cohort of gay men.
Methods: 209 gay men completed a baseline (T1) and a six month follow-up (T2) questionnaire on their HIV risk behavior, knowledge, attitudes, and beliefs. Intended behavior change at T1, perception of behavior change at T2, and actual reported behavior at T2 were cross-tabulated to see whether subjects who intended to change at T1 and perceived that they had changed at T2, actually report behavior change.
Results: Subjects reporting the intention to decrease their number of sex partners at T1 and a perception of decrease at T2 had actually decreased partners by T2 based on self-report ($z=3.22$, $p<.05$). Subjects reporting no intention to change at T1 but a perception of change at T2 did not report fewer sex partners at T2 ($z=1.71$, n.s.).
Conclusion: Individuals' perceptions that they have changed their behavior may be inaccurate measures of actual behavior change. Intentions to change, however, are consistently correlated with reported behavior change, suggesting that interventions aimed at changing stated intentions may be useful first steps in influencing behavior change.

M.D.P.33 CHANGES IN HAITIAN IMMIGRANTS' KNOWLEDGE, ATTITUDES AND PRACTICES ABOUT AIDS IN MONTREAL, CANADA

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Objective. To measure changes in knowledge, attitudes and practices related to AIDS in Haitian immigrants in Montréal.
Methods. In the first year (Oct.87-Sep.88) of an ongoing study, 206 Haitian subjects aged 15-39 years were interviewed on their knowledge, attitudes and practices related to AIDS. At the mid-point of the second year of the study (Oct.88-May 89), 100 subjects had answered the questionnaire. Results from the first year were compared to those from the second year. The significance level was set at 0.001 because of the large number of comparisons being made.
Results. In the second year, study subjects identified more accurately behaviors or experiences that are not associated with HIV transmission, such as mosquito bites. Attitudes towards persons infected with HIV were more positive in the second year. Also, more subjects knew the correct meaning of the acronym S.I.D.A. (AIDS in French) in this second year. Subjects from the second year were less worried about themselves or somebody close getting AIDS and thought it less probable that AIDS would become epidemic in all segments of the Canadian population. There was no significant change in reported sexual behavior.
Conclusion. There has been a slight improvement in knowledge related to AIDS and attitudes towards HIV-infected persons in the Haitian population of Montréal, Canada, from 1987 to 1989. Haitians are better informed about behaviors not associated with HIV transmission. We do not know if this increased knowledge is directly related to the fewer worries and the improving positive attitudes towards persons infected with the HIV in this population. We have not been able to document changes in risk behaviors. HIV risk-reduction interventions will need to focus on specific risk reduction practices.

M.D.P.34 SAFE AND UNSAFE SEX AMONG HOMOSEXUAL MEN IN THE NETHERLANDS

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Objective. To investigate sexual behavior of homosexual men in the Netherlands, their knowledge about HIV and AIDS, and their attitudes concerning safer sex and AIDS prevention.
Methods. A cohort of readers of the largest Dutch gay paper 'De GAY Krant' and activists of the gay movement was investigated at the beginning of 1986, 1987, 1988 and 1989. 522 men returned at least three questionnaires. A multiple regression analysis was made on having anogenital sex.
Results. No significant differences were found between the activists and non-activists in knowledge, attitudes and behavior related to AIDS. Those investigated are very well informed about AIDS and safer sex guide lines. In 1986 (and 1988) the safer sex guide lines were followed always by 28% (became 49%), in most cases by 52% (became 39%), and sometimes or never by 21% (became 12%). Having receptive anal intercourse with orgasm without using a condom at least once during the last six months before returning the questionnaire went down from 48% in 1986 to 26% in 1988. The main factors correlated with continuing having anogenital sex in 1986 and 1988 are: having a steady monogamous relationship (0.23, $p<0.001$) or a steady open relationship (0.13, $p<0.01$), looking upon anogenital sex to be 'the real sex' (0.17, $p<0.001$), and being homosexually active for a shorter period (0.10, $p<0.05$). Conclusion. Dutch homosexual men are well informed aboutsafer sex and tend to act accordingly. Those continuing having anogenital sex tend to have steady relationships.

M.D.P.35 PREDICTING HIV RISK BEHAVIORS AMONG GAY MEN

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Objective: To identify persons who will continue sexual risk taking despite basic safe-sex counseling, in order to target supplemental interventions.

Methods: We analyzed initial and 6 month followup data from AIDS counseling and testing clinic clients who participated in a longitudinal cohort study of men who have had sex with men. Data collected include recent sexual behavior and indications of attitudes, knowledge and beliefs surrounding sex, drugs and AIDS.

Results: Data from 517 men who completed both questionnaires are included. We found that 20% of respondents were practicing unprotected anal sex at followup. (We eliminated those in monogamous relationships with like serostatus partners). Five independent predictors of this risk taking we identified are shown below. Initial unsafe behavior was the strongest predictor, but the other predictors were significant after controlling for initial risk. These significances held up in a split sample analysis.

Predictor	Odds Ratio	95% CI
Initial unsafe behavior	3.06	1.93, 4.81
Perceives risky sex as low risk	1.93	0.32, 11.7
Believes AIDS will be curable	1.85	1.19, 2.87
History of drug or alcohol abuse	2.14	1.43, 3.20
History of unsafe sex with drugs or alcohol	2.63	1.65, 4.19

Conclusions: Clinical strategies to induce sexual behavior change in gay men should focus additional counseling efforts on individuals with a profile matching the predictors of continued risk taking. These include individuals who initially practice high risk sex, and believe that unsafe sex is not risky, those who believe a cure for AIDS will soon be found, and those with a history of drug or alcohol abuse or who report risky sex associated with drug and alcohol use.

M.D.P.36 KNOWLEDGE, BELIEFS, ATTITUDES AND BEHAVIOUR ABOUT AIDS IN THE 14TO20 AGE GROUP. EVALUATION OF AN EDUCATIONAL PROGRAM

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Objective: To assess the KNOWLEDGE, BELIEFS, ATTITUDES AND BEHAVIOUR of N=770 Students from a vocational schoolcenter in Berlin-W. They are involved in a special schoolprogram to inform on AIDS by special trained physicians or biology teachers.
Methods: Knowledge about transmission, risk factors, use of condoms, attitudes, beliefs and former sexual education were collected by a questionnaire with standardized and open questions before(n=770), four weeks(n=572) and six month(Sept.88) after(n=431) the lessons.
Results: After six month there was a higher acceptance of using condoms, and still very high level of information about ways of transmission and risk factors. Coping with fear, confidence, stable partnership, communication and the competence of using condoms are most important factors to prevent HIV-Infection. Only 11% proposed instead of enlightenment, measures of repressive control. Although >90% of the students had sexual education <2% had learned to speak about feelings and emotions related to sexuality. Students would not isolate HIV+persons.
Conclusions: Six months after the AIDS information lesson students still have a high level of AIDS related information and competence. They are interested in more lessons about sexuality and partnership, and about AIDS as a social problem. The approach of 'personal prevention' is necessary, because it is closing the gap between the preventive information - given by the mass media('medial prevention') - and the necessary preventive acting of adolescents. This approach can induce short- and longtermed preventive effects.

M.D.P.37 SEXUAL BEHAVIOUR AND HIV RELATED KNOWLEDGE AMONG A RANDOM SAMPLE OF YOUNG POPULATION OF ITALY.

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Objectives. To quantify sexual activity and behaviour and to determine HIV related knowledge.
Methods. A random sample of young population (age 16-30) was selected using a nested sampling procedure. Nine local authorities (Comuni), three each for Northern, Central and Southern Italy and, for each area, one for each of the following population size (10,000-50,000; 50,001-500,000; >500,000) were randomly selected in order to be representative of metropolitan, urban and rural areas. A random sample, proportional to the population size of the selected local authorities (LA), was than selected from the Residents Register. An official letter, mentioning the broad scope of the research and the support given by the LA to the initiative was sent to the selected individuals. Each individual was then contacted by specially trained interviewers who handed him out a structured questionnaire for self completion. The key questions were: age at first sexual intercourse, numbers of sexual partners in different time periods, use of condoms, knowledge about HIV transmission and use of IV drugs.
Results. 1,450 individuals were contacted. Valid questionnaires were obtained in 1,044, with an overall response rate of 72%. Analysis is not yet completed and will be presented at the Conference.
Conclusion. The good response rate suggests that the population in Italy is prepared to answer questions about their sexual lifestyle.

M.D.P.38 PEER NORMS FOR SAFER SEX AS A PREDICTOR OF SEXUAL RISK BEHAVIORS IN A COHORT OF GAY MEN

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Objective. Recent evidence suggests that positive peer norms for safer sex are associated with sexual risk reduction. This study looked at sexual risk behaviors as a function of perceptions of peer norms for safer sex in a sample of gay men. Subjects are primarily white and middle class; target ages: 19-60 years.
Method. Subjects provided a detailed sexual history, and completed a self-report measure evaluating peer norms regarding safer sex, modeled after Fishbein's theory of reasoned action.
Results. Preliminary analyses (N=70) indicate that approximately 74% of the cohort engaged in sex with multiple partners. Rates of at least one occasion of unprotected sex were: 56% (receptive anal); 41% (insertive anal); and 80% (active oral). Subjects' perceptions of positive peer norms for safer sex were associated with having fewer sex partners (p<.025), with being monogamous (p<.005), with fewer sex occasions (p<.05), and with lower incidence of unprotected active oral sex, but not with incidence of unprotected insertive or receptive anal activity.
Conclusion. Perceptions of peer norms for safer sex mediate at least some sexual activities, even in a sample of gay men from a highly organized community. Failure of peer norms to predict unprotected passive anal activity may be related to greater incidence of such activity among monogamous men (p<.025).

M.D.P.39 GAY IDENTIFICATION INFLUENCES THE EFFECTS OF ALCOHOL USE ON AIDS RISK BEHAVIOR

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Gay males' shift toward safe sex is often attributed to their identification with an active community which promotes safe sex, in contrast to IV drug users. Our data, however, show that many gay males slip from safe sex and that this is often related to alcohol use. Given the importance of the gay bar, we reasoned that identification with the community, while providing safe sex norms, may also induce risk via exposure to alcohol settings. This process may differ by levels of gay identification.
Objective. To examine the complex relationships among gay identification, involvement in the gay community, alcohol settings, and AIDS risk behavior.
Methods. A structured interview among a sample of 87 gay men from a large urban area.
Results. For all respondents, alcohol use, both by the individual and their primary social network, increased risk for unsafe sex. However, for highly gay identified respondents, alcohol use increased risk behavior via alcohol use in multiple gay settings, and not primarily the bar. In contrast, for low identified respondents, AIDS risk behavior was stongly related to bar-going.
Conclusion. Alcohol continues to be an important risk factor for unsafe sex among gay men. Further, such risk factors operate differently for those with different levels of gay identity. Thus, understanding and/or preventing AIDS risk behavior requires that specific cultural features of the gay community be examined.

M.D.P.40 KNOWLEDGE, ATTITUDE AND PRACTICE RELATING TO AIDS AMONG A RANDOM SAMPLE OF STUDENTS AT A PARIS UNIVERSITY.

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Objective: To provide a database on perception and reaction of beginning university students with regard to the AIDS epidemic in ordre to develop a continuously adapted program of information.
Methods : A one in five random sample including 671 male and female, 17-22 year old students answered a self-administered anonymous questionaire exploring, through 140 items, knowledge, attitudes and practice with regard to health in general, sexually transmitted diseases and AIDS.
Results: The response rate was 98%. Less than 5% of questions were unanswered. Questions concerning sexual practice have the same response rate as those concerning knowledge and attitudes. Students are concerned by the quality control of condoms. While 58 % say that they know that condoms, without reference to quality, reduce the risk of getting AIDS, this frequency rises to 92% when the condom proposed has the quality control seal. While 72% of the students actually plan to use condoms, only 49% of questions concerning the practical use of condoms were correctly answered by those students having sexual intercourse and only 40% of students say that they really use it (26% sporadically, 14% systematically). These latter figures do not differ between males and females nor between students with a single sexual partners and those with more than three sexual partners.
Conclusion: A proposed program of information should include a wholly explicit explanation about the practical use of condoms. A pilot program is to be proposed for adoption after discussion with students about specific sensitization and motivation.

Travailleurs de la santé
Health Care Workers

M.D.P.41 DECENTRALIZED SERVICES: GLOBAL NETWORK-TYPE APPROACH

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Objective: To make accessible medical and psychosocial services in order to provide persons concerned by HIV infection and AIDS with quality services.
Methods: 1. Setting up of a general practitioner/physician network working in the public and private sectors. Selection according to interest, geographical distribution, accessibility and operation methods (confidentiality). Main approach: pre and post-test counselling, coded on-site sampling, medical follow-up, psychosocial referral. 2. Setting up of a network of psychosocial professionals working in the public and private sectors. Priority interventions: individual consultations, support groups for seropositive persons, case management. Professional expertise: social workers, psychologists, sexologists. 3. Training of medical and psychosocial intervening parties, information to target groups, interventions among media, health education. Access to services through Info-Health (24 hr. hot line).
Results: After one year: 1. Staff: 35 physicians, 7 social workers, 2 sexologists, 2 psychologists, 3 nurses, distributed across 18 service points. 2. Achievements: 237 referrals to the medical network by Info-Health, 22 group meetings (seropositive persons), 85 interviews (psychotherapy, sex education, support), 47 communications made to the media, 33 presentations (lectures, conferences).
Conclusion: The "network" team is operational. Offered services aim at reaching target groups to help them to reduce their risk factors and to support them in what they are experiencing.

M.D.P.42 OVERESTIMATIONS OF RISK FOR OCCUPATIONAL HIV TRANSMISSION AS A FACTOR WITHIN AIDS-HIV EDUCATION AND CARE

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Objective. To assess the perceptions of personal and occupational risk for HIV infection as they potentially function as co-factors in the capacity of professional health care students to assimilate AIDS-HIV information and provide related care. Method. Having determined by previous study that an apparent lack of knowledge about HIV was frequently reflective of opinions/perceptions (versus knowledge) about occupational risk, a measure was developed specific to related beliefs. Incoming medical and nursing students at a major university training center were asked to estimate the consequent risk of engaging on a single occasion in a number of occupational behaviors [e.g. performing CPR (including mouth-to-mouth resuscitation) on an AIDS patient] and in a number of personal behaviors [e.g. French kissing (deep mouth-to-mouth) with a person with AIDS]. Items were formulated both for their common place within medical and nursing practice and in specific instances because consequent risk had been scientifically estimated (e.g. accidental needle stick, unprotected genital intercourse). A 6-point Likert-type scale was utilized as follows: 'No Risk' (0); 'Very Low Risk' (<1 in 200,000); 'Low Risk' (1 in 50,000); 'Moderate Risk' (1 in 3,000); 'High Risk' (>1 in 300); 'Very High Risk' (>1 in 3). Students were administered the scale as part of a larger questionnaire inclusive of three sections: Risk Perception, Attitudes; Knowledge. A nonequivalent control group design was employed. Questionnaires were administered at two points in time: upon matriculation and following a 10 week, 19 hour AIDS elective course. Results. The majority of students surveyed significantly overestimated risk for HIV infection as compared to both scientific estimates and the informed opinions of experts. Determinant factors in addition to the type and extent of contact included: whether or not there existed visual testimony to illness (e.g. K.S. lesions); whether or not an individual was seropositive and symptomatic versus asymptomatic; and at a pilot point of survey, whether or not the patient (described as having bitten the provider) was demented. Of note, is that those persons who were less knowledgeable were also more likely to overestimate risk (and unfortunately, less likely to take the aforementioned course). It was likewise the case that those persons most likely to endorse attitudinal items considered counter to optimal care were most likely to overestimate risk. In fact, results from multiple regression analyses indicated that the best predictor of negative AIDS attitudes (including professional resistance to providing care) was overestimation of risk for HIV infection. Finally, despite a positive trend, perceptions of risk were not significantly altered by traditional educational interventions. Conclusions. Importantly, further administration and revision is indicated in order to substantiate the validity of the measure itself, in particular to ascertain whether or not numerical anchor points are correctly interpreted by respondents. Available results do suggest that attendance to the topic of personal and professional risk for HIV infection is of particular importance within the context of AIDS education. Of import is not only attendance to biomedical findings and fact but perceptions which may preclude the assimilation and application of such knowledge. Effective education would assumedly be of a multimodal sort inclusive of direct attention paid to those issues germane to fear of contagion.

M.D.P.43 JOB-RELATED STRESS AMONG HIV-ANTIBODY TEST COUNSELORS

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Objective. To assess determinants and levels of stress among counselors. Methods. In July 1987, a questionnaire designed to measure AIDS/HIV-related knowledge, attitudes/opinions, counseling behavior, counselor stress, and demographic factors was self-administered by 78% (201) of all HIV counselors in counseling and testing sites in California. Results. Respondents tended to be female (62%), white (82%), college educated (97%), and generally scored well on knowledge questions. Gender, professional training or degrees, and volunteer versus paid status were not associated with differences in knowledge about HIV/AIDS. Psychometric properties were evaluated for the knowledge questions (Chronbach's alpha = 0.58) and stress items (Chronbach's alpha = 0.87). In factor analysis of the stress items, three distinct factors emerged: burnout (Eigenvalue = 9.4), time pressure (Eigenvalue = 1.8), and helplessness/hopelessness (Eigenvalue = 1.7). ANOVA and correlation analyses showed no significant associations between levels of stress and counselor age, counselor gender, sexual orientation, ethnicity, years of education, or score on the AIDS knowledge test. More stress was reported by counselors who perceived less choice in determining their role (r = -.3, n = 169, p = .002). Also, the lower the level of support from the administrator, the higher the level of reported stress (r = -.03, n = 166, p = .005). Conclusion. Counselors experience varied types of stress, moderated by choice in counseling and perceived support from administrators, suggesting stress mediators which may be used to target interventions.

M.D.P.44 PRIMARY CARE PHYSICIANS' KNOWLEDGE, ATTITUDES AND WILLINGNESS TO TREAT AIDS PATIENTS

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Objective. To examine the relationship between physician knowledge, attitudes, personal characteristics and AIDS prevention and treatment practices. Methods. Telephone interviews of a representative sample of 473 primary care physicians in New York City were taken during 1988 about knowledge, attitudes and clinical practices toward AIDS prevention and treatment. Results. Among physicians surveyed 61% had AIDS patients in their practice, and 77% had offered or recommended the HIV antibody test to a patient. Thirty-six percent of physicians would refer an HIV+ patient elsewhere rather than manage alone or in consultation. Stepwise logistic regression analysis estimated the adjusted odds ratios between physician characteristics and willingness to treat AIDS patients shown below.

Characteristic*	Adjusted Odds Ratio	95% C.L.
Age <= 40 years	3.27	1.95-5.47
Practice Internal Medicine	2.29	1.53-3.42
High AIDS Knowledge	3.22	1.59-6.51
Liberal Political Orientation	1.74	1.15-2.65

*Physicians' race and attitudes towards homosexuals were not retained in the final logistic model when controlling for variables shown above.

Conclusion. Preliminary data suggest that physician age, specialty, level of knowledge and political orientation are associated with willingness to treat AIDS patients.

M.D.P.45 COLLABORATIVE EVALUATION STUDY OF AIDS TRAINING PROGRAMS FOR WOMEN'S HEALTH PROVIDERS

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Objective. To develop, implement and evaluate AIDS training programs for health care providers of inner-city women, so that AIDS education, prevention and counseling can be incorporated into routine women's health services. Methods. Three NYC teaching hospitals have been selected to conduct training programs for a total of 750 women's health providers using three distinct models: (1) a competency-based, teaching symposia model; (2) a multi-modality model; and (3) a training-of-trainers model. Using a quasi case-control study method to evaluate training effectiveness, pre- and post-training questionnaires were developed to measure changes in provider knowledge, attitudes and medical practices. As a further assessment of provider trainings, patients are being asked to report on the AIDS prevention services they receive. Results. Changes in provider knowledge, attitudes and medical practices before and after the AIDS trainings will be described and analyzed across the three hospitals. Differences in outcome will be reported. Conclusion. As a result of provider training in AIDS education, prevention and counseling, most women's health providers now incorporate these services into their routine health care. As a next step, it is important to ascertain whether provider training has an effect on the knowledge of AIDS and risk reduction practices among inner-city women who voluntarily seek health care.

M.D.P.46 THE NEEDS OF PERSONS LIVING WITH AIDS

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A needs assessment study was conducted across Canada to identify and prioritize the major palliative care needs of persons living with AIDS. A two-part questionaire was developed to gather both quantitative and qualitative information on eight core issues considered to be critical in the care of AIDS patients. A targeted sampling approach was used to ensure that within four categories of potential respondents, Canadians who had varying amounts of experience in caring for persons living with AIDS were included. The respondents were drawn from every region of the country which included 27 hospitals, 28 palliative care programs, 15 home care/visiting nurse services and 13 community AIDS groupr. This presentation will present the results of this study and describe how Canadians who care for persons living with AIDS have spoken about the resources they require to provide an effective and a humane response to this devastating disease. This study has major implications in the development and expansion of Canada's present health care system.

M.D.P.47 THE KNOWLEDGE AND UNDERSTANDING OF HUMAN IMMUNODEFICIENCY VIRAL (HIV) INFECTION AMONG HEALTH CARE WORKERS (HCW) IN TEACHING AND NON-TEACHING HOSPITALS IN JAMAICA.

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The Acquired Immune Deficiency Syndrome (AIDS) is now evolving into a global epidemic affecting a wide cross section of the world's population. Public education on AIDS in Jamaica began in April 1987. No known case of HIV infection in Health Care Workers (HCW) has been reported in Jamaica or in the Commonwealth Caribbean and neither has any study been undertaken to assess the understanding of HIV infections in Health Care Workers in Jamaica.

The aim of this study therefore, was to assess the knowledge and understanding of H.C.W. on HIV transmission and isolation and precaution to be instituted for control of HIV infection and also, to ascertain whether any differences in knowledge existed between H.C.W. of teaching and non-teaching hospitals. A total of 650 questionnaires were sent to H.C.W. in four hospitals - (3 non-teaching and one teaching), of which 509 were returned, a response rate of 79%. Questions on AIDS transmission via blood transfusion and sexual intercourse and proper disposal of sharps received highest scores (85-100%), embracing all groups at both teaching and non-teaching hospitals. The greatest area of misunderstandings and misconceptions were reflected in responses obtained on isolation precautions which received low scores (< 30%) for both teaching and non-teaching hospitals.

Our study demonstrated that there was no difference in the knowledge of HIV infection among HCW in teaching and non-teaching hospital, and a urgent need for a comprehensive approach to education of HCW on prevention and control of HIV infection in Jamaica.

M.D.P.48 IMPACT OF AIDS WORKSHOP ON KNOWLEDGE AND ATTITUDES IN HEALTH CARE WORKERS

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OBJECTIVE. To determine the state of and change in health care workers (HCW) knowledge and attitude towards HIV infection and AIDS after attending a workshop.
METHODS. Ten two-day workshops were held for HCW from different population groups in 1988. The workshops addressed the natural history, transmission and prevention of infection, psycho-social aspects and counselling. The information was presented using a combination of didactic sessions, audio-visual material, role plays, group activities and discussion. 200 participants completed a pre and post-test questionnaire designed to ellicit attitudes towards knowledge of the disease. The questionnaires were analysed comparing (1) knowledge before and after the workshop, and (2) the correllation between knowledge and attitude.
RESULTS. Significant differences were found in knowledge and attitudes before and after the workshop. The majority of respondents lacked basic knowledge prior to the workshop. In addition, attitudes changed with more knowledge and anxiety decreased significantly.
CONCLUSION. The results of this study confirm that workshops promote knowledge, improve attitudes and thereby assist HCW in providing optimal care to patients and dissemenating education for prevention of HIV infection and AIDS.

M.D.P.49 EXPERIENCE WITH AIDS AMONG 3500 ZAIRIAN HEALTH WORKERS, 1987-1988

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Objective. To determine the current level of AIDS experience among health workers (HW) throughout Zaire.
Methods. We surveyed 3462 physicians, nurses, health facility workers, community HW and traditional healers.
Results. A total of 42% reported personally knowing someone with AIDS, and 18% had cared for an AIDS case. Cases were reported from urban and rural areas of all regions. Half of these personnel (especially physicians) favor informing a patient of his HIV(+) or AIDS status, and 62% favor informing the family. However, only 8% of AIDS cases and 22% of their families were in fact informed. These percentages increased greatly between 1987 and 1988, when national policy permitted informing cases of their AIDS status. One-third of personnel favor isolation of AIDS cases, and 3% recommend killing them.
Conclusions. 1) This is the first report suggesting that AIDS can be found throughout Zaire. 2) Patients and families are generally not informed of the AIDS diagnosis. 3) Negative attitudes of HW toward AIDS cases must be addressed to ensure a more positive role of HW in AIDS education activities.

M.D.P.51 GENERAL PRACTITIONERS AND MANAGEMENT OF HIV INFECTION

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Objectives: To survey current practice and attitudes among GPs in relation to screening for the presence of HIV and in relation to the management of HIV infection in asymptomatic, seropositive patients.
Methods: A questionnaire was mailed to all sentinel GPs (n-500) of the French Communicable Diseases Network (1% sample, representative of GPs in France). Questionnaire components included: demographic data and attitudes towards HIV screening and follow-up of patients, personal methods for obtaining information about the disease, HIV antibody testing and their strategies for the management of HIV infection.
Results: The response rate was 78%. Within the context of their medical practice, 57% said that they were affected by the subject of HIV infection, while 29% were already caring for an infected individual. 97% of these GPs thought that it was useful for them to follow infected patients. 88% considered these patients to be a normal part of the practice of medicine for a GP. 38% complained that they did not have enough information to do this. 20% of these GPs had reservations about caring for an infected patient and 3% expressed fear of contagion. There was a positive relationship between having reservations about treatment and the perception of the lack of information ($p < 0.05$). 9% of GPs had no systematic attitude toward HIV screening and always waited for patients to request the test. HIV testing was systematically proposed by 52% of the GPs in the case of premarital screening, by 45% for prenatal patients, by 37% for IV drug users, by 30% for homosexual patients.
Conclusion: The better informed a GP is, the more likely he is to have a positive attitude towards prevention and care of HIV infection. HIV testing is more often proposed by GPs when the subject is not 'a priori' at risk (i.e. premarital or prenatal screening).

M.D.P.53 ACCESS TO DENTAL CARE IN THE SAN FRANCISCO AIDS BEHAVIORAL RESEARCH COHORT.

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Objective. Press accounts in recent years have reported cases of dentists refusing to provide care for people with AIDS and HIV infection. These reports have raised doubts about whether such patients have full access to dental care. We wished to learn the extent to which a cohort of men with HIV disease or at high risk for HIV disease has been denied dental treatment.
Methods. The San Francisco AIDS Behavioral Research Cohort were surveyed in November 1988. This group of gay men has been surveyed annually since 1984 to track their reactions to the HIV epidemic. The response rate was approximately 70% (n=326).
Results. Only 3 respondents (1.5%) reported having been rejected from a dental practice in the past 3 years because of their HIV status. Only 16% said they would not inform their dentist if they were HIV positive. Over half (56%) indicated they would freely volunteer the information to .their dentist. The remainder said they would disclose their status under certain conditions, e.g., if oral manifestations of the disease were present.
Conclusion. The low prevalence of denial of care suggests that dentists in this community have responded well to the needs of this population. The relative willingness of patients to disclose highly sensitive medical information may be a reflection of the positive response of dentists. It may also reflect strong state and local laws safeguarding confidentiality and prohibiting discrimination and the relatively positive response of San Francisco to the epidemic.
This study was supported by NIMH & NIDA Center grant #MH42459.

M.D.P.50 A KAP SURVEY OF HEALTHCARE WORKERS IN BANGKOK ABOUT AIDS

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Objective. To assess the knowledge, attitude and practice concerning AIDS among Thai healthcare workers (HCW) in order to find out the basis for their fears and the means to minimize such fear.
Methods. Questionnaire survey was conducted in 274 HCW in 3 hospitals in Bangkok during August-September 1988. Twenty-eight percents of the subjects thought that they have already had some exposure to HIV patients.
Results. 1. Knowledge: Almost a quarter of the HCW admitted that they knew very little about AIDS. The misunderstanding was mainly the risk of HIV transmission with body fluids and the uncertainly about the efficacy of HIV inactivation procedures.

2. Attitude: More than half of the HCW stated that they rather preferred staying away from HIV patients because of the fear of contracting the disease which they partly blamed the inadequate facility provided by the hospital.

3. Practice: To make the HCW feel more comfortable in caring for HIV patients, they requested more frequent lectures and information distribution, particularly the measures to prevent nosocomial infection. They also requested free anti-HIV screening for themselves as well as better patient care facilities.

Conclusion. Results from this study can be used as the background informations for every effort to improve the attitude and the quality of patient care in countries where HIV infection just emerges and resources are limited.

M.D.P.52 WOULD PATIENTS SWITCH PHYSICIANS IF THEIR DOCTOR WERE HIV POSITIVE?

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Objective. To ascertain patients' perceptions of HIV in physicians' offices, including their reactions to physicians with HIV disease.
Methods. Telephone interviews were conducted in July and August 1988 with 2000 English-speaking, United States adults using a representative national sample generated by random digit dialing. A 75% response rate was achieved. The denominator for the data reported below is all those who received medical care from a physician in the past five years (n=1880; 94% of sample).
Results. Thirty-three percent of the respondents considered it likely that patients could get AIDS from an HIV infected physician. Forty-five percent believed that HIV positive physicians should not be allowed to continue to work (compared to 23% who believed HIV positive school teachers should not work). Fifty-six percent of respondents said they would find another physician if they believed their doctor were HIV positive. Twenty-five percent of the respondents said they would find another physician if they believed their doctor were treating people with HIV disease. Patients who said they would find another physician tended to believe that the virus could be transmitted from an infected physician to patients.
Conclusion. Patients are concerned about the presence of HIV in their doctors' offices and have misconceptions about the likelihood of transmission which should be addressed by public education programs.
Funded by NIMH & NIDA #MH42459 and the Universitywide Task Force on AIDS.

M.D.P.54 FEAR OF CONTAGION IN HOME HEALTH AIDES: A COMMUNITY SURVEY

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Objectives: to determine the potential for scarcity of home health aides (HHA) willing to care for persons with AIDS (PWA), and perceived reasons for this deficit.

Methods: A community telephone survey was conducted to the majority of proprietary agencies in one metropolitan area. A total of 31 agencies qualified for the survey and fully answered the questions. The person in charge of assigning HHAs, usually a nursing supervisor, was asked three questions: 1) Are you having difficulty or do you anticipate having difficulty finding HHA willing to care for PWA's? 2) If so, why are HHAs refusing to go into the homes of PWAs? 3) Would a continuing education program for HHAs on HIV infection be useful to your agency?

Results: Difficulty finding HHA willing to care is outlined below:

Agencies	YES	NO	DON'T KNOW
experiencing difficulty	18	1	
anticipating difficulty	9	2	1

Thematic analysis of answers to second question showed a high fear of contagion among HHA's. Contributing factors commonly identified included ethnic and cultural backgrounds of HHA, family pressure, and ignorance. Five of the supervisors felt strongly that education alone was not the answer. The interviews suggested an "agency atmosphere" which either contributed to or ameliorated fear, which coincides with known theory on group anxiety.

Conclusion: Home health agencies may have difficulty meeting increasing needs of PWA's for personal home care due to the cultural, social, as well as educational factors which contribute to fear of contagion among home health aides.

M.D.P.55 HEALTH WORKERS AND AIDS: KNOWLEDGE, ATTITUDES AND EXPERIENCES AS DETERMINANTS OF ANXIETY.

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Objective. Research and case reports have demonstrated insufficient knowledge, negative attitudes and anxiety related to HIV/AIDS among health professionals. This study has been carried out to identify possible determinants of anxiety in order to establish educational programmes focusing on factors relevant for reducing anxiety and improving professional behaviour.
Methods: A random sample consisting of 2561 Danish medical doctors, nurses and nurse aids received a mailed questionnaire on anxiety related to AIDS care and experiences, knowledge and attitudes regarding gay men and HIV/AIDS.
Results: The responses (74%) have been analysed by multiple logistic regression based on a model suggesting a hierarchy of causal dependencies where anxiety is assumed to be a response to all the 11 remaining variables. The results of the analysis demonstrating a major influence of attitudes towards HIV-infected persons and gay men on anxiety will be presented. Implications for education and psycho-social support of health care workers will be discussed.

M.D.P.56 KNOWLEDGE OF HIV TRANSMISSION AND ATTITUDES ABOUT AIDS AMONG 629 REGISTERED NURSES AT A MINNESOTA HOSPITAL.

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Objective. To determine the level of AIDS transmission knowledge among registered nurses practicing at a hospital located in a mid-range area of incidence for HIV infection.
Methods. In September 1987 an anonymous survey was delivered to all registered nurses at a 455-bed acute care teaching hospital and its associated clinics. The survey included a 40 point, 9-item scale which quantified the level of knowledge about AIDS and transmission of HIV infection.
Results. A total of 629 RNs responded. Of all respondents, 78% agreed with the statement "AIDS is easily spread by needlesticks"; specifically, 40% believe the risk of HIV infection after incurring one needlestick injury from an AIDS patient is at least 25%, and 22% believe the risk is at least 50%. While 87% correctly indicated that HIV cannot be spread through the air by a cough or a sneeze, 30% stated that they would wear a gown or mask if they had to enter the room of an AIDS patient. Though only 15% believe HIV infection is more common among hospital workers than other workers, 52% think at least weekly about "catching AIDS" at work, and 25% think daily about this possibility. One-half (47%) favor mandatory HIV testing for hospitalized patients. A third (35%) have received hepatitis B vaccine; 7% of the non-vaccinated gave "fear of AIDS" as a reason for declining the vaccine. While 86% hope their hospital plays an active role in caring for AIDS patients, 25% indicated that they try to avoid caring for AIDS patients, and 55% believe hospital employees should be able to refuse to care for AIDS patients. One-third (33%) indicated they do not have confidence in the AIDS medical information given to the public.
Conclusions. As nurses play a pivotal role in health care delivery, including community education, their knowlege and attitudes regarding AIDS is crucial. The above results demonstrate that among RNs there is a considerable level of misinformation, mistrust and fear regarding AIDS. Education for RNs should address specific issues regarding the occupational risk for HIV transmission and build their level of confidence in this information in order to optimize the quality of nursing care given by RNs to AIDS patients.

M.D.P.57 THE AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOR OF INTERNISTS AND SURGEONS: A COMPARATIVE ANALYSIS

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Objective. To identify factors accounting for differences and similarities of AIDS-related knowledge, attitudes, and behaviors between surgeons and internists.
Methods. In September 1987 an anonymous survey was delivered to all physicians at a 455-bed acute-care teaching hospital. Included in the survey were scales measuring AIDS-related knowledge, behaviors, attitudes, homophobia, and homosexual bias.
Results. A total of 68 internists- IM(68/98; 69%) and 34 surgeons- SG(34/69; 49%) responded. Three of the IMs and one SG identified themselves as homosexual. The IMs had a lower mean age (38.1 vs 40.0; p = .062), and were more likely female (84% vs 65%; p = .059). The only gender related difference in the parameters studied was a higher level of homophobia among male MDs (p =.014). The IMs were less biased in their attitudes towards homosexuality (p = .048) but were not significantly less homophobic than SGs. The IMs reported more favorable behaviors in hypothetical situations with AIDS patients (p < .001) and had slightly higher AIDS knowledge scores (p = .088) than SGs. IMs more frequently reported knowing someone with HIV infection (45/67; 15/34; p = .030) and they had more often cared for someone with AIDS (61/67; 22/34; p = .005). SGs were much more concerned about acquiring HIV through work exposure (p < .001) and reported a much greater level of contact with patients (p < .001). A majority (25/34; 73%) of surgeons were in favor of mandatory HIV testing of all hospitalized patients, while a minority (11/66; 17%) of IMs favored this (p < .01). Forty-seven percent (16/34) of the SGs and 29% (19/67) of the IMs desired a secret HIV test for themselves (p=.09).
Conclusions. SGs may exhibit less desirable behaviors towards PWAs compared to IMs due to more homosexual bias and more concern about at-work exposure. Education programs need to innovatively address these issues.

M.D.P.58 KNOWLEDGE, ATTITUDE AND CONCERNS OF HOSPITAL STAFF ABOUT AIDS

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This paper will report on phase I of a study of hospital staff designed to test various interventions directed at improving the empathic care of staff working with AIDS patients. In phase I, a 52 question survey (Pringle et al, 1986) of approximately 1050 staff was conducted (200 physicians [DR], 700 nurses, technologists and related clinical services [NU] and 150 administrative staff[AD]. Data was analysed within 5 factors: Knowledge; attitudes about homosexuality; screening; concerns about contagion; and the need for isolation. On average health professionals knew the correct answers for 68% of the knowledge questions (DR-71%, NU-65%, AD-68%). All groups appeared comfortable with homosexuality, although findings within specific items question this espoused comfort. For example, 26% of DR, 29% of NU and 21% of AD indicated they would prefer to take care of a patient who had contracted AIDS by a transfusion. Twenty percent of DR, 34% of NU and 26% of AD expressed concern about their ability to be empathic to a gay AIDS patient. Attitudes towards isolation were mixed. Half of the nurse group supported isolation, 38% of DR and 24% of AD. Over half supported screening for AIDS: 63% of NU, 54% of DR and 53% of AD. Forty percent of NU, 37% of DR and 17% of AD believed staff should have the right to refuse to care for a patient with AIDS. Higher knowledge levels are significantly associated with lower levels of concerns re isolation and contagion. It can be conjectured that the consistently higher proportion of NU in the concerned groups is a reflection of the more direct care or contact component of the subjects work. Finally findings will be compared with 2 other hospital surveys conducted by this research team.

M.D.P.59 KNOWLEDGE AND ATTITUDES OF RURAL GEORGIA PHYSICIANS CONCERNING AIDS

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Objective. To assess the AIDS-related knowledge and attitudes of the active physician and non-physician employees of a rural tertiary care hospital in the Southern US; to identify correlates of negative feelings toward AIDS patients and AIDS care.
Method. All 280 physicians and a randomly selected 10% (n=340) of the non-physician hospital employees were asked to complete an anonymous mail questionnaire regarding their knowledge about AIDS, fear of contagion, and responses to and attitudes toward AIDS patients. Physician response rate was 81%; non-physician rate 57%.
Results. Of individuals who are involved in direct patient care, 87% of both physicians and non-physicians reported that they disliked caring for AIDS patients either moderately or intensely. 93% of both groups felt they have a right to demand that they be informed when a patient has AIDS or is suspected of having AIDS. 64% of physicians agreed that "doctors should have the option of refusing to care for AIDS patients without penalty." 45% of MD's / 38% of non-MD's agreed that they would not touch an AIDS patient if they could easily avoid it. 13% of MD's a/17% of non-MD's reported being "afraid to go in an AIDS patient's room." 38% of MD's (50% of residents) and 35% of non-MD's reported having friends or family express concern about getting AIDS from them. 30% of the physician respondents disagreed or were unsure whether AIDS transmission through casual contact has not been documented. 21% of physicians indicated that knowing more about AIDS had not made them more comfortable in working with AIDS patients. Fear of contagion was significantly correlated with negative attitudes toward AIDS patients (r=.53; p=.0001), and employees who are involved in direct patient care were significantly less likely to report fear of contagion (Chi square, p=.04).
Conclusions. Strikingly negative attitudes toward AIDS patients and their care were held by both physicians and non-physicians in spite of generally good knowledge about AIDS. Fear of contagion was correlated with negative attitudes toward AIDS patients, and direct care givers reported less fear.

M.D.P.60 STAFF DISCOMFORT IN WORKING WITH HIV SPECTRUM PATIENTS

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Objective. To determine levels of staff discomfort and reasons for discomfort in working with various types of patients, including those within the HIV spectrum.
Method. 643 workers in Florida community mental health centers and drug abuse programs were surveyed regarding their attitudes and knowledge about AIDS. The questionnaire included a section on level of discomfort and reasons for discomfort in working with 11 different types of patients.
Results. The study found that 55% of staff would prefer to avoid working with HIV positive individuals. Statistical analyses demonstrated that hesitance was greater among mental health staff, compared with drug abuse staff. In particular, mental health staff indicated relatively greater discomfort working with homosexuals and IV drug users. For both staff groups, working with HIV-infected patients resulted in greater discomfort than working with homosexuals. Providing services to AIDS patients was viewed as more discomforting than working with any other group except child molesters. Results indicate that fear of contagion may be the primary concern in treating HIV spectrum patients, followed by discomfort with terminal illness, IV drug use and homosexuality.
Conclusion. Significant discomfort among these staff members, and its primary basis in unrealistic fears, point to the need for additional training in AIDS/HIV issues for mental health and substance abuse caregivers.

M.D.P.61

"ANALYSIS OF NURSE-AIDS PATIENT VERBAL INTERACTION BY THE SAVI"

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Objectives: To determine the time nurses spend with an AIDS patient and to identify the categories predominantly uttered by the pair using the System of Analysis of Verbal Interaction. (SAVI).
Method: Three nurses and 3 AIDS patients admitted to a large Brazilian hospital were observed over 15 sessions of 6 hours each. All the verbal episodes of the pair were recorded with paper and pencil and the recordings were submitted to 3 referees trained to divide the episodes into units and classify them into one of the 28 categories of the SAVI.
Results: During the 5400 minutes of observation, the nurses werepresent for 183 minutes(3.38%), other members of the nursing team were present for 1141 minutes (21.13%), and no member was with the patient for 4076 minutes (75.48%). From the 366 interaction units uttered by nurses, the 5 most frequent were: Description 93 (25.41%); Topic Questions 86 (23.50%); Maintenance Question 36 (8.84%); Command 34 (9,29%) and Positive Reinforcement 21 (5,74%). The patients utterred 1378 units,in interaction with nurses and other professionals of nursing. The most used were: Response Narrow 327 (23.73%); Quiet 228 (16.55%); Personal Sharing 151 (10,96%); Description 148 (10.74%); Topic Questions 128 (9.29%).
Conclusion: The nurse spent little time with the patient, considering the multiplicity of her functions. The categories uttered by nurse and patient during this period showed a clear interaction with openings for a dialogue and without negative categories indicating hostility, affect, defense etc.

M.D.P.63

Assessment of Nursing Home Preparation for Long-Term Care of Persons with HIV Infection

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Objective: Areas with increasing incidence of HIV and AIDS require a continuum of community based and residential services, yet nursing homes have been slow to respond to the epidemic. This study investigated activity of long-term care facilities regarding admission policies, staff education efforts and perceived problem scare for persons with HIV infection.
Methods: Anonymous mail questionnaires using forced-choice and open-ended questions sent to all Chicago and a sample or surrounding facilities.
Results: 65 homes completed anonymous mail surveys about attitudes and activities related to AIDS/HIV. While 10% reported applications of persons discussions of prospective AIDS residents, with forty percent reporting sending staff to AIDS education programs. Identified difficulties in serving HIV infections were ranked, with reimbursement rating as the greatest problems followed by staff cooperation. A quarter of the homes reported they would admit PWA's to their facility if reimbursement was improved.
Conclusion: Findings suggest that although a number of existing facilities engage in preparatory activities related to care for PWA's, there is a dearth of receptive facilities. Education and social policy interventions are indicated to improve the available resources for long-term care of PWAs.

M.D.P.65

MEASURING ATTITUDES ABOUT AIDS AMONG PUBLIC HEALTH PERSONNEL USING THE SEMANTIC DIFFERENTIAL TECHNIQUE

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Objective. To develop a questionnaire measuring attitudes about AIDS and related phenomena and to evaluate such attitudes in public health personnel.
Methods. Twenty-eight adjective pairs were selected to represent 5 dimensions: evaluative, potency, activity, fear and respect. Five categories of objects were evaluated: AIDS, persons with AIDS or carrying the virus, mandatory anti-HIV screening test, means of protection against HIV transmission, behaviors associated with HIV transmission. The questionnaire was completed by 79 subjects working in a Montréal community health department. Adjective pairs with low variance were eliminated and factor analysis identified salient dimensions and corresponding adjectives.
Results. Two correlated ($r=+0,385$) dimensions were identified: one evaluative and one representing "perceived responsibility"; each was composed of 3 adjective pairs and Cronbach's alpha was 0,862 for the first dimension and 0,872 for the second. Possible results ranged from 3 (negative) to 21 (positive) with 12 being the neutral point. More negative affects were associated with AIDS itself (5,0) or sexual abstinence as a means of protection (7,2). Positive affects were noted only for sexual faithfulness (14,5). Perceived responsibility was positive for all protection means (mean of 17,2) and slightly negative for behaviors associated with HIV transmission (mean of 9,0).
Conclusion. Results show that the questionnaire is reliable and that it discriminates well between attitudes towards risk behaviors and protective behaviors. The semantic differential is thus a valid method for measuring attitudes towards issues related to AIDS.

M.D.P.62

COUNSELING PROFESSIONALS WITH HIV NEEDLE STICK INJURIES

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Objective: To establish an effective counseling service specifically developed for medical professionals who have had significant blood or body fluid exposure to the HIV virus. They should quickly be linked to a comprehensive counseling session which not only addressed scientific questions but also allays fears and resentments which could jeopardize their care of patients. By exploring knowledge, value systems and concerns, we help ameliorate anxiety as well as other psychosocial stressors that may affect functioning in the health care setting. Pre and post HIV test counseling guidelines were developed specifically for the health care professional.
Methods: Employee Health Services is notified of all blood and body fluid exposures in the hospital setting. Health Service has been educated as to exposures which are or are not significant. The health professional worker is questioned as to the extent of blood exposure. Those who have been significantly exposed are then seen by a certified HIV counselor for an in-depth session. An HIV blood test is offered, and a post HIV session is scheduled with the same counselor. A medical specialist is on call to answer any scientific questions which cannot be answered by the counselor.
Results: Professionals as a result of this program are able to reassess and improve relevant coping mechanisms. They reduce irrational thinking and replace it with a manageable perspective. They become knowledgeable concerning HIV testing procedures and develop greater sensitivity on confidentiality issues.
Conclusion: This program seems to reduce fears and appropriately adjust relevant value systems. Infection control guidelines are strengthened and reasonable cautions are reinforced with regard to future patient care.

M.D.P.64

AIDS MINI-SURVEY ON ATTITUDES, BELIEFS AND KNOWLEDGE AMONG DENTAL PROFESSIONALS IN METROPOLITAN MONTREAL

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This preliminary study was conducted to assess current concerns regarding AIDS among dental professionals. A 74 items questionnaire was distributed to a sample of 25 dentists, 13 denturologists and 13 hygienists. Response rate was 92 %. The average age of the study group was 35.9 (range 23 to 65). 70.2 % of respondents believed that they have a responsability to treat people with AIDS. Only 8.5 % of respondents said they do not want to treat persons at risk for AIDS. 72.3 % thought that there exists some risk of being infected by working with a colleague who has AIDS. On a 21 item knowledge scale the average score was 11.5. The perceived ability to identify AIDS oral lesions on a 6 point scale was : 2.6 for dentists, 2.3 for hygienists and 1.4 for denturologists. Participants stated that 3.7 % of their patients are at risk of HIV infection. AIDS changed the practice of 68.1 % of respondents (use of gloves was privileged). 42.6 % of the study sample was not vaccinated against hepatitis B. Hygienists and denturologists showed lower rates of HBV vaccination than dentists ($p=0.01$ X^2test). Among dentists, non vaccination to HBV was associated to lower utilisation of gloves ($p=0.03$ Fisher's exact test). This survey shows that dental professionals are concerned with AIDS, however some deficiencies on AIDS knowledge and the application of infection control measures are apparent. A larger survey involving a representative sample from the province of Quebec is being conducted.

M.D.P.66

HIV-PATIENTS' PERCEPTIONS OF THEIR GENERAL PRACTITIONERS.

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Objective. As the number of people infected with the Human Immunodeficiency Virus (HIV) grows general practitioners (GPs) are increasingly involved in their care. We studied patients' perceptions of their GPs'attitudes towards and services provided for HIV-infection with special emphasis on problems of confidentiality.
Methods. We interviewed unselected HIV-patients in 3 hospitals, 3 outpatient clinics and 1 self-help group in Munich and West-Berlin. With the help of an anonymous structured questionnaire patients were asked for their and their GPs' demographic data, place of HIV-testing, GP's knowledge of and attitude towards the patient's HIV-status, rejection of treatment, reception in the GP's office and perceived level of the doctor's knowledge about HIV and AIDS. Until today 161 patients were approached and 153 agreed to interview.
Results. 87% of the patients were male, 13% female; 65% were between 20 and 40 yrs of age. 60% of the patients were homo- or bisexual men, 16% intravenous drug abusers (IVDA), 12% hemophiliacs. One third of these HIV-infected persons suffered from AIDS. 83% were registered with a GP whose specialty was internal medicine in 42% and family medicine in 32%. Only 20% were tested in the GP's office, 38% in the clinic and 16% in anonymous test-sites of the public health service. 6% of the patients said that their GPs were unaware of their HIV-infection but almost 18% did not answer this question. 32% trusted their GPs most, 43% their clinic doctors. Confronted with physical problems 59% would consult with their GP and 30% with a clinic physician. However, in emotional troubles only 16% would go to a doctor at all. Two thirds of the patients stated that their GP had enough time for them, 70% that the reception by the office-personnel was friendly or at least neutral. 14 patients were rejected at least once by a doctor (20 by a dentist) because of HIV-infection. 58% perceived their doctors' HIV-knowledge as excellent or good, 9% as bad. 71% were generally satisfied with their GP but 21% asked for more engagement of the doctor with the patients' problems.
Conclusion. Patients' perception of the level of their GPs' attitude, knowledge and management was surprisingly good. Although the GP-office does not seem to be a popular place for initial HIV-testing, many HIV-infected persons feel themselves in good hands with their family doctors.

M.D.P.67

HIV-RELATED PROBLEMS FACING GENERAL PRACTITIONERS (GP)IN BELGIUM.

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In November 1988 a telephone survey was conducted among a representative sample of 195 GP's (2.8% of the total number) in Flanders (Belgium). The items studied were : the proportion of GP's caring for seropositives or Aids patients, the indications for HIV-testing and the measures taken to avoid infection during medical practice. Eight percent of the GP's have at least one known seropositive patient and 1.5% take care of an Aids patient. All physicians with HIV-infected patients follow them, whereas only 15% of the GP's without HIV-experience feel for providing this medical care.

Number (%) of physicians asking HIV-test on different indications and number (%) of physicians informing the patient about the demand for analysis.

indication	asking for HIV-test no./total (%)		information of the patient no./total (%)	
physical fatigue	21/195	(10.8)	14/21	(67)
pregnancy	56/195	(28.7)	41/56	(73)
STD	166/195	(85.1)	111/166	(67)
"health check-up"	46/195	(23.6)	35/46	(76)
on the request of the patient	136/195	(69.7)	-----	----

One third of the physicians say to have changed their medical practice to avoid infection. Ninety seven percent use gloves while examining mucosae. In their office 60% use a needle-box for used injection equipment, whereas during home visits 75% of the GP's leave the used needles and syringes unprotected with the patient visited.

Specific training for GP's is needed to be familiar with the skills of counseling seropositives and more information and education is desired to implement the HIV-test in a more appropriate way.

M.D.P.68

EVALUATION DE QUATRE DISPOSITIFS DE RECUPERATION DES AIGUILLES USAGEES POUR LA PREVENTION DE L'INFECTION HIV CHEZ LES PERSONNELS DE SANTE ET PROPOSITION DE CRITERES DE CHOIX

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Objectifs. Plusieurs dispositifs visant à éviter les piqûres accidentelles des personnels de santé sont aujourd'hui disponibles ; ceux-ci sont hétérogènes dans leur conception et leur utilisation pratique. Nous avons testé quatre d'entre eux selon des critères rationnels et mesurables.

Méthodes. 80 infirmières de 7 services différents de notre CHU ont testé 4 dispositifs couramment utilisés : Sharps Container (Sherwood), Sharpsafe (LSA), Recup-aiguille (Amedis) et Securoject (Astrium). Dix critères quantitatifs ou qualitatifs furent cotés: 1.Facilité de désolidarisation de l'aiguille de la seringue ou du corps de pompe.2.Possibilité d'évacuation d'autres matériels (bistouris, trocarts...). 3. Risque de reflux.4. Résistance physique et chimique du container. 5. Incinérabilité.6.Stabilité.7.Herméticité après usage. 8. Adaptabilité aux différents usages (chariot de soins, plateau...)9.Présence ou non d'un désinfectant.10.Rapport qualité/prix.

Résultats. Ils sont globalement satisfaisants pour les 4 dispositifs, mais il existe certaines disparités, en particulier pour les critères 3,4,5,9.

Discussion. Les critères retenus apportent une ébauche de méthodologie pour une évaluation objective des différents dispositifs mis sur le marché ; ils sont utilisables dans chaque structure de soins et devraient permettre une acquisition raisonnée fondée sur un ensemble de critères objectifs et mesurables. Il conviendrait cependant, pour une meilleure utilisation, d'affecter chacun de ces critères d'un coefficient qui reste à déterminer.

M.D.P.69

MYTHS AND STIGMAS ABOUT AIDS IN HEALTH PERSONNEL IN A LATINAMERICAN COUNTRY.

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Objective: To obtain information about knowledge and attitudes of health personnel towards AIDS and the influence of communication media over them.

Methodology: A survey was done on a randomized sample of 896 health workers (h.w) (598 doctors and 298 nurses) working in care areas in institutional hospitals in 6 cities in Mexico.

Results: Although most h.w. identify the disease as produced by HIV (91%), 34% identify it as a cancer and 36% as a disease of homosexuals . 15% associate it to casual contact, and 17% to blood donation; more than 95% identify correctly sexual, blood and perinatal transmission and preventive measures. 29% consider that general population should be HIV tested. 51% are afraid of being infected, 51% would reject an infected person, 93% would feel ashamed if a relative becomes infected, and only 23% would provide financial assistance. 51% would have sexual relations with an infected partner. 8% would refuse taking care of an infected patient and 57% would request another person to do it. 63% consider homosexuality a mental illness, 16% a sin, 60% a sexual aberration; 51% would not have homosexual friends. 49% consider prostitution inmoral, 23% a sin and 51% socially condemned. No significant difference was found between attitudes in nurses and doctors. Their contact with information media is adequate, they consider that the messages are of good quality but incomplete.

Conclusions: Results show discordance between having received information and the level of knowledge and attitudes. This was consistent and regardless of having received information about AIDS. Information is not enough to modify deeply ingrained attitudes. Educational campaigns must design specific educational strategies that influence social and psychological areas and not only cognitive aspects.

M.D.P.70

HIV-1 KNOWLDEGE, ATTITUDES AND RISK PERCEPTION IN BIOMEDICAL RESEARCH FACILITY EMPLOYEES

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Objective: To identify and characterize HIV-1 knowledge, fear and risk perception among employees at a biomedical facility active in AIDS research. Methods: A questionnaire was self-administered by a random sample of 274 employees stratified into occupational groups: 1) custodial/maintenance, 2) clerical/administrative, 3) technical, 4) scientific. Information on potential occupational exposure to HIV-1 was available. The response rate was 64% (n=174). Results: Knowledge scores were high and not significantly different between groups except on a subset of questions dealing with casual modes of transmission. On this section groups 1 and 2 scored significantly lower than groups 3 and 4 ($p < .05$). Fear levels were similar across groups; 36% of custodial, 15% of clerical, 26% of technical and 10% of scientific staff reported moderate to high levels of fear. Surprisingly, despite high knowledge levels and wide differing levels of actual risk of exposure, approximately 40% of each occupational group felt themselves to be at occupational risk of HIV-1 infection; approximately 30% of workers assigned their odds of infection to 1/10,000 or greater. Conclusion: Although potential actual risk of occupational exposure to HIV-1 varied greatly among a group of research facility workers, similar levels of fear, concern and risk perception were noted. The relatively high levels of fear in low exposure groups may be the result of misunderstandings regarding HIV-1 exposure in the workplace.

M.D.P.71

MEDICAL STUDENTS' KNOWLEDGE AND CONCERNS ABOUT HIV INFECTI

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Objective: to examine the knowledge, concerns and attitudes of medical students about HIV, treatment of AIDS patients, and affect on careers.
Methods: In May 1988 124 1st year and 103 2nd year medical students at Boston University School of Medicine completed an anonymous questionnaire.
Results: All students were knowledgeable about casual, anal/vaginal and drug use transmission of HIV. Significantly more 2nd year than 1st year students reported knowing a great deal about transmission of HIV; risk behaviors, and risk groups. Less than 25% of either year reported knowing a great deal about the legal or ethical obligation to treat AIDS patients, or the cost to patient and society; and less than 10% reported being taught about these issues. Over 50% of both years said yes or did not know whether prostitutes, IV drug users, pregnant women, people getting married, and immigrants should be tested for HIV. 95% of 2nd years and 89% of 1st years worried about being infected as medical students, and 45% of 2nd years and 58% of 1st years wanted or were not sure if they should be allowed to refuse to treat AIDS patients. 45% of 2nd years and 37% of 1st years reported that the epidemic will influence their decision to practice clinical medicine.
Conclusion: Medical students' concerns about becoming HIV infected may influence their decision to practice clinical medicine. Their unwillingness to treat AIDS patients has implications for patient care. Curricula should address HIV transmission, implications of testing and other AIDS-related policies, and legal, ethical and patient/societal issues.

M.D.P.72

RISK OF OCCUPATIONAL EXPOSURE TO HIV INFECTED BODY FLUIDS AND TRASMISSION OF HIV-I AMONG HEALTH CARE WORKERS:A MULTICENTRE STUDY

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Objective. To evaluate the risk of occupational exposure to blood and other potentially infected body fluids and the risk of trasmission of HIV infection.
Methods. Nine italian hospitals (7840 beds) have been enrolled in a multicentric study on occupational risk among health care workers (HCW). The study is supported,in part, by the italian Ministry of Health (AIDS Project). All partecipant hospital have started, between 1985 and 1987, a prospective surveillance of occupational exposures. The risk of exposure, per person/month of work, has been calculated.
Results. As of december, 1988, 255 occupational exposures to HIV infected blood or body fluids (parenteral 71.7%, mucous-membrane exposure 28.3%) have been observed, on a total of 2520 exposures to potentially contaminated materials. All HCWs exposed to HIV, were prospectively followed and none of them seroconverted after a median follow-up of 13 months (range 2-34 months). The HIV at risk exposures by occupational group were: nurses 62 %, phisicians 20.7%, housekeeping 9.8%, laboratory technicians 7.5%. The risk of exposition per month of work (on a total of 345891 person/month of work) and employment category was: Physicians .0006, Nurses .0009, Housekeeping .0004, Laboratory technicians .0001.
Conclusions.Despite massive information, the risk of occupational exposure to HIV contaminated materials continue to be high, but the risk of infection is low.

M.D.P.73 ADVERSE EXPOSURES TO BLOOD AND BODY FLUIDS AMONG PRACTICING MIDWIVES IN THE UNITED STATES

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Objectives. To 1) assess the frequency and intensity of adverse exposures to blood and body fluids and 2) assess the attitudes toward and practice of Universal Precautions (UP) among practicing midwives in the United States.
Methods. Detailed questionnaires requesting demographic data, knowledge and use of infection control procedures, and frequency and types of adverse exposures to blood and body fluids were distributed to certified nurse midwives in the U.S.
Results. 1784/2963 (60%) returned completed questionnaires. 1562 (88%) of the 1784 respondents provide patient care. Of those providing care, 65% have completed masters level training. With respect to knowledge and use of UP, 55% reported using UP in their practices. Of those not using UP, 10% reported unfamiliarity with UP; 38% felt UP unnecessary; and 79% reported that UP interfere with the patient-midwife relationship. Only 54% perceive a high risk for occupational infection with hepatitis B virus; and 43% perceive a high risk for occupational infection with HIV-1. 49% have received hepatitis B vaccine. Of the 1562, 375 (24%) reported 923 needlestick exposures and 792 (51%) reported 2159 instances of facial splashes with blood or amniotic fluid in the past 6 months.
Conclusion. This national sample of a small, but well-educated population of health-care workers demonstrates a high frequency of exposures to blood and body fluids. Although only a small percentage were unfamiliar with UP, almost half do not use UP in practice. These data emphasize the need for effective UP education, stressing both the presence of occupational risk as well as appropriate measures to minimize this risk.

M.D.P.74 THE IMPACT OF AIDS ON HEALTH CARE PROVIDERS: AN ANNOTATED BIBLIOGRAPHY AND INTERNATIONAL SURVEY

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To understand further the impact of AIDS on health care providers, two international projects have been commissioned by the Global Program on AIDS of the World Health Organization.

(1) Annotated International Bibliography. Drawing on health care and social science literature from around the world, the bibliography will focus on the psychosocial impact of AIDS for the providers of health care on factors associated with this impact, and on the implications of providers' response for the health care system and for quality of care. The bibliography will be based on a theoretical model of health care provider behaviour. Each citation will include a summary and an analytical commentary.

(2) International Survey. Approximately 161 countries will be surveyed to identify: 1) the range of health care providers in each country who are currently caring for AIDS and seropositive individuals; 2) the major problems faced by these providers, and strategies to deal with them; 3) the settings in which care is being given, the sources of funding, and the role of government in providing care; 4) ongoing research that focuses on the behavioural impact of AIDS on health care providers; 5) services and strategies that will be required in the future and 6) people who are interested in participating in future studies of health care providers and their response to AIDS.

M.D.P.75 THE ROLE OF HOMEMAKER/HOME SUPPORT SERVICES IN AIDS CARE IN CANADA

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Objective: To report the results of the Canadian Council on Homemaker Services' AIDS training needs assessment study and describe service care delivery issues in the homemaker industry in Canada and Europe.
Methods: Preliminary data from the 1989 C.C.H.S. Study on Homemaker Services & Training Needs for AIDS care and from the 8th International Congress of the International Council on Homemaker Services (May 7 - 12, 1989) will be presented to identify the issues affecting the delivery of homemaker/home support services to persons with HIV/AIDS and their partners/families. A comparison of the predominant issues in Canada with those in Europe will be made based on the information presented in a workshop on "Palliative Care and AIDS care" at the 8th International Congress of I.C.H.S. by Margaret Fietz, Canada and Doris Frank, Switzerland.
Results: Homemaker services to persons with AIDS are now being provided in Europe and Canada through various Home care models. Results will be available prior to June, 1989 indicating preferred models, training and support required, client-directed coordination methods, etc.
Conclusion: Participants will increase understanding of factors influencing effectiveness of home support/homemaker service for persons with HIV/AIDS in Canada, with similarities to European care models noted.

M.D.P.76 THE DOCTOR-PATIENT RELATIONSHIP: IS IT WORKING FOR PEOPLE WITH HIV INFECTION?

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Objective. While many articles have been written from the physician's point of view about the doctor-patient relationship, there are few data-based studies from the patient's perspective. The aim of this study is to document the patients' perceptions of their experiences with their health care providers.
Methods. 103 seropositive homosexual men with at least one HIV-related symptom were recruited from the UCSF AIDS Clinic and administered a semi-structured interview inquiring about stressors and coping, at 3 time points about 6 months apart.
Results. Data are presented on the frequency and nature of stressful and supportive interactions with HCPs over time in the following areas: (a) communication/ information regarding symptoms, treatments, test results, diagnosis, and medical procedures, (b) HCP attitudes about treatment, (c) diagnostic skill, (d) treatment efficacy, (e) hospital stays, (f) clinical drug trials, (g) financial concerns, and (h) appointments. Responses are also tabulated according to type of health care provider and facility, as well as diagnostic status of the subject at the time of the interview. Most subjects reported one or more significant stressors in their relationships with their HCP and/or staff at the clinic, office or hospital; however, many also cited seeing their HCP as a way of dealing with various stressors. Patterns of doctor-patient relationship stressors and coping changed over time.
Conclusion. A comprehensive understanding of patients' changing needs for information, support, and guidance in the context of the doctor-patient relationship over time and the course of disease will permit HCPs to respond more effectively to these needs or to make appropriate referrals.

M.D.P.77 AIDS/HIV INFECTION: KNOWLEDGE, ATTITUDES, AND BELIEFS OF DENTAL HEALTH FACULTY AND STUDENTS

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Objective: To assess the current knowledge, attitudes, and beliefs of dental health faculty and students relative to AIDS/HIV infection in an area of high prevalence of HIV infection.
Methods: Knowledge of AIDS/HIV infection, attitudes, and beliefs relating to the care of those with AIDS, HIV infected, or at risk were measured by anonymous questionnaires at a school of dentistry in Los Angeles, Fall 1988. Responses received from 63 faculty members, 161 preclinical (year 1 and 2), and 173 clinical (year 3 and 4) students were analyzed.
Results: Preliminary data demonstrated AIDS knowledge (measured by 20 items) was generally high, yielding a high mean correct score for all three groups [17.2, 17.7, and 16.9 for the faculty (F), clinical students (C), and preclinical students (PC), respectively]. However, there were a number of people who incorrectly answered questions relating to the belief that HIV transmission could result from: the water supply (22% F, 19% C, 18% PC); food handlers (19% F, 17% C, 21% PC); airborne transmission (22%F, 16% C, 22% PC); and donating blood (19%F, 26% C, 32% PC). Many dental faculty and students had a negative attitude regarding the dental professional's obligation to treat the AIDS/HIV infected individual; contributing to the reluctance by all three groups to treat was the fear of becoming infected and the potential loss of other patients. Although both dental faculty and students felt that AIDS patients had a right to quality dental care (94%F, 94%C, 87%PC), many felt dental professionals should be allowed to refuse care to AIDS patients (24%F, 44%C, 34%PC; $p<.05$) and/or refer such individuals (30%F, 54% C, 47%PC). Among the three groups there were differences in perceived skills to diagnose and treat AIDS/HIV infected patients: 42% of the clinical students, 70% of the preclinical, and 27% of the faculty believed their skills to be less than adequate. Both faculty and students expressed a desire to learn more about AIDS/HIV infection and infection control.
Conclusion: Preliminary data suggest that lack of knowledge regarding AIDS transmission, lack of skills, and concerns about the risk of contagion may be deterrents to treating AIDS/HIV infected patients. Education is indicated for both dental health faculty and students and should address these specific factors to promote treatment of HIV infected patients by present and future dental health professionals.

M.D.P.78 PHYSICIANS' PERCEPTION OF PERSONAL RISK FROM AIDS (HIV VIRUS)

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This research reports on physician perception of personal risk as a key element of their response to AIDS. Using a measuring instrument we developed, the Physician AIDS Profile, we surveyed 440 physicians from a variety of specialties with a range of exposure to AIDS and seropositive patients. We obtained a 61% (N=267) response rate from the mailed survey.

The concept of personal risk was differentiated into: 1. physical risk of contagion and 2. social risk (such as professional burn-out) in caring for HIV positive patients. Separate indices were derived for each type of risk and statistical analyses were conducted. The significant findings included: (1) perceived physical risk was moderately but not highly correlated with perception of social risk (Pearson's $r=.49$, $p<.001$), (2) primary source of income (fee for service vs. salary), not medical specialty, was the most significant demographic variable in predicting physician perception of physical and social risk, and (3) perception of social risk tended to decrease as physicians were exposed to more seropositive patients in their practice, whereas there was no linear relationship between perception of physical risk and number of seropositive patients. Physicians' perception of personal risk is a key factor in understanding their complex response to AIDS.

M.D.P.79

PRACTICES AND ATTITUDES OF HEALTH CARE WORKERS (HCW) TOWARDS HIV-INFECTED PATIENTS IN A LARGE ACUTE CARE HOSPITAL.

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Objective. To determine the attitudes and practices of HCW towards HIV-infected patients (HIV pts) in an 800-bed university hospital.
Methods. A 60-item anonymous questionnaire was distributed to 2,425 HCW Dec. 1988-Jan.88. Standard demographic data, occupation, compliance with hospital guidelines, knowledge and attitudes about HIV, hepatitis B and sexuality were assessed.
Results. 1,137 responses(47%) have been analyzed to date. 44% of physicians and 56% of nurses had cared for HIV pts. 56% nurses vs 30% physicians wore gloves for blood drawing or line placement (p<.001). 77% nurses vs 42% physicians wore gloves to move HIV patients from stretcher to bed (p<.001). Both groups thought it more likely that they could acquire HIV from work-related activities than non-work-activities. Both groups took more inappropriate precautions for HIV pts vs HepB pts (p<.001). 33% of physicians and 50% of nurses thought they should have the option to refuse care for HIV pts. 80% felt that gay men should be screened for HIV on admission; 40% felt that hospital staff should be screened. 50% felt HIV(+) staff should not be permitted to give direct patient care.
Conclusions. Despite intensive HIV education in our hospital, significant personal fear and misinformation still exist. Comparison of attitudes toward HepB and HIV suggest some fears are based on attitudes rather than risk.

M.D.P.80

AIDS AND DENTAL HEALTH PROFESSIONALS:KNOWLEDGE,ATTITUDES AND INFECTION CONTROL PRACTICES

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Objective. To determine the knowledge,attitudes and infection control practices related to AIDS among dental health professionals.
Methods.694 dentists and dental hygienists responded to a survey.The questionnaire contained 54 multiple choice questions on knowledge,attitudes and infection control practices. Scores for knowledge,attitudes and infection control practices were calculated. Data were analyzed using chi-square tests, two sample T-tests,analysis of variance and Pearson correlation matrix.
Results.Respondents were quite knowledgeable about AIDS and HIV transmission. 75% knew the oral manifestations of AIDS.Dentists had a higher mean knowledge score than dental hygienists.Dental hygienists scored higher on infection control practices than dentists.57% of the dentists felt safe in treating AIDS patients.Older dental professionals had lower levels of knowledge about AIDS and infection control practices.There was no correlation between perceived risks and infection control practices.
Conclusion. Despite their high level of knowledge about AIDS,only 57% of the dentists were willing to treat AIDS patients and 43% perceived that they were at risk for HIV just like other health care workers.Only 64% of the dentists reported always using gloves. More educational efforts should be aimed at dental professionals with emphasis on allaying their fear of AIDS and improving their infection control practices.

M.D.P.81

A METHOD FOR IMPLEMENTATION OF UNIVERSAL PRECAUTIONS

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Objective Develop a method for simple and objective determination of protection required by universal blood and body fluid precautions which are recommended by the CDC.
Method A form was designed that allows identification of representative procedures, the types of exposure to potentially infectious material, and the probability of exposure. Specification of risk of exposure and type of fluid automatically indicates the barrier precautions required.

				Exposed Body Parts						Contamination of Clothing					
				Hands			Face			Soiling			Saturation		
				Probability						Probability					
				High	Low	None	High	Low	None	High	Low	None	High	Low	None
	Body Fluid			Gloves			Masks & Goggles			Cover-ups			Impervious Gowns		
Tasks	Blood	Other	None	Req	Avail	None	Req	Avail	None	Req	Avail	None	Req	Avail	None

Body Fluid
blood = blood, visibly bloody fluids, genital secretions, tissues, CSF, synovial, amniotic,pleural, peritoneal, pericardial
other = saliva, sputum, wound drainage, urine, feces, etc

Probability
High = blood exposure >1%, other exposure >50%
Low = blood exposure <1%, other exposure <50%
None = Never

Results Supervisors used these forms to classify activities in their departments. Thirty-two managers identified an average of 35 tasks. After review, these forms formed the basis of departmental infection control guidelines. They were used for inservice education programs and are maintained in each work area for reference by hospital personnel.
Conclusion This task worksheet simplified development of standardized barrier techniques. It improved understanding by hospital personnel of the requirements of blood and body fluid precautions, and facilitated compliance with required procedures.

M.D.P.82

A SURVEY OF KNOWLEDGE AND ATTITUDES CONCERNING HIV INFECTION AND AIDS AMONG FACULTY AND STUDENTS AT THREE UNITED STATES DENTAL SCHOOLS

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Objective. Compare knowledge and attitudes concerning HIV infection and AIDS among dental faculty and students in different U.S. cities. Methods. A questionnaire was distributed at 3 dental schools in 3 different cities (Detroit, Houston, and San Antonio). Frequency distribution was determined for all questions. General knowledge scores were obtained and subdivided. Avoidance characteristics, personal infection concern, and professional self confidence were determined. Results. The 580 survey participants scored a 75% correct response rate although areas of weakness were noted. Faculty and student knowledge was comparable in all areas except for infection control (faculty 64%, students 54%). About half of respondents felt a positive anti-HIV test was diagnostic for AIDS. Faculty were twice as knowledgeable about agents which inactivate HIV. About 3/4 of respondents felt they should have the right to refuse treatment to a patient with AIDS/ARC and about 50% would refer such patients. All participants expressed a high index of personal infection concern, although the faculty expressed more professional self confidence. Conclusion. The majority of participants were reluctant to treat HIV positive and diagnosed AIDS patients as indicated by high response rates concerning referral, although they felt an obligation to treat these patients. The greatest knowledge deficit was use of virucidal chemical disinfectants and universal precautions for contaminated items.

M.D.P.83

HIV-RELATED RISK, WORRY AND BEHAVIOR CHANGES AMONG EMERGENCY MEDICAL WORKERS: PERSONAL AND JOB-RELATED FACTORS

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Objective. To evaluate the relationship in job-related and sexually transmitted risks for HIV infection to worry and behavior changes among emergency medical workers.
Methods. A voluntary, anonymous, self-administered questionnaire with 149 items related to HIV infection, job-related functions, sexual practices, and demographic variables was completed by 268 Emergency Medical Technicians, Paramedics, and Firefighters.
Results. 64% perceived themselves to be at high risk for contracting HIV infection through job-related activities and 7% related to sexual behaviors (paired t=19.68,p<.0001). Perceived job-related risks included needle sticks and negative attitudes toward AIDS patients (p<.01). 75% indicated worry about contracting HIV infection from patients; 31% from sexual activity (paired t=14.24,p<.0001). Predictors of job-related worry included marital status (B=.17,p<.01), worry related to sexual transmission of HIV (B=.28, p<.0001), and self-perceived high occupational risk (B=.44, p<.0001). 80% changed job-related behavior according to recommended CDC infection control guidelines. 6% used condoms regularly. Predictors of job-related behavior changes included a negative attitude towards AIDS patients (B=-.20,p=.01) and worry about contracting HIV infection from patients (B=.21,p<.03).
Conclusions. Among emergency medical workers, perceived job-related risks for HIV infection increased worry to motivate job-related behavior changes. In contrast, perceived sexual-related risks increased worry but minimally motivated sexual behavior changes.

M.D.P.84

ATTITUDES AND PRACTICES OF GENERAL INTERNISTS REGARDING CARE OF PEOPLE WITH HIV INFECTION

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Objective. To understand the attitudes and practices of primary care physicians concerning the care of people with HIV infection.
Methods. We surveyed the membership of the Society of General Internal Medicine in 1987. Of 1755 surveys mailed, 755 were returned; 569 respondents indicated they had no subspecialty. Their median age was 35; twenty percent were women. Forty-eight percent cared for more than two AIDS patients.
Results. When general internists were asked about their care of people with HIV infection, 89% felt it most appropriate to counsel patients on AIDS risk reduction, 69% felt it most appropriate to evaluate and diagnose HIV infection and 55% felt they should follow people with HIV infection using subspecialty consultations when necessary. Only 6% felt it was most appropriate to refer AIDS patients to a specialist for primary care. When asked what would be effective ways to expand the role of primary care physicians in caring for those with HIV infection, 85% requested education on medical aspects of care, 85% wanted information about community services, and 38% sought help confronting fears and/or negative feeling about high risk individuals.
Conclusion. Most general internists surveyed feel their role includes providing primary care for people with HIV infection. However, strategies must be developed to provide ample education and emotional support in order to maximize the role played by these physicians.

M.D.P.85 EVIDENCE FOR THE BENEFITS AND NEED FOR ONGOING AIDS-HIV (A-H) CURRICULUM REVISION FOR MEDICAL, NURSING, PHARMACY AND DENTISTRY STUDENTS (MNPD) AT THE UNIVERSITY OF CALIFORNIA, SAN FRANCISCO SCHOOL OF MEDICINE

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Objective. To describe the effects of and need for AIDS-HIV curriculum revision at a major university health science center. Methods. After a 1985 needs assessment of students and pilot elective, an AIDS-HIV elective course was instituted in 1986 and modified for 1987, -88, and -89, based on faculty input and student evaluation data. The 1989 curriculum is presented in comparison to the prior four years. Pre-and post-knowledge and attitude changes are described for those medical students who did and did not enroll, in addition to evaluation data for all students. Results. Evaluation forms from 173 MNPD students who attended the 1988 course led to the following curriculum for 1989 (43 % medical, 30 % nursing, 23 % pharmacy, 2 % dentistry; 29% were male, 71% were female); course curriculum hours increased 240% from 1985 to 1989 and included 28 A-H topics and 31 AIDS speakers with expertise. 92% of enrolled students completed evaluation forms in 1988; mean topic importance was rated as 4.22 (unimportant=1; extremely important=5). Topics rated as needing more time led to an increase in topic-specific hours for 1989. These included: organ-system and/or disease-specific diagnosis and treatment; ethics; and persons with AIDS panel. Course outline and syllabus will be displayed. 75% of course time was biomedical; 25% social-psychosocial. After the course, 98% agreed or strongly agreed (AOSA) that they had a professional responsibility to treat AIDS patients; 89% AOSA they had more confidence in interacting with PWAs; 97% AOSA that the course content was relevant to clinical practice. 81% AOSA that 23 individual AIDS lecturers was more desirable than 1 or 2. Medical students who completed the course showed a statistically significant positive shift in attitudes germane to AIDS (p<.05) compared to those who did not complete the course. There was a positive shift in A-H knowledge which was marginally significant (p<.08). Conclusions. Our findings indicate that optimal A-H education for MNPD must include a broad assimilation of A-H knowledge and appropriate attitudes necessary for clinical interaction with HIV-spectrum illness patients. Such education is best facilitated by: time sampling of students who did and did not enroll in the A-H curriculum; ongoing evaluation of the A-H curriculum; including a breadth and interplay of A-H biomedical and psychosocial topics, selection of speakers with AIDS expertise, high credibility and communication skills; provision of updated traditional and novel written and visual materials; and representation of persons with HIV-spectrum illnesses. Our impression is that at this time, this A-H education model curriculum could be well applied to other MNPD, other health professionals, and others elsewhere in a variety of settings.

M.D.P.86 THE ATTITUDE OF PWA'S TO THEIR PRIMARY CARE PHYSICIAN

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Objective To analyse the attitude of patients with AIDS to their general practitioner (primary care physician).
Method One hundred consecutive patients attending two of the three largest AIDS units in London were interviewed using a semi-structured questionnaire. An exhaustive history of general practice registration was carried out and replies to attitudinal questions were recorded verbatim and subsequently categorised.
Results All 100 patients were gay men and 4 were also intravenous drug users. 77% of those interviewed were registered with a general practitioner and 14% expressed a desire to register. Of those registered, the doctor knew of the patients diagnosis in 47 cases, 30 patients thought their general practitioner did not know. Thus 53% of patients either could not consult a general practitioner or had an uninformed GP. The major factor dissuading patients being frank with their doctor was confidentiality (60% of 79 responses when a sub-group were interviewed). Qualities patients would rate highly in a GP they would consult were understanding and expertise (56% of 181 responses from 97 of the patients interviewed).
Conclusion An understanding of the attitudes of the client group to their general practitioner may be the first step in facilitating care of patients in the community in a country where primary care is well tested, largely approved of and cost effective.

M.D.P.87 "VERBAL INTERACTION BETWEEN THE NURSING TEAM AND THE AIDS PATIENT"

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Objective: To determine with priority the pattern and areas of verbal behavior that occur between AIDS patients and nursing team according to the SAVI. To determine variability in verbal interaction.
Methods: The sample consisted of 90 hours of observations involving 3 nurses, 10 nursing auxiliaries, 4 nursing attendants and 3 patients admitted to a 600-bed Brazilian general hospital. Four trained and calibrated observers took turns so that one of them was always present on the ward. The observation techniques used were cursive report and recording with paper and pencil. Three referees judged the verbal units on the basis of the theoretical assumptions of the System of Analysis of Verbal Interaction of Simon and Agazarian (1967) and elaborated 53 matrices. The data were analyzed in terms of simple and percent frequency and also submitted to an electronic processing program for the calculation of the amount of information transmited.
Results: From the 3336 verbal behaviors occurred, 1688 (50.60%) were in area E (Potential approach and/ or avoidance of topic); 686 (20,56%) in F (Potential approach and/or avoidance of topic and/or personal maintenance, 684 (20,50%) in H(approach to interpersonal topic); 250(3,73% in J (approach to interpersonal maintenance and topic). The remaining ones distributed among all other areas. The interactive pattern was E-F-H-J areas. The matrix that most retained behavior was Team-Team (receptor), followed by Patient (utterer) - Team (receptor); Team (utterer) - Patient (receptor), and finally Patient (utterer) - Patient (receptor). The maximum amount of information transmitted was 0.3065 and the minimum 0.0405.
Conclusion: Verbal behaviors ranged from relative ambiguity in terms of message clarity to clean and noncontradictory messages. There were no withdrawal messages (obscure messages). The interactions tended to move away from stereotypy. These positive results may be attributed mostly to the inservice training received by the team, but there is room for further improvement.

M.D.P.88 ASSESSMENT OF RISK FOR OCCUPATIONAL/NOSOCOMIAL TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS, TYPE I IN HEALTH CARE WORKERS

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Objective. This longitudinal study is designed to measure the risk for occupational/nosocomial transmission of HIV-1 among health-care workers (HCW).
Methods. Since 1983 we have been prospectively following more than 1200 HCW who have provided care to more than 1250 HIV-1-infected patients. Exposure information regarding frequency, intensity and types of occupational exposures to HIV-1-infected patients and to blood/body fluids from these patients has been sought in periodic questionnaires.
Results.

1. 483 adverse exposures (AE) have been reported during this study. Of these, 143 have been percutaneous injuries and 340 have been mucous membrane exposures. All AE have been followed for ≥ 6 months (range 6 - 71 months)
2. Eight HCW in this study have positive serologies. Of these, 7 were seropositive at study entry. Of these 7, none reported AE and all reported community behavior associated with increased risk for HIV-1 infection. One HCW seroconverted following a percutaneous exposure.
3. Combining our results with 9 other prospective studies assessing risk for occupational/nosocomial transmission of HIV-1: the risk associated with a single percutaneous exposure is 0.36%; (95% confidence intervals = 0.12%, 0.84%)(Poisson).

Conclusion. Although small, the risk for occupational/nosocomial HIV-1 transmission is not insignificant and may be decreased further by establishment and maintenance of Universal Precautions.

M.D.P.89 AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOR OF INTERNISTS AND FAMILY PHYSICIANS: A COMPARATIVE ANALYSIS

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Objective. To identify factors accounting for differences and similarities of AIDS-related knowledge, attitudes and behaviors between internists (IM) and family physicians (FP).
Methods. In September 1987 an anonymous survey was delivered to all IMs and FPs at a 455-bed acute care teaching hospital. Included in the survey were scales measuring AIDS-related knowledge, behaviors, and attitudes, homophobia, and homosexual bias.
Results. Thirty FPs (30/42; 71%) and 68 IMs (68/98; 69%) responded to the survey. Mean age of respondents was 36 years; 96% white; 75% male; and 96% heterosexual. IMs tended to be male more often than FPs (55/66; 83% vs. 18/30; 60%: p < .05). Gender differences were not significant except that the 23 female MDs had significantly more desirable attitudes towards AIDS patients (p<.05) and were significantly less homophobic (p< .001) than the 73 male MDs. There were no significant differences between IMs and FPs regarding the following: homosexual bias, homophobia, self-reported behaviors and attitudes towards AIDS patients, or personally knowing a PWA. IMs were slightly more knowledgable about HIV transmission (p =.061) while FPs demonstrated more concern about acquiring infection at work (p = .069) possibly due to a higher level of patient contact (p = .01). IMs more frequently had cared for AIDS patients than FPs (59/66 vs. 21/30; p <.05). Overall, 22% of the physicians surveyed favored mandatory HIV testing of all patients, 34% desired an anonymous HIV test for themselves, and 57% favored quarantine of non-compliant AIDS patients.
Conclusions. FPs compared favorably to IMs on the variables measured despite less contact with AIDS patients and less knowledge of HIV transmission. A better understanding of this phenomenon might allow educators to improve AIDS-related education programs targeting primary care MDs.

M.D.P.90 HEALTH AND HEALTH CARE CONCERNS OF AIDS AMONG MEDICAL AND NON-MEDICAL PERSONNELS

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AIDS raised itshead after a decade and it casts its gloomy shadow around the world. The medical science is still trying to come up with either a preventive vaccine or a therapeutic cure for the insiduous disease. The World Health organisation has identified 1.29 lakh cases of AIDS around the globe. The present study is a piece of research investigation with a main view to understand the attitudes and awareness among the Medical andNon-medical personnels regarding the origin and prevention of the disease, therapeutic measures, public health care measures, people's attitude towards the disease and doctors and patients view on preventive measures in relation to social and economic implications of the disease on health and economic development. The analysis of findings revealed that the origin and prevention of AIDS is not fully understood because of the lack of medical knowledge. Although the doctors who are in major urban centreshave come across with some amount of medical knowledge, still the full ecological and environmental dimensions of the disease is not fully understood. The medical and non-medical personnels who are in rural areas are not clear on the concept of the disease. The doctors in the major metropolitan cities are better aware of the disease than the doctors in the suburban areas who have little knowledge on AIDS and it generally decreases in a hierarchical level. It is hence necessary to impart training programmes at all levels.

M.D.P.91 LES TRAVAILLEURS SOCIAUX ET LE SIDA : L'EXEMPLE DES APPARTEMENTS THERAPEUTIQUES.

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Le sida entraine une prise en charge spécialisée lorsque les malades atteints par la maladie (stade IV) se trouvent en situation de marginalisation sociale.
L'accueil post-hospitalier à caractère sociothérapeutique définit de nouvelles modalités d'exercice professionnel des travailleurs sociaux.
Les auteurs, à partir de l'expérience des appartements de relais thérapeutique et social (APARTS, implantés à Paris et en Ile de France : 38 malades hébergés en 1987-1988 et 130 suivis en ambulatoire), analysent les changements observés dans le pratique professionnelle de ces travailleurs. Confrontés à la prise en charge de malades démunis et en situation de difficultés sociale et psychologique, ils observent soit les modifications de l'approche professionnelle des assistantes sociales, soit la nécessité de créer une nouvelle catégorie d'intervenants : les coordonnateurs psycho-médicaux.

M.D.P.92 INFORMATION AND EDUCATION GROUPS FOR CARERS.

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Objectives: To provide support for carers of those with HIV infection and AIDS. 2) To encourage contact with health professionals before crisis situations occur.

Method: An open group for partners, relatives and friends of those with HIV infection and AIDS at a Large London Teaching Hospital was set up. Topics to be discussed at the meetings were advertised beforehand and included the following: Understanding the Hospital System; Standard and Alternative Therapies; Dealing with Stress and Life Changes; Social Service Benefits and Legal Issues. They were advertised as "Information Sharing" rather than emotional support groups so as to be as unthreatening as possible. Evaluation of the effects of the groups was carried out by questionnaires handed out at each meeting. The questions related to: HIV status of the carer, contact to date with health professionals in the hospitals; whether the initial contact was crisis or routine; whether further contact was desired; the reasons for wanting further contact and perceived obstacle to contact. Additionally each meeting was evaluated on a variety of measures for information content and emotional supportiveness.

Results: Results pertaining to the above questions are presented for two groups of eight sessions each.

Conclusions: The effectiveness of such groups for providing support and increasing appropriate adn early contact with health professionals are addressed.

Adolescents (partie 2)
Adolescents (Part 2)

T.D.P.1 MODIFICATIONS OF SEXUAL ACTIVITIES IN THE ERA OF AIDS: A TREND ANALYSIS

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Objective. To empirically assess whether sexual conduct of primarily heterosexual 17-21 year olds has changed from 1981 in a direction likely to reduce transmission of HIV.
Methods. Logit analysis is used to identify trends and reversals of trends evident in responses of 1334 Montreal College students to questionnaires administered in 1981, 1983, 1985 and 1988.
Results. Trends toward decreasing age of first vaginal intercourse, increased likelihood of males participating in same-sex sexual activities, likelihood of coitus with casual partners, increasing numbers of coital partners, at least some use of condoms were identified for 1981 to 1985. In 1988 there is a reversal in the first two trends, decreasing age of first coitus and likelihood of males participating in same-sex sexual activity and a continuation of all other trends.
Conclusions. Based on the students surveyed, initiation of risk-related sexual activity was more likely to be postponed and condoms more likely to be used in 1988 than from 1981-1985. There is no change in the incidence of casual sex or reduction in the number of sexual partners reported from 1981 to 1988.

T.D.P.3 SHORT-TERM IMPACT OF AN AIDS EDUCATION CURRICULUM FOR ADOLESCENTS

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Objectives: To assess the short-term impact of an AIDS curriculum for adolescents on knowledge, attitudes, and behaviors related to AIDS, and to explore factors associated with change.

Methods: Two junior high schools in an ethnic, suburban community within the Boston metropolitan area participated in a 4-week AIDS education program. A treatment-delayed treatment control group design was employed wherein 1/2 of the students received the educational program in health education classes, and the other 1/2 received no education. Measures of knowledge, attitudes, and behavior were obtained from all students before and after the program.

Results: Chi-square test statistics revealed relatively few baseline differences between students in the treatment and control groups (N=289) prior to the education program in HIV knowledge, attitudes, or behavior. Significant differences were observed following the curriculum with students receiving the program having improved scores on most measures of change. Results from further statistical analyses controlling for baseline differences between groups, and baseline scores will be presented.

Conclusions: The relative impact of an AIDS education curriculum on knowledge and attitudes can be demonstrated with junior high school students. Greater difficulty exists in documenting behavior change due to school system constraints, temporal factors, and the expected prevalence of risk behavior at lower ages.

T.D.P.5 CONDOM BEHAVIOR IN 17, 18 AND 19 YEAR-OLD NORWEGIANS.

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Use of condoms is widely accepted as a "safe-sex" practice. The present study was undertaken to describe and provide a better understanding of condom behavior in Norwegian adolescents. The material comprised a representative sample of 3000 persons in the age group 17 to 19, and the response-rate was 61%. Data were collected by self-administered questionnaires. The results showed that 62% of the boys, and 68% of the girls had made their sexual debut, 50% of the 17 year-olds, 67% of the 18 year-olds, and 80% of the 19 year-olds. Median age at first intercourse for both sexes, and all age groups were 17. The proportions in the respective age groups who claimed they did not use condoms habitually were 33%, 36%, and 44%. However, 37% of the boys, and 26% of the girls used condoms at their last sexual intercourse. In order to provide a better understanding of condom behavior, the theory of reasoned action was applied, in which the intention to use condoms at the next intercourse was considered to be a function of attitudes towards use of condoms as well as proposal of use and subjective norms. Preliminary analysis of the model showed that behavioral beliefs related to the immediate consequences of condom use and the sexual context, and the normative expectations of significant others were the strongest predictors of intention (eta-correlations 0.20-0.60). There was no relationship between neither intention to use condoms nor actual use of condoms, and fear of hiv-infection. The theory of reasoned action seemed to provide a sufficient understanding of intention to use condoms, but further empirical analysis in terms of estimating the full model are forthcoming.

T.D.P.2 SEXUAL BEHAVIOR, CONTRACEPTIVE USE, AND STD HISTORY AMONG HETEROSEXUAL COLLEGE STUDENTS

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Objective. To describe the prevalence and frequency of sexual behaviors of college-age heterosexuals that place them at increased risk for Human Immunodeficiency Virus (HIV) infection.
Methods. A questionnaire developed by The Kinsey Institute asked respondents to indicate which of specific sexual behaviors they had engaged in and to report on a number of other phenomena relevant to HIV transmission.
Results. Data on the sexual histories of 810 self-selected college students, who based on their demographic characteristics appear to be representative of the targeted student population, were obtained. The typical respondent was 22 years old, white, Protestant, politically moderate, and from the Midwest. In reporting on sexual behavior, we consider only those respondents who labeled themselves as currently heterosexual (over 90%) and have experienced penile-vaginal or penile-anal intercourse. Over 80% of the respondents had engaged in one or both of these behaviors, while over 23% of the females and 27% of the males reported engaging in heterosexual anal intercourse at least once. Of these self-labeled heterosexual males, 3.39% had engaged in anal intercourse with another male. The average number of one-night stands was 3.75, while the average number of male partners for females was 6.17 and the average number of female partners for males was 10.72. Less than a third of the respondents had used a condom the last time they engaged in penile-vaginal or penile-anal intercourse, while close to a quarter had either used no contraception or used the rhythm or withdrawal methods. Approximately one in five respondents had experienced some form of sexually transmissible disease (STD).
Conclusions. Although the young adults in this sample have been sexually active a relatively short time, they have both engaged in unprotected sexual activity and had multiple sexual partners. Based on a Midwestern sample, these findings might be regarded as a conservative estimate of the proportion of young adults in the U.S.A. who engage in sexual activities which place them at risk for STD's, including HIV.

T.D.P.4 SEXUAL BEHAVIOR IN HIGH-RISK ADOLESCENTS

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Objective. To evaluate sexual behavior in runaway adolescents and gay youths who are believed to be at high risk of unprotected sexual activities and HIV infection.
Methods. A detailed semi-structured sexual history interview, the Sexual Risk Behavior Assessment Schedule for Youths (SERBAS-Y; Meyer-Bahlburg et al., 1988) was developed in 3 versions, extensively piloted, and then administered to 50 males and 50 females in 2 runaway shelters and to 50 homosexual males in a special agency, all ranging in age from 12-18 years, with an overrepresentation of minorities.
Results. Preliminary analyses showed that 56% of the adolescents engaged in sexual intercourse during the past 3 months prior to evaluation, with significant differences between the 3 groups. Males reported significantly more partners and sexual occasions than females did. Only a small minority of adolescents in either group used condoms at all, and those who did so used condoms inconsistently and infrequently. Gay males were more likely to use condoms, the more sexual partners (r = .31) and the more sexual occasions (r = .48) they experienced.
Conclusions. These results confirm that runaway adolescents are a high-risk sex group and in need of preventive intervention.

T.D.P.6 THE IMPACT OF TEENAGER'S KNOWLEDGE AND CONCERN OF AIDS ON SEXUAL BEHAVIOR AND PREVENTION STRATEGIES

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Objective. To assess the impact of teenager's self-rated knowledge and concern about AIDS, STD's and birth control (BC) on sexual behavior, prevention strategies, antibody testing, condom use and choice of information sources.
Methods. We surveyed 451 youths ages 13-21 (mean 16.6 and representative of each age) (59% F, 41% M) at the Youth Fair (73% unattached singles, 27% attached; 98% heterosexual; 46% white, 19% black, 21% asian, 11% hispanic).
Results. Self-rated knowledge of STD's, AIDS, BC and condoms was rated as high by 48.3%, 51.9%, 58.3%, 65.6% overall with few claiming little knowledge of the above (9.3%, 8.0%, 12.2%, 9.3%). While 19.6% of males vs. 7.1% of females claimed little knowledge of BC (p<.001) or STD (M 13.8%, F 6.7%, p<.05) when it came to condoms, there was no significant difference. Discussion of AIDS had occurred most frequently with friends (75.2%) and parents/family (62.3%) and teachers (55.7%), followed by doctors/nurses (21.3%), religious leaders (9.5%) and lastly an AIDS hotline (2.9%). In contrast, for more information about AIDS, 38.2% said they would go first to a doctor/nurse, AIDS hotline (29.1%), parent/family (11.6%), friend only 9.3%, teacher only 6.7%, newspaper/magazine (3.3%), and religious leader 1.1%. With the exception of single males, knowledge of AIDS did not affect # sex partners/last 12 months or condom use. Surprisingly, single males who rated their knowledge of AIDS high were least likely to use condoms (never 57.1%,some 14.3%,always 28.6%) while those knowing "little" (never 7.5%,some 25%,always 67.5%) (p=.002). First sex before age 12 occured in 2/136 (1.5%) 18-21 year-olds, the older half (53%) of the sample, in marked contrast to 16/121 (13.2%) of the 13-17 year olds, the younger half (47%) (p<.001). Always using condoms decreased with age from 13yo (67%) and 15yo (76%) to 19yo (27%) and 20yo (23%)(p<.05) but did not vary by sex or race. Unattached singles used condoms (56%) more than those attached (32%)(p<.01) with 41% citing BC as the major reason then AIDS (32%),STD (24%), but least of all because their partner wanted to (3%). Concern for HIV was high (M 85%,F 76%,p<.05). HIV tested:(M 16%,F 9%,p<.05). Many (F 41%,M 28%,p<.05) always ask for a test before sex, 15% sometimes.
Conclusion. Complex social factors influence teenagers sexual decisions.

T.D.P.7

TITLE: DEMOGRAPHIC AND HIGH RISK BEHAVIOR STUDY OF INCARCERATED ADOLESCENTS

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OBJECTIVE: To obtain demographic and AIDS high risk data to target and implement educational and research programs among incarcerated adolescents

METHODS: Interviews to gather data were conducted following a randomized design. This information was computerized (data manager d BASE III Plus) and analyzed with the statistical software package PRODAS.

RESULTS: 262 minors, age 16 and 17 were interviewed. 83% were males and 17% were females. 39% were Black, 29% Hispanic and 27% White. Incidence of sexual activity was high. Alcohol consumption during sex was frequent (47%), drug use concomitant with sex activity was 11%. Heroin and cocaine were the most frequently used I.V. drugs. Incidence of VD was 17% with gonorrhea the most common disease entity. While awareness about contracting AIDS was high, condom use and other precautionary measures were low.

CONCLUSION: Despite the fact that this population reported a 67% attendance to sex education classes, their degree of knowledge and concern about high risk behavior for AIDS was low. Educational programs with peer participation, seroprevalence studies and emphasis on HIV testing and counseling of high risk individuals will be pursued.

T.D.P.9

HIV-RELATED KNOWLEDGE, BELIEFS, AND BEHAVIORS AMONG HIGH SCHOOL STUDENTS IN THE UNITED STATES

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Objective. To describe HIV-related knowledge, beliefs, and behaviors among high school students in cities and States in the United States with the highest cumulative incidence of AIDS and to describe the system of surveys developed to enable departments of education to collect these data annually. Methods. As part of a unique system of surveys involving participation and collaboration by department of education representatives, 9 states and 6 cities administered anonymous questionnaires to samples of high school students in their respective jurisdictions. Sample sizes ranged from 778 to 7,013. The response rate of schools from each site ranged from 52% to 100%. Results. Many students incorrectly thought HIV infection may be acquired from giving blood (range, 27.8%-53.3%), using public toilets (range, 41.8%-64.4%), or having a blood test (range, 49.6%-75.4%) or from mosquito and other insect bites (range, 28.9%-46.8%). Most students knew IV-drug use (range 83.8%-98.4%) and sexual intercourse (range, 88.3%-98.1%) can result in HIV infection. High school students from four sites reported variable rates of IV-drug use and sexual intercourse: 2.8%-6.3% reported ever injecting illegal drugs; 28.6%-76.4% reported having had sexual intercourse at least once; and 15.1%-42.6% reported having had 3 or more sex partners. Conclusion. Departments of education should implement programs to correct misperceptions about HIV transmission, to reduce behaviors resulting in HIV infection, and to assess periodically whether these misperceptions and behaviors change over time among high school students.

T.D.P.11

ADOLESCENT RUNAWAYS' BEHAVIORAL RISK FACTORS, KNOWLEDGE ABOUT AIDS AND ATTITUDES ABOUT CONDOM USAGE

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Objective: Objectives of study were to: 1) determine behavior risk factors and knowledge about AIDS, 2) provide information about AIDS, and prevention, and 3) determine attitudes about condom usage among runaway adolescents while at an alternative school center.
Methods. Upon intake to the school, adolescents (213) were administered a questionnaire about AIDS knowledge, behavior risk factors and prevention information. While at the alternative school adolescents received 3 to 4 instructional classes about AIDS and prevention information. After the classes the adolescents (102) were given the same questionnaire to determine if the group had improved it's knowledge base about AIDS information, and changed attitudes about condom usage. Results. Results indicate that of the 213 runaway adolescents (between the ages of 11 and 16), 76% are sexually active, 7% have used intravenous drugs and, only 13% stated they always use condoms. Post data results on some knowledge questions indicate significantly larger proportions of correct responses. There are area where misunderstandings persist i.e., transmission through blood donation and transfusions. Attitudes about condom usage did not improve and adolescents feel uncomfortable talking about condoms with a partner. Conclusions: Runaway adolescents' behavior puts them at risk for HIV infection and AIDS. Alternative schools provide a setting for exposure to information about AIDS. A change in attitudes toward condom use and a change in condom use require more than classroom exposure to AIDS information.

T.D.P.8

KNOWLEDGE, ATTITUDES AND BEHAVIOR OF STREET-INVOLVED PEOPLE IN VANCOUVER

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Objective To assess and describe the knowledge, attitudes and behaviors of street-involved people in Vancouver in relation to AIDS.
Methods In January 1989, sixty-nine street-involved youth answered an anonymous, standardized questionnaire administered on the street by outreach nurses.
Results Of the 40 males and 29 females interviewed, 93% were 14-29 years old, 56% were Caucasian and 39% Native Indian, 44% lived with lovers or friends and 40% lived alone. The majority supported themselves by prostitution (70%) and/or welfare payments (48%). Seventy-seven percent felt that AIDS was not as serious as the media said, 46% would use condoms with a new but not a steady partner, 45% felt their chances of catching an STD were low. With regard to drug-taking behavior, 54% had used intravenous drugs within the past year, 73% of these had shared works and 76% cleaned their needles with bleach. The favorite drugs were cocaine and talwin and ritalin. Findings with regard to sexual behavior included the following: 45% had had sex with a homosexual man and 43% with an IVDU; 6 women and 10 men said they were bisexual in their private lives; 85% always used condoms with 'dates' (i.e. customers) but only 26% always used condoms with 'lovers' (i.e. steady partners). Their ability to be safe when having sex or using intravenous drugs was often adversely affected by being drunk or high.
Conclusion Street involved people in Vancouver remain at highest risk for acquisition and transmission of HIV because of risk behavior in their personal lives.

T.D.P.10

ETUDIANTS ET SIDA : INTERET D'UNE TYPOLOGIE POUR UNE PREVENTION SPECIFIQUE

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Objectifs. 1) Décrire étudiants (18-22 ans) de région parisienne, 2) Mesurer les corrélations entre facteurs de risque SIDA et facteurs de risque "supposés", 3) Construire une typologie pour actions préventives spécifiques. Méthode. 1) Echantillon : 963 étudiants représentatifs (méthode des quotas), 2) Intervention : strict anonymat, faite d'avril à juin 1988, 3) Auto-questionnaire : 175 items sur représentations, attitudes, comportements sur sexualité, maladie, SIDA, valeurs, informations SIDA, prévention, mesurant l'état des connaissances sur entre autres SIDA, facteurs de risque SIDA, 4) Tris à plat, croisés, analyses en composantes principales et typologique (logiciel EOLE). Résultats. 1) Parmi très nombreux résultats : 16 % lors premier rapport ont utilisé préservatif, 15 % ont pratiqué dépistage du VIH, 69 % pensent que le préservatif est le moyen le plus sûr pour éviter le VIH, 52 % s'estiment insuffisamment informés sur SIDA, 84 % pensent qu'un médecin est mieux à même de les informer, 52 % que l'information doit être faite en Faculté, 2) Cinq facteurs de risque supposés ont été retenus car tous bien corrélés aux facteurs de risque du SIDA, 3) Proposons une typologie de dix types associés différemment aux facteurs de risque conduisant à approches préventives particulières dont "petits groupes".

T.D.P.12

THE RELATIONSHIP OF KNOWLEDGE AND ATTITUDES TOWARDS AIDS TO SAFE SEX PRACTICES AMONG RUNAWAY AND GAY ADOLESCENTS

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Objective: To evaluate the relationship between knowledge of and attitudes towards AIDS and safer sex practices among runaway and gay adolescents.
Methods: Questionnaire assessments of knowledge of transmission, high risk groups, outcomes, prevention strategies, definitions, and HIV testing were collected and extensive interviews of sexual behavior during the last three months were conducted with 95 runaway and 30 gay youth in community agencies in New York City.
Results: There was moderately high general knowledge of AIDS (74%) and positive attitudes towards safer sex (74%) across all groups; as well as substantial unsafe sex. These high risk youth reported an average of 3 sexual partners and 12 sexual encounters over the last three months, most of which were unprotected by condom use (89%). General knowledge of AIDS was more highly correlated with condom use ($r = .31$, $p<.05$) and positive attitudes ($r=-.56$, $p<.01$) among gay male youth than for runaway youth. In addition, general knowledge of AIDS was positively related to the number of partners among gay youths ($r=.31$, $p <.01$), indicating those most at risk knew the most about AIDS.
Conclusions: Altering attitudes towards AIDS, not general knowledge, appears important and potentially effective among those at most risk: gay youth.

Comportement (partie 2)
Behaviour (Part 2)

T.D.P.13 YOUTH IN DETENTION AT HIGH RISK FOR HIV: KNOWLEDGE, ATTITUDES, AND BEHAVIORS REGARDING CONDOM USAGE

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Objective. Because youth who come into contact with the juvenile justice system are typically sexually active, prone to drug experimentation, and have high levels of STDs, they are at particularly high risk for HIV infection and transmission. Our aim was to examine their knowledge of how HIV can be transmitted and prevented, and their attitudes and behaviors about condoms. Methods. 184 juvenile offenders (mean age = 16) at the San Francisco Youth Guidance Center completed anonymous self-report questionnaires. The sample was 86% male, and 63% Black, 16% Hispanic, 7% Asian, 6% White, 7% other. Results. Knowledge about HIV prevention was generally high; for example, 85% agreed that using condoms during sex reduces the chances of HIV infection. Further, ability to obtain condoms "on the outside" was not a problem: 90% said that it would not be difficult at all. There was also evidence of motivation: 71% said they were "very afraid of getting AIDS." On the other hand, only 14% of the sample said they used condoms all the time during sexual intercourse, and 35% never used them. A striking 46% agreed that "sex without condoms is worth the risk of getting AIDS," and 41% said they would not use condoms because they would "really like to have a baby." Conclusion. The findings of low intention to use condoms and low usage are disturbing, in view of the fact that 35% admitted to having had sex with someone in exchange for money, drugs, etc. during the past year. Results suggest that culturally sensitive HIV education programs aimed at changing attitudes about using condoms are urgently needed for this high risk group

T.D.P.14 THE NATIONAL STUDY OF HEALTH AND SEXUAL BEHAVIOR

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Objective. To describe the development of a national survey of health and sexual behavior. This is a major undertaking that will provide data to help understand sexual behavior patterns associated with varying degrees of risk with respect to HIV infection and the contexts in which the behaviors are occurring. It will also provide some of the data needed to model the spread of HIV infection, e.g. rates of partner change and sexual behaviors within relationships. Many of the estimates of HIV infection depend upon estimates of risk behavior derived from the Kinsey studies of the 1940's. While these were landmark studies, the lack of a representative sample and the changes in sexual behavior that are known to have occurred in the past 40 years make a new study necessary. The present study confronts the problems of obtaining high quality data on sensitive questions from the general U.S. population and simultaneously being able to accommodate the less frequently occurring high risk behaviors. The development of the survey has included a number of methodological tests designed to determine the most effective means of eliciting accurate information. These include effects of (1) matching interviewers and respondents on selected demographic characteristics, (2) the location of the interview (in sites or in the home), (3) telephone vs. face-to-face interviewing including a self-administered questionnaire and (4) a closed-ended questionnaire vs. an open-ended semi-structured interview.

T.D.P.15 HIV STATUS RELATED TO KNOWLEDGE AND BEHAVIORAL CHANGE

Miller, Kenneth and Patient Managers, University of California, San Francisco, U.S.A.

Objective. To assess whether knowledge about AIDS influenced behavior in anti-HIV(+) blood donors, blood recipients, hemophiliacs and their sexual partners as compared to anti-HIV(-) controls.
Methods. A 16 item multiple choice questionnaire and an 11 item behavioral survey were distributed to 228 study participants and their sexual partners 6 to 12 months following standard verbal counselling regarding transmission and prevention of AIDS.
Results. 35/51 (69%) of anti-HIV(+) respondents and their sexual partners, who correctly identified preventive measures, indicated that they used condoms more than half the time; while only 36/131 (27%) of the anti-HIV(-) controls did so. 32/69 (46%) of anti-HIV(+) respondents and their sexual partners identified and practiced health promoting behaviors as compared to 37/149 (25%) of anti-HIV(-) controls. 66/69 (96%) of the anti-HIV(+) respondents avoided sharing unsafe items such as needles, razors, etc. with their partners while an equivalent number of anti-HIV(-) controls 139/155 (90%) evinced similar behavior.
Conclusion. In this sample, generally, knowledge about AIDS prevention was more likely to be translated into behavioral changes by anti-HIV(+) subjects than by those who were anti-HIV(-).

T.D.P.16 SELF PERCEPTION OF THE RISK OF CONTRACTING AIDS AMONG UNIVERSITY STUDENTS.

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Objective: To assess how accurate is the self perception of the risk of contracting AIDS among University Students.
Methods: A structured questionnaire on sexual behavior and knowledge about AIDS was mailed to 2609 students of the first two grades of the State University of Campinas. Analysis was performed using SPSS PC.
Results: The percentage of students declaring not having risk of AIDS was 21.7%, but 56.3% of them did not use condons, 14.1% had anal intercourse and 12.2% of men had had homosexual relations.
Based on the whole questionnaire, each student was classified as having null, low or high risk. Seventy five per cent of those who classified themselves as having null risk, actually had low or high risk. On the other hand, 77.8% of those who classified themselves as high risk, were low, according to our classification.
Conclusion: Even though the level of knowledge about AIDS is relatively high among University Students, there is still a high incidence of misconceptions or classifying which behaviors do actually constitute risk. Further educational activities appear as a high priority.

T.D.P.17 PREVALENCE OF GENITAL LESIONS IN AN STD CLINIC: SEXUAL BEHAVIOR CHARACTERISTICS.

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Objective. To determine the prevalence of genital lesions in individuals attending an STD clinic and to evaluate their sexual behaviors.
Methods. During a 15 week period, individuals (n=3247) making their first visit for a variety of reasons were studied and those patients with genital lesions were referred to a single clinician for evaluation. The patterns of sexual behavior of these patients were compared to those without lesions.
Results. Patients with genital lesions accounted for 241 (7.5%) visits. Men were more likely than women to present with genital lesions ($p<.01$) and genital lesion patients were less likely to be referred as a sexual partner ($p<.01$). Women with genital lesions more often did not use chemical or mechanical barriers for contraception and also gave a history of anal intercourse ($p<.05$). Men with genital lesions were less likely to use condoms than men without lesions ($p<.01$). After lesions were recognized, 24% of the men and 21% of the women continued to have sexual intercourse.
Conclusion. In view of previous findings that genital lesions are associated with an increased risk of HIV transmission, it is important to understand the patterns of sexual behavior of persons with such lesions. The current evidence for poor use of preventive measures must be addressed.

T.D.P.18 BEHAVIORAL PATTERNS OF BISEXUAL MALES IN THE U.S., 1982

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Objective: To analyze 1982 survey data on the sexual practices of 7,484 behaviorally bisexual males to better understand the lower-than-expected incidence of HIV infection in that population and their female partners.
Methods: Data from a national survey of 80,324 and female readers of Playboy magazine were examined using analysis of variance techniques. Demographic profiles and sexual behavior patterns were compared among men whose adult sexual behavior was exclusively heterosexual (N=54,088), exclusively homosexual (n=780), predominantly heterosexual (N=6,905), or predominantly homosexual (N=579).
Results: Of 7,484 behaviorally bisexual men, 2,111 described themselves as bisexual, 141 as homosexual, and 5,232 as heterosexual in orientation; 39% were currently married (vs. 44% of heterosexual men) and 39% were currently dating more than one partner. Bisexual men were less concentrated in cities than homosexual men (43% vs. 63%, 38% for heterosexual men). Behavioral bisexuality was associated with increased promiscuity (.63 SD on an index combining no. of partners and 3 other indicators) and increased risk of STDs (18% vs. 10% reporting one or more in past 5 yrs.) compared to exclusively heterosexual men, and with increased use of prostitutes in last five years (33%) vs. 19% for exclusively heterosexual or homosexual men.
Conclusions: The behavior reported by this large sample of bisexual men would place them at intermediate risk of HIV infection. Bisexual patterns of behavior are not well captured by self-reported sexual orientation.

T.D.P.19

PATTERNING IN THE SEQUENCES OF SEXUAL ACTIVITY BETWEEN MEN AND ITS IMPLICATIONS FOR HIV-1 TRANSMISSION

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Objective: Until now, analysis has concentrated on individual sexual acts and their role in the transmission of HIV-1. This paper looks at sequences of sexual acts which take place between men in order to discover any patterns which might be relevant to transmission.
Methods: Diaries of sexual activity were kept by 170 men who recorded, for each episode or session of sexual activity, where and when it took place; the other people involved (if any); the sequence of acts and other relevant details such as condom use. Diaries were encoded and analyzed using a specially written computer programme.
Results: Analysis suggests the existence of two patterns or modes of sexual interaction: role-playing and reciprocal. Role-playing keeps the insertor-insertee distinction, while reciprocal action does not, typically involving an alternation of such roles. Role-playing sessions involve fewer individual acts than reciprocal ones ($p \ll .01$) and are more likely to include anal intercourse ($p < .05$). When anal intercourse does occur in reciprocal sessions, it is less likely to produce orgasm ($p < .001$).
Conclusions: Reciprocal sex is likely to be safer sex. Further analysis of the patterns of sexual activity is urged as a means of understanding the context of transmission and as a resource for health education.

T.D.P.20

FACTORS ASSOCIATED WITH SEROPOSITIVITY TO HIV-1 AMONG A NON-CLINIC SAMPLE OF GAY AND BISEXUAL MEN IN LONDON

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Objctive: To describe the relevant characteristics of those found to be HIV antibody positive in a study of homosexually active men.
Methods: As part of a national study, 310 gay and bisexual men in London were recruited using a variety of sampling methods and interviewed in a non-clinic setting. 122 (71.6%) volunteered a sample of blood, which were tested for HIV-1 antibody using the Wellcome competitive assay, with positives confirmed using the Abbott recombinant assay. Interviewees could choose to know the result of the test. Data from the intrview were analysed using ANOVA.
Results: Individuals were classified as positive (30, 9.7%), negative (192, 61.9%) and not tested (88, 28.4%). Positives were found to be significantly younger ($p < .05$) and to have had more penetrative sexual partners - 'psp's: partners with whom anal intercourse had taken place - ($p < .05$) in the course of their lives. There was no difference between the groups in having had a psp in the month prior to interview, but of those who had, positives had significantly more than the other groups ($p < .01$). Level of education, current relationship status and degree of disclosure were not significantly different.
Conclusions: The hypothesis that younger gay men are currently more at risk gains some support from these findings.

T.D.P.21

TRENDS IN AIDS KNOWLEDGE, ATTITUDES AND BEHAVIORS (KAB) IN HETEROGENEOUS, HIGH-RISK GROUPS, FLORIDA

Lieb, Spencer*; Zimmerman, R.S.**; Kuechler, M.***; Langer, L. M.**; Sims, J.* and Witte, J.J.*.
*Florida Department of Health and Rehabilitative Services, Tallahassee, Florida, USA, **University of Miami, Coral Gables, Florida, USA, ***Hunter College (CUNY), N.Y., N.Y., USA.

Objective. To compare levels of AIDS KABs in 1987 and 1988 in groups at high risk in a region having 4,000+ reported AIDS cases as of 1/12/89.
Methods. A KAB survey was administered anonymously in 1987 (N=1,937) and 1988 (N=1,873) to those sampled non-randomly in 4 south Florida counties. Weights were assigned to each 1988 respondent by race, age, sex, education and distributing agency for comparability with 1987 values.
Results. Knowledge levels of HIV transmission modes were high in both years. A decline in anal intercourse was reported by gay/bisexual men [t(1198)=2.78, p=.005]. The percent tested for HIV antibody increased significantly ($p < .005$) for 6 of 7 hierarchical risk groups, 3 of which are shown below. Condom usage increased markedly among 2 of the 3 groups:

	N		%Tested for HIV		% Always Using Condoms	
Group	1987	1988	1987	1988	1987	1988
Gay/bisexual male	651	586	35%	51%*	15%	25%*
IV drug abuser	222	118	30%	69%*	3%	12%**
STD client	276	421	11%	31%*	4%	6%

*$p < .00001$ **$p < .003$

Conclusion. To the extent that such groups may be 'sentinels' for larger, at-risk populations, these results favor a reduction in HIV transmission.

T.D.P.22

BEHAVIORAL AND PSYCHOSOCIAL PREDICTORS OF COMPLIANCE IN HIV ASYMPTOMATIC AND SYMPTOMATIC PATIENTS IN CLINICAL TRIALS

Patrone-Reese, Janie; McCann,M; Chidekel, J; Fayne, T; Haliburton,B; Pringle, L; et al. University of Miami, Miami, Florida, USA.

Objective. To evaluate and determine factors associated with study compliance among HIV infected patients in clinical drug trials.
Methods. A voluntary, anonymous, self-administered questionnaire consisting of demographic and risk factor information, recreational and non-FDA approved drug use, and sexual practices was completed by patients with asymptomatic or symptomatic HIV infection participating in clinical drug trials.
Results. Of 150 distributed questionnaires, 120 were completed. The majority of patients not filling out questionnaires were hispanic. Of the 120 participating patients, 86 had asymptomatic and 32 had symptomatic HIV disease. A greater study compliance rate was noted among symptomatic patients vs asymptomatic patients. Further, asymptomatic patients were less likely to take study medication as prescribed (p=.023). No differences between men and women, marital status, or risk group were noted between the two groups. Patients with asymptomatic HIV infection were more likely to be younger (p= active (p=.003), and presently employed (p=.004) compared to patients with symptomatic HIV infection.
Conclusions.Asymptomatic patients with HIV infection are generally more likely to be non-compliant with clinical drug trials. Factors associated with recreational drug use, alcohol use and sexual activity must be considered in developing strategies to improve compliance rates of asymptomatic patients in clinical drug trials.

T.D.P.23

MALE HOMOSEXUAL SEXUAL BEHAVIOUR IN THE UK 1985-1988

Thomas J McManus[1], Peter Davies[2], APM Coxon[3]
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[2] South Bank Polytechnic, London SE1
[3] University of Wales, Cardiff, UNITED KINGDOM

Objective. To monitor changes in male homosexual sexual behaviour in the United Kingdom using a non-clinic sample.

Method. A questionnaire was circulated via the gay press. It was self administered and asked about numbers of sexual partners, changes in sexual behaviour, drug use, condom use, HIV antibody status and sexual assault.

Results. 1292 replies from 1985 and 1200 from 1988 were analysed. The demographic details of both samples were comparable. 60% of men in 1988 had less than 5 sexual partners in the previous 12 months compared with 35% in 1985. The 1988 respondents reported a 50% decrease in both oral and anal sex with casual sexual partners but only 36% used condoms >50% of the time during anal sex. Very little illicit drug use was reported. 18% of the 1988 cohort had been sexually assaulted by another man.

Conclusion. This national survey of sexual behaviour in gay men in the UK is attempting to monitor changes in behaviour as the HIV epidemic increases. There is evidence of a change towards safer sex but a significant proportion of respondents still have unprotected anal sex. The number of men sexually assaulted is higher than previously reported in smaller samples.

This investigation is part of Project SIGMA and is funded by the Medical Research Council.

T.D.P.24

A REVIEW OF STUDIES OF BEHAVIORAL RESPONSE TO HIV-ANTIBODY TESTING AMONG GAY MEN

AR Stempel; AR Moss. School of Medicine, University of California, San Francisco; San Francisco, CA, USA.

Objective. To review changes in sexual behavior made by gay men receiving HIV-antibody test results.
Methods. We examined 22 studies of sexual behavior change by groups of gay men from the United States and Western Europe.
Results. A median of 61% of study subjects (range=23-84%) choose to know their HIV-antibody status when made available to them in the context of their research study. Most studies (n=15) have indicated that awareness of infection decreases risk behaviors (anal intercourse and multiple partners) with seropositives showing greater declines than seronegatives. A considerable number of studies (n=07), however, have shown no difference in the post-notification behavior of subjects.
Conclusion. The behavioral consequences of HIV-antibody test result notification remains unresolved, but a reduction in behaviors which transmit HIV usually ensues. No clear pattern explaining these ambiguous findings is yet apparent. Inappropriate ('binge') behaviors following notification have not been reported in these groups.

T.D.P.25 ATTITUDES OF DENTISTS AND GRADUATION STUDENTS TOWARDS AIDS IN BELO HORIZONTE , BRAZIL

Greco,Dircey B.;Oliveira,E.I;Oliveira,M.R.; Paulino,U.H.M;Vitoria,M.A.A. and Adams,I. Immunodeficiency Clinic,Faculty of Medicine, Belo Horizonte, Brazil

Objective: To study the attitudes and reactions of these professionals towards HIV infection.
Methods: In September 1988 we have evaluated, through a questionnaire the attitudes and reactions of 40 dentists and 36 graduation students of dentistry towards HIV infection:12 questions before and after a six hour intensive course on AIDS.

Results:Questions	Yes(%) Before	After
1.HIV+ should be treated as a special group	93.9	63.6
2.Prepared to treat HIV+	15.1	72.7
3.Afraid of infection by treating HIV +	97.0	75.7
4.Afraid of losing patients if they know you treat HIV+	84.8	63.6
5.Are you sure about safety measures at work	18.2	84.8
6.HIV+ persons should inform their dentists	100	100
7.Infected dentists should inform patients	72.7	66.7
8.Better infection control since HIV era	69.7	72.7
9.Would treat with an infected dentist	24.2	42.4
10.Would be treated by a homosexual dentist	51.5	51.5
11.Risk groups should be screened	87.9	84.8
12.Have you been applying the recommended preventive measures at the work place	66.7	63.6

Conclusion: There are many misconceptions related to HIV infection despite the literature available and the various mass media campaign. Some of them seem to be easily changed through direct information, while others, especially those reflecting day to day contact are clearly misconceptions and remain unchanged.

T.D.P.26 A STUDY TO INVESTIGATE THE EFFECTIVENESS OF ROLE PLAY IN HIV HEALTH EDUCATION GROUPS FOR DRUG ABUSERS

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Objective: To assess whether role play is an effective modulator of behavioural and attitudinal change in drug abusers.
Methods: Residents of a drug dependency unit completed a questionaire before and after an education group to assess their knowledge of and attitudes towards HIV and behaviour in potential risk situations. Subjects were randomly assigned to 3 groups as follows:- Group 1 received information about HIV, safer sex and risks associated with injecting behaviour. Strategies for reducing risk were explored via discussion. Group 2, as for Group 1, but included role play to explore risk reduction strategies. Group 3 (control) received no HIV education.
Results: Initial results indicate that it was only those subjects who received active learning via role play that underwent significant attitudinal change.
Conclusion: Attitudes are indicators for behavioral change; role-play does facilitate attitudinal change in this population and is therefore a useful educational tool in the prevention of the spread of HIV.

T.D.P.27 PERCEIVED COMMUNITY NORMS AND RISK REDUCTION: BEHAVIOR CHANGE IN A COHORT OF GAY MEN

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Objective: To examine the effect on behavior of an individual's perception that others in his community were changing their unsafe sexual practices.
Methods: 500 gay men from two sites completed initial and six month follow-up questionnaires on their sexual behavior and a number of other behaviors and beliefs. Changes in two behaviors—frequency of unprotected receptive anal intercourse for seronegatives and number of anonymous sexual partners for seropositives—were evaluated.
Results: Positive perceptions of community norms may influence reduction in risk behavior. For example, subjects who believed that gay men in their community were changing their lives for the better showed significant reductions in numbers of anonymous sex partners ($z=2.57$, $p<.01$) (seropositives) and number of partners with whom they have unprotected anal intercourse ($z=2.87$, $p<.01$) (seronegatives).
Conclusions: Changing perceptions of community norms for risk behavior may be an effective way of reducing risk behavior.

T.D.P.28 HYPERMASCULINITY AS A PREDICTOR OF SEXUAL RISK BEHAVIORS IN A COHORT OF GAY MEN

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Objective. Previous research with straight males indicates that hypermasculinity (macho) is associated with a greater number of lifetime intercourse experiences and with less frequent and consistent condom use. This study explored the relationship between sexual risk behaviors and hypermasculinity in a New York City cohort of 110 HIV positive and 40 seronegative gay men (primarily white and middle class, aged 19-60 years).
Method. Subjects underwent a detailed sexual history interview and completed the Hypermasculinity Inventory (HMI; Mosher & Sirkin, 1984), a forced-choice self-report inventory designed to assess a macho personality constellation. The HMI was modified for use with this population.
Results. According to initial analyses (N=70), approximately 74% of the cohort reported sex with multiple partners and engaged in at least one act of unprotected receptive anal, insertive anal, and/or active oral sex. Correlational analyses indicate that hypermasculinity is associated with a greater number of sex occasions ($p<.05$), but not with number of partners nor with unprotected anal and oral sex.
Conclusion. Hypermasculinity in middle-class, AIDS-informed gay men predicts frequency of sexual activity but not sexual risk practices, in contrast to findings with heterosexual samples.

T.D.P.29 BEHAVIORAL TARGETS FOR POSSIBLE IMMUNOMODULATION THERAPY IN AIDS PATIENTS

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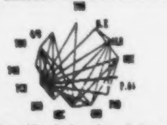
Objective To demonstrate the value of Psycho-Immune-Balascopy (PIBa) for the cognition of patterns of interaction between and within behavioral and immunological parameters, with application to immunomodulation therapy
Methods. PIBa was applied for detecting, mapping and measuring the complexity and patterns of regulatory interactions among 7 behavioral and 6 immune (WBC: B, T, T4, T8 lymphocyte counts; T4/T8 ratio) variables in 11 AIDS patients. Thirty-eight healthy controls were obtained from the Health Watch program, a longitudinal prospective study of healthy aging. All participants completed the Health Watch Questionnaire which provides quantitative scores of health status and lifestyle habits in 7 areas: nutrition, medical events, general wellbeing, psychological wellbeing, physical activity, alcohol use and smoking
Results. The diagram represents the characteristic structure of INTER (Behavior-Immunity) and INTRA (Behavior-Immunity) abnormal interactions in AIDS patients, where inter-systems interactions are more prevalent (13 single interactions) than intra-system interactions (6 in behavior and 11 in immunity).



Conclusion. Psycho-Immune-Balascopy (PIBa) can identify behavioral targets for possible immunomodulation therapy in patients with AIDS.

T.D.P.30 WILLPOWER ASSESSMENT: A DECISION MAKING MODEL FOR DESIGNING TAILORED TARGETTED AND POSITIVE PROMOTION.

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Objective: To develop a simple and reliable measure of willpower (WP) and its components for use in descriptive and experimental studies, using a self-administered post-dictive weighted multiattribute utility assessment instrument with elicited attributes within model sub-dimensions. The model was defined to allow generalisation to other health behaviours, and applied to the study of behaviour related to AIDS transmission.
Methods: Instrument design was based on focus group meetings and interviews with members of the target population, consultations with counselling professionals, and prefeasibility and feasibility testing with clinic attenders and members of a francophone homophile organization. The instrument is for use in an anonymous setting to assess respondent WP for his most recent salient "risky" sexual behaviour decision.
Results: Adaptation of the instrument using desktop publishing resulted in a doubling of the response rate to 66% in the feasibility study. Respondents completed the WP questionnaire in 20-30 minutes. They reported an increase in awareness of their WP in decision-taking. Emotional well-being was found to be most important, with weight approximately equally divided between abundancy and deficiency motivations. The WP instrument is now being made available to francophone and anglophone homosexual community members in Montreal via clinics and community organizations.
Conclusion: Investigators can use a self-administered questionnaire to assess WP for compliance with health behaviour prescriptions, without compromising respondent anonymity or target population coverage.

T.D.P.31 FACTORS ASSOCIATED WITH RECURRENCE OF UNSAFE SEXUAL PRACTICES IN A COHORT OF GAY MEN PREVIOUSLY ENGAGING IN 'SAFER' SEXUAL PRACTICES

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Objective. To analyze the behavior of gay men who had engaged in 'safer' sexual behaviors (SS) for one or more years and assess the predictors of subsequent maintenance of SS.
Methods. Collection of the longitudinal behavioral, attitudinal, clinical and immunologic data was gathered as part of a natural history of HIV infection of a cohort of initially asymptomatic gay men (n=336) seen in a Boston health center. 25% were HIV antibody positive at outset. SS was defined as 100% condom usage if anal intercourse was practiced.
Results. Those maintaining SS were similar in age, smoking and drinking activities, duration of homosexual activity and Ab status to those who did not. Subsequent non-maintainers tended to have higher levels of 'unsafe' sexual behavior on entry to the project as well feeling that behavior change was not beneficial. Non-maintainers increasingly perceived greater barriers to maintaining SS. Other Health Belief Model components such as perceived susceptibility and severity were not able to differentiate maintainers and non-maintainers.
Conclusions. Health education strategies designed around the Health Belief Model may need to be reassessed in relation to long term maintenance of sexual behavior change.

T.D.P.32 THE ROLE OF PENITENTIARY REFORM AND SOLIDARITY ENHANCEMENT AMONG JAIL INMATES IN THE PREVENTION OF AIDS IN THE DOMINICAN REPUBLIC.

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PROCETS, Ministry of Public Health, Santo Domingo, Dominican Republic.

Objective. To evaluate the approach to AIDS prevention in highly crowded Dominican jails through the inducement of penitentiary reform measures and the enhancement of solidarity networks among inmates.

Methods. AIDS CAP studies were carried out in Dominican jails in November 1987 and February 1989. Ongoing intervention includes attempts to create staff committees, training of health personnel, inmates' group discussion and lecture sessions, group formation and voluntary HIV testing and counselling.

Results. A lag of 24 months in AIDS awareness among inmates as contrasted to the general population has been overcome by the joint peer-professional intervention. Gang sex rapes ("maniguas") of youngest prisoners have been reduced to a minimum by inmates' defense committees.

Conclusion. Empowering inmates for self-generated preventive action in prisons both enhances their self-esteem and decreases the transmission potential of HIV among inmates.

T.D.P.33 IMPLICATIONS OF HEALTH BELIEFS FOR AIDS PREVENTION PROGRAMS: THE SAN FRANCISCO MEN'S HEALTH STUDY

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* Center for AIDS Prevention Studies, and *** Health Psychology, U.C. San Francisco, CA U.S.A., ** Fellow, American Foundation for AIDS Research

Objective. To examine the relationship between health beliefs and sexual behavior among gay and bisexual men in San Francisco.
Method. This analysis is based on 455 single sexually active gay and bisexual men participating in the San Francisco Men's Health Study (a population-based longitudinal study of single males in San Francisco). Health beliefs specific to HIV infection and AIDS prevention were assessed in 1987. Number of sexual partners and condom use were measured at six and twelve month follow up. Low Risk was defined as mutual monogamy or 100% condom use. High Risk was defined as having multiple partners and less than 100% condom use. The longitudinal relationship between the respondents' beliefs and subsequent sexual behaviors was examined using univariate statistical tests.
Results. The longitudinal analyses showed that subjects who perceive safe sex as important in preventing the spread of AIDS and who do not perceive safe sex as pleasure reducing are significantly more likely to report low risk sex during the next twelve months than are those who hold the opposite beliefs. In addition, high risk subjects were significantly more likely to believe that safe sex is unnecessary when two partners have the same serostatus than were low risk subjects. Finally, high risk subjects perceived significantly fewer behaviors as transmitting HIV than did low risk subjects.
Conclusion. These results support the hypothesis that health beliefs influence preventive behaviors among gay and bisexual men. AIDS prevention programs may thus benefit from including work on beliefs regarding HIV transmission and safe sex.

T.D.P.34 SEXUAL BEHAVIOUR OF EXPATRIATES IN AFRICA

Houweling, Hans*; de Grave, A.; Smits, S.P.; Ligthelm, R.J.; Leentvaar, A.; Kok, P.W.; et al.
*National Institute of Public Health (RIVM), Bilthoven, The Netherlands.

Objective. To describe sexual behaviour of Dutch expatriates in Africa with respect to risk of HIV infection.
Methods. In the course of a routine medical check Dutch expatriates working in sub-Saharan African countries are asked to complete a self-administered questionaire on sexual and other risk factors (since 1978) for HIV infection.
Results. Between Sept.1987-Dec.1988 699 men and 531 women entered the study; 558 men and 429 women were married or cohabited; resp. 408 and 404 were accompanied by their partner during their stay in Africa. Participants were posted in cities and rural areas of all sub-Saharan countries, including those in which prevalence of HIV infection is high. Of participants 28% had heterosexual contact with African partners (HCA): 37% of men and 15% of women. The mean number of sex partners was 5, the median 2, range 1-150. Ten % of men and 4% of women had been treated for S.T.D. HCA was associated with a history of S.T.D., being single, and not being accompanied by the partner ($p < 0.001$). Males more often had HCA, independently of the previously mentioned factors ($p < 0.001$). Condom use was infrequent and inconsistent.
Conclusion. Sexual contact with African partners is a frequent occurrence especially among single men; Dutch expatriates run a substantial risk of sexual exposure to HIV.

T.D.P.35 CHANGES IN SEXUAL PRACTICES IN THE SYDNEY AIDS PROJECT: 1984 - 1989.

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NHMRC Special Unit in AIDS Epidemiology and Clinical Research, University of New South Wales, Australia.

Objective: To describe the changes in sexual behaviour in a cohort of homosexual and bisexual men in Sydney, Australia.
Methods: The Sydney AIDS Project is a prospective cohort study of 1037 homosexual and bisexual men enrolled between February 1984 and January 1985. At each six-monthly review visit subjects complete a self-administered questionnaire that examines their sexual practices during the preceeding six months.
Results: A decrease in the mean number of sexual partners during the preceeding 6 months was reported by both seropositives (22 to 4) and seronegatives (16 to 2) over the first 3 years of observation. Seropositives reported a reduction in receptive anal intercourse from a mean of 8 to 2 times per month and seronegatives from 4 to 1 per month. There was a similar reduction in all sexual practices. These changes were reflected in a decrease in the seroconversion rate within the cohort which peaked at 4% during early 1985 but remained below 1% in 1988.
Conclusion: These data indicate significant changes in the sexual practices of a large group of homosexual men in Sydney since 1984. These changes are reflected in a decrease in the seroconversion rate for this cohort. An updated analysis of the data, incorporating data to early 1989, will be presented.

T.D.P.36 CHANGE IN SEXUAL BEHAVIOR IN HOMOSEXUALS AT RISK FOR AIDS

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University of Michigan, Ann Arbor, Michigan, United States

Objective. To describe longitudinal prevalence and predictors of safer sex among homosexual men at risk for AIDS.
Methods. Detailed behavioral data describing condom usage during receptive and insertive anal sex were collected in the Coping and Change/Chicago MACS cohort, beginning in February 1986. Change in behavior between W4 and W5, separated by a six month interval, was used as the dependent variable. Attitudes, peer norms, prior experience with condom usage, and sociodemographic variables were used as predictors.
Results. W4-W5 data are shown in Table 1. Predictors of behavioral change during receptive vs. insertive anal sex were dissimilar. While HIV serologic status was related to subsequent changes in receptive anal practices, socioeconomic and attitudinal variables predicted change in insertive anal practices.

Table 1 - Safer Sexual Practices at Two Time Points

	Safe (W4) N(%)	Not Safe (W4) N(%)	Total N(%)
INSERTIVE ANAL SEX:			
Safe (W5)	192(58)	148(55)	340(57)
Not Safe (W5)	137(42)	123(45)	260(43)
Total	329(100)	271(100)	600(100)
RECEPTIVE ANAL SEX:			
Safe (W5)	243(66)	141(60)	384(64)
Not Safe (W5)	124(34)	93(40)	217(36)
Total	367(100)	234(100)	601(100)

Conclusion. Individual condom usage is not consistent over time. Previous reports of aggregate measures showing improved condom usage among gay men should be viewed with caution because of such individual fluctuations which are not yet fully understood. Our findings also suggest that serostatus is influencing decision-making regarding condom usage and/or choice of partner(s). Decreasing seroconversion rates might be ascribed partly to these processes, rather than the elimination of anal sex or consistent use of condoms.

T.D.P.37 TITRE : COMPORTEMENT SEXUEL ET RISQUE D'INFECTION A V. I. H. AU SENEGAL

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CARBALLO M** ; NDOYE I* ; PETITGIRARD Anne**
*Ministère de la Santé Publique - SENEGAL -
** GPA/OMS - GENEVE

OBJECTIF : Identifier les comportements Sexuels et ses déterminants dans une population de 15 - 49 ans.
METHODOLOGIE Enquête par interview sur un échantillon national représentatif (Sondage par grappes : 2.500 personnes) complétée par observation, interview ethnographiques, focus-group. Conception finale et Exécution faites par équipe pluridisciplinaire. Coordination par Centre National d'Education Pour la Santé.
RESULTATS La recherche essaie d'établir les rapports entre comportements sexuels et données sur l'infection à VIH et les autres M.S.T. Les résultats permettent d'établir entre autre un lien entre comportements et données démographiques (migration et idéologie sexuelle) et persistance de valeurs socio-culturelles (fidélité, croyances religieuses) d'une part,entre perception du risque et prédisposition à adopter un comportement sexuel à risque.
CONCLUSION
Ces résultats spécifient les incidences pratiques pour l'orientation, le renforcement et l'évaluation des programmes d'intervention éducatives facilitant leur intégration et efficacité.

T.D.P.38 "Pretesting AIDS Health Promotion Materials".

Mclellan, Iain*; Richardson A.**
*World Health Organization, Health Promotion Specialist, GPA/HPR, Geneva; **World Health Organization, Health Educator, HPS/HPR, Geneva, SWITZERLAND

This presentation will be supported by slides illustrating types of changes made to materials and pretesting sessions with target audiences. A poster presentation will be available.

Objective. 1) To introduce methods for pretesting prototype AIDS health promotion messages and materials designed for culturally diverse target audiences in Africa, Asia, the Pacific and the Caribbean. 2) To promote the concept of developing specific AIDS messages for primary, secondary and tertiary target audiences with the long range goal of behavioural change.
Method. 141 persons working in AIDS health promotion from 54 countries participated in a series of 5 WHO-sponsored workshops during 1988-89. The health educators, communication specialists and medical doctors conducted focus group interviews with various target audiences such as prostitutes, STD patients, high school students, teachers, hotel workers, lab technicians, military personnel, hospital workers, truck drivers and others. Messages and materials were produced with the assistance of graphic artists and were pretested on these same target audiences.
Results. 1) More than 200 different prototype messages in the form of posters, story boards, comics, radio scripts and other materials were produced, pretested and revised. 2) The participants became convinced of the value of pretesting.

T.D.P.39 BEHAVIORAL INTENTIONS AND OTHER FACTORS INFLUENCING BEHAVIOR CHANGE IN A COHORT OF GAY MEN: A PROSPECTIVE STUDY

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Objective: To examine the influence of intentions to change unsafe sexual behavior on reported behavior change in a cohort of gay and bisexual men.
Methods: 217 gay and bisexual men completed baseline and six month follow-up questionnaires on their HIV risk behavior, beliefs, attitudes and intentions. A model to predict behavior change from Time 1 (T1) to Time 2 (T2) was developed using variables drawn from social cognitive theories of behavior change.
Results: Behavioral intentions at T1 predict behavior change at T2. Men who reported intentions to decrease the number of occasional partners with whom they had receptive anal intercourse at T1 reported significant decreases at T2 ($z=3.99$, $p<.05$). Beliefs about normative behavior mediated this relationship. Among men who intended to decrease the number of one-time partners with whom they had anal intercourse, only those who perceived positive norms for this behavior had made significant reductions ($z=2.34$, $p<.05$).
Conclusions: Cognitive models of behavior change may help identify predictors of change, and thus be useful in developing risk reduction interventions.

T.D.P.40 AIDS-RELATED BEHAVIOR CHANGE OF GAY MEN IN RICHMOND VA, 1985-1988

Bradford, Judith B.; and Johnson, D. Virginia Commonwealth University, Richmond, Virginia, USA.
Objective. To present baseline and follow-up data on AIDS-related behavior change and related variables among a non-clinical sample of gay men in the Richmond metropolitan area. Key variables to be discussed are sources of information, perception of threat to self, and change in risk-associated sexual and drug use behaviors.
Methods. Initial data were collected in the spring of 1985; follow-up data were collected two years later. A questionnaire was prepared specifically for the study, with the help of focus groups of gay men in the city. The same process was used to modify the original questionnaire before follow-up. A two-stage method was used to distribute questionnaires to potential respondents. A list of distributors, both individuals and organizations, was recruited and trained in contacting gay men and explaining the study. The same distribution network was used for the follow-up, in order to make comparison feasible. Anonymity of respondents was carefully protected, in order to gain participation in this city, where homosexual behavior is a felony offense. The response rate was 45% in 1985 and 68% in 1988.
Results. Very few had been tested for HIV infection in 1985, but 43% had been tested by 1987. Thirty-seven percent of the 1987 cohort were infected; 8% had ARC or AIDS. In 1985, 23% experienced "great fear" about their own vulnerability to infection; in 1987, this percentage was about the same (21%). However, more than half of gay men sampled in 1987 had experienced an increase in level of fear from when they first heard about AIDS. Changes were noted in sources of information about HIV: physicians, AIDS service organizations, and the public health department gained in prominence. Only a minority reported self-protective behavior change in 1985; in 1987, almost everyone reported that he had made changes.
Conclusion. Gay men in this middle-sized southern city were 3 times as likely to have made some changes in risk behaviors in 1987 as they were to have done so in 1985. Reported changes were probably insufficient to prevent transmission of the virus to increasing numbers of individuals in the population sampled.

T.D.P.41 SEXUAL BEHAVIOUR CHANGES AMONG MALE SEXUAL CONTACTS OF MEN WITH HIV DISEASE: A 3 YEAR OVERVIEW.

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Objectives: To describe the behaviour changes which have taken place (over a 3-year period) in a cohort of male sexual contacts of men with HIV disease.
Methods: 249 sexual partners of men with HIV disease were recruited into a prospective study between July 1984 and July 1985. The cohort has been monitored every three months. Data on sexual activities have been collected through an interviewer-administered questionnaire and comparisons between the first and twelfth follow-up visit have been made.
Results: The cohort has experienced a reduction in the number of sexual contacts from a median of 3.7 (mean=7.5) to a median of 1.1 (mean=4.1). The percentage of men who did not have sex increased from 24% to 51%. The mean number of anonymous partners has dropped from 3.7 to 2.0. High risk sexual activities such as anal insertive and anal receptive have decreased (anal insertive from 68% to 43% and anal receptive 58% to 42%). Only a small number are being exposed to semen in the rectum (14/106) or orally (19/106). The frequency of lower risk activities such as oral insertive and receptive has also decreased; frequency of masturbation with a partner has remained unchanged. 70% of the men who engage in anal intercourse use condoms more than 50% of the time.
Conclusion: Overall, the men have reduced both the numbers of sexual partners and the volume of sexual activity. The reduction in volume of sexual activity has been gradual and consistent in trend.

T.D.P.42 PSYCHOSOCIAL AND BEHAVIORAL COMPONENTS OF BELIEF OF ANTI-HIV-1 STATUS IN HEALTHY GAY MALES

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Objective. This study investigated the relationship of perceived belief of HIV-1 exposure to sexual and health behaviors, psychological and social variables in healthy gay men at risk for AIDS, prior to notification of their anti-HIV-1 status.
Method. Healthy gay males at risk for AIDS (n=45) wishing to know their anti-HIV-1 status participated as part of a longitudinal investigation. At baseline, prior to being informed of their diagnosis, subjects provided behavioral and psychological data including measures of psychological distress, coping, gay hassles, internalized homophobia, and sexual behaviors. Immune functioning and HIV-1 antibody status were also determined. Prior to diagnosis, subjects were classified as belief negative (BN) or belief positive (BP), based on their self-predicted anti-HIV-1 status.
Results. Of 17 anti-HIV (+) subjects, 10 (59%) were BP; of 28 anti-HIV (-) subjects, 22 (79%) were BN. Thus, 71% of all subjects predicted their anti-HIV-1 status correctly. Controlling for status, CD8+ (cytotoxic/suppressor) cell counts, were significantly higher for BP than for BN subjects. Among all subjects, CD8+ numbers were positively correlated with distress measures of intrusive and avoidant thoughts about AIDS. Significantly more intrusive thoughts about AIDS were reported by BP subjects. BP subjects also engaged in more analingus and fellatio and reported more receptive anal intercourse partners in the last month, as well as, more fellatio, active intercourse, and analingus and greater number of partners for analingus and fellatio one year ago. BP subjects reported more gay hassles, more positive feelings about being gay and engaged in more self-disclosure about their sexual orientation with family and friends. In BP subjects, internalized homophobia was negatively correlated with total AIDS-related intrusive and avoidant thoughts. Also a more positive feeling about being gay in BP subjects was significantly correlated with decreased anxiety about receiving anti-HIV-1 results.
Conclusion. Self-reported behavioral and psychological as well as actual immunological differences were related to belief in HIV-1 seropositivity. Supported by NIMH, P50MH42455-03.

T.D.P.43

SAFE AND UNSAFE SEXUAL PRACTICES BY HETEROSEXUALS AND HOMOSEXUAL MEN: PREDICTING INTENTIONS AND BEHAVIOUR

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Objective. To examine, in these three groups, the influence of attitudes, personal and peer norms, and past behaviour on the *intention to practice safe or unsafe sexual behaviour* and on actual behaviour at the next sexual encounter.

Methods. Homosexual men and heterosexual men and women (N = 240) were recruited from the Brisbane community to participate in the study. They rated (1) their intention to engage in several sexual behaviours and behaviours occurring during sexual encounters, (2) the pleasantness of these practices, and other costs and benefits, (3) their personal norms about the behaviour, (4) peer norms, (5) norms for significant others, and (6) their past practice on each behaviour. The behaviours had previously been classified as safe or risky with respect to HIV transmission. At their next sexual encounter, subjects completed a brief questionnaire indicating the behaviours they had engaged in, using the same list as on the initial questionnaire.

Results. On the basis of their behaviour, subjects were classified as practicing safe, possibly risky, or risky sexual behaviour. Homosexual men were significantly more likely to practice safe behaviour than heterosexual men or women. Multiple regression analyses indicated that past behaviour was the strongest influence on both intentions and actual behaviour for all three groups of subjects, but that attitudes towards the behaviours also played a significant role. Multivariate analyses of variance explored further differences among the three subject groups, and between subjects practicing safe and unsafe sex, on the influence of attitudes and norms, especially peer norms. These results indicated that peer norms are more influential for homosexual men, while the sexual partner is the most important normative influence for heterosexual men and women.

Conclusion. These results highlight the importance of individual psychological variables in the decision to practice safe or unsafe sex, and thus have strong implications for safe-sex education programmes. Much more account must be taken of the influence of past sexual behaviour on present practice.

T.D.P.44

PSYCHONEUROIMMUNOLOGIC RELATIONSHIPS IN MEN WITH ARC

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Objective. To describe and understand the nature of relationships among psychosocial, neuropsychologic, and immunologic variables in HIV disease. To our knowledge, the interactions of variables in these 3 domains have not been reported for men with HIV spectrum disorders.

Methods. Laboratory immunologic measures were obtained for 103 seropositive homosexual men with at least one HIV-related symptom who were recruited from the UCSF AIDS Clinic, and administered neuropsychological tests and psychosocial self-report measures. All the measures were obtained at 3 time points, approximately 6 months apart.

Results. Significant correlations were found between measures of anxiety, depression, confusion, fatigue and absolute numbers of Leu 3+ cells, and Natural Killer (NK) cell activity. At Time 1, higher scores on emotional suppression were also significantly correlated with more Leu 3+ and Leu 3+ Leu 8+ cell numbers, as well as with more NK cell activity. At Time 2 (N = 56), higher scores on suppression of anxiety and unhappiness were significantly correlated with higher numbers of Leu 2+, Leu 2+ Leu 7+, Leu T7+, and Leu 2+ Leu 15-, and with more NK cell activity. Higher numbers of Leu 2+ and Leu 2+ HLA-DR cells were significantly correlated with numbers of neuropsychological impairments from mild to marked.

Conclusion. While it is premature to draw conclusions about the implications of psychoneuroimmunologic relationships in HIV disease, our findings suggest that these relationships change with disease progression, and are perhaps best interpreted in the context of immunologic and psychologic adaptation to ongoing disease and psychosocial events.

T.D.P.45

CHANGES IN CONDOM USE AMONG GAY MEN: PREDICTORS AND METHODOLOGICAL ISSUES

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Objective. Psychosocial predictors of changes in condom use over time were examined. Sample attrition and repeated measurement effects on changes in condom use in two studies were also examined.

Methods. Respondents were gay men in San Francisco. Study One: a longitudinal sample (n=300;1984-1987) and cross-sectional samples (n's=200 per wave; 1985-1987) were randomly selected by random digit dial techniques; Study Two: a longitudinal sample (n=600; 1984-1987) was recruited from bars and bath houses and mailed-in questionnaires. Identical behavioral measures were used across studies (Psychosocial measures will be described).

Results: Condom use increased significantly over time in all samples. This increase was unrelated to subject attrition or repeated measurement effects (Study 1 & 2). Higher levels of social support and enjoyment of condoms were associated with increased condom use over time (analysis of covariance: Study 2). Health beliefs, alcohol use, and antibody status did not predict changes in condom use.

Conclusion: Prevention programs with gay men should focus on building social support groups and eroticizing safe sex practices. Changes in condom use observed in longitudinal studies of gay men are probably unrelated to design features.

T.D.P.46

COPING OF HIV-INFECTED MEN AND AIDS-PATIENTS

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Objective. To assess relationships between psychosocial stress caused by an HIV-infection and different reaction patterns as directly influenced or modified by coping processes.

Methods. Life Quality-, Coping-, and Social Support Questionnaires and semi-structured interviews, administered to 30 homosexual men and Ex-IVDU's, Walter Reed Stage I-V, at least 3 months after diagnosis.

Results. Feelings of psychic (60% "strongly affected") and job distress (45%) decreased from high levels after the HIV test to moderate degrees (20% resp. 10%). In order to minimize stress, individuals used differential patterns of coping. Passive cooperation, rumification, problem-analysis, tackling, activity as diversion were used most frequently. Gay men further preferred perceptual defence and tried to preserve composure, while Ex-IVDU's were seeking social support. Gay men felt more threatened by HIV than Ex-IVDU's.- Clustering over subjects, we found one group, aged 19 to 28, who at the start of their autonomous life were hit by the diagnosis, and developed a depression, showing high scores in perceptual defence, social withdrawal, self-accusation and psychosomatic reactions. A second group of professionally successful gay men focussed on distraction by emphasizing job activity.

Conclusions. Coping patterns of HIV-positives are similar to those of cancer patients (cf.Heim 1988). Effectiveness of coping will be discussed.

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T.D.P.47

DE NOUVEAUX COMPORTEMENTS PARMI LES HOMOSEXUELS EN EUROPE : LES CAS DE PARIS ET D'AMSTERDAM.

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Objectif. Etudier si des rencontres régulières avec pratiques sexuelles à moindre risque, ainsi que la diffusion d'informations spécifiques ont une influence sur le changement en profondeur du comportement des homosexuels. Ces rencontres(Jack Off Parties-JOP-) seront évaluées simultanément à Paris et Amsterdam et l'étude permettra de mieux connaitre les pratiques sexuelles des participants en dehors des Jack Off Parties.

Méthodes. Réalisation et diffusion du même questionnaire(60 questions) portant sur: prise de contact avec les JOP, évaluation des JOP, test de détection des anticorps du VIH et résultats, pratiques sexuelles habituelles en dehors des JOP, caractéristiques sociodémographiques des participants,...Questionnaires diffusés lors des JOP de janvier, février et mars 1989 (600 à 800 retours attendus pour les deux villes).

Résultats. La première enquête de ce type avait été réalisée à Paris début 88. Les conclusions, présentées à la Conférence de Stockholm (abstract n° 6543), indiquaient le rôle important des JOP pour diffuser et maintenir de nouveaux comportements sexuels à moindre risque .De même, cette enquête avait fait apparaître trois grands groupes de participants selon l'âge et la sérologie. L'étude actuellement en cours devrait valider ces résultats, noter les évolutions, mettre en évidence les différences éventuelles entre deux pays ayant des traditions et des politiques de prévention différentes.

T.D.P.48

T.D.P.49 PSYCHOSOCIAL REACTIONS OF MEN WHO ARE CARERS FOR HIV-INFECTED PEERS AND MEN WHO ARE HIV-ANTIBODY POSITIVE.

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Objectives: (1) To describe and compare the psychosocial reactions of HIV-antibody positive gay men and gay men involved in providing care to their HIV-infected peers in three Australian cities. (2) To contrast these responses to those of two groups of men, one with non HIV-related illness and one with no major illness. (3) To examine the implications these findings have for the development and implementation of counselling and support services for carers and HIV-infected men.
Methods: Content analysis scales are applied to transcriptsof the men's interviews to secure measures of distress, anxiety, depression, uncertainty, anger and helplessness, together with their better experiences of competence and sociability as well as general positive emotion.
Results: (1) The psychosocial reactions of gay men showed considerable consistency acrossthe three Australian cities. (2) The HIV-antibody positive men and the carers react differently from both the ill and well men, but their reactions are very similar to each other. Depression is most common for the HIV-antibody positive men, followed by the experience of anger. Depression is also common for carers. However, perceived competence is also high for both the antibody positive and carer groups.
Conclusions: Caring for people with HIV infection can be distressing and demanding The psychosocial reactions of individual carers needs to be examined in order to develop adequate support structures for them. Methods of counselling and support used with HIV-antibody positive men should be examined when developing interventions for carers. The perceived competences retained by carers and HIV-infected mensuggest these strengths should be fostered in developing counselling.

T.D.P.51 DEFENSE MECHANISMS AND HIV RISK RELATED BEHAVIORS IN SUBSTANCE ABUSERS

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Despite the clinical importance of understanding a patient's defensive structure, little attention has been devoted to the role of defense mechanisms in the intrapsychic structure of substance abusers and the relationship of defenses to HIV-related risk behaviors. In this study, substance abusers were administered the Defense Mechanism Inventory (DMI) and the Risk Behavior Inventory (RBI). The DMI measures five defense categories - Turning Against Object (TAO), Turning Against Self (TAS), Reversal (REV) Principalization (PRN) and Projection (PRO). The RBI elicits demographic and HIV-related risk information such as sexual activities, needle sharing and drug-related risk activities. The sample studied consisted of 29 substance abusers hospitalized for detoxification from heroin and cocaine addiction. Results showed that despite an adequate knowledge fund of AIDS prevention and risk reduction information, the patients reported substantial risk related behaviors on the RBI. Evaluation of the DMI data indicated that the patients scored highest on the REV defense, followed by PRN, PRO, TAO and TAS respectively. PRN and REV, which represent intellectualization and denial defenses, may play a significant role in the interpersonal dynamics of continued involvement in substance abuse and contingent HIV-related risk behaviors. Clinical and health education implications of providing treatment services and AIDS prevention information to substance abusers is discussed.

T.D.P.53 RETENTISSEMENT PSYCHOLOGIQUE DE L'INFECTION A VIH SUR LA RELATION DE COUPLE.

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L'étude des facteurs psychologiques qui perturbent la relation d'un couple stable a été effectuée auprès de 40 patients séropositifs et SIDA, hospitalisés. A partir d'entretiens semi-directifs et de questionnaires auprès du patient et de son partenaire habituel, les auteurs ont trouvé que les facteurs de risque psychologique sont corrélés avec la situation affective et sociale du couple antérieure à l'annonce de la séropositivité au VIH.

Dans la majorité des couples, homosexuels et hétérosexuels, la séropositivité est annoncée par le patient au partenaire, alors qu'elle est gardée secrète vis-à-vis des parents (tout au moins au début de l'infection) et plus encore vis-à-vis des enfants. Le mode de contamination sexuelle est en règle non évoqué ou tenu secret dans la relation de couple hétérosexuel (mécanisme de protection du couple, systèmes de loyauté). On observe une plus grande stabilité du lien dans le couple homosexuel. En cas de rupture à cause de la séropositivité, peu de couples se sont reconstitués ultérieurement. Le lien affectif supplée à la réduction notable des pratiques sexuelles, à l'exception du sous-groupe des couples dont l'un des partenaires ou les deux sont toxicomanes. Les particularités de ce sous-groupe sont analysées par rapport aux comportements du couple vis-à-vis de la prévention de l'infection par le VIH.

T.D.P.50 PSYCHOLOGICAL INTERVENTIONS IN THE TREATMENT OF PERSONS WITH AIDS, ARC & ASYMPTOMATIC HIV INFECTION.

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Objective. To report on the use of Neuro-Linguistic Programming (NLP) in the treatment of HIV infected persons and the consequent beneficial effects on quality of life and clinical status.
Methods. The approach is based on psychoneuroimmunology (PNI), the study of the complex bidirectional interactions of consciousness (psycho), brain and central nervous system (neuro), and the body's defense against desease (immunology). The NLP model of human behavior provides a behavioral technology for changing beliefs and attitudes correlated with immunosuppression, as well as for learning the coping strategies that characterize long term survivors of AIDS and other life threatening illness. The asymptomatic group participated in a 2 1/2 day workshop, persons with AIDS or ARC were seen individually (from 4 to 16 hours each).
Results. The preliminary results (follow-up period of 6 to 24 months) indicate substantial increase in self-reported quality of life, changes in life style and livivng/working situations, weight gain, decrease in number and intensity of symptoms and infections, elimination and/or substantial decrease in number and intensity of side effects from drug treatments.
Conclusion. Because of lack of control with respect to other treatments it is not possible to isolate the effects of NLP. Nevertheless, the timing and extent of many changes was impressive and not merely coincidental. Given that it has no harmful side effects, NLP offers an effective strategy in the treatment of AIDS and ARC and in the maintainance of health in asymptomatic HIV infected persons

T.D.P.52 PROCESSUS D'ADAPTATION A LA MALADIE DE PERSONNES ATTEINTES DU SIDA

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En raison de l'absence de traitement efficace à ce jour, il paraît essentiel de promouvoir le bien-être des personnes atteintes du SIDA.
Objectif. Décrire le processus d'adaptation à la maladie des personnes atteintes du SIDA.
Méthodes. Une étude descriptive de type transversal s'est déroulée dans un centre hospitalier universitaire de Montréal auprès de 50 sujets, la moitié au stade primitif et les autres, au stade progressif avancé. Les variables étudiées ont été: les perceptions des sujets vis-à-vis la sévérité des pertes (questionnaire élaboré), leurs stratégies adaptatives (échelle de coping, Billings & Moos, 1984) et l'état psychologique (échelle de bien-être, Kovess et al. 1985).
Résultats. I. Les pertes d'ordre physique sont celles perçues le plus sévèrement. II. Les stratégies adaptatives orientées vers la recherche d'information sont celles les plus utilisées. III. La sévérité des pertes éprouvées influence de façon statistiquement significative l'utilisation des stratégies d'évitement. IV. Les sujets qui ont les meilleurs scores de bien-être utilisent davantage des stratégies orientées vers la recherche d'information et ils ont moins recours à des stratégies d'évitement. V. Les sujets qui sont au stade progressif-avancé de la maladie perçoivent plus sévèrement les pertes d'ordre social que ceux au stade primitif.
Conclusion. Les efforts déployés par les sujets pour composer avec les pertes subies ont des répercussions profondes sur leur intégrité psychologique.

T.D.P.54 DIFICULTIES IN THE MANAGEMENT OF AIDS PACIENTS AND INFECTED PEOPLE IN BRAZIL

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Objectives: To identify the problems health professionals have in dealing with AIDS patients and infected individuals.

The managment of AIDS patients and infected individuals in a hospital, out-patient clinics, home care facilities or work place have brought convulsive responses from health professionals in Brazil. The main responses were the following: irrational fear, arrogance, refusal to provide medical care, impotence, lack of solidarity and discrimination. These responses brought a crisis on the management of patients on both in-patient and out-patient basis and led us to develop and implement a training course and counseling services. The methodology used in the training was role-play. From 480 health professionals evaluated, 90% (432/480) showed improvement on the level of knowledge, change in perceptions and attitudes towards infected individuals, AIDS patients, and themselves.

T.D.P.55

PSYCHOLOGICAL CORRELATES OF THE TRANSMISSION AND ACCEPTANCE OF RUMORS ABOUT AIDS

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Objective. To identify the emotional and cognitive factors that underlie the transmission and acceptance of widely disseminated rumors about AIDS, and to determine the prevalence and degree of belief in the rumors. Rumors were expected to thrive in an atmosphere of anxiety and uncertainty.
Method. A questionnaire, which listed current rumors about AIDS, was completed by 229 college students. Items were designed to explore the relationship between apprehension, doubt, AIDS-related changes in behavior, and rumor-specific anxiety, importance, and uncertainty as correlates of self-reported frequency of rumor transmission and degree of rumor belief.
Results. Stepwise regression analyses revealed that the best predictive equation of frequency of rumor transmission included rumor-specific anxiety and behavior change ($R=.50$, $p<.001$); rumor-specific anxiety, importance, and expectation of AIDS-related personal consequences best predicted belief in rumors ($R=.75$, $p<.001$). Rumor-specific credulity was related to AIDS uncertainty ($r=.30$, $p<.001$) and rumor transmission ($r=.37$, $p<.001$). Overall uncertainty about AIDS and rumor transmission were related ($r=.15$, $p<.05$).
Conclusion. Rumor-specific anxiety appears to be the strongest predictor of rumor transmission and credulity. Tendencies to transmit anxiety-provoking rumors are likely to accompany AIDS-related behavior change, perhaps to justify the change or reduce post-decisional dissonance. Anxiety-provoking rumors perceived as important and personally consequential are most likely to be believed. Reduction of anxiety in AIDS education campaigns is advised.

T.D.P.57

HELP-SEEKING FOR AIDS-RELATED CONCERNS: A COMPARISON OF GAY MEN WITH VARIOUS HIV DIAGNOSES

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Objective. To examine psychological distress levels and help-seeking patterns among four groups of gay men (AIDS diagnosed, HIV seropositives, HIV seronegatives, men unaware of their HIV status) and assess the helpfulness of different sources used (peers, family, professional helpers).
Methods. 574 gay men who participated in the 1987 wave of the AIDS Behavioral Research Project completed questionnaires regarding help-seeking, HIV status, AIDS-related worry, anxiety and depression.
Results. Respondents reported high anxiety, depression and a high degree of help-seeking. Men diagnosed with AIDS and seropositives reported the most AIDS-related worry and were the most likely to seek help. Peers were the most widely sought help-source and perceived to be the most helpful. Helpfulness of peers was correlated with less anxiety and depression. Family members were least likely sought and perceived as least helpful.
Conclusions. Peers serve as the primary and most effective help-source for gay men confronting the AIDS crisis. Community programs are needed to promote the helping abilities of peers, prevent burn-out among peer helpers and provide alternative help sources for men who lack supportive peer networks .

T.D.P.59

EVIDENCE OF FRANK COGNITIVE IMPAIRMENT AND DEPRESSION APPEARING INDEPENDENTLY OF WALTER REED STAGE

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Objective. To provide descriptive information on levels of depression and global cognitive functioning in HIV positive males at a military medical center.
Methods. A retrospective review of psychological test data was conducted. Scores on a standard depression scale (Zung) and cognitive test (Shipley-Hartford) are presented, and these were examined in relation to the patient's stage of infection in the Walter Reed Classification system.
Results. Descriptive data are presented in tables. Of 254 patients, 27% scored in the clinically depressed range, and a frequency analysis of these showed no relation between walter reed stage and number pf patients with a depressed score. Using a Shipley-Hartford CQ of less than 80 to indicate cognitive decline, 15% of 256 patients evidenced such a change. Frequency analysis revealed no relation between Walter Reed stage and CQ.
Conclusion. Patients in both early and late stages of HIV infection are subject to depression and cognitive impairment, and substantial numbers of patients in all stages had normal scores. Professionals should not assume either normality or dysfunction of a patient's psychological status on the basis of information on stage of infection alone.

T.D.P.56

THE STRESS OF CARING: DIMENSIONS OF STRAIN AMONG INFORMAL AIDS CAREGIVERS

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Objective. To identify the dimensions of stress experienced by gay men caring for friends or lovers with AIDS. Methods. Qualitative interviews were conducted with 20 informal caregivers. Interviews were taped, transcribed and analyzed for stress-related content. Structured questionnaires were administered to an additional 30 respondents. Results. Three broad dimensions of stress were identified: 1) Primary Caregiver Strains that arise directly out of the demands and responsibilities of the caregiver role; 2) Secondary Strains that develop in other areas of the caregiver's life because of the intrusion of caregiving demands; and 3) Intrapsychic Strains resulting from the caregiver's own fear of contracting AIDS, the attenuation of his social network because of AIDS-related deaths, and the anticipated loss of an intimate relationship. Several sub-components within each of these general dimensions of stress have been identified. The types of coping strategies used to deal with these stressors will also be presented. Conclusion. While caring for the AIDS patient in the community has humanitarian benefits for the patient and economic advantages for society, it is not without costs. The informal caregiver is often left to contend with a great number of intense stressors. The importance of incorporating the needs of informal caregivers into public health policy is evident.

T.D.P.58

SHORT-TERM MEMORY (STM) CAPACITY DECLINES AS A FUNCTION OF AIDS DEMENTIA COMPLEX (ADC) SEVERITY

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Objective. To assess STM capacity as a function of clinical severity of ADC. Although memory failure is a frequent complaint in ADC patients the bases for such complaints have yet to be determined.
Methods. STM on a free recall task was examined in a group of 89 patients at various stages of HIV-1 infection. Patients were rated according to cognitive impairment based on a standard neurological history and examination: 50 (unimpaired), 21 (mild) and 18 (moderate to severe). STM capacity was measured by determining the mean number of items recalled from STM in the Auditory Verbal Learning Test (Waugh, NC and Norman, DA. Psych. Rev., 89-104, 1965).
Results. STM declined as a function of cognitive impairment [$F(2,86) = 8.30$, $p<.001$]. Whereas the decline was modest in patients with mild impairment (7%), it was more pronounced in patients with moderate or severe impairment (42%). The decrease in STM correlated with other neuropsychological measures of ADC: timed gait ($r=-.34$), grooved pegboard ($r=-.43$), and trail making A and B (-.46), but not with measures of psychiatric distress.
Conclusions. STM decreases as a function of increased severity of ADC. This decline reflects diminished cognitive capacity but because of the role of attention in STM, it is unclear whether the reported results represent a true memory deficit. The extent to which this decline affects cognitive functioning warrants further investigation.

T.D.P.60

ATTRIBUTIONAL STYLE AND DEPRESSION IN HIV-RELATED ILLNESS

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Objective. To examine the incidence of self-reported depressed mood in a group of ARC and AIDS patients and the relationship of attributional style to mood state.
Method. Thirty subjects (AIDS, n=10; ARC, n=20) were administered the following tests: MMPI-168, Beck Depression Inventory (BDI) and Attributional Style Questionnaire (ASQ). The subjects' ages ranged from 22-62 with a mean and median of 42 years and a mean education of 14 years.
Results. Elevated depressed mood was found for the total sample on both the depression scale of the MMPI-168 ($M=64.33$, $SD=16.44$) and the BDI ($M=14.83$, $SD=10.20$). Although both groups reported significant depressed mood on the MMPI-168 depression scale (AIDS, $M=70.80$, $SD=14.76$; ARC, $M=61.10$, $SD=16.62$) and mild to moderate depressed mood on the BDI (AIDS, $M=15.10$, $SD=9.47$; ARC, $M=14.70$, $SD=10.79$), no significant differences were found between the groups on these measures. A significant positive correlation was found between the ASQ and MMPI-168 depression scale ($r=.49$, $p<.006$) and the BDI ($r=.49$, $p<.006$).
Conclusion. Elevated depressed mood was observed in a sample of ARC and AIDS patients and a significant positive relationship was found between internal, stable and global explanations for negative events and self-reported depression. Attributional style may be an important factor in the manifestation of depression among patients presenting with HIV-related symptoms, and the implications of this will be discussed.

T.D.P.61 HIV-1 PATIENTS' SELF-REPORTED COMPLAINTS OF MEMORY FAILURE AND THEIR RELATIONSHIP TO ACTUAL MEMORY PERFORMANCE

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Objective: To evaluate the relationship between HIV-1 patients self-reported memory complaints and their actual performance on formal tests of memory.
Methods: 123 untreated HIV-1 patients at varying AIDS Dementia Complex stages were evaluated with the Neuro-AIDS Study Group neurological history, examination, and neuropsychological battery. Patients also completed a self-report scale of memory complaints [Memory Assessment Clinics, Inc.], which provides scores on two general factors: (1) ability (ABIL) to perform a variety of everyday memory tasks and (2) frequency (FREQ) with which lapses in performing such tasks occur.
Results: ABIL and FREQ factors were strongly correlated with each other (r=-.64, p<.001), and with the number of memory complaints elicited from neurological history (ABIL: r=.-45, p<.001; FREQ: r=.50, p<.001). ABIL score was lower (t=3.17, p=.002) and FREQ score higher (t=3.12, p=.002) in patients with mild to moderate symptoms of ADC. Only the ABIL score was mildly correlated with performance on formal tests of memory (with Verbal Learning, r=.20, p=.009; with Visual Retention, r=.16, p=.08) or tests with a memory component (with Verbal Fluency, r=.22, p=.01). The FREQ factor was most strongly correlated with mood (r=.51, p<.001) and general psychiatric symptom (r=.56, p<.001) ratings.
Conclusions: Complaints of impaired memory ability are mildly related to actual decrements in performance. The frequency of reported lapses, however, is strongly related to the intensity of mood/psychiatric disturbance.

T.D.P.63 EMOTIONAL STATES IN RELATION TO IMMUNE FUNCTION IN A COHORT OF MALE SEXUAL CONTACTS OF MEN WITH HIV DISEASE.

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Objective: To explore the relationship of emotional states and laboratory measures of immune function.
Methods: Men with prior homosexual contact with an individual with HIV-related illness were recruited without respect to emotional state for a study of HIV status, risk behaviour, clinical status, and immune function. 155/161 (96.2%) men without AIDS completed the Profile of Mood States (POMS) for at least one quarterly visit in one year. 6 POMS scales X 12 immune function measures = 72 possible significant ($p<0.05$) correlations.
Results: POMS scale scores did not differ between HIV+ and HIV- men. For HIV- men, 1 POMS/immune function pair was correlated at visit 1 (N=47) and 2 different pairs were correlated at visit 2 (N=42). For HIV+ men, 5 POMS/immune function pairs were correleated at visit 1 (N=99) and 19 pairs were correlated at visit 2 (N=78); unexpectedly, greater emontional distress was associated with better immune function on all correlations.
Conclusion: In this long-term study of homosexual men, greater emotional distress was not associated with deterioration in immune function measures commonly used to monitor progress of HIV infection.

T.D.P.65 HIV INFECTION AND NEUROPSYCHOLOGICAL STATUS IN ASYMPTOMATIC HEROIN ADDICTS

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Objective: To analyse the area of visuo-spatial reasoning and verbal memory in HIV+ compared to HIV- and to observe if there is any relation between these two neuropsychological functions and HIV seropositivity.
Methods: 201 IDAs admitted to a detoxification unit were tested from January 87 to December 88.
The psychometric tests used were: The Raven's Standar Progressive Matrices for the area of visuo-spatial reasoning (IQ equivalent) and the WAIS Digit Span subtest for the auditive memory area ("T" score).On days 1 and 11 after admittance at the detoxification unit, patiens were tested with the Digit Span; on the 7th day by the Raven.
Results: 143/201 (71.14%) of patiens had HIV antibodies (EIA test) and 58/201 (28.86%) had not. The age was 25.66 ± 4.16 years and the time of addiction was 69.33 ± 35.77 months: 74.81 ± 32.52 m in HIV+ and 55.81 ± 39.91 m in HIV- ($p<0.001$). 78.5% had only primary schooling level and in 74.6% of cases social status was middle-low or low. Abuse of other drugs was high, but not significative, in both groups. 31.3% of the HIV + obtained an IQ<25 percentile in the area of visuo-spatial reasoning. The Digit Span showed no differences, between the two days of testing, and finding the same evolution in both serostatus.
Conclusions: There were not significative differences in the visuo-spatial reasoning and auditive memory areas of both seropositives and seronegatives . Nevertheless, it exists a decreased visuo-spatial reasoning in a third of the cases that does not seem related to HIV serostatus, in asymptomatic IDAs. Therefore, factors as low school level , abuse of other drugs and long-term heroin adicttion could explain these findings.

T.D.P.62 QUALITY OF LIFE OF PERSONS WITH AIDS/ARC.

Donald Ellerman, Health Planning Consultant and Mark Smith, University of Pennsylvania, Philadelphia, PA, USA.

Objective: To document and quantify the effects a diagnosis of AIDS has on ones life.
Methods: All persons diagnosed with either AIDS or ARC (PWAs) were surveyed in the metropolitan Philadelphia area. A mail-return survey method resulted in 90 completed surveys of a total documented population of 523 PWAs. The survey was distributed through health care and social service networks.
Results: The survey produced evidence for a cycle of impacts on PWAs of diagnosis leading to illness, to loss of employment, to loss of health insurance, to loss of financial security, and all these to mental stress. Average monthly income declined from $1885 before diagnosis to $885 afterward. Health care dominates PWAs' lives; they spent a mean of 5.9 hours per day on their personal medical care, paperwork and extra hours sleeping and made an average of 6 visits per month to health care facilities. Overall quality of life is standardized on a scale from 0 to 10 using Spitzer's Quality of Life Index. The mean for PWAs is 6.8. Spitzer reported means of 7.1 for cancer patients and 7.3 for chronically ill persons.
Conclusion: A diagnosis of AIDS leads to significant impacts on employment, finances, mental health, daily living and overall quality of life which can be documented and quantified.

T.D.P.64 PERSONALITY DISORDERS AND HIV INFECTION IN HEROIN ADDICTS

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Objective: To test the hypothesis that personality disorders can favour some risk practices for HIV infection in intravenous drug abusers (IDAs), through the analysis of psychometric scales and factors, in a hospital detoxification unit (HDU).
Methods: 201 asymptomatic IDAs (156 males and 45 females) underwent personality tests (Eysenck's EPQ, Catell's 16PF and MMPI) without knowledge of their serological HIV status in a HDU from January 87 to December 88. Factors such as schooling level, prison, social status, daily heroin doses, use of other drugs and time of parenteral addiction were also studied.
Results: 143/201 (71.1%) had HIV antibodies (EIA test) and 58/201 (28.9%) had not. Average of parenteral addiction was 69.33 ± 35.77 months: 74.81 ± 32.52 m in HIV+ and 55.81 ± 39.91 m in HIV- ($p<0.001$). There were not any differences in sex, age, daily heroin doses, use of other drugs and prison (49.3%). The seropositive group tended to psychoticism (EPQ-P scale) but we did not find differences in the other four scales (Neuroticism, Psychoticism, Extraversion and Lie scale).
Two factors of the 16PF questionnaire: Suspicious ($p<0.01$) and Shrewd ($p<0.01$), were related to seropositivity for HIV infection.
In spite of a tendency to a psychopathological deviance (Pd) in the HIV+ group, MMPI test showed no significative differences in none of the 10 scales.
Conclusions: Personality disorders with the exception of Suspicious and Shrewd factors, do not seem to be related to the HIV infection in IDAs. Co-factors as long-term addiction and low socioeconomical status contribute to the main risk factor -sharing needles- for HIV infection in IDAs.

T.D.P.66 PSYCHOLOGICAL FACTORS PREDICTING DISTRESS AFTER HIV TESTING

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Objective. To identify individuals at risk for distress after HIV testing.
Methods. When 264 physically asymptomatic subjects voluntarily sought HIV antibody testing, three hypothesized predictors of distress were assessed: 1) perceived social support,(Interpersonal Support Evaluation List, ISEL); 2) hardiness,(Hardiness Questionnaire, HQ); 3) attributional style,(Health Attributional Style Questionnaire, HASQ). Distress was concurrently assessed by the Beck Depression Inventory (BDI), State/Trait Anxiety Inventory (SAI, TAI), and Brief Symptom Inventory (BSI). The distress measures were readministered 9 weeks later, after notification and one of three psychoeducational interventions.
Results. Zero-order correlations (initial) and partial correlations (follow-up; controlling for effects of serological status and intervention):

	Initial (N=264; 28% HIV+)				Follow-up (N=167; 28% HIV+)				
	BDI	SAI	TAI	BSI	BDI	SAI	TAI	BSI	For all
ISEL	-.55	-.44	-.54	-.42	-.43	-.46	-.57	-.53	coefficients
HQ	-.59	-.51	-.66	-.57	-.35	-.34	-.50	-.41	p<.001
HASQ	-.52	-.54	-.56	-.42	-.30	-.28	-.43	-.37	

Conclusion. Perception of social support, hardiness and attributional style were strongly associated with distress before HIV testing and predict distress 9 weeks later. They may be useful assessments to identify patients for preventive psychosocial interventions.

T.D.P.67 PSYCHOLOGICAL AND SOCIAL FUNCTIONING IN A COHORT OF HOMOSEXUAL MEN AT RISK FOR AIDS

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Objective. To describe mental health and social functioning in a cohort of gay men at risk for AIDS.
Methods. 414 members of the Chicago Multi-Center AIDS Cohort Study (MACS)/Coping and Change Study (CCS) completed each of six biannual, self-administered questionnaires between 1984 and 1988. General mental health is determined by the Hopkins Symptom Check List-58 (HSCL), including 5 subscales (somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression and anxiety) and a total score. Depression is also measured by the single adapted Diagnostic Interview Scale (DIS) question and 5 questions from the Center for Epidemiologic Study Depression Scale (CES-D). (High correlations were found between measures.) AIDS-specific mental health is determined by 3 sub-scales: AIDS worries, negative emotions about AIDS, and impairment of social functioning due to AIDS. Suicidal ideation is measured by a single question.
Results. While mean HSCL and CES-D scores were stable across the 6 assessments, AIDS-specific distress increased at each time point. The HSCL scores for the cohort were somewhat elevated above general population norms but considerably below psychiatric outpatient norms. HSCL depression and anxiety greater than one standard deviation above the general population mean in at least 3 of the 6 waves were experienced by 42.2% and 35.8% of the sample, respectively. According to the DIS, 13.4% of the sample experienced a week-long depressive episode within the 6 months preceding each of the 3 waves in which the question was asked. While 54.9% of the sample never had thoughts of ending their life, 18.8% had experienced suicidal ideation during 3 or more of the 6 waves. General and AIDS-specific distress decreased with age. Income has a positive effect only on general feelings of well-being, having no effect on AIDS-specific concerns. Seronegatives had a lower AIDS-specific distress scores.
Conclusion. Although the mean level of psychological distress in this group is somewhat elevated over the general population, it is remarkably stable over time. These results are consistent with a coping strategy which successfully compartmentalizes AIDS-specific distress for most men, but also suggest an important minority experience significant depression.

T.D.P.69 Beyond information provision as a Technique for HIV Education

A study of the psychological determinants of young offenders beliefs about HIV.

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Objective

To identify targets for education which go beyond the simple provision of information.

Method

Questionnaire measures covering beliefs about HIV together with aspects of Psychopathy, Neuroticion, and ethnocentrism were administered to a representative sample of male youth custody trainees. The data were exploded with corelation and regression analyses.

Results

Results implied a strong non-rational component in young offender beliefs about HIV indicating limits on the likely effectiveness of HIV education.

T.D.P.71 RISK OF ADULT HIV INFECTION AND CHILDHOOD SEXUAL ABUSE

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Objective. To estimate the frequency of heterosexual transmission of HIV infection and to identify risk factors for transmission.
Methods. A population-based prospective cohort study of heterosexually active adults in southeast New England began enrollment in 1988. Information is collected at the first visit and at periodic followup visits on sexual and drug use history and current behaviors by an interviewer-administered questionnaire. Blood is drawn from all cohort members and analyzed for antibody to HIV using ELISA and confirmatory Western blot.
Results. During the first year, 109 women and 106 men have enrolled. To date, 53 women and 38 men have provided information on childhood sexual abuse. A total of 32% of the cohort reported that they had been raped; of those ever raped, the time of first rape was during childhood for 62% of the cohort. Survivors of childhood sexual abuse were more likely to be women (40% of women vs. 21% of men reported rape) and nonwhite (47% nonwhite vs. 29% white). Cohort members were twice as likely to work as prostitutes if raped in childhood than people without this history. IV drug use was also more commonly reported among survivors of sexual abuse (50% IVDU among survivors vs. 37% among those never raped). At entry into the study, 33% of the survivors vs. 21% of those never raped had evidence of HIV infection.
Conclusion. Survivors of childhood sexual abuse may be at increased risk for sexual and drug using behaviors that lead to transmission of HIV infection.

T.D.P.68

Title The Psychological Management of a Care Support Unit for male prisoners with HIV in England and Wales.

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Objective To provide a descriptive analysis of the history and development of a Special Care and Support Unit for male prisoners with HIV in Britain.

This paper focuses on the management of the particular problems faced by inmates with HIV in penal establishments and the role of Psychological counselling in this process.

Method

A Psychologist who functioned as a participant observer was attached to assist in the management of the Unit and to provide counselling and support to both staff and inmates.

Results Lessons for Regime design, anxiety management strategies, are among the results from a participant observation over the 3 years history of the Unit.

T.D.P.70 PSYCHOSOCIAL ADAPTATION AMONG HIV POSITIVE PATIENTS

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Objective. To identify, describe and compare selected aspects of psychosocial adaptation: self-concept, self-esteem, social isolation, and social functioning among individuals infected with human immunodeficiency virus (HIV).
Methods. A comparative descriptive cross-sectional research design was used to assess psychosocial adaptation among individuals infected with HIV. Sixty-three consenting subjects from inpatient and outpatient units within a major medical center located in a large metropolitan area were categorised into one of four groups: (1) asymptomatic (n=10); (2) early stage (n=10); (3) late stage (n=19) and (4) at risk (n=24). Four quantitative instruments were used for data collection: Rosenberg's Global Self-Esteem Scale; Sherwood's Self-Concept Scale; Inventory of Social Functioning and the Dean Alienation Scale.
Results. There were no significant differences among the four groups for the dependant measures of self-concept, F=.309, p=.819; self-esteem, F=.126, p=1.26, and social functioning, F=.260, p=.854. However, asymptomatic individuals (Group I) scored significantly higher on the Dean Alienation Scale, F=3.205, p=.030 than the other three groups.
Conclusion. These results indicate that newly diagnosed patients experience greater alienation during the initial onset of HIV infection.

T.D.P.72 NEUROPSYCHOLOGICAL DEFICITS ASSOCIATED WITH ASYMPTOMATIC HIV INFECTION

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Objective. The hypothesis was tested that central nervous system involvement by HIV infection may begin early in the course of AIDS and may manifest itself with mild neuropsychological deficits already in HIV seropositive otherwise asymptomic subjects.
Methods. 46 seronegative and a representative sample of 54 seropositive subjects were compared on a broad range of cognitive, psychomotor and emotional tests.
Results. Slight decrements in memory verbal fluency and digit span were found in the seropositive group. These differences could not be attributed differences in age, educational level, level of general intelligence or differences in emotional state. Discriminant-analysis predicted 86% of the cases correctly on the bases of neuropsychological tests.
Conclusion. for analysis of the nature of the neuropsychological differences between seronegative and seropositive subjects longitudinal studies are required to further evaluate the possible involvement of the CNS.

T.D.P.73

PSYCHOSEXUAL ASSESSMENT IN AIDS RESEARCH: INTERVIEWER SELECTION, TRAINING, AND MONITORING

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Objective. To describe a program designed to optimize rapport between interviewer and subject and to minimize specific biases in this value-laden and emotionally charged area of assessment.
Method. (1) Interviewer selection; criteria include both general educational requirements and level of comfort in dealing with diverse sexual histories. (2) Desensitization workshops, to familiarize the interviewer with sexual vernacular. (3) Item-by-item review of the sexual instrument. (4) Co-rating of audiotaped interviews. (5) Supervised interview practice with staff members. (6) Supervised interview practice with subjects from the target population. (7) In the field: Coding-review of every interview. (8) Monitoring of interviewer style by audiotape-review of every 7th to 10th interview. (9) Weekly group supervision of interviewers.
Results. Careful selection of interviewers reduces overall training time. The training program facilitates rapport, self-disclosure, etc. Group sessions enhance interviewer motivation.
Conclusion. Overall quality of psychosexual data is enhanced by interviewer selection and training procedures,

T.D.P.74

T.D.P.75

SELF-LABELED SEXUAL ORIENTATION AND SEXUAL BEHAVIOR AMONG WOMEN

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Objective. To describe the relationship between women's self-labeled sexual orientation and actual sexual behavior both since age 18 and since 1980.
Methods. A self-selected sample of women from 34 states completed a questionnaire specifically designed for this study. The instrument included questions examining demographics, sexual behavior with both men and women, and both knowledge and opinions regarding AIDS.
Results. The data suggest that self-labeling of sexual orientation among women does not necessarily correlate with sexual behavior since age 18 or since 1980. In our sample of 262 women who label themselves lesbian, self-labeling of sexual orientation and actual sexual behavior patterns appear to be relatively independent -- 75% of these women had had sex with men since age 18 and 46% had done so since 1980. Thirty percent of the lesbian women reporting sex with men since 1980 had engaged in penile-anal intercourse. Our data also indicate that the likelihood of engaging in anal intercourse is significantly related to the sexual orientation of a woman's male partner. Among lesbian women in our sample, only 23% of those with heterosexual partners engaged in anal intercourse as compared to 45% of those with known behaviorally bisexual male partners.
Conclusion. The labels "heterosexual" and "homosexual" are often presumed to predict the sex of partners, the types of behavior engaged in and in some cases, the overall frequency of sexual activity. Moreover, once a label has been identified, it is accepted as characterizing an individual's lifetime sexual behavior. Like other non-risk-identified groups in our society, lesbian women are assumed to be at minimal risk for infection with Human Immunodeficiency Virus (HIV). Although sexual behavior between women may be an unlikely route of transmission, the danger of assuming that lesbian women or, for that matter men and women of any particular orientation group, are at minimal risk, lies in the erroneous notion that such group designations impose impermeable barriers to sexual interactions.

T.D.P.76

SAFER SEX AMONGST HOMOSEXUAL MEN; MEANING & MOTIVATION.

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OBJECTIVE. To study the motivations and meanings of changing sexual practices amongst men who have sex with men, in response to AIDS.
METHOD. Fifty men were contacted at a gay sauna or through snowball sampling and were interviewed with an unstructured, in-depth approach.
RESULTS. Sexual practices were variable over time and context dependent. Those generally practising safer sex were characterised by one or more of the following: most strongly identifying themselves as gay; concerned to maintain a healthy life-style; close relationship with someone with HIV infection; concerned for health of others particularly their partners.

Those men who tended to participate in "unsafe" sexual practices included those who: were still in the process of "coming out"; saw themselves as sexually inexperienced; lacked social skills or self - confidence to assert their preference for safe sex; younger men who used sex as a means of gaining entry into gay society; older men who were willing to compromise health concerns for sexual availability; men who had broken off a stable relationship and were particularly vulnerable.

Changes to sexual behaviour had usually been made at great cost. Often, safer sex represented a major disruption in social life. Semen exchange was seen by most as "real sex" and therefore giving it up was a significant loss. It appeared that sex was the most important form of communication between these men. Other forms of intimacy were poorly developed.
CONCLUSIONS. Consistency in the practice of safer sex depends upon circumstances, characteristics and context. The extent of the sacrifice required should not be underestimated.

T.D.P.77

VARIABLES INFLUENCING CONDOM USE AMONG INTRAVENOUS DRUG USERS

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Objective: To determine the knowledge, beliefs, attitudes, and behaviors related to the use of condoms among IVDUs. IVDUs are at risk of contracting and/or transmitting HIV through unprotected sexual contact.
Methods: 289 IVDUs attending 3 methadone maintenance clinics in New York City completed confidential standardized questionnaires during 1987-1988.
Results: AIDS risk factors were: sexual activity in previous month (yes=73%); condom use among sexually active (no use=68%); sexual partner(s) injected drugs in past year (yes=33%); intravenous drug use in previous month (yes=41%); needle-sharing in previous month (yes=20%). Multiple logistic regression was conducted for the sexually active subjects to predict their condom use in the previous month (none vs. some). Condom users scored higher on Acceptability of Condoms, e.g., to believe that condoms did not "cut down on my enjoyment" and to be willing to use condoms "if my partner asked me" (Odds Ratio=1.7, 95% CI=1.2, 1.4). Users also scored higher on Receptivity of Partners to Protection, e.g., to believe that their sexual partners would "not be insulted" by requests for condom use or other sexual protections (OR=1.6, 95% CI=1.1, 2.2). Condom users were also more likely to personally know a person with AIDS (OR=1.5, 95% CI=1.2, 2.3) and to be recent entrants to methadone treatment (OR=.84, 95% CI= .73, .96).
Conclusion: IVDUs' willingness to use condoms is significantly determined by specific beliefs and attitudes that could be modified by appropriate health education and cognitive-behavioral interventions.

T.D.P.78

SEXUAL BEHAVIOR SURVEY OF BRAZILIAN MEN THAT ARE CLIENTS OF TRANSVESTITE PROSTITUTES

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Objective. To elucidate the sexual behavior of men that engage in sexual contact with transvestite prostitutes.
Methods. A 20-item questionnaire was applied to 162 men that regularly engaged in sex with transvestites. 150 men were included in the study.
Results. The mean age was 34.01 years. 68% were married or had stable female partners. 3.3% reported homosexual activity in adulthood. None had stable male partners. 97.33% of the subjects identified themselves as heterosexuals and 2.6% as bisexuals. 18% were engaged exclusively in active anal intercourse with the transvestite, 20.67% in passive anal intercourse, and 57.33% in both. 4% did not engage in anal intercourse. 81.33% reported some degree of alcohol or drug use before or during the encounter. 4.6% reported IVDU with the transvestite. 94.67% acknowledged the risk for acquiring some form of STD. None thought that they were at risk for AIDS.
Conclusion. This study demonstrates that transvestite prostitution is an important risk factor for heterosexual transmission in Brazil, as well as, the need for developing specific educational programs for heterosexuals including these aspects.

T.D.P.79

CHILDHOOD GENDER NONCONFORMITY PREDICTS HIV-1 SEROPOSITIVITY IN HOMOSEXUAL MEN

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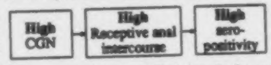
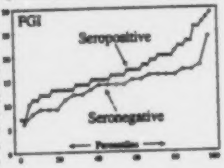


Objective: To determine whether childhood gender nonconformity (CGN, an important variable in gender identity research) is of value in AIDS research. The central hypothesis is that homosexual men with high CGN become disproportionately seropositive for HIV-1, largely due to high levels of receptive anal intercourse (figure above).

Methods: N = 72 homosexual men have been recruited (23 seronegative and 49 seropositive), and completed the Clarke Feminine Gender Identity Scale (FGI). A one-way ANOVA correlated seropositivity with FGI scores. Additional analyses used scoring variations.

Results: FGI scores differ significantly by seropositivity status (figure below). (F = 6.65, df = 71, $p < 0.012$; Fisher PLSD = 2.41, Scheffe F-test = 6.65, $p < 0.05$). *All except one of the men with the highest FGI scores were seropositive.*



Conclusions: The association between FGI and seropositivity is so strong at the high end of the FGI distribution that it might not arise merely by way of the hypothesized intermediate variable. Personality variables as well as behavioral ones may be required. Additional analyses will be reported at the meeting that suggest that FGI may be a good surrogate for receptive anal intercourse experience, and might to some extent mitigate the underreporting of such experience in direct questions. Implications for medicine and sexology will be discussed.

T.D.P.80

SEX AND DRUG PRACTICES IN THE ILLICIT SEX INDUSTRY AS RELATED TO THE SPREAD OF AIDS

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Objective. To assess the sexual practices of prostitutes and their clients with respect to AIDS transmission.

Methods. Information was collected from a total of 169 streetwalking prostitutes contacted on the streets of New York City from 1985 to 1988. (22 in 1985, 43 in 1986, 65 in 1987, and 37 in 1988.)

Results. Of 169 streetwalking prostitutes, 14 (8.7%) were found by ELISA with confirmation by Western Blot to be positive for HIV-1. Of the 22 (13%) of these women who admitted to former or present intravenous drug use, 32% were positive, while among the 147 (87%) women not admitting to intravenous drug use, only 5% were positive. Many of these women reported having lovers who used intravenous drugs.

From questioning about the types of sexual practices, it was concluded that over 70% of the sexual acts performed by streetwalkers are oral. Vaginal sex is performed by streetwalkers only about 20-30% of the time. This is in contrast to brothels where vaginal sex is the most common practice.

Condom use was reported in 1985 by only 50% of streetwalkers; by 1987 almost all reported condom use. In contrast to this, in a parallel study, male clients reported having used condoms only 38% of the time. The men admitted to being inebriated half of the time.

Conclusion. The predominant sexual practices of streetwalkers (manipulation or fellatio), plus a high reported rate of condom use in this group, suggest that streetwalkers are less at risk of contracting AIDS than are prostitutes in brothels, since oral sex carries a lower risk to the recipient than the vaginal or anal intercourses often practiced in brothels. The increased use of "safer" sex practices among participants in the illicit sex industry may be responsible for relatively low transmission of AIDS. Absence of "safer" sex practices by prostitutes with their lovers (as opposed to clients) continues to present a hazard. Also, it is possible that efforts to move prostitutes off the streets could backfire by resulting in an increase in the less "safe" sex practices. Outreach to prostitutes and clients must be a priority in AIDS prevention.

T.D.P.81

CONDOM USE AMONG HETEROSEXUAL MALE IV DRUG USERS IS AFFECTED BY THE NATURE OF SOCIAL RELATIONSHIPS.

Sotheran, Jo L.*, Friedman, S.R.*; Des Jarlais, D.C.**; Engel, S.D.***; Weber, J.****; Rockwell, R.*, et al.
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Objectives. To describe the extent to which male IV drug users in treatment know that condoms reduce HIV transmission risk, contrast knowledge to actual use, and determine whether characteristics of sexual relationships affect men's condom use with women.

Methods. One hundred fifty-nine men recruited from 3 New York City methadone treatment programs in 1984 and 1986 were re-interviewed with a structured questionnaire in 1987-88.

Results. Of the 159, 137 (84%) had sex with women in the period (mean 23 months) covered by the interview. Of these 137 sexually active men (of whom 2 also had sex with men), 57% (78/137) reported only one sexual partner. While 93% (125/134) knew that condom use can prevent sexual transmission of HIV, only 56% (76/135) of the sexually active men ever used condoms during the interval. Black/Hispanic/White status, education, and number of women partners were not significantly associated with condom use, but the nature of sexual partnerships was. Among the 64 men who lived with a sexual partner, 44% used a condom at some time during the period, compared to 68% of the 71 who did not live with a sexual partner ($p < .005$). The relationship remained significant after controlling for number of partners.

Conclusion. Education about condoms is not necessarily sufficient to promote actual use; the nature of social relationships also affects sexual risk reduction. Condom use among men is less frequent in relationships with more complex interdependence.

T.D.P.82

HIV SEROPREVALENCE AND ITS IMPLICATIONS FOR A TRANSSEXUAL POPULATION

Alan D.L., Guinan, J.J. McCallum, L.
Albion Street (AIDS) Centre, Sydney Hospital, Sydney, Australia.

Objective. To determine HIV seroprevalence and risk factors in pre-operative transsexuals.

Method. Data collected as a routine part of the Albion Street (AIDS) Centre and Outreach programmes screening and follow-up services were collated and reviewed using the clinic's computer database, individual files and personal interviews with transsexual clients.

Results. Preliminary analysis of the data from 58 transsexuals tested indicated that 12 (21%) were HIV infected. Major risk factors were prostitution (75%) and intravenous drug use (46%).

Conclusion. The high HIV seroprevalence and the frequency of HIV risk behaviour in the transsexuals tested indicate the urgent need to direct the attention of ongoing educational and behavioural change programmes to this minority group. The psychosocial implications of denial of the right to sex change surgery on the basis of HIV seropositivity also needs to be addressed.

T.D.P.83

EVALUATION OF SEXUALITY IN HIV INFECTED PATIENTS BY THE WARTEGG TEST.

Longo, Paulo Henrique Pinheiro; Carvalho Neto, L.D. and Morais de Sá, C.A.
Gaffrée & Guinle University Hospital - University of Rio de Janeiro (UNI-RIO) - BRAZIL.

Objective: To observe possible changes in the sexuality of HIV infected patients by sexual transmission, compared to those infected by blood transfusion.

Methods: 30 HIV positive patients were assessed by a non directive archetypal method, this group including 18 (60%) infected by sexual transmission (14 homosexuals and 4 female partners of bisexual men) and 12 (40%) by blood transfusion. The Wartegg test was performed in all infected patients on account of its accurateness and easiness. Through archetypal stimule the patients develop pictures and comments about the subject, eliciting adequate and non adequate responses in 8 different fields. The sexuality field was specifically evaluated and statistically assessed by Chi-Square Test.

Results: Data are apresented in the following table:

SEXUALITY FIELD ALTERATIONS	SEXUAL TRANSMISSION N	SEXUAL TRANSMISSION %	BLOOD TRANSFUSION N	BLOOD TRANSFUSION %	T O T A L
OBSERVED	18	100	5	41,6	23
NOT OBSERVED	0	0	7	58,3	7

$p < 0.001$

Alterations in the sexuality field observed ranged from difficulty in reacting to archetypal stimuli to non adequate responses.

Conclusion: HIV positive individuals (who were) infected by sexual transmission may develop deep changes in their conception of sexuality.

T.D.P.84

AIDS PHOBIA : A CLINICO-PSYCHOANALYTICAL STUDY.

Dr. Gilada I.S., Bhimani G.V., Shah B., Thakur V., Indian Health Organisation, J.J. Hospital, Bombay, India.

AIDS PHOBIA; A state of intense anxiety, crystalized around an obsessional idea of suffering from AIDS, which is precipitated by an actual sexually transmitted disease or an illicit sexual contact and which may lead to a gradual deterioration of the personality. It may or may not be relieved through reassurance, insight and information.

This study presents analysis of about 88 cases of AIDS phobia managed by the authors comprising a venereologist and 3 psychiatrists.

During the initial stage of it's spread, AIDS has created generalised anxiety in the population, mainly due to its' difficult clinical management and final outcome. From an initial linking to sexual intercourse, the authors have observed that over a period of time, the cases started associating it with history of any possible mode of spread, stretching it further to any possible mode of spread with minimum risk and also to any illness state that somehow resembles the earlier symptoms of AIDS.

The present study also highlights the issues of Public Education of AIDS. Preliminary contact with the physician, ordering of diagnostic tests for AIDS, and myths and misconceptions shrouding the dreaded disease and patient education.

Session d'affichage
Poster Session

Le SIDA et l'individu
AIDS and the Individual

T.D.P.85

ATTITUDES AND BEHAVIORAL RESEARCH FOR AIDS.

Dra. León, Guerra, Casco et. al.
Minister of Health, Central University, School of Profesional Psychology of Pichincha, Quito - Ecuador.

OBJECTIVE: To know the attitudes and sexual behaviors of the population towards AIDS, to plan and form health programs and education of this disease.
JUSTIFICATION: While the HIV Virus expandes uncontrollably up the scale of the worldy population, because of the lack of medication, vaccines, information and education, the process of change of attitudes and sexual behavior is very slow in relation with sexual promiscuity and AIDS.
Ecuador is a country in the absence of the elementary support of basic resources for the scientific investigation unable us to carry out the plans, programs of sexual education and AIDS.
HYPOTHESIS
- The stereotype, attitudes and sexual behaviors are very negative in the examplairy stratus.
- No sificant differences in the study of thefacts, stereotypes, attitudes and sexual behaviors determined by the following variabies: sex, age, educational level and geographical region.
METHOD: Scientific investigation by means of the observation of field research or by means of inquiry.
The investigation is underway.

Auspice: International Development Research Centre - Canadá.

Les adolescents
Adolescents

T.D.P.86

LE RISQUE DE CONTAMINATION PAR LE VIH DANS UNE POPULATION DE JEUNES EN PSYCHIATRIE

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Objectifs. 1)Décrire des jeunes (16-25 ans) hospitalisés en psychiatrie, 2) Mesurer les corrélations entre les facteurs de risque et les facteurs de risque supposés du groupe en les comparant à ceux d'une population de référence (963 étudiants représentatifs, étudiés dans un autre travail), 3) Etudier les relations entre ces facteurs de risque et les effets de la pathologie psychiatrique,sur la transmission du VIH.
Méthodes. 1) Echantillon : 180 patients hospitalisés en institution psychiatrique pour étudiants. La passation garantit un strict anonymat, 2) Auto-questionnaire : 175 items, déjà utilisés dans une étude précédente sur la population évoquée ci-dessus, permet de repérer les représentations, attitudes, comportements en relation avec la sexualité, la maladie, le SIDA,l'information sur le SIDA, la prévention, le niveau de connaissances sur les préservatifs, MST, SIDA et évaluer la fréquence des facteurs de risque, 3) Tris à plat, croisés, tests de significativité des résultats.
Résultats. Par rapport à la population de référence, ces patients ont des rapports sexuels complets moins nombreux, des facteurs de risque plus élevés, certains de ces facteurs reliés à la pathologie psychiatrique, permettant de proposer des éléments préventifs à introduire dans la prise en charge.

T.D.P.87

TARGETING AIDS INFORMATION AT SEXUALLY ACTIVE 15-17 YEAR OLDS

Barbara Jones*, Heidi Liepold*, Shane Lunney**,CANADA

The Canada Youth and AIDS Study provides a national information base on what youth think, know and do about sexual behaviour, AIDS and STDs.

Building on this Study, this project provides a comprehensive approach to reaching sexually active teens through vehicles of their choice - national television, rock video, and music. Reinforcement of the information and messages disseminated in the half hour television program are reinforced directly to youth through available rock video and accompanying hit-tune recordings, posters and print material and as well through a well designed school marketing and delivery program.

National focus testing of scripts and messages allows for consideration and identification of regional differences.

* Federal Centre for AIDS
**Shane Lunney Productions

T.D.P.88

PEER EDUCATION IN ADOLESCENT AIDS PREVENTION EXPERIMENTAL PHASE

A Bunde-Birouste*, D Guillemot*, D Jayle*
*APS Association pour la Prevention du SIDA, Paris, FRANCE

Objective To offer AIDS related peer education training in a limited number of schools in order to evaluate its feasibility and the types of activities possible prior to designing and implementing an extensive pilot project
Methods APS (l'Association pour la Prévention du SIDA) has been active in training adults as AIDS-educators since early 1987 The majority of the AIDS educators trained are involved in youth-related work (teachers, youth workers, school doctors/nurses etc.) To date more than 800 AIDS educators have been trained thoughout the country Noting a high level of motivation on the part of certain young people, APS decided to to implement a formal study of peer educator training The approach of using peer educators is completely innovative in France - it had never before been attempted, in any subject area Thus, rather than immediately establishing a protocol, APS organised pilot peer education activities in 10 different establishments in order to gain an understanding of the realities and problems prior to designing the in depth study Following an extensive training period, each group of young people, working in collaboration with their respective adult AIDS educator and APS, designed original prevention projects for their peers Projects developed by the peer educators include radio broadcasts, theatrical productions, video tapes, poster and comic strip contests, information stands and classroom interventions.
Results Although a formal quantitative evaluation was not performed as this was the pilot phase of project development, qualitative analysis is currently underway, the results of which will be available in May 1989
Conclusion Although the evaluation is in process, preliminary reactions to this approach of AIDS education for adolescents are quite positive APS receives more requests for this type of program than it can handle The association will implement a state-wide peer education pilot program durning 1989

T.D.P.89

IMPACT OF ADOLESCENT HEALTH MESSENGERS' AIDS PREVENTION PROGRAM ON PEERS AND ADULT RELATIVES IN THE DOMINICAN REPUBLIC

De Moya, E. Antonio; Brea de Cabral, M; Guerrero, E; Domínguez, L; Buttler, M.
PROCETS, Ministry of Public Health, Santo Domingo, Dominican Republic.

Objective. To describe the joint Ministries of Public Health/Education, Instituta of Sex Education and PROFAMILIA approach to adolescent AIDS prevention - through peer sex education messengers at schools and communites.

Methods. Discussion of the conceptual framework of adolescent AIDS prevention program, pre/and post intervention CAP studies, and appropriate educational technology evaluation studies at public and private schools.

Results. Relatively widespread unacknowledgement of STD/AIDS in 1985 has shifted to adolescents' eagerness to participate in school/community preventive action. AIDS related CAPs among teenagers show a much more positive stance and a high morale to face the epidemic. Spontaneous reverse transmission of AIDS preventive culture from adolescents to their parents and other adult relatives is consistently reported.

Conclusion. Adolescents' increasing active participation in the AIDS struggle has shown to be most effective not only for conveying educational contents to their peers at schools and local communities, but to their parents and other adult relatives as well.

T.D.P.90

GENERAL AND PERSONALIZED KNOWLEDGE OF AIDS AMONG ADOLESCENTS

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* HIV Center for Clinical and Behavioral Studies, New York State Psychiatric Institute and Columbia University, New York, NY, USA
** Hetrick Martin Institute, New York, NY, USA

Objective: To develop reliable and valid measures of general knowledge of AIDS and positive attitudes towards safer sex and drug use behaviors. Methods: Focus groups, interviews, reviews of the literature, consultations with advisory boards regarding content and reading level, and preliminary item-analysis of questionnaires were conducted to construct a 61-item test of general knowledge of AIDS and a 41-item assessment of attitudes towards safe sex. These scales were administered to 95 runaways, 60 high school students, and 30 gay male youths. The samples were similar in ethnicity (30% Black; 40% Hispanic), SES (poor), and age (X=16). Results: The internal consistency of the scales was high (Cronbach's alphas over .84) and test-retest reliability using 46 runaway and gay youths was over .7 across a week. Overall, general knowledge of AIDS was high (74% correct), with gay youths (79% correct) being better informed than nongay youths (72%), particularly on means of transmission and HIV testing. Adolescents reported high personal efficacy and very positive attitudes towards safe acts (74%). Knowledge was not significantly associated with positive attitudes. Conclusions: Adolescents have basic knowledge regarding AIDS and report very positive attitudes towards safe behaviors on questionnaire measures. These positive attitudes and intentions stand in contrast to youths' abilities to implement safe acts and reports in focus groups.

T.D.P.91 INFLUENCE OF PERCEIVED REFERENT-GROUP NORMATIVE BEHAVIOR ON ADOLESCENTS USE OF CONDOMS

DiClemente, Ralph; DuNah, R.
University of California, San Francisco, California, USA.

Objective. To identify the correlates of adolescents' condom use during sexual intercourse.
Methods. A school-based sample of sexually active adolescents (N=229) completed self-report questionnaires assessing their knowledge, attitudes and frequency of condom use.
Results. Analyses assessed the relationship between demographic factors, AIDS-specific knowledge, perceived susceptibility, age at onset of sexual intercourse, number of sex partners, and perception of referent-group normative behavior on frequency of condom use. Perception of referent group normative behavior was identified as the only factor which significantly differentiated adolescents who use condoms from those who do not. Approximately 81% of adolescents who perceive referent-group norms as supporting condom use during sexual intercourse were frequent condom users; while, in contrast, only 47% of the adolescents who perceived referent-group norms as supporting unprotected sexual intercourse were condom users (PR=1.7, 95% CL=1.3-2.3, P=0.000).
Conclusion. Adolescents who perceive referent-group norms as supporting condom use are almost twice as likely to use condoms during sexual intercourse. Modifying adolescents' perceived referent norms may result in increased condom use.

T.D.P.92 DIFFERENTIAL EFFECTS OF AIDS KNOWLEDGE AND PERCEIVED SUSCEPTIBILITY ON THE REDUCTION OF HIGH-RISK SEXUAL BEHAVIORS AMONG COLLEGE ADOLESCENTS

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* University of California, San Francisco, California, USA
** Planned Parenthood of California, USA.
*** Vassar College, Poughkeepsie, New York, USA.

Objective. To evaluate the relative effect of AIDS knowledge and perceived susceptibility to HIV infection in promoting AIDS-preventive behavior change among sexually active adolescents.
Methods. A national sample of 1,129 undergraduates, ages 18-23, completed a self-administered questionnaire assessing knowledge about AIDS-prevention behaviors, attitudes about AIDS (perceived susceptibility to HIV infection) and prevalence, type and frequency of sexual behaviors and condom use.
Results. Behavior change was not associated with level of AIDS knowledge while perception of susceptibility to HIV acquisition was strongly associated with reduction in high-risk behaviors.

Behavior Change	Knowledge (%)				Perceived Risk (%)			
	High	Low	PR	95% CL	High	Low	PR	95%CL
increase condom use	37.3	38.6	1.0	0.8-1.2	44.1	32.5	1.4	1.1-1.6
decrease partners	30.8	35.0	0.9	0.7-1.1	38.3	28.3	1.4	1.1-1.7
decrease anal sex	9.7	10.7	0.9	0.4-1.9	10.1	10.3	1.0	0.5-2.1
decrease oral sex	8.3	13.2	0.6	0.4-1.0	15.3	6.9	2.2	1.4-3.6

Conclusion. Perceived susceptibility to HIV is a more powerful mediator of risk-reduction behavior change in this population.

Counseling
Counselling

W.D.P.1

HIV PARTNER NOTIFICATION WITHIN AN ANONYMOUS TESTING SYSTEM

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Objectives. To describe HIV partner notification in an anonymous testing system.
Methods. This paper discusses North Carolina's HIV partner notification program; outlines protocols and procedures; highlights advantages and disadvantages; and examines problems and strategies to resolve them. North Carolina requires reporting of AIDS cases meeting the C.D.C. surveillance definition, but not other cases of HIV infection. All 100 local health departments offer anonymous as well as confidential testing for HIV infection. In early 1988, a unique statewide HIV partner notification system was developed to assist infected persons in meeting newly established legal obligations to notify sex and needle-sharing partners and to increase their opportunities for additional counseling and referrals. The program offers clients three options for notifying partners: 1) meet with an HIV counselor who will notify and counsel partners confidentially; 2) complete and mail to the AIDS Control Program a form identifying partners so an HIV counselor can notify partners; 3) notify partners themselves. The infected person may remain anonymous under all three options.
Results. Preliminary data on the partner notification program suggests cooperation by HIV-infected persons. In the first seven months 70 forms were received, counselors interviewed 89 HIV antibody positive persons, and notified and counseled 143 partners. This program encourages participation of HIV-infected persons by allowing them to maintain anonymity. Other studies have indicated that offering HIV services anonymously fosters cooperation of those who fear discrimination. Specific problems encountered include: quality of information obtained via mailed forms, inability to notify partners of anonymously tested HIV-infected persons who do not return for test results, and provider skepticism about patient participation leading to ineffective referral for partner notification.
Conclusions. Despite certain problems, HIV partner notification can be effective in a system where HIV is not reportable and anonymity is maintained.

W.D.P.2

INTENSIVE HIV COUNSELLING FOLLOWING SEROSTATUS NOTIFICATION IS ASSOCIATED WITH A LOW DIVORCE RATE IN 122 SERODISCORDANT ZAIRIAN MARRIED COUPLES

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Objective. To prospectively observe the impact of an HIV counselling program on the psychosocial and marital status of 122 discordant Zairian married couples (one member HIV(+), the other HIV(-)=DC).
Methods. During a serosurvey of 12,000 employees and their wives at 2 Kinshasa businesses, 122 DC (67 M+F-, 55 M-F+) have been identified and followed monthly since being jointly informed of their serostatus (total follow up time=83 couple-years of observation). When a DC's marriage was threatened or when one or both DC members experienced severe depression, suicidal intentions, violence, or severe anxiety (psychological distress=PD), a female nurse, trained in HIV counselling, made multiple (average 5/DC) home visits.
Results. Seventeen DC(14%) (7 M+F-, 10 M-F+) developed PD requiring intervention. The remaining 105 DC accepted their serostatus following clinic-based counselling. Of the 17 DC with PD, 5 separated temporarily and 2 divorced. There were 3 threatened suicides (2 HIV(+)women, 1 HIV(+) man). Inability to ever again conceive children because of the necessity of practicing protected sex (F+ DC) and fear of the women's family that her husband would infect her (M+ DC) were common sources of PD.
Conclusions. There was wide initial concern that serostatus notification of DC in a patriarchal society would lead to high divorce rates particularly when the female was the seropositive individual. However, intensive home counselling has resulted in divorce in only 2 (1.6%) of 122 DC followed for at least 6 months. The counselling has also alleviated considerable PD.

W.D.P.3

RECENTLY ACQUIRED SEXUALLY TRANSMITTED DISEASES (STD) IN HOMOSEXUALS WITH HIV-INFECTION

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Objective: Several studies have shown, that risky behaviour of homosexuals can be reduced by counseling. However, no data on recently acquired STD in homosexuals with HIV-infection exist.

Methods: We have assessed the number of recently acquired STD in our outpatient clinic (internal medicine). The influence of STD on immunological parameters was studied.

Results: In 1988 we have seen 228 HIV-patients in our clinic (64% homosexuals, 23% i.v. drug users, 1% hemophiliacs, other or unknown riskgroup: 10%). All patients were repeatedly counseled about risky sexual behaviour and the possibility of transmitting the virus. Six of 147 homosexuals (4%) have been diagnosed with recently acquired STD, among them 2 with gonorrhea, 3 with syphilis and 1 with hepatitis B. All patients admitted that at least at one occasion safer sex was not practised because of HIV-infection of the partner (5 patients) or the conviction everybody practising homosexual sex nowadays must be aware of contracting HIV-infection (1 patient). In 1987 no STD was seen among 134 homosexual patients attending the clinic. In 3 patients with recently acquired STD evaluation of lymphocyte subsets revealed activation of T-cells (up to 56%).

Conclusion : Recently acquired STD demonstrate that counseling efforts were not effective in 4% of our patients with HIV-infection. The necessity of safer sex has to be emphasized not only to prevent spread of HIV but also to reduce probability of disease progression to AIDS if both partners are HIV-infected.

W.D.P.4

"DISCUSSING THE DO NOT RESUSCITATE ISSUE WITH THE AIDS PATIENTS"

Madera, Inez, R.N., B.S.*, Laviena, Luis, PhDC**, de Caprariis, P.J., M.D.*, Stehney, M., M.D.*, Stiles, J., M.P.H.*
*Sunset Park Family Center of the Lutheran Medical Center, Brooklyn, N.Y., USA

Objective: This paper was prepared to help establish when is the most appropriate moment to discuss death and dying issues with AIDS patients.

Methods: A physical and psychological status assessment is implemented on all patients. This evaluation establishes critical periods to discuss the death and dying issues as well as the do not resuscitate procedures. Standardized instruments are used to objectively assess their physical and emotional state.

Results: The hospitalization period is not the ideal setting to discuss DNR. In an ambulatory setting, utilizing a case management team helps the patients deal in a more effective way with the bereavement process associated with this disease. AIDS affects not only the person but the person networks therefore the family systems and other significant figures need to be included in this process.

Conclusion: Once they are involved in this multidisciplinary approach they become more knowledgeable of their disease. While having the cognitive, physical and emotional strengths they are in a more comfortable and clear state of mind to make responsible decisions on DNR. A global view of the patients' state provides the clinical staff with an adequate knowledge as to when to address such a sensitive issue.

W.D.P.5

AIDS RISK ASSESSMENT (ARA) AND COUNSELING BEHAVIORS OF PRIMARY PHYSICIANS IN COMMUNITY MEDICAL CENTERS.

Laux, Lila; Coverdale, J. and Aruffo, J., Thornby J., and Vallbona, C. Baylor College of Medicine, Houston, Texas, U.S.A.

Objective. To describe ARA and counseling behaviors of primary care physicians.
Method. This study surveyed 37 out of 40 primary care physicians treating adult patients in the Harris County Hospital District System of Community Health Centers. They are responsible for the health care of over 90,000 low income largely minority patients. Ninety-seven percent had previously replied that no one in the centers had discussed AIDS with them.
Results: Physicians believe (1) that they should provide AIDS information to patients, (2) that AIDS education is effective in reducing the spread of AIDS, and (3) that their own patients are at significant risk of AIDS. However, they report that they are counseling only 1 in 10 of their patients about AIDS transmission. We also asked physicians how comfortable they felt when asking patients about their sexual practices and drug use. Ninety-five percent reported feeling comfortable giving information about AIDS but a substantial proportion of them (27%) said they were uncomfortable asking the personal questions that need to be asked to assess AIDS risk.
Conclusion: Interventions aimed at increasing the ARA and counseling behavior of physicians must be developed and must include desensitization with regard to sexual history taking.

W.D.P.6

AIDS RISK BEHAVIORS AND AIDS BELIEFS IN HIV SEROCONVERTORS

Dunphy, C., Wood, R., & Krueger, L. AIDS Prevention Project, Seattle-King County Department of Public Health, Seattle, WA, USA 98101.

Objective: To describe behaviors and beliefs among HIV seroconvertors compared to non-seroconvertors.

Methods: We compared alcohol and drug use, intended and actual HIV risk behaviors, reasons for having sex, beliefs about impact of AIDS on the community, and beliefs of self-efficacy in implementing safe sex behaviors in 10 members of a Longitudinal Cohort Study for men who have sex with men who HIV seroconverted while in the study with 900 men who didn't seroconvert.

Results: HIV seroconvertors were significantly more likely to: stop having safe sex with a partner after having sex with him a few times; feel partners would object to using a condom; have partners who use condoms less frequently; feel it is not getting easier to find partners who enjoy safe sex; and have less accurate HIV knowledge.

Conclusion: Clients who reveal these beliefs, behaviors and partner choices and who have low HIV knowledge may be important to counsel more intensively.

W.D.P.7

MANAGEMENT OF PSYCHOLOGICAL DISTRESS: A HOSPITAL BASED "MUTUAL AID" SUPPORT GROUP FOR HIV SEROPOSITIVE MEN

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Center for Special Studies, New York Hospital-Cornell Medical Center, New York, N.Y., USA

Objective. To decrease psychological distress and increase social support and the exchange of medical and treatment information, an innovative "mutual aid" support group for HIV seropositive men was created.
Methods. A support group consisting of nine seropositive men led by a trained facilitator met for one and one-half hour weekly sessions for ten weeks. In the "mutual aid" support group format two types of support occur: (1)a non-threatening, non-judgemental milieu structured by a facilitator fluent in group therapeutic technique and (2) a peer support model for group-generated topic preference, permitting the group to identify and process self-selected issues at their own pace.
Results. Two forms of self-report ratings were utilized in evaluating the intervention's efficacy. Informal, anecdotal reporting by group members on a weekly basis indicated a general decrease in emotional distress and an increase in social contacts. A written evaluation after ten weeks of group indicated improved affect, increased adjustment to serostatus, increased social support, increase in current knowledge of medical and treatment information and a desire for continued group interaction.
Conclusion. This unique hybrid of psycho-education, peer support, group therapy and crisis management increases adjustment to a traumatic psychological event: HIV seropositivity. This group has proven so effective that group members have determined the need for continued meetings beyond the proposed ten week period. This model is efficient in the hospital outpatient care setting using minimal staff resources while maximizing patient well-being.

W.D.P.8

THE NEED FOR COUNSELLING OF HIV TESTED INDIVIDUALS IN A RURAL POPULATION OF UGANDA.

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Objective: To determine the demand for HIV serological results among serosurvey subjects in a rural Ugandan population.
Method: The Uganda AIDS Control Programme has implemented a longitudinal study of HIV related knowledge and behaviors, and of HIV serological trends in rural Rakai district. A baseline knowledge, attitudes and practices (KAP) and serological survey was conducted on consenting adults in 21 randomly selected rural and 9 trading center clusters. Plans call for repeated KAP and serological survey rounds.
RESULTS: Preliminary results indicate 72% of adult study subjects stated they wished to know their serostatus. 81% knew there is no cure for AIDS, 60% knew of a period of latency between infection and illness, 83% knew of sexual transmission. Survey team members were approached by individuals asking to know their serostatus.
CONCLUSIONS:Demand for serological results in this population was high. Baseline knowledge of characteristics of the illness was also high. The information is being used to design a counselling program for survey clusters, which will permit persons to learn their results in a confidential and culturally appropriate manner. The special circumstances of serosurvey subjects will be considered in developing counselling in this non-clinical setting. The researchers consider a counselling program essential for program creditability and for the success of repeat visits for data and blood collection.

W.D.P.9

PSYCHOSOCIAL ISSUES PRESENTED BY SELF IDENTIFIED BISEXUAL MEN WITH HIV CONDITIONS

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Memorial Sloan-Kettering Cancer Center, New York City, U.S.A.

Objective: To examine the lifestyle consequences and related psychosocial issues confronting bisexual and gay men with HIV conditions.

Methods: A study of 35 HIV positive (30 with AIDS) bisexual men, aged 26-64, who were seen in individual counseling by a social worker as part of standard patient services and 38 gay men with AIDS, aged 24-61, who completed a structured interview with a social work researcher. Data collected from 8/86 to 12/88.

Results: Both groups were similar on educational, racial and religious background and occupational groupings. Groups differed on marital status (63% of bisexuals were currently or previously married compared to 13% of gay men) and parental status (41% of bisexuals had children vs. 3% of gay men). Prior to their learning their HIV status, only 11% of currently married bisexuals told their wives of their bisexuality and only 8% of bisexual fathers had told their children. However, 39% of bisexuals have told family members about their HIV status and 73% of those who have AIDS have told their family. Of the gay men 76% of their immediate family know about their status.

Conclusions: A major task confronting bisexual men is that of the disclosure of their condition and lifestyle. Mental health professionals need to develop specific strategies for assisting them in communication about these issues.

W.D.P.10

PSYCHOSOCIAL ISSUES PRESENTED BY TRANSFUSION ASSOCIATED HIV INFECTED ADULTS AND THEIR FAMILIES

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Objective: To identify psychosocial issues of transfusion associated HIV condition in infected adults and their families.

Methods: 15 patients (5=HIV/10=AIDS), ages 30-92, transfused for: cancer-related treatments (3), cardiovascular surgery (5), trauma (3), other medical conditions (3), sexual contact with a transfused spouse (1). Information drawn from individual, family, and group counseling sessions and team meetings with physicians.

Results: Common themes reported by patients and their families: intense anger with medical community and blood banks, mistrust of health care providers, feelings of victimization, lack of identification with other HIV patient groups and need for control of their medical care. Male patients reported concerns of being labeled homosexual. Fourteen patients and families expressed anger at the gay community and reluctance to utilize community AIDS organizations. Of 8 married couples, 7 have since abstained from sexual relations.

Conclusions: Special circumstances of transfusion associated HIV infection require psychosocial interventions that are specifically designed to diminish feelings of isolation, enhance communication with family, health care professionals and physicians; and provide a way to manage anger and mistrust.

W.D.P.11

A REVIEW OF HIV COUNSELING IN AN INNER CITY UNIVERSITY HOSPITAL.

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Objective: To review HIV counseling procedures in an inner city university hospital.
Methods: Review of HIV counseling policy in effect 9/87 - 1/89 at Johns Hopkins University Hospital. Pre-test counseling and informed consent was the responsibility of the medical ordering the HIV test. Patients with positive or indeterminant Western blot results were to be referred to the hospital HIV counselor for post-test counseling. No policy is in effect for counseling patients with negative HIV results.
Results: Between September 1987 and January 1989, 4350 HIV tests were performed. Of these, 510(12%) were ELISA and Western blot positive: 47(1%) were ELISA positive and Western blot indeterminant. HIV infection risk factors: 36% intravenous drug use (IVDU), 7% gay/bisexual man, 4% sexual partner of a person at risk, 2% transfusion. No risk factor was identified in 48% of patients testing positive/indeterminant. Of 557 patients with positive/indeterminant tests, 329 (59%) were referred for post-test counseling. Counseling sessions include basic education in HIV infection, safer sex practices, cleaning IV drug needles, ending with the counselor making a determination what psychologic and/or medical follow-up is necessary. The remaining patients testing HIV+, being followed by either an inpatient service or an out-patient clinic, will likely receive some form of informal counseling from their care provider. Although most patients testing HIV positve/indeterminant received some post-test counseling, this represents only 8% (329/4350) of patients undergoing HIV testing.
Conclusion: This HIV test counseling program was effective at reaching most HIV positive/indeterminant patients. Since there is no policy for counseling HIV- patients, those at continued risk of infection may not get adequate counseling. HIV counseling should not only be based on test results, but on the patients risk factor as well.

W.D.P.12

COUNSELLING TRAINING - CURRENT NEEDS: AN EVALUATION OF AIDS COUNSELLING TRAINING COURSES LOOKING AT CHANGE AND CONTENT.

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OBJECTIVE:- To examine the changing needs for training over time and to assess current course content, demand and efficacy.
METHOD :- Training of health care staff has been carried out since 1985. All participants are questioned before and after courses. A Random sample is followed up for long term data. This study examines change over time and current course needs.

RESULTS :- AIDS and HIV Counselling training has changed in focus, content and style over time. This is in response to new information, needs, demands and essentially different audiences who require training. A shift has been noted over three years. Initially front line workers were involved. Their needs were informational and they required a validation of counselling need, approach and technique. Counselling has now become accepted and attenders tend to be more entrenched role staff. Training has moved towards skills based needs. Early anxieties about contact with AIDS and HIV individuals has now been replaced with worries about basic counselling skills. Skills training is more lengthy and requires active participation. Role play, contracts, group work and the use of video techniques are discussed.
CONCLUSION :- Training demand is high and needs constantly change.

W.D.P.13

HIV PRECIPITATED LIFE CRISES: LIFE ENHANCING AND CONSTRICTING RESOLUTIONS

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Objective: To trace the sequence of major life issues precipitated by acquiring HIV infection; to describe the different meanings patients give those issues in resolving them; to study the impact of those resolutions.
Methods: Regular psychiatric follow-up of HIV infected individuals is part of the USA Army's HIV program. Psychotherapy by the author, emphasizing reframing of troubling issues, occurred at all stages of infection.
Results: The meaning each person gives to issues effects his life. Acute HIV issues are: 1. the meaning of the HIV test, e.g., "AIDS, dying, no future, kill myself," which usually shifts to "infected, not-diseased, a future, live. " 2. Will others be "fearful, condemning, rejecting" or "fearful, but caring, interested?" 3. The meaning of HIV for their sexual and social life, for their expectancy, for their career goals in life. Longer term issues arise from confronting the issue of death. Given limited time, what really do I want to do and be?" Frequent changes are: (1. From being one's body to just having a body. 2.) From life being about "making it," to being about loving, caring, living in the present, insisting less on one's way and accepting more how things are,) leading to "peace," greater self expression, contributing to others.
Conclusion: These patients are not "dying" but actively living, dealing with issues often avoided or denied. Some give to those issues meanings which constrict participation, relationship, aliveness. More give meaninfs which enhance the quality, e.g. loving, peacful, enjoying the moment.

W.D.P.14

EVALUATION OF A PSYCHOTERAPEUTIC PROGRAM IN HIV SEROPOSITIVE SUBJECTS

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Objective. To evaluate the response of seropositive subjects to a preestablished psychoterapeutic individual program planned with the patient's participation.
Method. 60 HIV seropositive asymptomatic men (average age= 30 yrs) were assigned to 3 groups (20 homosexuals, 20 bisexuals and 20 heterosexuals). 15 % had had a stable sexual partner (sp) for at least a year before treatment. After their knowledge of the positive result, an individual psychotherapeutic plan was established with them (40 sessions, 45', 2 x wk). Free association psychoanalytic technique was employed to favor the appearance of conscious and unconscious fantasies associated to HIV infection and to influence the acceptance of seropositivity and its personal, family, work and couple implications through the interpretation of unconscious contents.
Results. 95% of patients inhibited active sexuality for fear of damaging and/or destroying their sp, specially those with a stable relationship, regardless of sexual orientation. All cases verbally expressed hostile feelings to whom they considered source of their infection to the therapist but did it indirectly with the sp because of fear of being abandoned. Fights with friends and sp increased. 75% presented alteration of sleep cycle and/or nightmares, loss of appetite, sadness and careless general appearance as signs of depression. 60% of patients reinitiated active sexual life, making use of safe sex techniques. 50% of cases continued expressing hostile feelings which were generalized to other areas of their life. No difference was found between the groups.
Discussion. The knowledge of infected status in this group originated reactivation of previous psychopathology. An increase in paranoid and depressive features was detected. Sexual activity was reinitiated and promotion of preventive measures was successful.

W.D.P.15

HIV COUNSELING AND TESTING IN NEW YORK STATE (NYS) SEXUALLY TRANSMITTED DISEASE (STD) CLINICS

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Objective. To provide HIV counseling and education for a high risk population, and to determine the HIV-ab seroprevalence (ELISA, WB) of those requesting testing.
Methods. Persons in 18 NYS counties who received HIV counseling at STD clinics from 1/88 through 10/88 were interviewed for demographics, risk factors, and STD history.
Results. Of 3451 persons receiving counseling and eduction, 3045 (88%) chose to receive an HIV-ab test; the proportion choosing confidential testing was essentially the same as those who chose anonymous (51 v. 49%). Of the 97% (2953/3045) with available data, 133(4.5%) were WB+. Those tested were predominately male (62%), never married (66%), white/non-Hispanic (70%), self-identified as heterosexual (85%), and 25 to 34 years old (42%); 14% admitted IV drug use. Those who had been previously tested (500, 17%) were more likely to be HIV+ (10 v. 3.4%). Those HIV+ but not previously tested were more likely to be older (33 v. 31 yrs.), male (80 v. 60%), non-white (41 v. 28%), Hispanic (13 v. 4%), or to have ever had an STD (61 v. 43%), especially syphilis (16 v. 3%), then those HIV-. Over 69% of those HIV- and not previously tested had at least one HIV risk factor; 63% said they had an intimate partner at risk. Those previously tested and HIV+ were more likely to use IV drugs (25 v.11%), have multiple (7 v. 2) or unknown (10 v 4%) sex partners, or ever have had syphilis (29 v. 16%), than those HIV+ but not previously tested.
Conclusion. A large percentage of STD clients choose confidential HIV testing if available. Persons previously tested differ markedly from those tested for the first time.

W.D.P.16

HELPING HIV MOTHERS AFTER THE BIRTH OF THEIR BABIES. "A COUNSELLING OUT PATIENT CLINIC".

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There is an increasing number of newborn from HIV mothers. Actually, the transmission of the virus can be diagnosed when the baby is between 6 to 12 months old or even older. It is for the mother a period of anxiety which may have consequences on mother/infants' interactions. We propose a "Counselling out patient clinic"open to all HIV mothers being informed before, during pregnancy or after birth that her baby may have been or not infected. It is not a medical or psychiatric counselling. The aim is to authorize these often very young mothers, isolated without any maternal or grang-maternal pattern to ask "simple" or "natural" questions about their babies' pre-occupations: the way it is developping, eating, sleeping. Are they doing well? The setting the counselling situation will give us the possibility of observing the mothers in interaction with their babies in different situations as: playing, eating, nursing, etc. We will analyze the part of the child in the interaction, the attention capacities of the mother to her baby's need, the fantsmatic interactions. We will, also, analyze if the characterisitc of the child at birth, the announcement of the possible infection induce specific interactions or an interactif dysfunctionnement. This programm has 2 aims. 1° Prevention and therapeutic. For the child: prevention of developpmental for the mother: prevention of depression, relapse of drug-addition;

W.D.P.17

EVALUATION OF A MEDITATION AND HYPNOSIS-BASED STRESS MANAGEMENT PROGRAM FOR MEN WITH HIV

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Objective. To investigate the efficacy of an 8 session stress management program based on mindfulness meditation and self-hypnosis training for homosexual men with HIV infection and related illness. Methods. A group-based program, taught in 8 weekly 2 hour sessions, was offered to men with HIV-related psychological distress. The following techniques were taught (in the order listed): abdominal breathing; mindfulness meditation -- basic technique and variants; stretching exercises; and self-hypnosis for relaxation, improved mood, and enhanced health. The following dependent measures were given: POMS, Basic Personality Inventory, checklists of medical and psychological symptoms; and 2 measures of hypnotic responsiveness (SHCS:A, CHEQ).
Results. The program has been offered to 3 groups of patients with N = 4, 11, and 8, respectively. Outcome data from group 1 indicate a reduction in measures of psychological distress and enhanced sense of control and enjoyment of daily activities. Results from the 2 groups in progress (N = 19) will be presented at the poster session. Conclusions. Preliminary results suggest that the program can significantly reduce HIV-related psychological distress. Data from the larger sample will permit stronger conclusions.

W.D.P.18

THE EFFECTS ON PARENTS OF HOSPITALISATION OF AIDS PATIENTS.

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Objectives. To identify and highlight the problems experienced and reactions of parents whose son is hospitalised with an AIDS related illness. To provide a link between parents and care givers as well as offering ongoing counselling and support services.
Method. Parents were interviewed by a Research Nurse on two occasions; on average approximately 1 month after hospital admission and 6-10 months later. Parents were questioned regarding reactions to sexuality, perception of illness, mental state, networks of care. This identifies any changes in attitude or reactions to the death of their son.
Results. 23 patients consented to their parents participation. 31 parents were interviewed with an average age of 62.3. A majority were resident in London and were prepared to care for their son at home. 21/31 felt that they had benefited from discussion of their sons illness especially on first hearing of an AIDS diagnosis. Just under half stated that they were regular church or synagogue attenders; few had told their priest or rabbi of their sons diagnosis. 19/31 knew of their sons sexuality prior to learning of an AIDS diagnosis. These parents were better able to accept or cope with an AIDS diagnosis than those who were unaware of their sons lifestyle.
Conclusion. Discussion of their sons diagnosis and early intervention of support personnel is beneficial to the majority of parents. Proximity to centres of care is influential in parents decision to care for their son in a home setting.

W.D.P.19

COUNSELLING HIV ASYMPTOMATIC PATIENTS FOR AZT MRC/INSERM DRUG TRIAL

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Objective. To describe an approach and method for counselling asymptomatic HIV infected patients being considered for the MRC/INSERM Zidovudine (AZT) drug trial.
Method. Structured interviews of patients were carried out at intervals of pre-enrolment, enrolment, at 3 months and thereafter 6 monthly. Hypothetical, future-orientated questions were used. Some issues addressed were the extent of knowledge about AIDS and how entering the trial influenced the perception of having HIV. Content analysis of patients' responses were made.
Results. Patients who entered the trial after counselling had improved their understanding of HIV and AIDS and had more realistic expectations. Problems were anticipated and identified at an early stage. Those who had to stop were better prepared. There was less denial about having HIV, opening up discussion of many issues with relatives and others. There was more preparation for an emphasis on HIV infection rather than AIDS. Younger patients wanted AZT.
Conclusion. Counselling about drug trials is an essential part of patient management. It has an important effect on the number of patients entering and complying with the protocol. Clinical staff report a greater ease in counselling in relation to other fears which patients may have.

W.D.P.20

LACK OF IMPACT OF HIV COUNSELLING ON WOMEN WITH STD CHECKUPS TO ALTER THE LIKELIHOOD OF SUBSEQUENT STD VISITS.

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Objective. To assess the impact of HIV counselling on risk for subsequent STD.
Methods. Ninety-one volunteer women were enrolled in a prospective seroprevalence survey of HIV infection. These women, visiting a clinic because of suspected STD were matched to all non volunteer women (184 controls) seen for STD checkups on the same initial enrollment date.
Results. A survey of all women requesting STD checkups at the clinic showed no difference in risk behaviour and age, for study subjects and controls. The rate of first return visits for STD checkups revealed no difference between the group who received standard counselling for STD vs. the group who received specialized counselling for HIV over an 11 month period (p=0.47). However, there was a more rapid rate of first return visits for STD checkups in the initial two months for the control subjects, but by 6 months, both groups had a 50% probability of return. A subset of women in both the study and control group had multiple visits for subsequent STD checkups and confirmed STD's
Conclusion. The effectiveness of specialized HIV counselling to alter behaviour among these women in a core area family clinic was not documented. Further studies are required to evaluate specialized HIV counselling.

Minorités
Minorities

W.D.P.21

RACIAL/ETHNIC DIFFERENCES IN COHORTS OF GAY/BISEXUAL MEN AND RECOVERING ADDICTS: IMPLICATIONS FOR AIDS PREVENTION STRATEGIES

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Objective. To examine educational and sociocultural variations in perceptions of risk, behavioral history and social support systems related to the spectrum of HIV-related disorders among Blacks, Latinos and Whites.
Methods. Two cohorts of participants in AIDS educational programs in New York City during 1988 were surveyed. The first cohort was comprised of 157 gay/bisexual men (13% Black, 24% Latino and 63% White) surveyed in three Manhattan gay bars. Data were collected during a two-hour period on a designated night in each bar. The second cohort was comprised of 107 participants of Project HEART, a 6-session AIDS-prevention educational program in three sites of two drug-free therapeutic communities (TCs). The TC residents were of mixed gender (65.4% male), primarily heterosexual (79.6%) and ethnically diverse (51% Black, 22% Latino, 27% White). TC residents were surveyed at the beginning of the program and at its termination (six weeks later). Data regarding perceptions of HIV-related risk, sexual and drug-related history, and measures of social support were collected from both cohorts. Additional information regarding social support, self-esteem and life satisfaction was gathered from the TC residents.
Results. Analysis of variance results are indicated below.

	Bar Cohort		TC Cohort	
Variable	F	p	F	p
HIV-related knowledge	12.57	<.0005	4.96	.01
Salience of health	*	*	3.96	.02
Informational support for AIDS	*	*	6.02	.004

* Not asked of bar participants

For both cohorts, Whites performed significantly better than their Black and Latino counterparts. When education was controlled, these differences were upheld. In the bar sample, Chi-square analysis revealed that significantly more Whites sought AIDS-related information from friends than did either Blacks and Latinos. Further, gay Whites were more likely to rank insertive oral and anal sexual behavior as less risky than receptive oral and anal sexual behavior and were more likely to engage in insertive behaviors than their Black and Latino counterparts.
Conclusions. The data indicate that Whites who participated in AIDS educational programs were better informed about HIV-disease than either Blacks or Latinos. Further, Blacks and Latinos report less support for their concerns than Whites. Finally, gay White men were more likely to engage in unsafe sexual behavior if they perceived their personal risk to be relatively low. Educational strategies that promote sexual responsibility and strengthen social support systems will be presented.

W.D.P.22

SOURCES OF AIDS INFORMATION AMONG HETEROSEXUAL ASIAN, BLACK, LATINO AND WHITE COLLEGE STUDENTS

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Objective. The research literature on health communications in areas other than AIDS supports a tentative hypothesis that ethnic minority status influences the receipt of health-related communications (Allen, 1981; Allen & Bielby, 1979a, 1979b). The current study sought to evaluate whether or not such effects are also observed in delivery of AIDS-related information.
Methods. Questionnaires were completed by 665 unmarried young adults attending Southern California universities. Subjects ranged in age from 18 to 24 years old (median = 19.0 years). Fifty four percent were women; 46% were men. Forty percent were White, 20% Black, 18% Hispanic, and 17% Asian.
Results. Most subjects indicated television was their primary source of AIDS information, followed by magazines and newspapers. Few subjects had made use of AIDS hotlines or AIDS service centers (< 9%) for AIDS information. Less than 1/4 reported that their families provided information about AIDS. Both Asian (14%) and Latino (14%) subjects were less likely than Whites (25%) to indicate that their family was a source of AIDS-related information. Less than 1/3 of Asians had spoken with a health professional about AIDS in contrast to approximately 45% of other subjects. Overall, Asian subjects reported significantly fewer sources of AIDS information than other subjects.
Conclusion. Results support the hypothesis that ethnic minority status does influence the ways in which young adults receive information about AIDS.

W.D.P.23

Prevention of HIV infection in the mentally impaired, featuring West- Berlin

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Currently, about 12 000 mentally handicapped persons live in West- Berlin.
For one year approximately 400 mentally disabled persons were attended in the context of the community based AIDS preventive activities of the West- Berlin senate. This practice as well as intensive inquiries resulted in the following conclusions:'
At least 50% of the mentally impaired have experienced sexual contact at latest in the middle stage of life. Within this group the range of sexual activities and inclinations resembles that of the general population. Furthermore, frequent sexual assaults are seldom acknowledged by the mentally disabled as what they are and so tolerated.
Concerning mental impairment, sexuality is under taboo. Because of this, group specific AIDS preventive training programs were not developed in the past. The general social and medical informations for the public, however, did not efficiently reach this group.

This situation urgently demands efforts to prevent HIV infection in the mentally impaired.
In case of HIV infections the specific way of life (e.g. accomodation in large institutions) causes particular problems. Our experience shows that in this field measures requiring time and intensive personal contact are usually effective.

Considering the specific limitations, even the severely mentally handicapped may gain a solid knowledge and make use of it.

W.D.P.24

RACIAL AND ETHNIC DIFFERENCES IN HIV SEROPREVALENCE IN SELECTED UNITED STATES POPULATIONS

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Objective. To assess racial and ethnic differences in risk of HIV infection in the United States by reviewing data on seroprevalence and AIDS incidence.
Methods. We reviewed published reports and unpublished results of HIV seroprevalence studies in selected populations. Racial and ethnic differences in HIV antibody prevalence within studied groups were expressed as a ratio of prevalence rates (PRR), using non-Hispanic whites as the reference group. Corresponding ratios of AIDS incidence rates (RR) were based on cases diagnosed in 1988.
Results. Prevalence of HIV infection was higher among blacks and Hispanics than among whites in nearly every group studied, including military applicants (blacks: PRR=6, Hispanics: PRR=3); blood donors in selected regions (black: PRR=12, Hispanics: PRR=3), and patients at sentinel hospitals (blacks: PRR=2, Hispanic: PRR=1). Similar disparities were observed among studied groups of IV drug users (blacks: median PRR=5, Hispanics: median PRR=3), as well as in surveys of childbearing women and patients in several clinical settings. AIDS incidence in 1988 was also higher in blacks (RR=4) and Hispanics (RR=3).
Conclusions. The consistently observed racial and ethnic differences in prevalence of HIV infection have been attributed to differences in the prevalence of high risk behaviors, including IV drug use. However, marked differences in seroprevalence even within groups of IV drug users emphasize the need to describe high-risk behaviors more precisely for prevention.

W.D.P.25

RECRUITMENT, RETENTION AND COMPLIANCE OF MINORITY PATIENTS AND DRUG ABUSERS IN A VA COOPERATIVE STUDY

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Objective: Minorities and drug abusers (IVDA) have been under-represented in some HIV treatment trials. We analyzed their recruitment, retention and compliance in a multi-center VA Cooperative Studies trial of AZT vs. placebo for patients with AIDS-Related Complex.
Methods: Demographic characteristics, risk behavior activities and follow-up (F/U) for scheduled visits of the patients were reviewed. Blood samples were analysed for study drug by HPLC and classified as complaint, non-complaint or indeterminant.
Results: Results are tabulated below: (*=p<.01)

			% STUDY DRUG COMPLIANCE		
RACE OR RISK	#PATIENTS	%SCHEDULED F/U	COMP	NON-COMP	INDETERMINANT
White	131	80.2	92	2	6
Non-White	58	75*	93	3	4
HS (Homosexual)	115	83	92	2	6
IVDA	32	64*	92	4	5
HS & IVDA	16	79*	91	2	7
Blood	5	75	97	3	0
Heterosexual	6	85	94	3	3
Unknown	10	78	92	0	8

Conclusion: Minority patients and IVDA were significantly less likely to return for scheduled F/U. However, they were compliant with taking study medication. These data should be taken into account in considering them for HIV clinical trials.

W.D.P.26

W.D.P.27

CLOSE ENCOUNTERS OF AN UNSAFE KIND: RISKY SEXUAL BEHAVIORS AND PREDICTORS AMONG BLACK GAY AND BISEXUAL MEN

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Objectives: To determine the current high risk sexual behaviors and predictors of those behaviors in a cross-sectional study of Black gay and bisexual men.
Method: The sample consisted of 50 gay and 50 bisexual Black men recruited in 1988 through gay organizations, gay bath houses, parks, personal referrals and unsolicited volunteers in San Francisco, Oakland and Berkeley, California. All respondents were questioned about their unsafe sexual behaviors (e.g. all anal and oral unprotected sexual activity within the last month), AIDS knowledge, attitudes and beliefs.
Results: Compared to gay men, Black bisexual men had a higher total number of sexual partners ($\bar{x}$= 3.9 vs. 5.7, p <.01), a higher percentage of unsafe sex (50 % vs. 78 %, p < .001), including a higher percentage of unsafe sex with primary partners (50 % vs. 78 %, p<.02), and unsafe sex with other partners (60 % vs. 88 %, p < .05). In testing for correlates of unsafe sex for the combined sample, discriminant analyses revealed the following predictor variables significantly discriminated(p < .01) between the respondents who practiced unsafe compared to those who practiced safe sex: self efficacy, enjoyment of sexual activity with partners, close association with persons with AIDS, and media awareness of AIDS.
Conclusion: This study, one of the first to examine non-white gay and bisexual men, reveals high levels of risk behaviors in bisexual men. Prevalence studies and culturally-appropriate interventions are drastically needed among these minority men at high risk for HIV infection.

W.D.P.28

DEMOGRAPHIC PROFILES OF SAN FRANCISCO BAY AREA BLACK AND LATIN AIDS DEATHS, 1985 - 1986

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Objective: To obtain demographic data not currently available from AIDS surveillance statistics for planning intervention strategies for Blacks and Latins in five San Francisco Bay Area counties.
Methods: Vital statistics data were used to identify all Black and Latin deaths in 1985 and 1986 with ICD codes consistent with AIDS-related illnesses. Death certificates were then reviewed to confirm AIDS as the cause of death and abstract demographic data. Addresses of decedents were converted to census tracts.
Results: 223 Black and Latin AIDS deaths were identified. 97.7% were male, living primarily in middle-class neighborhoods. 27.8% died in private residences, 33.2% in public hospitals, and 38.6% in private hospitals. Overall, 71.3% were employed as skilled workers. Blacks in professional and clerical/sales positions were more likely to die in private residences (62.5%) while Latins in those occupations were more likely to die in private hospitals (61.5%). Occupations of most Latins suggest proficiency in English.
Conclusion: In contrast to the underclass profile of minorities with AIDS nationally, data show that, prior to 1985, AIDS was not a disease of disadvantaged Blacks and Latins in the San Francisco Bay Area.These findings are consistent with the nature of the epidemic in San Francisco where white, gay men are disproportionately represented among people with AIDS. Active surveillance, incorporating socioeconomic data, such as that available from death certificates, is necessary for planning targeted regional interventions and tracking the epidemic in minority communities.

W.D.P.29

COMPARISON OF THE KNOWLEDGE, ATTITUDES, AND AIDS-RISK BEHAVIOR OF BLACK AND WHITE COLLEGE STUDENTS IN THE SOUTHEASTERN UNITED STATES

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Objective: To compare the knowledge, attitudes, and risk behaviors of black and white college students in a currently low-AIDS prevalence area.
Method: 395 undergraduate students attending 3 state-supported universities in Mississippi completed measures evaluating AIDS-risk knowledge, prejudice toward persons with AIDS, willingness to interact with PWAs, and self-reported sexual behavior and substance use for the preceeding month. The sample included 212 black and 183 white college students.
Results: 61% of students were sexually active and engaging in practices which pose potential HIV-exposure risk. There were no significant racial differences in the frequency and range of sexual activities. Black and white college students were significantly different in substance use patterns with white students reporting use of both legal and illegal substances significantly more often (p < .001), although white students were better informed about practical aspects of AIDS risk (p < .002). Black students reported less prejudicial attitudes toward persons with AIDS (p < .05). There were no significant differences between black and white students' willingness to interact with a person with AIDS in casual social situations. Multiple regression analyses found no relationship between students cognitive knowledge of AIDS-risk and the frequency with which they personally engaged in potentially risky practices.
Conclusion: The results confirm the need for prevention efforts targeting college students to reduce their present and future vulnerability to HIV infection.

W.D.P.30

AIDS: KNOWLEDGE, ATTITUDES AND SEXUAL PRACTICES AMONG HISPANICS IN CHICAGO-RESULTS OF A 1988 CITYWIDE SURVEY.

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In 1980 Hispanics represented 6 percent of the U.S. population and currently they account for 15 percent of all US. AIDS reported cases.
Objective: To obtain baseline information on Chicago Hispanics on knowledge, attitudes about AIDS transmission, sexual practice and prevention of HIV infection useful for program planning and implementation and for policy formulation.
Method: During the Spring of 1988 400 Hispanic persons 16 years of age and over were interviewed using Random Digit Dialing (RDD) telephone survey.
Results: Most Hispanics have general awareness and basic knowledge about AIDS. However, they have high levels of misinformation about mode of transmission. Many believe that they can contract AIDS through kissing, shaking hands or through toilet seats. Younger people and those with high education know more about AIDS. Youth and single people were found to be more at risk for AIDS due to their sexual practices.
Conclusion: There is a gap between what Hispanics know and what they do. They know that AIDS can be prevented with the use of condom, but most Hispanics do not use them as a mean of protection.

W.D.P.31

PSYCHO-SOCIAL ASPECTS OF MALE PROSTITUTION IN WASHINGTON, DC

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OBJECTIVE: The major objective of this presentation is to describe and analyze the help-seeking characteristics of 70 male prostitutes in Washington, DC. In addition, it will discuss the levels of knowledge, attitudes and safer sexual practices of male prostitutes regarding AIDS.

METHODS: The sample was collected through the use of the "snowball" method on the street of Washington, DC through the researchers' involvement with two community sex education programs. Structured face-to-face interviews and direct observation of informal and formal settings where young street males congregated, were utilized to gather data.

RESULTS: Demographic data will be reported on such variables as age, race, education, employment, family background, living arrangements, onset and duration of prostitution experiences. Significant differences were found between Black and White male prostitutes and between younger and older prostitutes in terms of help-seeking behaviors, mental health status, utilization of services, risk behavior and AIDS awareness.

CONCLUSION: Overall, the majority of the prostitutes sought help; reported poor mental health and worried about AIDS. Suggestions will be made for practice and future research.

W.D.P.32

PULLING COYOTE'S TAIL: AMERICAN INDIAN SEXUALITY AND AIDS-EDUCATION AND PREVENTION IN A CROSS-CULTURAL SETTING

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California, USA

Objective: To illustrate the effectiveness of using traditional legends as a way of understanding Native concepts of behavior and expectations and as a vehicle for doing HIV prevention education among Native people.

Method: The National Native American AIDS Prevention Center has incorporated the use of traditional legends, such as those in which "Coyote" plays a central role in its training on AIDS with both urban and reservation-based communities in the U.S. and Canada. These legends have been combined with slides of "third gender" individuals (whose tribal social roles usually overlap, but do not encompass Western concepts of homosexuality) to discuss how currently available curricula from non-Native sources may not be appropriate in describing same-sex sexual relationships in some tribal communities. Specific examples of successfully adapted Native American AIDS curricula will be provided.

Results: Pre-/Post-test results showed increased understanding of AIDS by participants.
Conclusion: Traditional legends are an effective tool in AIDS education for Natives.

W.D.P.33

AIDS AMONG HISPANICS IN THE UNITED STATES

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Objective. To demonstrate the effectiveness of an outreach intervention model in causing behavioral change within the Hispanic IV drug user community, identified as at risk of AIDS.
Methods. Indigenous outreach workers (ex IV drug users) gave AIDS education, condoms, and bleach to Hispanic IV drug users in San Diego, CA, Laredo, TX, and San Juan, PR. The impact of project intervention was measured by a series of comparative measures on a "before" and "after" set of questionnaires used to interview Hispanic IV drug users in the 3 cities. IV drug users were interviewed about their demographic background, high risk drug and sex behaviors, and their health.
Results. This project demonstrated that it is feasible to implement the indigenous outreach intervention approach to stem the spread of the HIV virus at different sites within varous geographical areas. We gathered a better profile of the IV drug users and their associates in the 3 cities. In addition we saw reported changes in needle use and sexual behavior from the time of the respondent's initial interview until the time of his/her followup interview.
Conclusion. Once implemented, this outreach intervention model is successful in meeting the goal of behavioral change among Hispanic IV drug users in a variety of sites. It is also feasible to employ such an approach with different populations.

W.D.P.34

HIV SEROPREVALENCE AND ITS IMPLICATIONS FOR A TRANSSEXUAL POPULATION.

ALAN, Diana L; GUINAN, J; McCALLUM, L.
Albion Street (AIDS) Centre, Sydney Hospital, Sydney NSW, Australia.

Objective: To identify the incidence of HIV seroprevalence and its implications upon Pre-Operative Transsexuals.
Methods: Data collected as a routine part of the Albion Street (AIDS) Centre and Outreach Programme's screening and follow-up services were collated and reviewed with the use of the Centre's master database, individual files and personal interviews with transsexual clients.
Results: Preliminary analysis of the data from the 58 transsexuals tested by the Centre had indicated an HIV seroprevalence of 21%, a prostitution incidence of 75%, and an IV drug usage of 46% within the study group.
Conclusions: This study has identified a minority group which to the present date appears to have been overlooked by AIDS Researchers. The transsexual clients within our study population had a significantly higher HIV seroprevalence than other groups tested by the Albion Street (AIDS) Centre. This infection rate has some rather serious implications in terms of long-term management of transsexuals and especially those Pre-Operative transsexuals where surgery is indicated but refused on the grounds of their HIV status.

W.D.P.35

MINORITY PATIENT POPULATIONS' KNOWLEDGE ABOUT AIDS.

Aruffo, John: Coverdale, J.: Vallbona, C.

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Objective: To describe Black and Hispanic populations' understanding about AIDS transmission and prevention.
Method: In the Harris County System of Community Health Centers in Houston, 587 patients including 143 White, 151 Blacks and 293 Hispanic completed a structured interview on AIDS issues. The Hispanic patients were interviewed by a native Spanish speaking interviewer fluent in both English and Spanish. Patients were given a cumulative correct score for 10 questions on AIDS transmission.
Results: An ANOVA showed significant differences in knowledge between each ethnic group. Cumulative scores were: White (78%), Blacks (68%) and Hispanics (61%). Only 58% of Hispanics reported that using a condom during sexual intercourse lowered the risk of contacting AIDS, compared to 84% of whites and 83% of blacks. A regression analysis showed signficant effects for both education and ethnic group but not for age and sex.
Conclusion: Dissemination of AIDS information is essential to prevent the spread of AIDS. These data demonstrate an ethnic difference in assimilated knowledge about AIDS. Additional attention should be focused on educating low-income Blacks and Hispanics about AIDS.

W.D.P.36

HIV-RISK RELATED SEXUAL PRACTICES AMONG ASIAN YOUNG ADULTS

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Objective. In the U.S., cases of AIDS in ethnic minority Asians, unlike Blacks and Hispanics, are not currently disproportionate to their representation in the population (CDC, 1988). Little is known about the sexual practices of unmarried, young Asian adults. The current study examined HIV-risk related sexual behavior in a sample of Asian young adults attending college in the Southern California area to identify the parameters for HIV prevention in this population.
Methods. Sixty five men and 88 women, self-identified as heterosexual Asians, completed questionnaires assessing sexual behavior histories. Approximately half were U.S. born. Subjects ranged in age from 18 to 24 years (X = 19 years).
Results. 28 men (44%) and 44 women (50%) had engaged in heterosexual sexual intercourse at least once. Of those who had, less than 1/3 always used birth control and only 11% always used condoms. Yet, 3/4 had used condoms at least once. Nearly 30% of men and 57% of women reported that a sexual partner had objected to using condoms at some time in the past. Fifteen percent had engaged in anal intercourse. None of the men, but 6% of the women, had been treated for a sexually transmitted disease.
Conclusion. Results illuminate factors that contribute to delay of initiation of sexual activities among ethnic minority Asians. Once sexually active, sexual behaviors are consistent with behavioral patterns observed in research on primarily White young adults (Hagales et al, 1988).

Les femmes (partie 1)
Women (Part 1)

W.D.P.37 EFFECTS OF A SPANISH-LANGUAGE COMMUNITY INTERVENTION IN SOUTHWEST TEXAS ON REPORTED HIV INFECTION KNOWLEDGE, ATTITUDES AND BEHAVIOR

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*The University of Texas Health Science Center, Houston, Texas, USA, **Centers for Disease Control, Atlanta, Georgia, USA, ***Texas Department of Health, Austin, Texas, USA.

Objectives: To test the effect of a Spanish-language community intervention on reported HIV infection knowledge, attitudes and behavior in a treated vs. a matched community in Southwest Texas.
Methods: A telephone survey of randomly sampled Spanish speaking adults on knowledge about AIDS/HIV, attitudes, behavior change, and information source prompting them to change, was completed in 1988. There were 91 respondents from the intervention community and 56 from a demographically matched community. The intervention community, in its fourth year of a National Cancer Institute (NCI) funded health promotion campaign, received an HIV infection emphasis in 1987. Activities included hand delivered calendars, featured informative communications in the local media, saturated delivery of a Spanish language version of the Surgeon General's handout on AIDS, and distribution of a telephone hotline number.
Results: Respondents from the intervention community were more knowledgeable about HIV transmission (F=3.9, df=1,146, p<.05), and felt a greater need for testing among various AIDS risk groups (F=5.8, df=1,146, p<.01). A greater proportion of intervention community residents reported changing sexual behavior (33% intervention vs. 26% comparison, p<.05), with the local media the primary source of information prompting change in both communities.
Conclusions: Relatively inexpensive community information campaigns, when given within existing health risk prevention programs, can positively influence reported knowledge, attitudes and behavior in Spanish speaking ethnic minorities.

W.D.P.38 PSYCHOSOCIAL ASPECTS OF THE HIV INFECTED WOMEN IN RIO DE JANEIRO, BRAZIL.

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Gaffrée & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO) - Brazil.

Objective: To identify the emotional and social adaptations that more frequently occur to HIV infected women.
Methods: The study comprised 32 HIV infected women including 29 female sexual partners of infected men, 2 female intravenous drug users and one blood transfused women, aged 23 to 45 years, who were interviewed and observed from Feb 88 to Dec 88.
Results: Psychosocial patients' adaptation are shown in the following table:

PSYCHOLOGICAL FINDINGS	N	%
Anxiety	32	100,0
Depression	25	78,1
Guilt and Ambivalence	19	59,4
Poor Self-Esteem	15	46,9
SOCIAL IMPACT	N	%
Decrease on economic status	32	100,0
Increased concern about their children's future	21	65,7
Unemployment	17	53,1
Lack of professional training	15	46,9

Conclusions: The female group deserves a special psychosocial support because of its specific characteristics and demands. This female psychosocial profile could be an important determinant on the clinical progression of infected women. We believe fundamental to continue developing the present study.

W.D.P.39 EVALUATION OF THE WPC-333 FEMALE CONDOM BARRIER

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Objective. To present clinical results evaluating whether the design and materials used in the new female condom, WPC-333, are safe and create an effective barrier as compared to the male condom.
Methods. Two separate studies were completed. In one study, 108 couples used 521 WPC-333 polyurethane female condom devices and 516 latex male condom devices. Each device was returned within 24 hours of use to determine integrity of the barrier as measured by the standard water leak test. In a separate study, 49 couples used 147 WPC-333 devices and 147 male condoms. Questionnaires were completed after each use related to functionality of the devices. Risk of barrier failure defined as spillage of seminal fluid inside the vagina was quantified. Adverse reactions were also recorded.
Results. WPC-333 had significantly fewer water leaks than the male condom at a p-value of .001. The combined probability of risks of leaks, tears and spillage inside the vagina using WPC-333 was 3.3%; the combined probability of risks using the male condom was 11.5%. No adverse reactions were reported.
Conclusion. WPC-333 provides an important alternative to the latex male condom for reducing the risk of contracting STDs and preventing pregnancy. Polyurethane is a safe material for use in barrier contraceptives. WPC-333 does not introduce any new risks and may reduce total risk versus the male condom.

W.D.P.40 DIFFERENCES IN STAGE OF PRESENTATION AND PRESENTING SYMPTOMS BETWEEN WOMEN AND MEN IN A PRIMARY CARE AIDS CLINIC.

Bibble, Denise; Marte, C.; Tiersten, A.; Kelly, J.; Keyes, C.; Wolbert, J.; Bellevue Hospital/Community Health Project, NY, NY, USA.

Objective: To examine gender differences in stage of presentation and presenting symptoms and to ascertain possible reasons for such differences. Methods: A questionnaire was administered to 20 female and 20 male clients within one month of intake at a community based, primary care clinic for HIV infection. Information was elicited about reason for visit and factors that prompted urgency or, alternatively, delayed time of entry. Charts were reviewed for diagnosis, presenting symptoms, demographic information and risk category. Intake laboratory data was reviewed. Results: Women presented with more advanced disease and more symptoms than men. As an incidental finding a large number of women had gynecologic complaints prior to other HIV-related symptoms. There was a large difference in mean self-reported duration of symptoms prior to entry (39.75 wks-women, 24.30 wks-men). Differences in psychosocial factors included less awareness of risk, less knowledge about health care resources and less access to treatment protocols in women. Women cited as hindrances caretaker roles, lack of transportation and of child care. Women more often stated concerns about partners refusing safer sex and anticipated illness and death. Both men and women stated concerns about employment, financial resources and stress. Conclusion: This study suggests that HIV-infected women present with more symptoms and at a more advanced stage of illness than men. It further suggests that psychosocial factors such as lesser awareness of risk status, greater family caretaker responsibilities and more limited financial resources play a significant role in explaining the differences in stage of presentation.

W.D.P.41 MALE CLIENTS OF FEMALE PROSTITUTES IN BIRMINGHAM ENGLAND: A BRIDGE FOR TRANSMISSION OF HIV?

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Background: Prostitution in Birmingham is a £13 million p.a. industry. We estimate that 10% of adult males regularly pays for sex.
Project: An outreach team has interviewed 258 female prostitutes about risk factors for HIV. Prostitutes have also helped us study their clients by direct interview with 125 men. Others completed survey sheets on 50 consecutive clients each, providing data on a further 350 men.
Results: 95% are local to the West Midlands. Ages range from 20 to 80, the mean being 41.5 years. 77% had non-prostitute female sexual partners. 14% had 3 or more such partners in the previous 12 months. 11% had had male sex partners in their lifetime. 82% rarely or never carried condoms. 5% had injected since 1985. 3% had been HIV tested. 33% did not know that anal sex with a woman was high risk for HIV. 34% name prostitutes as a main source of information about HIV, while only 8% name a medical source. Reasons given for seeking commercial sex and frequency of visits indicate that this activity cannot be limited by law. Only 8.5% had ever been warned by police for kerb-crawling, despite intensive policing over the period of data collection.
Conclusions: i) Clients of prostitutes are sufficiently numerous to affect a heterosexual HIV epidemic, ii) Outreach programmes to prostitutes must continue as they have a role in educating clients; iii) the demand for commercial sex is too high to be reduced by legislation, therefore risk reduction must be effected in other ways.

W.D.P.42 EDUCATIONAL NEEDS ASSESSMENT FOR WOMEN AT RISK FOR HIV THROUGH INTRAVENOUS DRUG ABUSE

Williams, Ann B. Columbia University, NewYork,U.S.A.

Objective: To acquire information needed by educators to develop education and support programs for women at risk for HIV through intravenous drug abuse.
Method: A qualitative needs assessment based on in depth interviews with 21 women at risk for HIV through intravenous drug use. Results were analyzed using variables of the Health Belief Model and the concept of self-efficacy.
Results: The women showed high levels of knowledge about HIV transmission and little misinformation. They perceived the severity of the AIDS threat, their personal vulnerability and the efficacy of protective behaviors. Barriers to effective behavior change included fear of withdrawal symptoms, peer pressure, unavailability of sterile injection equipment, ambiguity about the risk of needle sharing with close friends or sexual partners, a perception that condoms are not 100% effective,lack of trust in relationships with significant others, a perception that perinatal transmission occurs 100% of the time, and fear of HIV testing. Contextual variables included community fear of AIDS, lack of hope, social isolation, importance of the childbearing role and rejection by health care providers.
Conclusions: Didactic educational programs targeted to women at risk should be continued but should be supplemented with support programs which are dialogic and interactive to encourage change.

W.D.P.43

Juliana, Patti*; Lowinson, J.H. *; Weissman, G.**; Lewis, K.***; Margolis, S.*** and Weiner, S.****; Finnegan, L.****. *Albert Einstein College of Medicine, Bronx, New York, USA. **National Institute on Drug Abuse, Rockville, Maryland, USA, ***Macro Systems, Inc., Atlanta, Georgia, USA, ****Jefferson University Family Center, Philadelphia, Pennsylvania, USA.

AIDS OUTREACH/PREGNANT WOMEN AND CHILDREN

Objective: To discuss an aggressive outreach effort to pregnant high risk women to prevent heterosexual and perinatal AIDS transmission, and to study the attitudes, knowledge and behaviors of those women.
Methods: A quasi-experimental demonstration project in two sites will be presented which will implement and evaluate AIDS prevention and outreach services for high risk pregnant women and their sexual partners. Study sites already provide medical and drug treatment; this project will enhance existing services through education and prevention activities, HIV testing, related counseling, and efforts to engage and counsel the sexual partners of these women. Periodic assessments of the women's physical health, psychosocial functioning, parenting abilities and AIDS risk reduction knowledge will be conducted as well as assessment of the children's development. Coordination of counseling and concrete services will be provided in response to identified needs.
Results: The effectiveness of intervention with the women as individuals will be considered as compared to intervention with the women and their sexual partners. The impact of service provision on changing AIDS risk behaviors will be reviewed.
Conclusion: The panel will discuss the role of comprehensive service delivery to pregnant women and their families as an effort to impact on changing AIDS risk behaviors.

W.D.P.44

HIV/AIDS PUBLIC INFORMATION CAMPAIGN TARGETING WOMEN AT RISK AND SEXUALLY ACTIVE ADULTS

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Objective. To describe the U.S. Government's national AIDS public information campaign phase targeted to women at risk (e.g., sexual partners of IV drug abusers) and multiple partner, sexually active adults whose sexual behaviors place them at increased risk of exposure to and infection by the human immunodeficiency virus (HIV).
Method. In October 1988, The National AIDS Information and Education Program initiated a public information campaign to inform and educate persons whose sexual behaviors place them at increased risk of exposure. Strategies (i.e., public service announcements (PSA's), active marketing of materials, development of local programs around the materials) for implementing the campaign and preliminary results from the campaign will be presented.
Results. Preliminary data on the campaign's success in reaching intended audiences are presented as well as problems in implementing the campaign. Special attention will be given to the lessons learned in attempting to disseminate timely, relevant informational materials to the public, and building public support for airing of PSA's and effective networking to maximize the impact of the campaign.
Conclusion. Evidence to date suggests that the campaign has been successful in reaching target audiences, that messages are well received, and that a public health system to support media based public information campaigns is developing.

W.D.P.45

BARRIERS TO COMPREHENDING RISK REDUCTION MESSSAGES AMONG HIGH RISK BLACK AND LATINA WOMEN

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OBJECTIVE. To identify difficulties among sexually active Black and Latina women in adopting HIV risk reduction behaviors.
METHODS. Psychotherapy interviews of Black and Latina women were collected and qualitatively assessed for common difficulties identified by the clients in reducing HIV risk.
RESULTS. The following common problems were identified: difficulty with selecting credible sources of information, difficulty with comprehending conflicting information regarding heterosexual HIV risk, difficulty with identifying prospective sexual partners risk status, difficulty with self assertion regarding condom use, habitual use of substances during sexual activity, and lack of knowledge about where to obtain additional information regarding HIV risk.
CONCLUSION. There is a high level of concern among high risk minority women about HIV risk, although, implementing personal risk reduction remains a problem. There is a need for psychotherapists who work with sexually active females to equipt themselves with knowledge regarding risk to this population as well as skills to increase risk reduction self efficacy among their clients.

W.D.P.46

AIDS RISK AMONG WOMEN WITH MULTIPLE SEXUAL PARTNERS: HIV RISK SCREENING DATA FROM A FAMILY PLANNING POPULATION

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*The Center For AIDS Prevention Studies, UCSF, San Francisco, USA
** Planned Parenthood of San Francisco- Alameda, San Francisco, USA

OBJECTIVE. To identify HIV high risk behaviors in a family planning population, enabling family planning providers to plan prevention strategies targeted toward this group
METHODS. Behavioral risk screening data collected from 2112 female family planning patients attending a San Francisco Bay Area Planned Parenthood Clinic was analysed to determine the proportions of HIV high risk behaviors in this population. Data was collected between January and May of 1988. Analysis included tests of proportion and chi square.
RESULTS. Eighteen percent reported some HIV risk.The highest risk categories were 12.16% who were at risk due to multiple sexual partners, 3.2% who were at risk due to having a bisexual male partner, and 2.46% who were at risk due to either a history of IV drug use or an IV drug using sexual partner. Twenty eight percent of the at risk population was assessed to have two or more risk factors. Women with multiple partners were significantly more likely to report bisexual partners ($p < .001$), IV drug involvement, or IV drug using partners ($p < .001$).
CONCLUSION. These data indicate that females who are exposed to multiple partners do have a significantly higher chance of encountering a male in a high risk category. As IV drug use and bisexual activity are generally not perceived as attractive behaviors, they are probably not readily reported to female partners, especially within the context of a casual sexual encounter. This suggests that these risks are actually somewhat higher in this population. In order to assess true risk more information is needed about condom use and other safe sex practices in this population. A survey to assess the prevalence of preventative practices is now in the planning stages.

W.D.P.47

ATTITUDES TO AND AWARENESS OF AIDS AMONG SOUTH AFRICAN WOMAN.

Sifris,Dennis,and Millar,Steven. HIV Clinic, Johannesburg Hospital, South Africa.

Objective. To explore the current awareness of the awareness of the attitudes to AIDS, and the role of woman in the prevention of AIDS.
Method. Group discussions were held with 200 Black & White woman aged between 18 & 34. A self-completion questionnaire was also used. Use was made of a projective questioning and stereotypes for the more sensitive questions
Results. The majority felt that they knew very little and needed more information. Casual sex was coidered the predominant mode of transmission, but donating blood was thought to be a risk factor by 48%, toilet seats by 44% and spitting coughing and sneezing by 22%. Almost all felt that the womens role in prevention was important & 87% of Black woman were personally concerned about catching AIDS, as compared to only 42% of White woman. Within the Black culture, one partner relationships appear to be the exception rather than the rule. White woman felt it would be embarrassing to ask their partners to use condoms. Most Black woman were concerned about catching AIDS through their partners activities whereas half the White woman were not concerned.
Conclusion. Knowledge about AIDS is poor among South African Woman and more information is needed. Woman feel they have a vital role to play in prevention.

W.D.P.48

NATIONAL SURVEILLANCE OF AIDS IN WOMEN, 1981-1988: A REPORT FROM THE CENTERS FOR DISEASE CONTROL

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Objective. Describe the epidemiology of AIDS in women in the United States.
Methods. All AIDS cases in females 13 years of age and older reported to CDC through December 31, 1988, were analyzed.
Results. Since 1981, a total of 6,983 (9%) of 81,418 adults with AIDS have been women. AIDS cases in women have increased from 196 (7% of adult cases) reported before 1984 to 3,296 (10%) in 1988. During these same two periods, the male-to-female ratio for AIDS cases among heterosexuals has decreased from 3.1:1 to 2.5:1. The nine States (72% of cases in women) with the highest cumulative incidence rates of AIDS cases in women were all on the Atlantic coast. The racial/ethnic distribution of women with AIDS (52% black, 28% white, and 19% Hispanic) was similar to that for heterosexual men. Hispanic and black women had cumulative incidence rates 8 and 12 times, respectively, that for whites. Most women (85%) were of reproductive age (15-44 years) and perinatal HIV exposure was a risk factor for 1,044 (78%) pediatric AIDS cases. IV drug abuse was associated with 70% of AIDS cases in women (52% were IV drug abusers and 18% were sex partners of IV drug abusers) and 73% of perinatal AIDS cases. The median survival time from AIDS diagnosis to death for women was 10 months; the same as that for heterosexual men. By the end of 1988, a total of 3,853 (55%) women with AIDS were reported to have died.
Conclusion. Prevention efforts in women and their children must be directed towards IV drug abusers and their sex partners, with particular focus on blacks and Hispanics in geographically discrete areas.

W.D.P.49

COMPARISON OF BLACK AND WHITE WOMEN TESTED FOR HUMAN IMMUNODEFICIENCY VIRUS

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Objective. The primary goal was to develop a profile of women in a low incidence area by examining characteristics of 340 white and 55 black women, self-selected as at risk for HIV infection.
Methods. The women were anonymously counseled and tested at a public health facility in a university town in north central Florida. Differences in risk behaviors, STD history, educational level, safer sexual practices, sources of information regarding AIDS, and level of fear were examined.
Results. The mean educational level for white women was 14 years, for black women 13 years. Using Spearman correlation coefficients, history of hepatitis, IV drug use, sexual partner with HIV infection, and presence of tatoos were significantly associated with seropositivity in the group as a whole. Seropositive black women were more likely to have had a transfusion, tatoos, and an HIV seropositive partner. Seropositivity in white women was negatively correlated with education. They were also more likely to have had a history of hepatitis, IV drug use or a partner who was a hemophiliac.
Conclusions. Women who come for voluntary testing represent an educated group, which may imply that this type testing only reaches a select population, and that women at risk may not be respresented. Identified risk factors for women who are seropositive match those found in high risk areas.

W.D.P.50

COMPARING ESTIMATES OF HIV SEROPREVALENCE IN U.S. WOMEN: CHILDBEARING WOMEN AND MILITARY RECRUIT APPLICANTS.

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Objectives. To assess bias in estimated HIV seroprevalence rates for U.S. women by comparing rates in female military recruit applicants with those from the Survey in Childbearing Women.
Methods. Since October 1985, female civilian applicants for U.S. military service have been tested for HIV-1 infection. Beginning in October 1987, ongoing, blinded statewide HIV seroprevalence surveys have been conducted in U.S. women delivering live infants.
Results. Statewide prevalence rates among childbearing women were higher than corresponding rates among female military applicants in each of four regions of the U.S. Among childbearing women, state-specific rates ranged from 0.03% to 0.66%, with corresponding rates from 0.00% to 0.29% in female military applicants. State-specific rates from both surveys were highest in the Northeast, followed by the South, North Central, and West regions.
Conclusions. Women who participate in high-risk behaviors such as IV drug use may be less likely to apply for military service. This introduces bias in the population tested and likely produces underestimates of the prevalence of HIV infection among U.S. women. In contrast, the population of women delivering live infants includes women from all risk groups. Seroprevalence among childbearing women, however, may be different from that in women who choose not to or are unable to become pregnant or who experience adverse pregnancy outcomes. Data from both surveys, however, though subject to these biases, provide useful information on the prevalence and trends of HIV infection in U.S. women of reproductive age.

W.D.P.51

UNSAFE SEXUAL BEHAVIOR AND HIGHER RISK PARTNERS: CHANGE OVER TIME IN A PROSPECTIVE STUDY OF WOMEN AT RISK FOR AIDS

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Objective: To assess sex and drug use behavior changes in a prospective study of women at risk for HIV infection.
Methods: 279 sexually active women with infected, high risk, or multiple partners were interviewed and tested between 1985 and 1987, and followed up 6 to 12 months later.
Findings: At entry, 84% reported unsafe or possibly unsafe behavior with IVDU, bisexual, or HIV-infected partners. At follow-up, 70% fit this same definition; one had seroconverted. Significantly more women reported changing to lower-risk partners than reported changing to lower-risk behaviors.

	Entry	Follow-up
Partner at Risk and High Risk Behavior	84%	70%
Partner at Risk and Low Risk Behavior	1%	4%
Low Risk Partner and High Risk Behavior	14%	26%

Conclusion: Women followed over time have significantly reduced unsafe partnerships but only moderately reduced unsafe behaviors. To the extent that they continue to engage in risky behavior and do not always know their partners' risk, they remain at some risk for HIV infection. Prevention programs for women need to emphasize reduction of risky behavior as the only certain prevention strategy.

W.D.P.52

EMERGING PATTERNS OF DRUG USE, SEXUAL BEHAVIOR, HIV INFECTION AND STDS IN HIGH RISK SAN FRANCISCO AREAS FROM 1986-1989

Cohen, Judith B.[1], Lyons, C.A.[1], Lockett, G.J.[1,2], McConnell, P.A.[1,2], Sanchez, L.R.[1,2], Wofsy, C.B.[1]

[1]University of California San Francisco, [2]California Prostitutes Education Project, San Francisco, California, USA

Objective: To evaluate changes in drug use, sexual behavior and STDs among high risk women and their partners participating in a street-based peer provided prevention research and education program.
Methods: In a two phase ongoing program, 192 women in 1986-87 (T1) and 153 women and 34 male partners (MP) thus far in 1988-89 (T2) received interviews, counseling, and testing for HIV Ab, HepB, and syphilis infection in San Francisco Bay Area districts known for drug use and prostitution.
Findings: From T1 to T2, HIV infection was unchanged at 5% in women but was 12% among MPs. HepB rates were unchanged among women (48%, 49%) but were 85% for MPs. HIV infection was associated with IV drug use among women and MPs. Probable active syphilis (RPR and MHA-TP+) was significantly associated with crack cocaine use, younger age, and less condom use, but not with IV drug use or HIV infection.
Conclusion: Ongoing assessment of AIDS risk in these areas indicates two patterns: that of HIV infection associated with IV drug use, and an ominous new pattern of crack cocaine use associated with syphilis that may predict increased HIV infection to come. Existing prevention programs do not address the problems or needs of people in the latter group.

W.D.P.53

BEHAVIOR CHANGES TO REDUCE HIV TRANSMISSION RISK IN A PROSPECTIVE STUDY OF SEROPOSITIVE WOMEN

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Project AWARE has evaluated 1,047 women at risk for HIV infection 56 (5%) of whom are seropositive. Of the 40 seropositive women who have been followed for at least 12 months, (16) 40% are IVDU, (16) 40% had an HIV infected sexual partner, (4) 12% had a partner at increased risk for HIV infection (3) 5% had no identified risk and 1 was probably infected through a blood transfusion. Selected sexual and drug using behavior changes include:

Behavior	Entry	6 Mo.	12 Mo.
Number of Women	40	40	24
Avg. No. Sex Partners	5.2	2.1	4.0
% With Fewer Partners	n/a	40	50
% Abstinent	0	35	8
% Tongue Kissing	93	60	67
% Cunnilingus, No Barrier	85	45	54
% Any Vaginal Sex, No Condom	75	37	37
% Sex During Menses	42	11	8
% IV Drug Use	40	23	10
% Sharing Needles	40	15	5

Of the 11 women who are still exposing uninfected partners to vaginal secretions, 5 engage only in cunnilingus, 3 have partners who refuse to use condoms, and 3 have been unable to disclose their antibody status.

Although many HIV+ women experienced a period of abstinence, most resumed sexual activity but dramatically reduced sexual and needle-sharing behavior known to transmit HIV to others.

W.D.P.54

EPIDEMIOLOGICAL INFECTIOLOGICAL AND IMMUNOLOGICAL RESULTS FROM THE HIV-AMBULANCE OF THE DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

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OBJECTIVE: To examine gynecological problems in HIV-infected women in relation to immunological parameters.
METHODS: From 40 HIV-infected female patients, who were treated, 25 women were seen every three to six months. Most of them are living outside the cities of the state Rheinland-Pfalz. 52% of them are or have been i. v. drug abusers, 44 % have been infected by sexual transmission. Only one third use condoms for cohabitation, another third denies this form of protection. The rest has no sexual intercourse in the moment. 23 pregnancies are known in this group and in 20% of the cases HIV-infection has been discovered during prenatal care.
Results: 80 % of the patients had have a recurrent candida infection of the vagina which was detected in culture. Immunologically 75% of the women belong to the stage III (in order to the CDC-classification). Out of this group more than 50% show less than 400 CD 4 + cells/μl. A positive result for HIV-Ag, anti-p 41 and negative anti-p 24 could be detected in five cases. One of the four women with AIDS died of a rapid growing cervix cancer although treated with radiotherapy.
CONCLUSIONS: Our data provide evidence for the increasing incidence of gynecologic problems in HIV-infected women. From our experience gynecological examination has to be routinely integrated into medical cave of HIV-infected women.

W.D.P.55 HIV-INFECTION IN HETEROSEXUAL WOMEN IN COPENHAGEN

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Objective: To describe the spread of the HIV-infection in women in Copenhagen, especially the heterosexual transmitted cases.
Methods: From 1.I.1985 to 1.IX.1988 the charts of all HIV-seropositive women in the main hospitals in Copenhagen were studied. Data were collected on sexual activities and practices, intravenous drug abuse, transfusions, history of sexual transmitted diseases (STD) and CDC classifications. The women were categorised in four groups according to the mode of transmission of the HIV-infection.
Results:

	I.v. drug abuse	Heterosexual cases	Transfusion	Undetermined
Number	58 (50%)	3[illegible] (31%)	12 (10%)	10 (9%)
Unsafe sex+risk man	41/45 (91%)	17/25 (68%)	—	6/10 (60%)
Former STD	36/50 (72%)	11/32 (34%)	1/12 (8%)	4/10 (40%)
Former HBV	22/58 (38%)	4/35 (11%)	0/12 (0%)	3/10 (30%)
Classification at latest follow-up				
CDC II	30/43 (70%)	17/30 (57%)	4/12 (33%)	5/8 (62%)
CDC III	8/43 (18%)	9/30 (30%)	1/12 (8%)	3/8 (38%)
AIDS	5/43 (12%)	4/30 (13%)	7/12 (59%)	0/8 (0%)
Median:HIV-pos. test	X 1985	VII 1986	I 1986	XII 1985

Conclusion: Heterosexual transmission of the HIV-infection occur among women in Copenhagen also among women without risk behaviour. The prevalence of HIV-infection in the heterosexual population is unknown and the importance of co-factors such as STD and genital lesions and anal intercourse remains to be determined but will be analysed in a coming study.

W.D.P.56 IMPORTANCE OF IVDA AS A RISK FACTOR FOR HIV INFECTION IN WOMEN OF BUENOS AIRES CITY.

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Objective. To determine the main risk factors responsible for HIV infection in women living in Buenos Aires City and surroundings.
Methods. A group of 213 out of 246 women who spontaneously consulted because of HIV in the Infectious Diseases Hospital of Buenos Aires City from 1/1/87 to 6/30/88 (age between 14 and 58 years) were studied clinically and serologically. The main items considered in the questionnaire were sexual habits, drug addiction and other sexually transmited illnesses. Anti-HIV antibodies were screened by EIA methods and confirmed by Western blot.
Results.

HIV Serology	Number	IVDA %	Non-addicts or non-IV DA	Sexual Contact	Promiscuity	Hepatitis	Syphilis	Gonorrhea
HIV posit.	63	88.8	11.2	11.2	31.7	19.0	34	14
HIV negat.	150	19.3	80.7	10.6	11.3	3.0	8	4.6

Among all the women studied, 29.5% presented anti-HIV antibodies. In this group, 88.8% was IVDA and the remaining 11.2% had sexual contact with HIV-positive men. A higher percentage of a previous history of syphilis, gonorrhea and clinical hepatitis as well as promiscuity was also observed in the HIV-infected women.
Conclusion. One third of the studied women which represent almost 90% of the female population consulting for HIV at the Infectious Diseases Hospital, were infected with HIV. Among these 88.8% were IVDA and 11.2% were the sexual partners of infected men. IVDA is remarkably important as a risk factor for HIV infection of women in Buenos Aires City.

W.D.P.57 WORKING WITH HIGH RISK WOMEN IN A NATIONAL AIDS PREVENTION PROGRAM--THE U.S., PUERTO RICO AND MEXICO

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Objective. To describe programs and strategies for identifying and working with women who are sexual partners of intravenous drug abusers (IVDAs) and/or are themselves IVDAs, and to present interim findings and results from ongoing AIDS demonstration research programs funded by the National Institute on Drug Abuse, United States of America.
Methods. Presenters will describe methods used in the national effort to: identify/contact high risk women; increase their knowledge/understanding of risk behaviors, their skills in removing barriers to change and in sustaining safe behavior practices; link them with needed community resources; and collect and analyze pre-post intervention data.
Results. Findings will cover the demographic characteristics of over 1,000 women, their risk behaviors prior to intervention, and changes in these behaviors six months later. Results will include women served in programs that also target male IVDAs as well as individual programs that target only women.
Conclusion. Presenters will focus on the most conclusive findings from the ongoing national project and invite questions and discussion from the audience.

W.D.P.58 INFLUENCE OF HIV INFECTION ON PREGNANCY DECISIONS

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OBJECTIVE: To describe the impact of HIV serostatus on pregnancy decisions in 2 groups of seropositive (SP) and seronegative (SN) women.
METHOD: At-risk women are offered testing and are enrolled in a 4 year prospective perinatal HIV transmission study. Group I: SP and SN women initially learning their results while abortion (AB) was an option.
Group II: Women who became pregnant again after learning their HIV status.
RESULTS: Group I: from 1/1/86 to 1/27/89, 39/82 SP (46%) and 31/95 SN (33%) had the option of AB. 4/38 SP (11%) and 1/31 SN (3%) chose AB (p>.2). SP and SN groups did not differ significantly in sociodemographic parameters. Group II: As of 1/27/89, 24/90 SN (27%) and 15/80 SP (19%) (p>.2) have gotten pregnant one or more times since their initial pregnancy. 5/15 SP and 3/24 SN have been pregnant twice and 2/5 SP have been pregnant 3 times. PREGNANCY OUTCOMES: 1st Repeat: 1/15 SP chose AB, 12/15 continued and 2/15 miscarried. 15/24 SN continued, 7/24 chose AB, and 2/24 miscarried. Ignoring miscarriages, 8% SP vs 32% SN chose AB (p=.05). 2nd Repeat: All SP chose AB, all SN continued. 3rd Repeat: Both SP continued. SP and SN groups did not differ in sociodemographic parameters. Individuals' rationales for decisions will be described and general issues discussed.
CONCLUSION: HIV infection does not have a clear impact, if any, on reproductive decisions in this population; psychosocial and economic variables may have greater influence.

W.D.P.59 AIDS IN WOMEN: CANADIAN SURVEILLANCE PROGRAM

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Objective: To assess trends in AIDS cases reported among women in Canada.
Methods: National surveillance of AIDS in Canada was initiated in February 1982. Demographic, risk factor, clinical and laboratory data are collected on a standard case report form. The National AIDS Surveillance database was reviewed with specific reference to adult females.
Results: As of January 23, 1989, 118 women (5% of adult cases) were reported to the National AIDS Surveillance Program. Of these, 3% were injection drug users; 28% recipients of blood/blood products; 64% heterosexual contacts and 6% had no identified risk factors. The heterosexual contact classification includes two categories: (1) persons originating in an area with a high prevalence of HIV infection and where heterosexual transmission is the major route of spread; (2) heterosexual partners of person(s) with HIV or at risk for this infection. There has been a significant decrease over time in the proportion of women in category (1) - 58% (11 of 19) of AIDS cases diagnosed before 1985 compared to 26% (26 of 99) diagnosed since 1985 ($p< .01$). The proportion of women in category (2) has remained stable at 32%. Overall women account for a constant proportion of total AIDS cases over time, ranging from 4% - 6% between 1984 and 1988. 1988 data are preliminary since cases diagnosed during this year will be reported through mid-1989. Based on overall projections for AIDS cases in Canada, it is expected that 40 - 60 female AIDS cases will be diagnosed in 1988.
Conclusions: These surveillance data indicate that the incidence of AIDS in women is remaining quite stable over time and, therefore, is keeping pace with the overall growth in the number of AIDS cases.

W.D.P.60 A SURVEY OF AIDS-RELATED KNOWLEDGE, ATTITUDES, BELIEFS AND BEHAVIORS AMONG WOMEN IN NEW YORK CITY

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Objectives. To examine levels of AIDS knowledge, risk perceptions and sexual practices among women aged 15–44 in New York City.
Methods. A cross-sectional survey of 1800 female NYC residents was conducted from November, 1988 to January, 1989. Data were collected by door-to-door, in-person interviews throughout the New York City area.
Results. Preliminary data from the first 912 respondents show that 79% considered themselves knowledgeable about AIDS, 38% reported a change in behavior to reduce risk, 41% knew someone with AIDS, and 20% had a family member or other relative with AIDS. Odds ratios between respondents' characteristics and behavior change are shown below.

Characteristic*	Odds Ratio	95% C.I	p
Had HIV antibody test	3.15	2.10–4.71	.001
Not married	2.33	1.75–3.11	.001
Knows person with AIDS	2.26	1.70–3.01	.001
U.S. born	2.15	1.60–2.90	.001
Income $11,000 +	2.01	1.46–2.73	.001

*Age, education and perception of risk were not significantly associated with behavior change in this population.
Conclusion. Our data suggest that future AIDS education and prevention programs should be directed toward low SES women. Special programs for immigrant women may be required.

Consommateurs de drogues par voie intraveineuse (partie 1)
I.V. Drug Users (Part 1)

W.D.P.61

CRACK USE AND RISK FOR AIDS AMONG BLACK ADOLESCENTS

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Objective. To describe the characteristics of black adolescent crack cocaine users and assess their risk for sexually-contracted HIV.
Methods. 204 black adolescent crack users in Oakland and San Francisco, California, were surveyed about their use of crack and other drugs, their sexual partners, their sexually transmitted disease (STD) history, their attitudes toward condoms, their use of condoms, and their use of crack during sexual activity.
Results. 100 respondents (49%) reported using crack in combination with sexual activity. Of those mixing crack with sex, 50% reported a history of one or more STD's, as compared with 29% (significant at p<.01) of those who did not combine sexual activity with crack use. A history of gonorrhea was more prevalent among those combining sex with crack (42%) than among those who did not (13%, significant at p<.001). The prevalence of STD history among those who reported both having sold crack and having combined sexual activity with crack use (92% for females, 48% for males) was much higher than for those who did not (22% for females, 13% for males).
Conclusion. Given the prevalence of a history of STD reported by respondents, particularly among those who have sold crack and among those who combine crack use with sexual activity, the risks for contracting and transmitting HIV in this population appear to be great. Further studies to assess HIV prevalence among crack users and dealers and expanded efforts to develop and test interventions to prevent HIV spread within this population are urgently needed.

W.D.P.63

THE EFFECT OF A NEEDLE AND SYRINGE EXCHANGE ON A METHADONE MAINTENANCE UNIT

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Objective. To determine if the location of a needle and syringe exchange adjacent to the methadone maintenance (MM) unit was associated with an increase in the use of heroin. Methods. A needle and syringe exchange scheme was opened in November 1986 adjacent to an inner city MM unit. Urinalysis results of 128 MM clients who were on the programme continuously 3 months before and 3 months after the introduction of a needle and syringe programme were analysed for morphine. Results. There was no significant increase in the overall proportion of clients who had contaminated urines before (45%) and during exchange operation (z=1.6, p=0.11). A proportion of clients (28%) who had clean urines prior to the establishment of the exchange were found to have contaminated urines after it began. However, a comparable proportion of clients (19%) with dirty urines prior to the exchange opening were found to have contaminated urines prior to the exchange opening were hound to have clean urines after it opened. Conclusion. The increase in availability of sterile needles and syringes adjacent to a drug treatment unit did not appear to adversely affect the proportion of drug free clients in this study. While some clients started using heroin during exchange, others who were using before exchange ceased, indicating that factors other than the exchange were influencing heroin use.

W.D.P.65

A HIV-PREVENTION SYRINGE EXCHANGE PROGRAM IN LUND, SWEDEN. TWO YEARS OF OBSERVATIONS OF THE ATTENDERS

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In november 1986, a syringe exchange program at the Clinic for Infectious Diseases at the General Hospital in Lund, was started. The program gets active support from the local drug treatment facilities. So far no HIV-epidemic has broken out in our region. No negative side-effects have been observed. 800 persons have visited the program. 75 % use centralstimulants, the rest use heroin. Drug abusers involved in heavy usage of drugs, as well as drug abusers with a small limited abuse, attend the program. 76 % of the visitors are males. The program attracts even those with a hidden abuse, since only half of the attenders have been in contact with local drug treatment facilities. There where no significant differences between these two groups except the fact that a greather proportion of those who used amphetamines where without treatment experiences. Since the attenders can decide for themselves if and when to visit drug treatment centers, we do not know the exact relationship between attenders of the program and other kinds of care. In spite of this, we have observed that more drug abusers come to the out-patient clinic and detoxification unit. Few of the clients are below 20. The program does not reach the very young and probably not the most chaotic.

W.D.P.62

RELATIONSHIP BETWEEN HIV RISK BEHAVIOURS, KNOWLEDGE AND SEROSTATUS OF SYDNEY INTRAVENOUS DRUG USERS, 1987.

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Objective. To investigate the HIV risk taking behaviours, knowledge, attitudes and HIV serostatus of Sydney intravenous drug users (IVDU's). Methods. On hundred and eighty-one Sydney intravenous drug users both in and out of drug treatment were recruited. An interviewer administered questionnaire was used to collect information on demographic characteristics, drug-using and sexual behaviour, AIDS knowledge and prison experience. HIV test results were obtained from subjects. Results. The mean age was 27 +/-, the M:F ratio 2:1, and 77% of the males were heterosexual. The majority injected daily (91%) and preferred heroin (87%). Eighty percent admitted to sharing needles; 50% weekly or daily and 91% cleaned their equipment. Condoms were used only by 12% with regular partners but by 18% with casual partners and by 77% of prostitutes with their clients. Thirty percent (54/181) had been in prison since 1981 of whom 50% (27/54) had engaged in risk taking behaviours while in custody. Knowledge was satisfactory and perception of risk of HIV infection for IVDU's was high. However perception of personal risk was low. Twelve out of 131 (9%) subjects had HIV antibodies of whom 7 were homosexual. Conclusion. The 9% HIV seroprevalence found in this study can be expected to increase due to the frequency of HIV risk-taking behaviours. The high proportion of HIv positive homosexual IVDU's suggests the need for targeted campaigns for this subgroup.

W.D.P.64

HIV RISK BEHAVIOURS OF INTRAVENOUS DRUG USERS PRESENTING TO THE ALBION STREET (AIDS) CENTRE, SYDNEY, AUSTRALIA.

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Objective: To investigate needle sharing behaviour and sexual practices of intravenous drug users (IVDU) presenting to the Albion Street (AIDS) Centre.
Methods: Detailed medical history, physical examination, intravenous drug use history and sexual behaviour information were collected and computer coded for all clients presenting for HIV diagnosis. Those reporting IV drug use, between March 1985 and March 1988, were included in this analysis.
Results: 1047 clients presenting during this period reported IV drug use as a risk factor. The mean age was 27 (sd 5.6) years, 747 (71.3%) were male, 292 (27.9%) female and 8 (0.8%) transsexual. 55% of males and 77% of females claimed exclusive heterosexuality. 39% reported current intravenous drug use and 87% of the total reported having shared needles and syringes. 16% had worked as prostitutes and the mean monthly number of sexual partners (prostitutes excluded) was 1.7 (sd1.9). The overall HIV seroprevalence in this sample was 12.4%, with 15.4% of males and 4.3% of females being infected. 42.8% of homosexual men were infected compared to 3.8% of male and female heterosexuals. There was a small but significant quarterly increase in the proportion of HIV seropositive heterosexual IVDUs during this period.
Conclusions: The HIV seropositive prevalence of IVDUs tested was substantially lower than reported amongst European and Nth American samples and is consistent with the low incidence of IVDU AIDS cases reported in Australia (1%, NOV 1988). However, evidence of continued risk behaviour indicate the possibility of rapid spread of HIV within this subgroup.

W.D.P.66

Risk Taking and Risk Reduction Among IV Drug users in 4 US Cities

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Objective: To examine the AIDS risk behaviors and risk-reduction activities of active IV drug users in Baltimore, Chicago, Denver, and El Paso.
Methods: This is a multi-method study using quantitative and qualitative methods. Face to face interviews were conducted with active intravenous drug users not in treatment. Study participants were recruited using street-based indigenous outreach workers who are also involved in prevention and education activities. In addition, ethnographic interviews were conducted to aid the interpretation of results.
Results: A total of 115 active IV drug users were interviewed in Baltimore, 619 in Chicago, 139 in Denver, and 92 in El Paso. Different patterns of needle sharing and needle cleaning emerged in each city. Inter-city comparisons reveal a complex but identifiable set of associations between various social, demographic, and drug-related variables on the one hand and needle sharing and cleaning behaviors on the other.
Conclusion: It is concluded that AIDS/IVDU education programs must understand and take into account (1) racial/ethnic and regional subcultural differences and (2) the local IV drug use practices (in terms of types drugs used and frequency of injection).

W.D.P.67 CESSATION OF ALCOHOL AND DRUG USE DISORDERS IN AN HIV SAMPLE

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Objective. To assess longitudinal patterns of cessation of abuse of alcohol and other drugs in an HIV community sample.
Methods. 160 gay and bisexual men were assessed as part of a longitudinal study examining predictors of HIV illness progression. Structured clinical interviews were conducted to evaluate past and current psychiatric disorders, as well as current levels of depression and anxiety. Self-report measures of personality attributes and life outlook were also collected.
Results. A significant number of men in our sample reported successful termination of past alcohol and drug abuse and dependence with maintenance of that change (see table below). Many of the men attribute this behavioral change, at least in part, to their concern about AIDS. They appear no different on current measures of psychological distress when compared to those men who never had an alcohol or drug use disorder.

	Past Dependence/Abuse*		Current Dependence/Abuse*	
Group	Alcohol	Drug	Alcohol	Drug
HIV+ (N=118)	40%	64%	3%	9%
HIV- (N= 42)	24%	48%	7%	5%
Total (N=160)	36%	59%	4%	8%

* percentages reflect co-existence of alcohol and drug diagnoses in some subjects.

Conclusion. In a group of men at risk for AIDS we find successful cessation of maladaptive substance use that is rarely reported in the alcohol and drug literature.

W.D.P.68 DEMOGRAPHIC, BEHAVIORAL, AND CLINICAL FEATURES OF HIV INFECTION IN NEW YORK CITY INTRAVENOUS DRUG USERS (IVDUs)

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Objective: To determine the demographic, behavioral, and clinical features of HIV infection in 454 IVDUs.
Methods: Subjects were recruited from patients scheduled for physical examination in drug treatment clinics in NYC. A questionnaire was administered and serum was collected for HIV serology, using ELISA and Western blot techniques. Subjects were categorized using the CDC HIV classification system. Data was examined using univariate and multivariate analyses.
Results: The HIV infection rate was 61% with antibody and antigen detected in 58% and 4%, respectively, of the population. Nineteen percent of 307 subjects were in Group III or Group IV of the CDC classification system for HIV-associated infections. Only behavioral factors ($p=.001$) and clinical indicators ($p=.003$) were found to distinguish the HIV infected from the non-infected. Frequent use of IV drugs ($p=.016$), duration of drug use ($p.=050$), daily methadone dose ($p=.018$), and duration of drug treatment enrollment ($p=.038$) were significantly associated with HIV seroinfection status and CDC HIV stage.
Conclusions: These findings strongly support aggressive efforts to reduce parenteral drug use and enroll IVDUs into effective drug treatment.

W.D.P.69 NEEDLE SHARING AMONG IVDU'S WHERE NEEDLES ARE AVAILABLE WITHOUT PRESCRIPTION.

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Objective. To assess needle sharing among intravenous drug users (IVDU's) in a region where sterile needles are readily available without prescription.
Methods. Current IVDU's in Portland, Oregon, were questioned about AIDS, drug-use history, and needle-sharing practices using a standardized questionnaire that included both structured and open-ended questions. Sources of recruitment included a corrections facility, county health clinics, private welfare organizations and street outreach. Participation was voluntary and confidentiality was assured. Preliminary results are presented below.
Results. Between 12/88 and 2/89, 150 IVDU's were interviewed. Mean age was 28 years; 56% were male. Mean years of IV drug use was 7.5. Heroin was the principal drug injected for 25%, cocaine for 31%, amphetamines for 27% and heroin plus cocaine or amphetamines for 17%. Most (58%) had never been in drug treatment. Needles were purchased from pharmacies or other stores by 79% of users. Over half (54%) stated they currently shared needles while shooting drugs. Of those sharing needles, 15% shared only with their sex partners, 39% also shared with other friends, and 46% shared with total strangers. The main reason given for sharing needles was convenience (50%); less than 5% said they shared because of difficulty obtaining needles. Needles were never cleaned by 27%. Needles were cleaned by 23% using bleach and 50% using water. Over 95% of all these IVDU's, including those who shared needles, knew that sharing could transmit AIDS. Sixty five percent of IVDU's who shared needles assessed their risk of AIDS as moderate or high compared with 18% of those who did not share ($p<.001$ by chi square).
Conclusion. The ready availability of sterile needles, knowledge of AIDS transmission, and perception of personal risk are not sufficient to prevent needle-sharing among many IVDU's. Education regarding safer needle cleaning may be the most effective intervention among IVDU's who continue to shoot up.

W.D.P.70 SEXUAL RISK FOR HIV TRANSMISSION IN A GAY MALE SUBSTANCE-ABUSING POPULATION

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Objective. Combining alcohol and/or drugs with sex is associated with sexual behavior that is high-risk for HIV transmission. Gay substance abusers were compared to the general gay population to further test the relationship between high-risk sex and alcohol/drug use.
Methods. Substance abusers entering treatment at 18th St. Services in San Francisco were asked to fill out a self-administered questionnaire on sexual activity, substance use, and AIDS knowledge ($n = 108$). The comparison sample of gay/bisexual men were recruited in a random digit dial telephone study in San Francisco (Communications Technologies, 1987, $n = 201$). Sexual risk was calculated with a version of the Chicago Multi-Center AIDS Cohort Study (MACS) group's scale.
Results. 26.8% of the substance abusers were rated "high-risk" (i.e. anal sex without condoms outside of monogamous relationships), compared to 6.9% in the Communications Technologies sample. This was true although the clinical sample was well-informed regarding AIDS prevention, had high levels of educational achievement, and was as likely to be sober as high during sex.
Conclusion. The association between drug/alcohol use and unsafe sex is not a simple one. The proportion of high-risk sex not associated with drug or alcohol abuse in this clinical population suggests that we may be dealing with more than a "disinhibition effect." Programs are needed to intervene with substance abusers, and further research on the psychosocial factors contributing to these levels of unsafe sex is needed.

W.D.P.71 ABSENCE OF ANTIBODY TO HIV IN LONG-TERM, SOCIALLY REHABILITATED METHADONE MAINTENANCE PATIENTS

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Objective. To determine the prevalence of antibody to HIV in long-term, socially rehabilitated methadone-maintained former heroin addicts in New York City, where 55-60% of active IV heroin addicts are HIV-infected.
Methods. Of the 68 former parenteral heroin addicts in "medical maintenance", 58 (85%) agreed to participate in this study. In medical maintenance, socially rehabilitated methadone maintenance patients are treated in the offices of primary care physicians, who provide methadone treatment and general medical care (JAMA 1988;259:3299). Antibody to HIV (anti-HIV) was determined in all patients by both ELISA (Dupont) and indirect immunofluorescence (Fluorognost). Hepatitis B surface antigen, antibody and core antibody were determined by ELISA (Abbott).
Results. None of the 58 socially rehabilitated methadone maintenance patients had anti-HIV. One or more markers of HBV infection were seen in 53 (91%). The duration of methadone maintenance was 16.9 ± 0.5 yr, and the median daily dose was 60mg. Before methadone treatment, the patients had abused heroin parenterally for 10.3 ± 1.7 yr, and they had engaged in additional high-risk practices for HIV infection.
Conclusion. Effective methadone maintenance treatment can protect parenteral drug abusers from HIV infection.

W.D.P.72 HIV STATUS & RISK BEHAVIOR IN PARTICIPATING AND NON-PARTICIPATING I.V. DRUG PATIENTS IN A HIV TESTING/EDUCATION PROGRAM

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Objective. To describe differences in rates of HIV infection and risk behaviors between I.V. drug patients who volunteer ($n=224$) and those who decline ($n=95$) to participate in a HIV testing/AIDS education program.
Methods. I.V. drug users seeking drug treatment were screened for willingness to participate.
Results. T-test results revealed significant differences in age (higher in non-participants, $p=.025$), and number of needle-sharing partners (higher in participants, $p=.014$). There were no significant differences related to drug choice, length of drug treatment, number sexually active, number of sexual partners, frequency of sexual activity, or demographic variables. Reasons given for not participating included: not interested in the program (13%); didn't think they were at risk (12%); didn't want to spend the time (12%); wanted testing, not education (10%); previously educated (9%); previously tested (7%). HIV antibody was anonymously tested on non-participants from remaining serum obtained from standard SMA-12 samples. Although differences in the prevalence of HIV seropositive status between groups was not significant (chi-square $p=.2675$), the percentage of HIV positive non-participants (13.5) was almost twice as high as HIV positive participants (7.2).
Conclusions. Although participants reported more needle-sharing partners,non-participants appear to have a higher frequency of HIV infection. Patients who refused to participate may under report high-risk behaviors or engage in other high risk behaviors. Voluntary serotesting and education programs may miss some I.V. drug users at high risk for HIV infection.

W.D.P.73

DO MALE INTRAVENOUS DRUG ABUSERS (IVDA) GIVE CONSISTENT RESPONSES TO BEHAVIORAL QUESTIONS?

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Objective. To measure the consistency of the responses of IVDA to selected demographic,health and behavioral questions.
Methods. A subsample of male IVDA paticipating in a case control study were asked to return a month after an interview with a female social worker.Those returning completed a shorter,self-administered questionnaire including 20 identical questions from the first interview.
Results. Seventy-eight(65%) of the subsample returned spontaneously. Consistency ranged from 68%(number of female sex partners in last year) to 99%(homosexual behavior).Consistency for current age(5 year groups) was 90%"works"sharing behavior 88%,and ever-injecting at the seller's house 76%.In most questions judged to be sensitive, respondents answered more positively in the self-administered questionnaire,e.g.,sharing same "load",19 to 27%;injecting at seller's house,53 to 59%;and sex with a prostitute in the last year, 31 to 39%.In contrast,admitting treatment for STD decreased,37 to. 31%.
Conclusion. The effect of current drug addiction on responses to behavioral questions that may predict the risk of HIV infection is unknown.Our results show that consistency of response may vary over time,by question,and by mode of interview.

W.D.P.74

PREDICTING NEEDLE-SHARING BEHAVIOR OF IVDU'S IN TREATMENT

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Objective. To identify characteristics of intravenous drug users (IVDUs) in treatment who were at greatest risk for transmitting and acquiring HIV infection, enabling substance abuse efforts to more accurately target interventions to populations at risk.
Methods. The Department of Public Health collects information on all individuals admitted to drug treatment programs contracting with the city of San Francisco. The data is collected on a standard form at intake to treatment. This study asked: which of the 36 variables on the intake form predict needle-sharing behavior among 3028 IVDUs admitted from April 1 - Sept. 30, 1988? Analysis included chi square and log-linear regression.
Results. Significant differences between needle-sharing and non-sharing were found for certain demographic variables, i.e. age, education ($p<.05$), race, sex and employment ($p<.01$). The primary drug used was also significant ($p<.01$), i.e. heroin (then amphetamine) users were more likely to share needles. Preliminary results of the log-linear analysis suggest that cocaine use was significant ($p<.0001$) in predicting needle sharing behavior. Also, though seroconversion continues to rise among blacks in treatment in San Francisco, blacks were less likely than non-blacks to share needles ($p<.0001$).
Conclusion. These data require further analysis but may indicate that special attention to cocaine use among IVDUs will be necessary in prevention efforts in San Francisco. The role of race in particular, as well as other demographic variables, require further investigation. AIDS interventions at some agencies may explian some of the demographic differences found.

W.D.P.75

HUMAN IMMUNODEFICIENCY VIRUS IN DRUG USERS AND INCREASED CONSULTATION IN GENERAL PRACTICE

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OBJECTIVE: In areas of intensive drug abuse, in the absence of an operative drug dependency unit, the burden of care falls heavily on the Primary Health Care providers - General Practitioners. Anecdotal evidence suggests HIV infected IVDA were taking up an increasing amount of the GP's time. Attempts to relate increased consultation rates to HIV infection and knowledge are shown.
METHOD: 25 HIV+ and 25 HIV- IVDA were selected randomly from a larger group of 350. Case notes were examined for GP attendances, defaults and out-of-hours calls. Hospital referrals were noted, as were defaults to those same services. Full case notes were analysed for a four year period 01-01-84 to 31-12-85 and 01-01-86 to 31-12-87. The first two years represent an era of pre-AIDS awareness, both for the IVDA and physicians.
RESULTS: The most extensively used facility for both groups in both time blocks was their GP. The infected users attended more often throughout, but not significantly so. Both groups significantly increased the number of visits to their GP from the first two year block to the second (P<.0005). Casualty was the most frequently utilised hospital based service. With the exception of the Infectious Diseases Unit (the regional AIDS Screening Clinic) none of the hospital based services were attended more than once in two years by either group. The seropositive IVDA attended the ID Unit on average 1.4 times in the second two year period, compared to only 0.28 visits by the seronegative IVDAs. All services represented had a significant problem with defaulters, in particular the psychiatrists.
CONCLUSIONS: The large number of consultations increased after awareness of AIDS in a group of IVDA, particularly in those IVDA who became infected with HIV. By far the most utilised service was the GP, the hospital services were poorly attended by all IVDA whether infected or not. The implications for future management of all IVDA and funding of services are discussed.

W.D.P.76

HIV STATUS AND CHANGES IN RISK BEHAVIOUR AMONG ARRESTED AND DETAINED INTRAVENOUS DRUG ABUSERS IN STOCKHOLM 1987-88

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Objective. To follow the spread of HIV among intravenous drug abusers (IVDA) in Stockholm and their risk behaviour. HIV entered this population in 1983.
Methods. From January 1987 until October 1988 1068 IVDA arrested or detained at the remand prison in Stockholm have been interviewed about HIV risk behaviour and tested for HIV antibodies. The participation is volontary; the drop out rate is 40% in the arrested population and 10% in the detained population.
Results. The overall seropositive rate is 13%, approximately the same for men and women. Among IV amphetamine users (who constitute about 85% of the IVDA in Stockholm) the HIV seropositive rate is 6%, whereas it is 47% among the heroin addicts. More than 40% of the addicts have participated more than once. Three have seroconverted during the investigation period. In the project we have discovered fifteen HIV-positive addicts. Of these nine were not previously tested, whereas six had a previous negative test. The annual incidence rate is about 1%. More than 90% of the addicts entering January-June 1988 were tested before (average 3.8 times) compared to 1987 when 80% were tested (average 2.5 tests.)

There is no measurable change in sexual risk behaviour in terms of number of partners or condom use between 1987 and -88, but there seems to be a tendency among the HIV negative IVDA to have become more careful with their injection equipment in terms of frequency of needle sharing.
Conclusion. The HIV seroprevalence among IVDA in Stockholm 1987-88 has been stable. There seems to be risk reduction in terms of needle sharing but not in sex behaviour.

W.D.P.77

OBSERVANCE ET COMPLIANCE DU TRAITEMENT PAR ZIDOVUDINE (A.Z.T.) CHEZ LES TOXICOMANES I.V. INFECTES PAR LE VIH

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Objectifs : Observer la compliance et les effets du traitement par A.Z.T. chez les toxicomanes intra-veineux infectés par le VIH.
Méthodes : A travers le suivi clinique et biologique d'une cohorte de toxicomanes séropositifs pour le VIH1, appartenant aux groupes III et IV de la classification du CDC; les critères d'inclusion retenus sont cliniques : apparition d'une ou plusieurs infections opportunistes du groupe IV et/ou biologiques: lymphocytes CD4 $\leqslant$400/ml en permanence et/ou antigénémie P24 $\geqslant$ 200pg/ml.Le sevrage des drogues I.V. est exigé avant le début du traitement.
Résultats :42 patients toxicomanes intraveineux ont reçu un traitement par A.Z.T. Sur 56 elligibles pour ce traitement avec un recul variant entre 3 mois et 18 mois; la durée moyenne du suivi est de 10 mois.
L'observance a été complète pour 33 patients,partielle pour 5 patients et mauvaise pour 4 patients. Les causes de non-observance ont été 3/9 une rechute de la toxicomanie, 4/9 malades perdus de vue,2/9 refus par le malade.
Conclusion : L'observance du traitement est possible lorsque la toxicomanie est sevrée et prise en charge parallélement.

W.D.P.78

REDUCING HIV TRANSMISSION BY PROVIDING METHADONE TREATMENT TO INTRAVENOUS DRUG USERS IN JAIL

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Objective: The KEEP program at the central N.Y.C jail facility on Rikers Island provides methadone treatment to incarcerated IVDUs and routes them into community methadone programs after release, to prevent relapse to intravenous drug use and associated AIDS risk behaviors. Intensive Transition Services (ITS) are provided to randomly assigned KEEP participants at their release to increase their rate of entry to community treatment.
Methods: The program is being evaluated with a controlled pre/post-test experimental design. Subjects are assigned to interventions as follows: KEEP methadone only (N=120); KEEP plus ITS (N=120); heroin detoxification-controls (N=150).
Results: 2,000 male and female IVDUs are served annually by KEEP. Preliminary pre-test interviews were conducted with 36 IVDUs not in drug treatment at incarceration. Subjects averaged 11 years of drug injection and used $120 of intravenous heroin daily; 85% reported sharing of unclean injection equipment (needles, syringes, "cookers"); 80% were literally "street addicts" with no stable living quarters or social supports; and the women averaged about 20 lifetime prostitution arrests.
Conclusion: The in-jail KEEP methadone program serves a large, relatively neglected population of criminally-involved street addicts and addicted prostitutes who are at high risk of contracting and transmitting HIV. Successfully routing these groups into community drug abuse treatment will help stem the spread of AIDS.

W.D.P.79 IVDU AND AIDS: MORE RESISTANCE TO CHANGING THEIR SEXUAL THAN THEIR NEEDLE-SHARING PRACTICES.

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OBJECTIVES To study the effect of intensive education /prevention program (EPP) on 1) high-risk behavior of IV drug users and their sexual partners and 2) the spread of HIV-1 in this population.
METHODS: We started an EPP in Sacramento in 7/87 consisting of education regarding spread of HIV, ways to reduce drug- and sex-related risks, and HIV ab test for IVDU and their sexual partners. The program operates at drug treatment programs (DTP), hospital and jail. Test results are given 1 wk later and "safer shooting" and "safer sex" methods are discussed again. IVDU are retested and assessed for behavior modification every 4-6 months.
RESULTS: Of the 671 IVDU tested initially, 7% never share and 93% share paraphernalia(P). Of the 93%, only 40% disinfect P often, usually or always. 68% of IVDU never use condoms for vaginal sex and only 22% often, usually or always use them. The average # of sexual partners 1 and 6 mos prior to testing was 3 and 11. 150 IVDU have returned for retesting and, of these, 10% no longer use drugs, 34% do not share and 52% share P. Of the people who share P 52% disinfect P often, usually or always. 64% still do not use condoms for vaginal sex and only 26% often, usually or always use them. The average # of sexual partners in the last 1 and 6 mos was 2 & 5.6. The rate of sero-conversion among returnees was zero. The prevalence rate for HIV-ab among DTP clients has not increased since the EPP was begun.
CONCLUSIONS We believe IVDU can change drug-related high-risk activities, but in our program they are resistant to changing their sexual habits. This type of EPP should be integrated into all DTPs to slow the spread of HIV among IVDU. Better methods to change sexual habits need to be developed.

W.D.P.81 Experience With An Anonymous Drop-in HIV Testing Program For Intravenous Drug Users (IVDU) and Their Contacts

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Objectives: To initiate a drop-in HIV education, counseling, and testing program for IVDU-Project TRUST (PT) staffed primarily by recovering IVDU.
Methods: Demographic and risk behavior data was collected by a standardized questionnaire and correlated with HIV serology.
Results: During 1988, PT saw 875 clients: 758 (87%) were tested; 67% were male, 70% were white. Overall, 20% were seropositive. Seropositivity was significantly higher in active vs recovering IVDU (34% vs 20%, p<0.01), and in blacks and Hispanics vs whites (p<0.01). Of note is that 78% of clients returned for their test results. Seropositive clients were offered immediate medical and drug treatment options, and participation in support groups.
Conclusions: PT is a "user friendly", unique, and successful model for education and counseling IVDU about HIV. Although the initial population tested was primarily white, the addition of minority counselors has dramatically increased use by Hispanics. Former IVDU are effective counselors and role models for this risk group.

W.D.P.83 PREVENTION OF AIDS IN IV DRUG USERS AND ITS CONSEQUENCES ON THE EPIDEMIC IN AN INTERACTING HETEROSEXUAL POPULATION

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Objective: To study the potential effect of IV drug users on the epidemic in the heterosexual population as well as the effects of interventions in IV durg users on the epidemic in IV drug users, heterosexuals and newborns.
Methods: Mathematical Models and Computer Simulations
Results: For a population of 5000 IV druq users interacting with 300,000 heterosexuals corresponding to a medium sized urban center with 20% of the IVDU already infected, the cumulative number of non-IV drug user heterosexual AIDS cases could be increased up to 1200-fold after 10 years by interaction between the two populations. The number of heterosexual cases increases linearly with the degree of interaction. Interventions redusing elements of the transmission coefficient, such as the probability of shooting with a reused needle or infectivity, affected by the supply of needles and use of bleach have less than linear effects on reducing cases in both IV drug users and non-IVDU unless very effective comprehensive programs are undertaken. Withdrawal type programs, such as methadone/detox and needle distribution programs have linear effects even with small progams. The total number of cases can be increased enormously because the heterosexual population is so much larger than the IV drug user population.
Conclusions: The degree of interaction between IV drug users and heterosexual non-IVDU needs to be studied and reduced. Withdrawal programs are more effective than other programs. The cost of waiting to intervene can be high.

W.D.P.80 USE OF A FINGERSTICK PAPER-ABSORBED (PA) BLOOD SAMPLE FOR HIV SEROSURVEYS IN INTRAVENOUS DRUG USERS (IVDU).

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Objective: To evaluate the utility of PA fingerstick blood samples for serosurveys of IVDU.
Methods: Populations of IVDU: methadone maintence (MM) clients and IVDU using an HIV drop-in testing program (TP). A PA fingerstick sample of blood, demographic and risk factor data were obtained with consent. Samples were tested by ELISA & confirmed by WB (Hoff, NEJM:1988:318:525), & results were correlated to risk behavior data.
Results: Of MM patients, 145/209 (69%) consented: 46% were women, 39% were minorities. Seropositivity was 39% overall and significantly higher in minorities vs whites (49% vs 30%, p=.01). For the 393 TP clients, seropositivity was 17% overall, higher in active vs recovering IVDU (34% vs 14%, p<0.001), and higher in minorities vs whites (36% vs 13%, p=.002).
Conclusions: Seroprevalence rates may vary widely among innercity IVDU. A fingerstick PA blood sample is a convenient method for serosurveys of IVDU, because it is rapid, obviates venipuncture, poses less risk to the provider, and specimens are easy to store and transport.

W.D.P.82 DRUG USE AND SEXUAL BEHAVIOR IN MALE PATIENTS AT AN STD CLINIC: IMPLICATIONS FOR AIDS PREVENTION

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Objective. To describe drug use and sexual behavior relevant to AIDS prevention among male patients attending an STD clinic.
Methods. In March 1988 a consecutive sample of male patients at the SF STD clinic completed a self administered questionnaire. Demographic characteristics, types of drugs used, frequency of use, use with sex, knowledge of risk and sexual behavior change were compared.
Results. Patient response included 292 heterosexual (115 white/177 minority) and 163 gay/bisexual (109 white/54 minority) males. Drug use prevalence included: alcohol 87%, marijuana 55%, cocaine 26%, crack 12% and methamphetamine 12%. 75% reported using drugs with sex. Heterosexual males reported more regular use than gay/bisexual males of alcohol (73% vs 63%, p=.04), cocaine (15% vs 3%, p=.0004) and crack (10% vs 1%, p=.007). Among heterosexuals, whites more than minorities used alcohol regularly (79% vs 65%, p=.04) and used drugs with sex (81% vs 65%, p=.02). Minority heterosexuals regularly used crack more (15% vs 3%, p=.007). Gay/bisexual males were significantly more likely to know that drug use increased unsafe sex than heterosexuals and report reduced drug use with sex in response to AIDS (36% vs 16%, p=.00001). Minority heterosexuals reported reduced drug use with sex more than whites (22% vs 8%, p=.01).
Conclusions. There is substantial drug use among male patients at an STD clinic. STD clinics need to develop information and services for patients regarding drug use and sexual behavior relevant to preventing AIDS.

W.D.P.84 ROLE OF HIV INFECTION IN ALTERATION OF PULMONARY FUNCTION IN INTRAVENOUS HEROIN ADDICTS (IHA).

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Objective. IHA and patients (pts) with AIDS frequently develop interstitial lung disease. In IHA HIV infection could represent a cause of further pulmonary damage. We studied a group of IHA, to evaluate the role of HIV infection in alteration of respiratory function (RF). Methods. RF tests, blood gas analysis and CD4 lymphocytes counts were performed in 33 IHA, with no pulmonary symptoms and normal chest x-rays, 23 male and 10 female, 12 HIV- and 21 HIV+, 6 belonging to group II of CDC classification system, 11 to group III and 4 to group IV. Results. Only DLCO expressed as percent of the predicted (74.6±14.1 % vs 86.9±6.6 %, p<0.01) and CD4 lymphocytes (785±428/mm³ vs 1236±464/mm³, p<0.01) were significantly lower in HIV+ pts than HIV- pts. DLCO was <80% in 15/19 (79%) HIV+ pts and in 1/11 (9%) HIV- pts. The 4 HIV+ pts with normal DLCO (>80%) were in group III and IV of the CDC classification.
Conclusions. These data show that HIV+ IHA had significant reduction in DLCO in comparison to HIV- IHA. The absence of clinical symptoms and/or radiological abnormalities of pulmonary disease suggests a subclinical pulmonary infection or alveolitis caused by HIV. Since DLCO abnormalities, that we mostly find in HIV+ IHA, are present in the asymptomatic stages of the infection and are not related to CD4 lymphocytes reduction, we suggest that interstitial lung involvement can be due to a direct action of the virus rather than to a subclinical opportunistic infection.

W.D.P.85 SEXUAL BEHAVIORS OF INTRAVENOUS DRUG USERS

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Objective: Ascertain the sexual behavior patterns of intravenous drug users and correlate these with drug use and needle sharing patterns. Methods: In 1988, 273 intravenous drug users in treatment provided extensive interviews regarding drug use, needle sharing practices and sexual behavior. The demographics of the sample were: male 186(68.1%), female 87(31.9%); (age X=38.4); White 188(69.9%), Black 65(23.8%), other 13 (4.8%).
Results: Numbers of heterosexual partners in past 12 months

	None	1	2-4	5-10	>10	Median
males	27(14.5%)	72(38.7)	55(29.6)	26(14)	6(3.1)	1.0
female	23(26.4%)	34(39.1)	24(27.6)	4(4.6)	2(2.2)	1.0

Condom use for vaginal intercourse was low for both males (8.7%) and females (13.6%). Males reporting sharing needles in the past year had more sexual partners (mdn=2.0) than those not sharing (mdn=1.0,U=2928.5,p<.02) Males (mdn=2.0) and females (mdn=2.0) reporting recent IV cocaine use had more sexual partnrs in past year than those reporting other recent IV drug use (males, mdn=1.0,U=363p<.05; females mdn=1.0,U=192 p<.02). Conclusion: The high risk behaviors of needle sharing and sexual promiscuity are related for males in this sample. IV cocaine use appears to be further related to sexual promiscuity for both males and females.

Additionnels
Additional

W.D.P.87 THE USE OF CONDOMS BY PROSTITUTES IN YAOUNDE-CAMEROON

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Objectives.To determine barriers and to explore ways of overcoming cultural, moral,social and economical resistances to the use of condoms in Africa.
Methods.An AIDS education campain was conducted among 125 prostitutes in Yaounde and free condoms were supplied since January 1988.The prostitutes had to require all the clients to use condoms as effective protection against STDs and AIDS.An evaluation was done in July(79/125 of the girls)and in December.
Results.Use of condoms:

	January 1988	July 1988	December 1988
No answer	48% (60/125)	1,3%(1/79)	2,2%(2/87)
Never or rarely	24% (30/125)	3,8%(3/79)	25,3%(22/87)
Half the time	21,6%(27/125)	29,1%(23/79)	19,5%(17/87)
More than ½the time	6,4%(8/125)	62% (49/79)	47,1%(41/87)
Always		3,8%(3/79)	5,7%(5/87)

Reasons given by prostitutes for not using condoms were:pelvic irritation; they did not like it;no pleasure;the client did not accept;non availability of condoms;the cost ofcondoms.

Clients who refused the use of condoms had these arguments:they said AIDS does not exist;they were not afraid of STDs or AIDS;they said they were healthy;they thought the prostitutes had STD or AIDS;no pleasure;because of the size and frequent condoms breaks;they wanted to pay less.
Conclusion.The use of condoms has increased but Cameroon still needs an educational campain which has to dissuade men from engaging in unprotected sex with prostitutes.Condoms should be more available.

W.D.P.89 Barriers to continued condom use.

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Reasons for use of condoms by homosexually active men were examined. Homosexual and bisexual men were recruited around Sydney from social venues and from advertisements of a telephone interview service. Open ended discussions about all aspects of condom use were recorded on tape. 195 interviews were conducted and subjected to content analysis using five categories: normative behaviour, behavioural beliefs, decision making, effort and self efficacy. Results for the five categories were stratified into faulty or sound responses and age did not markedly influence the overall results. However, the qualitative aspects of the faulty responses varied by age. Half the men in all age groups were judged to have weak normative behaviour while the majority expressed strong behavioural beliefs. Even though over a quarter of men had faulty decision making processes about when not to use a condom, the majority of men had high expectations about their continued condom use in the future. It was found that categories can not be examined independently of one another. The effort involved in using condoms was an important factor for almost half the participants, and dislike for condoms was two times more frequent for men 35 to 40 years of age, compared to both younger and older men. Contextual factors, such as drugs and alcohol use and romantic ideals, are important mediating factors in determining the impact of beliefs and attitudes on the decision making processes of condom use. Individual groups at-risk of HIV infection need to have their specific attitudinal and lifestyle barriers to condoms addressed in targetted educational and behaviour change programmes.

W.D.P.86 PREVENTION AND COUNSELING ACTIVITIES OF DRUG ABUSE CENTERS FOR HIV-INFECTED AND NON-INFECTED DRUG ADDICTS

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Purpose. The Federal Republic of Germany currently has 500 substance abuse centers. Due to the high incidence of AIDS among i.v. drug users their programing now includes prevention and psychosocial counseling in the field of AIDS for this population. To evaluate and improve AIDS services, a demonstration project was implemented at 18 facilities.
Method. Data was collected on an ongoing basis by structured interviews and questionnaires. Preventive activities, treatment plans, client characteristics and daily management issues were the areas of evaluation.
Results. The range of provided activities is broad and includes education, streetwork, group therapy and services to the terminally ill. The average number of HIV positive clients utilizing services was 40 (range 3-200). Less than projected numbers of HIV positive clients have resulted in an increased focus on the areas of AIDS prevention and psychosocial supportive counseling.
Conclusions. An analysis of the data reveals that overall the counseling centers coped well with the AIDS treatment tasks, but, however, more improvement in special areas is indicated.

W.D.P.88 FREE CONDOMS FOR 15-25 YEAR OLDS - A Pilot Project in Stockholm County, Sweden

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Objectives:
- to make condoms easily accessible to young people in a way they can accept.
- introduce the condom to young people.
- offer support, advice and possibilities to discuss sex and relationships with trusted adults.

Method: Every week 40 places varying from highschools to discos and footballclubs were asked to participate. They distributed the condoms each in their own way - suitable to their activities and target groups.

Evalution: Every week all participants filled in a preconstructed survey. After the project extensive interviews were made with participants and teenagers in 10 places.

Results: The evalution showed young people understood the purpose of the project and liked it. They felt more comfortable getting condoms from people they knew than in drugstores and shops. Boys and girls turned to different places for condoms and advice. Participants with special training gave more opportunities for talks. The project was succesfull and a fullscale program is now starting.

W.D.P.90 LES FEMMES AFRICAINES DEVANT LE SIDA AU ZAIRE

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La transmission du SIDA en Afrique étant surtout à prédominance hétérosexuelle, les femmes en âge de procréer et leurs enfants sont particulièrement à risque. Quoiqu'urgente, l'action préventive est entravée par des contraintes d'ordre économique, social, culturel et psychologique.

Cette communication présente les contraintes existentielles parmi des femmes de divers milieux sociaux telles qu'elles ressortent des recherches-actions menées à Kinshasa en 1987-88. On verra comment les comportements individuels sont médiatisés par des institutions sociales. Ainsi, pour être efficaces les programmes de prévention nécessitent une approche totalisante qui permet d'augmenter les ressources dont disposent les femmes dans leurs familles et sociétés.

W.D.P.91 SURVEILLANCE-EDUCATION SANITAIRE DES PROSTITUEES AU SENEGAL

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Objectif. Sensibiliser une population à risque pour rompre la chaine de transmission du HIV et des autres MST.
Methodes. Au Sénégal, 15% des prostituées sont porteuses d'Ac anti-HIV contre 0,6% dans la population de contrôle. Au cours des visites sanitaires périodiques instituées grâce à la réglementation de la prostitution. 1700 prostituées ont bénéficié de séances d'éducation et d' information où les modes de contamination, les manifestations cliniques, et les moyens de prévention des MST et du SIDA sont débattus.
Resultats. Nous notons qu'un climat de prise de conscience commence à se répandre parmi ces prostituées (souvent en possession de préservatifs, prélèvements vaginaux pathologiques en régression). Mais, le refus des clients d'user de préservatifs, les raisons d'ordre économique qui les poussent à enfreindre les mesures de prévention, le nombre élevé de prostituées clandestines sont autant de facteurs qui rendent cet apprentissage difficile.
Conclusion. Une information permanente et soutenue, une stratégie permettant de cibler les clandestines, des préservatifs de qualité, peu onéreux et facilement accéssibles contribueront à diminuer considérablement la dissémination du HIV et des autres MST au SENEGAL..

W.D.P.92 SELF-REPORTED SEXUAL BEHAVIOR IN A COHORT OF HOMOSEXUAL MEN: CROSS-SECTIONAL ANALYSIS AT 6 YEARS

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Objective. To describe sexual behavior in the Vancouver Lympedenopathy-AIDS cohort in 1988.
Methods. Eligible subjects completed their most recent visit during the period 10/87-09/88. Questionnaire responses about numbers of partners, frequency of anal receptive intercourse (ARI) and frequency of condom use by the partner during ARI in the prior 12 months were compared. Distinctions were made concerning regular (≥1 contact/month) and casual partners. Seronegatives (SN) were compared to seropositives (SP).
Results. A total of 383 subjects were eligible (197 SN/186 SP). SN and SP had similar annual numbers of all sex partners (median 3.0 vs 4.0; p=.382), regular partners (median 1.0 vs 1.0; p=.960) and casual partners (median 2.0 vs 3.0; p=.391). More SN than SP subjects reported never engaging in ARI with regular partners (55.3% vs 31.9% respectively), and never engaging in ARI with casual partners (80.2% vs 41.0%). More SN than SP subjects reported never using condoms during ARI with regular partners (45.4% vs 18.2%) but frequency of condom use by casual partners during ARI was similar. Among those reporting ARI with casual partners, only 72.0% of SN and 70.8% of SP reported always using condoms during this very high risk activity. Those who did not always use condoms during ARI with casual partners cited the following reasons: no perceived risk; casual attitude; drug/alcohol impairment; personal preference; and/or both partners seroconcordant.
Conclusion. Despite marked overall behaviour changes, some subjects in our cohort in 1988 continue high risk activities. Numbers of partners have fallen and are now similar in HIV+ and HIV- men but behaviour patterns differ. Analysis of behaviours should take into account the type of partner as behaviours vary with regular and casual partners.

Les femmes (partie 2)
Women (Part 2)

Th.D.P.1 HIV ANTIBODY AND HIGH RISK BEHAVIORS AMONG NON-INTRAVENOUS DRUG USING WOMEN OBTAINING ABORTIONS IN THE SOUTH BRONX, NEW YORK CITY.

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Objective: To determine the prevalence of HIV antibody (Ab) and high risk behaviors in low income pregnant adolescents and young women obtaining first trimester abortions in an out-patient facility in the South Bronx, New York City.
Methods: During 4-7/88, 516 patients having a 1st trimester elective abortion were interviewed about demography, drug use and sexual, medical and venereal disease history. Discard blood and urine were coded and linked to interview data and anonymously tested for serum HIV Ab, syphilis serology and urine toxicology.
Results: HIV Ab was detected in 9/504(1.8%) sera; none in 127 subjects aged 15-19, 4/163(2.5%) aged 20-24, 3/116(2.6%) aged 25-29, 2/57(3.5%) aged 30-34, and 0/41 aged 35-44 (p=.06). Two of 222(0.9%) blacks, 6/260 (2.3%) Hispanics and 0/6 whites had HIV Ab. Of 431 interviewed, none reported IV drug use. Urines were negative in 133/142 (93.7%) and positive in 9/142 (6.3%); 7/9 corroborated by self-report of drug use (non-IV). Non-IV cocaine &/or heroin use was reported in 37.5% of subjects &/or their male sex partners of prior 2 years (20.8% in <20yrs to 50.6% in 30-34yrs). In age stratified analyses, drug use (non-IV) by subject and/or sex partner was associated with ≥3 sex partners (OR=6.0 p<.01), sex daily (OR=2.5 p<.05), a gonorrhea history (OR=3.2 p<.01), ≥3 pregnancies (OR=2.6 p<.01) and ≥2 abortions (OR=1.7 p<.05). Barrier contraceptives were never used by 32.2%(125/388), unrelated to drug use.
Conclusion: Women obtaining abortions in the South Bronx are at risk for HIV infection from unsafe sex. Drug use (non-IV) is common and associated with sexual behaviors predisposing to HIV infection. AIDS prevention programs must address the inter-relation of drug use via non-IV routes and high risk heterosexual activity.

Th.D.P.2 HIV INFECTION IN WOMEN: EFFECT OF COUNSELLING ON RISK-ASSOCIATED BEHAVIOR.

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Objectives. To determine effects of counselling on certain risk behaviors in North American women infected with HIV. Methods. 31 HIV-seropositive women were carefully evaluated and followed closely in a multidisciplinary ambulatory care program for a mean of 22 months. Intensive counselling in regard to preventing transmission was provided to all. The impact of counselling on intravenous drug use and sexual activity was monitored. Results. Of 31 HIV seropositive women (mean age 31 years), 26 had been infected by intravenous drug use (IVDU). Of the 26 IVDU, 17 achieved drug abstinence after documentation of HIV infection. Abstinence was achieved by 7 of 12 women who had served prison terms for drug-related offenses. Each of the 17 drug abstinent women always (11) or almost always (6) practiced safe sex. Of the 14 IVDU who had supported drug use by prostitution, only 6 achieved drug abstinence; the remaining 8 continued both IVDU and 'unsafe' activity in the sex industry. Conclusions. With concerted peer and professional counselling, abstinence from IVDU can be achieved in a large proportion of women with HIV infection. Drug abstinence was more difficult to achieve in women who had been financially dependent upon prostitution. Support systems directed specifically toward and developed with the collaboration of participants in the sex industry may be critical in limiting transmission of HIV.

Th.D.P.3 GLASGOW STREET PROSTITUTES: A STUDY OF SEXUAL BEHAVIOUR AND INJECTED DRUG USAGE.

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Objective: To study aspects of sexual behaviour and drug injecting among female street prostitutes in Glasgow.
Methods: Over a 4 month period in late 1988, a group of unselected female prostitutes attending a drop-in centre and/or a HIV Counselling Clinic were interviewed about aspects of sexual behaviour and drug abuse.
Results: Of 63 women interviewed, 40 (64%) were aged 25 years or under. 53/63 (84%) had recently injected drugs; 17 (32%) of these 53 were known HIV-positives. Almost all were well-informed about HIV and AIDS. Only 9/58 (16%) performed vaginal intercourse (VI) with more than 50% of their clients; 58/59 (98%) claimed they always used condoms for VI with clients, although 59/62 (95%) reported that clients had asked them for VI without a condom. Of 47 who had a regular sexual partner, only 8 (17%) used condoms for VI with these regular partners. 35/63 (56%) used contraception other than condoms; 18/63 (31%) were on long-acting IM medroxyprogesterone acetate ("Depo Provera").
Conclusion: These findings indicate that much client-prostitute interaction does not involve high-risk activity. Furthermore, most prostitutes have adopted risk reduction measures with their clients; this does not extend however to their regular partners. Despite public education initiatives, many clients are still requesting unprotected sexual intercourse.

Th.D.P.4 SEXUAL PARTNER NOTIFICATION: ATTITUDES AND ACTIONS OF HIV-INFECTED WOMEN.

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Objectives: To survey HIV+ women concerning attitudes toward sexual partner (SP) notification (N) and feelings concerning future pregnancy.
Methods: 25 HIV+ women were interviewed at Infectious Disease & Pediatric AIDS clinics during July and August 1988 in northern New Jersey (NJ).
Results:

Questions (summarized)	Affirmative Responses (%)
1. Should the Health Dept (HD) be involved in confidentially assisting in the N of SP of HIV+ women?	16/25 (64%)
2. Would you be willing to confidentially provide the names of your SPs to the NJ HD?	17/25 (68%)
3. Would you agree to HD disclosure of your name to SPs?	5/25 (20%)
4. Have you informed all male SP you had previous to your HIV+ diagnosis (dx) that you are now infected with HIV?	6/25 (24%)
5. Have you informed all male SP you had since your HIV+ dx?	12/23 (52%)
6. Do you wish to become pregnant?	1/25 (4%)

Women interested in HD involvement in N tended to be willing to disclose SP names to the HD, and those uninterested tended to be unwilling. 38% of the 16 women who had not notified all SP did not desire HD involvement.
Conclusions: SP of HIV+ women are frequently uninformed of possible risks from prior sexual encounters. SP information required for centralized N programs may not be volunteered or readily available. Compliance must be evaluated in constructing SP N programs. Many HIV+ women in NJ are becoming pregnant despite the reported lack of desire. Innovative approaches to assist women in disclosure and family planning are needed.

Th.D.P.5 PERCEPTION OF AIDS RISK AMONG WOMEN SEXUAL PARTNERS OF IV DRUG USERS IN SAN FRANCISCO

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Objective. To explore the factors that shape women's perception of HIV risk and to examine the role that perceived risk plays in introducing preventive behavior change in a sample of women sexual partners of male IV drug users in San Francisco, California. Data presented are from interviews conducted at entry to an AIDS prevention counseling trial.
Methods. Sixty-two women sexual partners of IVDUs recruited from a variety of outreach efforts were interviewed concerning their sexual practices, beliefs about their HIV risk, and their partners' HIV serostatus and needle practices. Average age of subjects was 33 years. Fifty-five percent were white, 33% black, and 10% Hispanic. Sixty-nine percent had at least a high school education. One subject was known to be infected with HIV, 28 (45%) had received negative antibody test results, and 33 (53%) had unknown serostatus.
Results. Although the majority of subjects considered themselves to be at risk or possibly at risk (61%), only 20% (13) reported always using condoms. Women whose partners shared or possibly shared needles in the year prior to interview were more likely to perceive themselves at risk (69%) than women whose partners did not report sharing. A second factor that appeared to influence women's beliefs about risk was their partners' antibody status. Women with partners who had a negative antibody test result were less likely to consider themselves at risk than women whose partners had not been tested or had received seropositive results. While the perception of risk did not differentiate between women who had adopted preventive measures and those who had not, concrete knowledge of an infected sexual partner resulted in consistent condom use or abstinence. Six of the 13 women who reported always using condoms had known seropositive partners.
Conclusion. Assurances from their male IVDU partners concerning safe needle practices and negative antibody results served to allay fear of infection in this sample of women. Given the high rates of recidivism among IVDUs and the uncertainty of partners' reports, this group may be downplaying their risk for HIV infection. Effective health education of this high risk population must address the resistance to adopting safer sex practices among women with partners of unknown serostatus .

Th.D.P.6 AN ETHNOGRAPHIC STUDY OF HIGH RISK SEXUAL BEHAVIOR IN 96 WOMEN USING IV HEROIN, COCAINE AND CRACK IN THE SOUTH BRONX

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Objective. To identify determinants of high risk sexual behavior and the obstacles to risk reduction in IV drug and crack using women in the South Bronx.
Methods. In late 1987 we initiated an ethnographic study in the Women's Center - a drop-in education and support group meeting weekly in a Methadone clinic. Women served as "community informants" to describe prevalent sexual and drug use practices in the local drug sub-culture. Information was gathered through individual ethnographic interviews, process ethnography of group interactions, focus groups, and structured attitudinal questionnaires. Participants (n=96) were 55% Hisp, 40% Blk, 5% Wht; Mean Age 33 with 2.2 children.
Findings. All women were 2nd or 3rd generation substance abusers - 75% using crack/cocaine 30-40% still injecting. Drug related violence and illegal activities often characterize relationships with sex partners. Sexual relationships were determined by current drug use patterns (especially cocaine use) which amplifies risk of HIV exposure due to frequency of sexual contact with multiple partners, usually without the use of condoms.
Conclusions. The high rates of continued polydrug use by inner city minority women, driven by crack/cocaine addiction, is the major obstacle to successful AIDS risk reduction efforts in this most vulnerable group of women. Access to effective drug treatment services is essential to restrict the further spread of AIDS by unsafe and unprotected heterosexual behavior.

Th.D.P.7 THE WOMEN'S CENTER: A MODEL PEER SUPPORT PROGRAM FOR HIGH RISK IV DRUG AND CRACK USING WOMEN IN THE BRONX.

Eric, K.; Drucker, Ernest; Worth, D.; Chabon, B.; Pivnick, A.; Cochrane, K. Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, New York, USA.

Objective. To provide women with a safe and confidential group setting in which to share feelings, thoughts, and information about sexual behavior, drugs and AIDS, and to support behavior change and risk reduction activities.
Method. Groups meet weekly in a Methadone clinic or in a Community Health Center. Focus groups, educational lectures, video and support groups are used to facilitate discussion. Peer leadership is encouraged and participants do outreach work in the community to enroll other women.
Results. The groups have been functioning for one year in which there have been 625 visits from over 100 women. Each weekly group session is attended by an average of 20 women. A close relationship of drug use (especially crack) to high risk sexual behavior is apparent and has led to a "drug free" ethos in the groups. The group process has contributed to the development of peer counsellors, group leaders, and outreach workers from among participating women. In one group with 25 regular participants, 13 (>50%) women have entered hospital to detoxify from crack use, four have enrolled in a local community college.
Conclusion. Group intervention resulting in risk reduction is possible among high risk drug using women through peer support models focusing on reducing drug use.

Th.D.P.8 THE EXTENT AND IMPACT OF HIV-RELATED DISCRIMINATION IN NEW YORK CITY-A SURVEY OF PWAS AND SERVICE PROVIDERS.

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Objective. To document the full extent of HIV-related discrimination in New York City.
Methods. A diverse sample of 60 PWA's and 60 AIDS service providers interviewed in standardized format concerning discrimination.
Results. Survey revealed that the scope of actual discrimination experienced by people affected by AIDS extends far beyond the areas anti-discrimination laws are designed to remedy.
Conclusion. Local, state and federal anti-discrimination laws must be amended if they are to provide meaningful protections to those who suffer HIV-related discrimination. Further, the social impact of HIV-related discrimination--cost of and access to public health, social services, education and prevention--is far greater than is generally recognized and must be incorporated into all programs and policy planning.

Th.D.P.9 DIFFERENCES BETWEEN SYMPTOMATIC HIV+ FEMALE & MALE PATIENTS

Kelly, Patricia, Graham,V.;Hall,L.;Kitchens,A.;Bastien,A; and DeHovitz,J.; Kings County Hospital Center, Brooklyn,NY,USA

Objective: To compare clinic presentation of female & male patients.
Methods: All 86 female patients seen in the year 1988 (N=86) at the HIV Clinic of a NYC municipal hospital were compared to male controls selected for similiar initial visit dates.
Results: Ethnic origins of female patients (Black-48, Haitian-16, Hispanic-15, Other-4) were similiar to those of males (45,14,21,3). IVDU was the largest risk factor for both females & males (43,54), but heterosexual transmission was a larger second risk factor for women (33) than men (4) in this clinic. Both sexes were similiar in age ($\bar{x}$=34.0 for women, range 19.5-45.9; $\bar{x}$=36.7 for men, range 19.6-55.8), in the average amount of time spent in the clinic system (8 and 8.8 months), in receiving AZT (42/45) and in numbers known dead (13 each). Significantly fewer women had a CDC-defined diagnosis of AIDS than men (39 v.64)(p=.01). In those patients with AIDS, similiar percentages had PCP as their initial opportunistic infection (56%/64%).
Conclusion: Significantly fewer women than men in this clinic have a CDC-defined AIDS diagnosis, suggesting that women may seek medical care earlier in the HIV disease process. However, this early intervention on their part results in an inability to receive CDC-AIDS defining economic and social benefits. Alternatively, the natural history of HIV infection may be different in women, with fewer severely immunosuppressed HIV infected women fulfilling CDC-AIDS criteria than men.

Th.D.P.10 SELECTED GYNECOLOGIC ISSUES IN WOMEN WITH HIV INFECTION

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Objective. Describe gynecologic (GYN) variables in women attending an inner-city HIV clinic.
Methods. Retrospective review of available GYN information obtained from 83 HIV seropositive women seen between 1984 and 1989.
Results. The mean age was 31.9 years (range 20-58). The racial distribution was: Black-80%;Caucasian-15%;Other-5%. HIV infection risk factors included: IV drug use (IVDU) alone-29%;heterosexual contact with a high-risk partner only-24%;blood transfusion-7%;unknown or denied-7%;IVDU and heterosexual contact with a high-risk partner-23%. Of 67 patients, 81% had ever been pregnant and 57% of these had >2 living children. Furthermore, 71%(39/55) continued to be sexually active;of these 9.7%(3/31) used no form of contraception and only 39%(12/31) used condoms. After knowing of their serostatus, 18%(10/55) became pregnant and 8/10 delivered term infants. History of GYN problems was elicited in 34%(25/74). Of 50 women reporting a history of sexually transmitted disease 56% had had gonorrhea;18% syphilis;20% genital herpes;and 14% genital warts. Active GYN problems at first visit were uncovered in 34%. During the time of review, 37%(31/83) women had abnormal GYN exams including 6 pelvic masses and 10 cases of genital herpes;19%(4/21) Pap smears were abnormal.
Conclusion. Heterosexual activity is a frequent mode of HIV transmission in this population. Unsafe sexual practices and inadequate contraception are prevalent and likely to perpetuate spread of infection. The GYN history and exam were often overlooked, but GYN problems accounted for substantial past and current morbidity in this predominantly inner-city population.

Th.D.P.11 COLLEGE WOMEN'S SEXUAL BEHAVIORAL INTENT AND PERCEPTION OF RISK OF HIV INFECTION FOR SELF AND PEERS

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Objective: To determine women college students' perceived risk of various sexual behaviors and their intent to engage in such behaviors with males in long-term and recently-initiated relationships.
Method: 334 randomly-selected female undergraduate students responded to a questionnaire in October 1988 at a major southeastern U.S. university. The questionnaire presented two hypothetical situations, one involving a long-term relationship with a male student and the other involving a recently-initiated relationship. Respondents identified for each situation the sexual behavior in which they and their peers would engage, and rated the level of risk of each behavior. Data were analyzed using paired T-tests.
Results: Preliminary analyses indicate the following significant differences: self and peer perception of risk in the newly-initiated relationships; self perception of risk in both hypothetical situations; self and peer behavioral intent in both hypothetical situations.
Conclusion: It appears that women college students perceived greater risk to themselves than to their peers in both hypothetical situations, even though they predicted lower sexual behavioral intent scores for themselves than for their peers.

Th.D.P.12 FEMALE SEX PARTNERS OF IV DRUG USERS: A STUDY OF SOCIO-PSYCHOLOGICAL CHARACTERISTICS AND NEEDS

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Objective. To identify and examine the socio-psychological characteristics, needs, and service requirements of non-using female sex partners of IV drug users in Los Angeles County. The data will provide an information base for effective HIV infection prevention education programs and strategies.
Method. Eighty key informants including service providers, law enforcement officers, IV drug users, and sex partners from various ethnic groups were interviewed in-depth. Purposive sampling guided the approach to selecting the key informants. The interview protocols were semi-structured, with both open-ended and objective questions.
Results. The sex partner population is made up of different subpopulations with different characteristics correlated to ethnicity, non-IV substance use, and income and education levels. Commonalities across subpopulations are: low self-esteem, powerlessness, history of abuse, isolation, and low perception of HIV infection risk.
Conclusion. HIV prevention education leading to protective behavior change must be based upon an empowerment model which addresses the psychologies of powerlessness, and is sensitive to cultural and class differences.

Th.D.P.13 GENDER DIFFERENCE IN "MATURING OUT" OF INTRAVENOUS DRUG USE

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Objective. To specify the proportion of women among *different categories of* IVDUs, in order to better describe and predict the spread of AIDS.
Methods. Secondary analysis of 3 data sets of IVDUs (reported AIDS cases, drug treatment agency roster, and hospital emergency room admissions) in 3 cities (San Francisco, the Bronx and Chicago), comparing the gender ratios at different ages.
Results. In each urban area the proportion of women among IVDUs declines with age. About 1/3rd of IVDUs in their 20's, and 1/8th of those 40 and older are women. On treatment data, at least half the clients in their early 20's are female, though for older clients the proportion of women IVDUs in treatment increasingly resembles the proportion on other indicators. The declining proportion of women holds for all racial and ethnic groups, though at all ages there are few Hispanic, and especially Mexican American, women.
Conclusion. "Maturing out"-cessation of IV drug use for people as they age"-occurs for men and women at different rates. IV drug use is neither permanent nor demands a total commitment overriding all other aspects of life such as raising a family or a desire not to be a criminal. These countervailing forces weigh differently for men than women, so their IV drug careers are markedly different. In the early years, women especially seek out drug treatment to get away from "the life," and by their early 30's, and especially 40's, all indicators show far more women than menhave abandoned IV drug use. Substantial ethnic differences in gender roles are evident, though in all groups the risk of AIDS among IVDUs diminishes with age at a faster rate for women than men.

Th.D.P.14

Th.D.P.15 FEMALE FAMILY MEMBERS AS MEDIATORS OF UTILIZATION OF HEALTH AND SOCIAL SERVICES

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Objective. To analyze the degree to which the availability of family members, particularly women, as sources of informal support is related to the utilization of health and social services by People with AIDS.
Methods. Data from a survey of a population based random sample of living PWAS in New Jersey is analyzed. The sample includes a high number of intravenous drug users, male homosexuals, racial and ethnic minorities and women. An analysis is made of the differential access of these population groupings to informal family support, and the relationship between the degree of utilization of informal family support and the range and extent of utilization of formal services.
Results. Family members, especially women, are found to be to be the major source of informal support of PWAS among both IV drug users, homosexuals and women who acquired AIDS through heterosexual transmission. This finding hold true , for Black Americans, Hispanics, and whites. Support from women family members is demonstrated to be both instrumental and emotional. A significant relationship is demonstrated between high level of support from female family members and a high degree of utilization of health and social services.
Conclusion. There is a relationship between access to informal and formal supports among PWAS.

Th.D.P.16 HIV INFECTION AMONG FEMALES ENTERING NEW YORK STATE PRISONS

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Objective. To determine the prevalence of and risk factors for HIV infection among females entering New York State prisons.
Methods. From September 1988 to January 1989, information was extracted from the medical records of 514 consecutive females entering New York State prisons, and their sera were tested in a blinded fashion by ELISA and Western Blot for antibodies against HIV.
Results. Of 450 females tested to date, 85 (18.9%) were HIV seropositive. Seropositivity was highest among 30-39 year olds (24.5%) and varied by ethnicity (blacks--14.3%, Hispanics--28.9%, whites--8.2%) and residence (New York City--23.9%, Upstate--4.1%). Nearly half (46.9%) of the 126 intravenous drug users and one-third (34.8%) of the 69 women with serologic evidence of syphilis were HIV seropositive. Two of 19 pregnant women were seropositive. By logistic regression, seropositivity was associated with intravenous drug use (adj OR=10.0, $p<.05$), Hispanic ethnicity (adj OR=3.8, $p<.05$), black race (adj OR=2.9, $p<.10$), and residence in New York City (adj OR=7.3, $p<.05$).
Conclusion. In New York, nearly one of every five female prison entrants is infected with HIV, primarily due to IV drug use. The association between seropositivity and ethnicity may have resulted from unreported confounding risk factors, such as sex with an unrecognized high-risk person. Female prisoners are an important group for educational efforts to reduce the risk of transmission to their sexual partners and offspring.

Th.D.P.17 DETERMINANTS OF SEXUAL RISK REDUCTION IN FEMALE IV DRUG USERS RECRUITED FROM THE STREET.

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Objective. Female IVDU's are the primary link to perinatal HIV transmission. Their motivation for HIV sexual risk reduction is poorly understood. Therefore, our aim was to identify determinants of such efforts in a street sample of active female IVDU's in the lower east side of Manhattan.
Methods. 116 female IVDU's were recruited through street outreach contacts by neighborhood ex-IVDU workers. Paid face-to-face structured interviews were conducted to assess HIV-related risk behaviors, beliefs, personal or network experience, and network norms.
Results. 61% of the sample reported initiating any sexual risk reduction behavior (i.e., condom use, abstinence, reduction in number of partners, avoidance of "high risk" partners) since they heard of AIDS. In multiple logistic regression, significant positive predictors included having more than 1 partner during the average month of the past year ($p<.016$); having friends who practiced sexual risk reduction ($p<.019$); and perceived current ($p<.034$) and future ($p<.048$) risk of HIV infection. Ethnicity, relationship status, knowing someone with HIV disease, and perceived self-efficacy about being able to carry out risk reduction were not significantly associated with risk reduction behavior.
Conclusion. Elements of both Health Belief and Social Influence theory predict sexual risk reduction behavior in female IVDU's. These results are consistent with the findings of prior studies of drug risk reduction in IVDU's in treatment - which demonstrate that both fear of AIDS and positive social norms (Friedman, et al, 1987) are associated with drug risk reduction behavior. Since both health beliefs and perceived norms are malleable, these findings have immediate relevance for designing sexual risk reduction interventions.

Th.D.P.18 DIFFERENCES IN HIV/AIDS COUNSELLING FOR WOMEN AND FOR MEN

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Objective: 1) To find out the differences in the motives of why women and men visit an HIV/AIDS counselling centre and take an HIV test and 2) to present the varied role of female counsellors when counselling men and women.
Methods: Evaluation of reports of experiences given by the female counsellors of the seven HIV/AIDS counselling centres of the Austrian AIDS Foundation (ÖAH).
Results: Many women visit the counselling centres to get advice for others. They want to take an HIV test to make sure that they are not dangerous for others. Protection against AIDS is considered - like contraception - as in the first place a matter of women. The wish for an HIV test often has the following functions: to confirm the closeness to the male partner (especially when he is infected), to "liberate" ("permission" to engage in new relations), to draw a line underneath the past (test result as a proof of purity), to repress the topic AIDS (after a negative result, the topic AIDS is definitely terminated), to lay down a criteria for continuing a relationship (infection through the sexual evasion of the partner or not). Male clients often try to force a female counsellor intothe role of the "exculpating woman" and of a "Wailing Wall". Discussion of the effects of these circumstances in the course of the counselling.
Conclusion: The differences between men and women require different concepts for women which take into account their special concerns and desires.

Th.D.P.19 PRATIQUES DE RISQUE ET SIDA PARMI LES PROSTITUEES ESPAGNOLES

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Objectifs. Connaître d'une façon scientifique la situation des prostituées espagnoles face au SIDA quant aux pratiques de risque. Connaître leur opinion en toutes les matières relatives au risque d'être porteur du VIH ou de développer la maladie. Etude détaillé des changements des habitudes, etc. des prostituées espagnoles. Etude de l'émargement et du refus social dans l'Espagne
Méthode. Enquête d'opinion pour toute l'Espagne. Personnes âgés de plus de 14 ans. Proportionnel parmi des villes de moins de 10.000 habitants et plus de 500.000 habitants. Par régions, habitat, sexe et âge. Questionnaire: 333 questions et réponses possibles, résultant 1.117 entrevues valides, avec une erreur ± 3,5% niveau de confiance = 2 (95,5%) et la variance populationale P/Q 50/50.
Résultats. 40% a eu des relations sexuelles avec plus de 2.000 personnes différentes. 80% a ingéré de la semence. 71% reçoivent le coït anal. Seulement 31% a un couple permanent. 90% n'a que des études primaires. 15% ne passe aucune revision médicale. 69% utilise le préservatif et 25% la pilule anticonceptive. On connait le SIDA le 61%. 17% s'injecte heroïne et 11% cocaïne. 60% des prostituées héroïnomanes ingère de la semence habituellement 71% se ferait la preuve du SIDA.
Conclusion: L'usage du préservatif a augmenté dans un 29% et 28% a une plus grande hygiène dans les relations sexuelles.

Th.D.P.20 STD PATIENTS' AND PROSTITUTES' KNOWLEDGE ON AIDS: MODIFICATION OF SEXUAL PRACTICES, AND EDUCATION NEEDS.

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Objectives: To assess STD patients' and prostitutes knowledge of AIDS with a view to identifying education needs and to assess if knowledge of HIV-status could influence sexual practices.

Methodology: 50 randomly selected STD patients and 25 prostitutes volunteers were interviewed concerning knowledge on AIDS, and sexual practices. HIV-antibody screening was carried out on all and the results were made known to them. Participants were reinterviewed 6 months later concerning their sexual practices after knowledge of HIV-status.

Result: There were serious gaps in knowledge about transmission and prevention in both groups. Majority of STD patients had prostitutes as clients while prostitutes were not discriminatory. None used condoms regularly. Majority of participants who know that condom could be used to prevent STD were not aware of its effectiveness in the prevention of AIDS. Over 95% of the prostitutes who screened negative for HIV-antibody responded 6 months later that they now insist on usage of condom while 30% of STD patients said they now keep to one sexual partner or regularly use condoms.

Conclusion: Identifying various gaps and other areas of education needs would be used to provide effective information needed to design health education strategies. Knowledge of the negative status of HIV-antibody could possibly be used to modify sexual behaviour in high risk groups. Integration of AIDS campaign into STD services is recommended.

Th.D.P.21 "TWILIGHT PHENOMENA" - A PROJECT CONCERNING MEN AS BUYERS OF THE SERVICES OF PROSTITUTES AS A RISK FACTOR.

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Objective: To focus on, reach and influence men to refrain from buying the services of prostitutes. There are far more purchasers than prostitutes; they have greater social, sexual and geographical mobility and their risk-taking behaviour links several large peripheral groups together.
Methods: "Twilight phenomena" is a collective name for a number of sub-projects aiming at exposing the role of the man in prostitution and his risk-taking behaviour. This has been achived by:
-Initiating female politicians and civil servants to "on site" seeking out of men and spreading of information.
-A seminar for men about men who seek sexual contacts, men with risk-taking beahviour and men as buyers of sexual services.
-A Nordic conference on prostitution in Gothenburg to focus interest in Scandinavia on the buyers of the services of prostitutes.
-A cultural project with selected films,authors/debaters and specially commissioned work, such as plays,cabarets,music and pictures dealing with the conditions and risks involved in prostitution. We have also applied for funding of a research project from th Goverment's HIV/AIDS delegation, to find further methods and models to influence men to refrain from buying the services of prostitutes.
Results: We have emphasized the role of the man in prostitution and his risk-taking behaviours by involving and activating individuals,groups,administrations and authorities in the municipality of Gothenburg.
Conclusion: The project "Twiligt phenomena" is an example of how, on the basis and within the framework of the Social Services Act, a specific social problem and matter of public health of major municipal interest can be brought to public awareness and tackled by alternative methods.

Th.D.P.22 HIV INFECTION AND PROSTITUTION IN YAOUNDE-CAMEROON

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Objective.To describe a preventive inteavention for prostitutes for HIV infection.
Methods.Early 1988, 11 prostitutes were selected from hotels,bars and nightclubs throughout Yaounde.They were trained (a)to ameliorate their knowledge on STDs and AIDS, (b)to educate their peers on STDs and AIDS, (c)to spread informations on safer sex practices including how to use condoms and spermicides. These actions were carried out: (a)determination of epidemiological,biological and clinical status of 168 prostitutes, (b)survey on knowledge,attitudes and practices towards AIDS among 125 girls, (c)information and education on safer sex practices, (d)free supply of condoms, (e)evaluation of the work.

Results.Respondents'age:the majority are in their twenties,were born around Yaounde,have never been married and became prostitutes to make money.

Prostitutes represent the highest infected group in Cameroon: 12 from 168 (7,14% versus 0,5% in the general population) had antibodies against HIV1. Four of those 12 girls had clinical symptoms of HIV infection.

In January 1988,most of the respondents said they have heard of AIDS since more than one year,but the degree of knowledge was low about the modes of transmission and methods of effective protection.As for January 1988 behavior change since hearing about AIDS, 22% said they had made no change because they lacked significant information to know what to do. Later,AIDS education demonstrated changes in risk perception,knowledge and attitudes.
Conclusion.This model intervention program planned by FHI and Ministry of Health can be effective for reducing HIV infection among prostitutes.

Th.D.P.23 HIV-INFECTION IN PROSTITUTES:THE POTENTIAL OF HIV-TRANSMISSION.

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OBJECTIVE: To measure risk behavior for HIV-1 of prostitutes of a city with 200 000 inhabitants in West-Germany were tested for HIV-1 transmission. Other factors significantly related to high frequency of sexual activity as for example infection with gonorrhoea or syphilis were examinated. Additionally loose structured interviews were performed to collect information on sexual behavior.
RESULTS: Interestingly none of the women was infected with HIV-1. None of the women was a i. v. drug abusers. Episodes of infection with N. gonorrhoeae, Treponema pallidum and T. vaginalis were diagnosed in 50 % of the women. The most frequent source of customers was via brothel prostitution (80%). It turned out that all women did not use condoms with customers.
CONCLUSIONS: The prevalence of HIV-1 infection in prostitutes is highly dependent on local transmission. The use of the term "prostitute" does not automatically carry the possibility of a high risk group. On the other hand considering unprotectiveness of these women concerning the spread of the virus into these cohorts does serve as a severe marker for rapidly ongoing dissemination. For prevention efforts education campaigns, especially on risk practices have to be intensified.

Th.D.P.24 A DESCRIPTIVE ANALYSIS OF PATIENTS ATTENDING THE WOMEN'S HIV CLINIC AT THE JOHNS HOPKINS HOSPITAL

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Objective: To describe a population of women attending an inner city clinic devoted to the care of HIV-positive patients
Methods: A retrospective review of 83 of 300 charts of HIV positive women seen at an outpatient clinic between 1984 and 1989.
Results: The mean age was 31.9 years with a range of 20-50. The racial distribution was: Black - 80%; Caucasian - 15%; Other 5%. Thirty percent of the women were married or had spouse-like partners. no partner or support - 50%. unknown - 20%. Of the women. 81% (54/67) had one or more living child. and 57% (38/67) had at least 2 children. Sixty-four percent were on some form of medical assistance. disability. or both. At their first visit. 57% were asymptomatic. 29% - symptomatic . 7% - AIDS. Risk factors for HIV infection were: IV drug use (IVDU) alone - 29%; heterosexual contact with a high risk partner (HC) only -30%. IVDU and HC -23%.blood transfusion - 7%; unknown or denied risk factors - 7%.Of 60 women who stated reasons for being tested. seropositivity was initially discovered as an incidental finding in 23% (14/60). A complicated past medical history was common. including: psychiatric- 33% (24/74). gynecologic (GYN) - 36% (28/74). and cardiovascular - 11% (8/73). Remarkably. 30% had a history of 3 or more serious medical problems. Half of the women had 2 or more active medical problems at the first visit including. psychiatric - 37% (29/78). GYN - 34% (26/77). and dermatologic - 18% (14/77). Twenty-seven percent admitted to active IVDU. and 20% (13/66) admitted to recent incarceration or legal problem.
Conclusion: The data shows that women attending an inner city HIV clinic are likely to present complex medical and psychosocial problems in addition to their HIV status. This. combined with reproductive and family issues. and limited financial resources. support systems. and medical information will likely create a need for an expansion of services for this population.

Th.D.P.25

AIDS AND WOMEN: CHANGE IN SEXUAL BEHAVIOR

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Objective. To determine the change in sexual behavior of college women with emphasis on their use of effective AIDS risk reduction behavior.
Methods 334 randomly selected, female undergraduate students in a major university in southeast U.S. responded to an AIDS questionnaire survey for women.Data collected included demographic information, level of sexual activity, change in sexual behavior, knowledge and frequency of use of effective AIDS risk reduction behavior.
Results. The majority of the respondents had high level of knowledge regarding effective AIDS risk reduction behavior. 49.4% reported change in sexual behavior. Those who claimed to have changed their sexual behavior tend to have been more sexually active. They are more likely to discuss their partners' past sexual experience, and insist their use of condoms. They are also more likely to report using condoms frequently.
Conclusion.Despite the high level of knowledge regarding effective AIDS risk reduction behavior, only half of the respondents reported to have changed their sexual behavior and of whom only 15% claimed to always use condoms.

Th.D.P.26

SEROSURVEY OF WOMEN OF CHILDBEARING AGE IN TEXAS, USA

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Objective: To survey women of childbearing age in Texas for the presence of HIV antibodies.
Methods: 87,016 whole blood specimens of newborn infants received at the Texas Department of Health (TDH) Laboratory for heritable disease screening were tested in a blinded fashion for HIV antibodies.
Results: Eighty-three (83) HIV positives were found among all women tested for an overall prevalence rate of 0.095% (95% confidence interval, .076%-.119%). When only Texas residents (86,180 women and 81 HIV positives) were considered, the prevalence rate remained essentially the same at 0.094% (95% confidence interval, .075%-.117%). The HIV positives were widely dispersed across the state's 254 counties generally consistent with the distribution of the state population. The 3 exceptions were: (1) Harris County, which has approximately 17.3% of the 1987 estimated Texas population and submitted 20.173% of the samples tested in this survey, but accounted for 42.975% of the HIV positives for a prevalence rate of 0.196% (95% confidence interval, .014%-.277%); (2) East Texas which has 7.5% of the state population and accounted for 4.6% of the specimens tested, but only had 1.235% of the HIV positives for a prevalence rate of 0.025% (95% confidence interval, .001%-.140%); and (3) Far West Texas, which has 6,875% of the state population and accounted for 7.8% of the specimens tested, but had no HIV positives. Blacks account for 11.4% of the state population and 12.784% of the specimens tested, but has 48.1% of the positive HIV results. Whites account for 66.0% of the state population and accounted for 50.9% of the specimens tested, yet only accounted for 32.0% of the positives. Hispanics account for 22.5% of the state populations and 20.3% of the specimens tested, but only had 14.8% of the HIV positives.
Conclusion: Prevalence of HIV specimens is generally distributed among Texas women of childbearing age in a manner similar to the overall population of the state, with the noted exceptions. However, black women were more likely to be HIV positive in 1988 than either whites or persons of Hispanic origin. Women of Hispanic origin were the least likely to be HIV positive.

Th.D.P.27

UPDATE TO THE COMMUNITY RESPONSE ON WOMEN AND AIDS

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AIDS is the leading cause of death among women aged 25 - 34 years in New York City. Black and Hispanic women account for 85% of all cases. Nationwide AIDS surveillance data indicate that the proportion of women who acquired AIDS through heterosexual contact is increasing (from 12% in 1982 to 30% in 1987). Despite this increase and the projected need for services geared towards women with HIV infection and their families, there has been minimal planning and little systemic response by the public and private sectors or by service providers.

The Women and AIDS Resource Network (WARN) is a not-for-profit agency that has been working to enhance and facilitate access to resources for women and children affected by HIV infection and AIDS. WARN provides information and referral, counseling including crisis intervention. Technical assistance to agencies developing services for women, group training and educational presentations is also provided in hopes of empowering women so we can help curve the rising of mortality and morbidity statistics among women.

Th.D.P.28

MEDICAL-PSYCHOSOCIAL COUNSELLING FOR WOMEN

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Objective: To determine problems of medical-psychosocial counselling for women. Methods: In our outpatient clinic for sexually transmissible diseases (STD), we have attemped to realize a medical-psychological care system. Results: 12.4 % (53/429) of medical patients were female. They are younger than men (26.4 vs 35.1 years) and come with special problems in particular with questions concerning contraception and childbirth. Since January 1987 psychosocial counselling was carried out in 3320 cases, 662 of whom were female. 68.6 % required information about HIV-infection or antibody tests. 557 women made use of the phone counselling service and 105 wanted to have personal counselling. 33 % of women coming to personal counselling were partners or relatives of HIV-infected men. 14 % of female clients were HIV-infected. Conclusion: To the present most of the women require information about HIV-infection. The close cooperation between physician, psychologist and social worker as an integrated team has proved a great benefit for patients and seems to be especially useful for counselling women.

Th.D.P.29

Consommateurs de drogues par voie intraveineuse (partie 2)
I.V. Drug Users (Part 2)

Th.D.P.30

RISK-TAKING BEHAVIORS OF INTRAVENOUS DRUG ABUSERS

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Objective. To describe the needle use and sexual risk behaviors of intravenous drug abusers (IVDAs) interviewed in nine large U.S. cities.
Methods. Persons included in this study are 1,669 IVDAs who responded to an interviewer-administered questionnaire developed by participants in the National AIDS Demonstration Research (NADR) project sponsored by the U.S. National Institute on Drug Abuse.
Results. Injecting practices identified as risk-behaviors included: number of persons sharing needles/syringes; renting/borrowing used needles; and, cleaning needles (with other than bleach). Seventy percent of males and 56% of females reported sharing needles with two or more persons in the past six months. Furthermore, fully 47% of these male IVDAs and 34% of female IVDAs had engaged in all three of the identified risk behaviors. Forty-one percent of the total sample reported having visited a "shooting gallery".

Sexual practices identified as risk-behaviors included type of sex practice (e.g., anal receptive), number of IVDA sex partners, and condom use. As a group, 16% reported not having had sex in the past six months and an additional 43% reported having had sex but not with an IVDA. This latter figure represents a potential vector for the transmission of HIV infection outside the IVDA population. Additionally, 14% of the males and 36% of the females reported having engaged in the exchange of sex for money and/or drugs. Twenty-nine percent of both male and female IVDAs engaged in sexual activity with one or more IVDAs and did not always use a condom, thus increasing their own risk for HIV infection.
Conclusion. Despite efforts to inform the IVDA population of the dangers of certain risk taking/risk giving behaviors, a large proportion of IVDAs continue to put themselves and others at high risk of HIV infection. The NADR project should identify interventions that are effective in bringing about risk reducing behavioral change.

Th.D.P.31 RISK FACTORS FOR HIV SEROPOSITIVITY AMONG IV DRUG ABUSERS (IVDA) IN FRANCE: EVIDENCE OF A CHANGE IN BEHAVIOUR.

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Objective: To evaluate risk factors for HIV contamination in an homogeneous population of IVDA not recruited on the ground of health problems.
Methods: We have studied 152 consecutive IVDA entering LYON's prisons after november 1987 and 2 control groups of 100 subjects each(non IVDA and inmates denying drug abuse).
Results: The overall HIV seroprevalence among IVDA was 15% whereas none of the controls were positive. In a multivariate analysis the only variables related to HIV seropositivity were the form of needle sharing (NS), the location of drug addiction (Areas of low versus high prevalence of AIDS), and sexual promiscuity evaluated on syphilis seropositivity. We observed a significant decrease in NS between IVDA whose addiction had begun before and after 1986. That change was associated with a decrease of HBV (77 to 39%), HIV (18 to 8%) and syphilis (14 to 2%) seropositivity as well as the incidence of clinical hepatitis(44 to 19%). In a multivariate analysis a change in initial NS and rates of HBV and syphilis seropositivity significantly differanciated IVDA whose addiction had begun before and after 1986. Furthermore a reduction in NS was observed in 61% of IVDA of the first group.
conclusion: sexual promiscuity as well as NS may be responsible of the spread of HIV among IVDA. The change in sexual behaviour observed since 1986 was not an increase of the use of condoms but rather a reduction of the number of sexual partners.

Th.D.P.32 THE IMPACT OF LAW AND POLICY ON NEEDLE AND SYRINGE EXCHANGE PROGRAMMES IN CANADA

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Objective. To evaluate policy and law as factors impeding public health initiatives aimed at preventing the spread of HIV amongst intravenous drug users in Canada.
Method. Analysis of Canadian policy and legislative approaches to illicit drug use and their impact on the distribution of needles and syringes to those who cannot or will not stop such use.
Results. The response to illicit drug use in Canada, mirrored and influenced by that of the U.S., has generally been crimino-legal. Opiate use was criminalized in 1908 as an indirect result of anti-Asiatic riots. Subsequent legislation was also fuelled by demands for stronger control of illicit drug markets which criminalization had helped to create. Canadian narcotic legislation since 1961 imposes harsh penalties for possession, trafficking, importation and exportation, but notably none for use. Treatment modalities have received little emphasis. The general climate is one of harsh societal disapproval of illicit drug use and drug users.

In contrast to the U.S., there are no specific laws in Canada prohibiting the possession of needles and syringes or their supply to intravenous drug users (a recent Act criminalizing possession, sale and distribution of drug paraphernalia appears to exempt needles and syringes from its purview). Government advisories and other factors have acted to dissuade pharmacists from selling "works" to intravenous drug users. At least one licensing authority has told physicians that the provision of needles and syringes to intravenous drug users is unethical and/or illegal. Those proposing programmes for the distribution of needles and syringes have expressed fear of criminal liability. Legislators have expressed fear of being perceived as encouraging illicit drug use, and funding programmes that apparently contradict historical responses to drug use.
Conclusion. The climate surrounding illicit drugs in Canada is a substantial obstacle to urgently-needed public health programmes to prevent the spread of HIV. Socio-politico-legal factors have frustrated distribution of syringes and needles to intravenous drug users in Canada; only one pilot programme has been established (Feb. 1989). A conflict is perceived between the urgent need for measures to prevent the spread of HIV and demands to suppress drug use. Increased efforts are required to persuade legislators and the public that these two goals are not incompatible, and that needle and syringe distribution appear not to encourage drug use.

Th.D.P.33 INCREASING CRACK USE AMONG DRUG USERS IN AN AIDS EPICENTER: SAN FRANCISCO

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Objective. Recent studies have linked risk of HIV infection and other STDs to use of crack cocaine through 1) exchanging sex for drugs and 2) disinhibition enabling unprotected sex. This study compared changes in characteristics of crack users over time.
Method. CSAS collected standard admission data on all clients entering drug treatment from 1986 to 1988. Chi square analyses were used to compare admissions from April to Sept., 1986 (n=3673) with admissions for the same period in 1988 (n=4459).
Results. Cocaine use was reported by 31% of clients in 1986, compared to 41% for the same period in 1988 ($p < .001$). As the primary drug of choice, cocaine was reported by 11% in 1986 and 16% in 1988 ($p < .001$). Among those reporting cocaine as the primary drug, smokable cocaine use increased over time from 53% to 80% ($p < .001$), while injecting and inhaling cocaine decreased (17% to 5% and 29% to 14%, respectively). Among crack users, the proportion under 26 years old increased from 19% in 1986 to 35% in 1988 ($p < .001$). Blacks represented 85% of crack clients in 1986 and 77% in 1988; Latinos represented 1% in 1986 and 8% in 1988 ($p < .001$).
Conclusion. Overall, smokable cocaine use more than doubled (156%) from 1986 to 1988. Latinos and youths under 26 account for increasing proportions of crack users, and Blacks constitute the majority of users in this sample. Injectable cocaine use has apparently decreased while smokable cocaine use has increased. The greatest HIV infection risk related to cocaine use may be through sexual transmission, associated with increased sexual risk behaviors among smokable cocaine users.

Th.D.P.34 SHARING NEEDLES: RISK REDUCTION AMONG INTRAVENOUS DRUG USERS IN SAN FRANCISCO

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Objective. To describe changes in needle sharing behavior over time (April 1986 to September 1988), and identify predictors of needle sharing.
Methods. Participants were all intravenous drug users entering two city drug detoxification clinics (N=7660). At admission, participants reported number of needle sharing occasions in the past 30 days. Clinic samples differed in terms of drug of choice (X2=403, p .001), ethnicity (X2=249, p .001), and age (t=-14.9, p .0001). Proportion of cases sharing needles was evaluated cross-sectionally in consecutive 6 month time blocks.
Results. Needle sharing decreased for both samples combined from 50% in 1986 to 28% in 1988 (X2=239, p .001), and for each sample separately (see table).

	% sharing in each consecutive 6 month time period					
	T1	T2	T3	T4	T5	p value
Clinic A	55%	46%	38%	31%	28%	.001
Clinic B	48%	41%	35%	28%	27%	.001

In a logistic regression model controlling for other demographics, cocaine use (OR=1.2, 95% CI=1.1-1.3), age (OR=1.07, 95% CI=1.04-1.11), and being white rather than black (OR=1.16, 95% CI=1.09-1.13) were positively associated with needle sharing.
Conclusion. 30% of participants continued to share, and this proportion did not decrease substantially in the past year. Cocaine use predicts sharing.

Th.D.P.35 MODIFICATION DU COMPORTEMENT DES TOXICOMANES IV

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Alors qu'en France le partage des seringues était quasi systématique, l'apparition du SIDA et l'autorisation de la vente des seringues en pharmacie sans ordonnance depuis mai 87 ont manifestement changé les habitudes des toxicomanes.
Nous comparons plusieurs études qui ont été menées à la Prison de Fresnes sur le comportement des toxicomanes masculins (par voie IV). Les deux premières ont eu lieu en 86 et concernent 141 toxicomanes, la 3ème en 88 et concerne 312. Les groupes sont comparables en ce qui concerne l'âge, l'origine ethnique la situation pénale et la toxicomanie (durée, nombre moyen de 4 injections/J). Le comportement des toxicomanes en 88 est significativement différent de ce qu'il était en 86 en ce qui concerne : le nombre de jour d'utilisation d'une seringue (1,4 en 88/8 en 86), le nombre d'injection pour une même seringue (5,6/32), l'utilisation d'une seringue strictement personnelle (54,5%/16%).
Sur le plan du comportement sexuel : l'usage du préservatif est plus répandu qu'auparavent (37,5%/27%), le nombre de personnes qui se protègent sur les deux plans : préservatifs et seringues est encore faible mais en augmentation (24%/12%). Le comportement des toxicomanes vus en 88 est analysé en fonction de la pratique du test sérologique et de ses résultats (non testés : 103, ⊖ : 97, ⊕ : 96, sans résultat 16).
Nous remercions les Oeuvres Hospitalières Françaises de l'Ordre de malte (OHFOM) pour leur contribution aux deux études de 1986.

Th.D.P.36 A HIV-PREVENTION SYRINGE EXCHANGE PROGRAM IN LUND, SWEDEN. OBSERVATION OF THE ATTITUDES OF: 1. ATTENDING IVDU:S 2. COUNSELLORS IN A NEARBY DRUG TREATMENT CENTER. 3. SOCIETY.

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1. In November 1986 a HIV-prevention program designed for IVDU:s started at a Clinic for Infectious Diseases in Lund. The program offers clean utensils and condoms, information, personal advice and regular HIV-testing. 800 IVDU:s have so far visited the program, 20% more than 10 times. Every month 30 more individuals appear. 90% are HIV-tested. Out of a sample of 78 attenders, 81% said that they nowadays never share equipment. Most syringes are returned. Out of a sample of 40 patients at a nearby drug treatment center, 62% had attended the exchange program. 90% had abstained from drugs or used utensils of their own.
2. Counsellors at the nearby center for IVDU, find no difficulty in working parallelly in the same city. On the contrary, addicts seem to bee more interested in treatment than before.
3. When we started the program, we estimated the 3 000 IVDU:s in the region to be on the treshold of an epidemic. There is still no epidemic. IVDU:s are extensively HIV-tested. Out of deceased drug abusers 1987-1988, none were HIV-infected when autopsies were made at the Forensic Institute in Lund. The program is increasingly accepted by society in southern Sweden. There are no side-effects, and what's more important, there is no increase in drug abuse in the society as a whole because of the program.

Th.D.P.37 AN AIDS INTERVENTION PROGRAM FOR THE BLACK OUT-OF-TREATMENT INTRAVENOUS DRUG USER

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Objectives. To reach the black out-of-treatment intravenous drug users, develop relationships to promote risk reduction behaviors, promote drug treatment, and improve their access to health care. Methods. The intervention in the targeted community is conducted in stages, and includes: 1) involving former and current black IVDU's in the outreach effort, 2) establishing a local counseling/testing site, 3) enlisting assistance from local merchants to distribute intervention materials, and 4) making contact with the black IVDU's, offering information regarding AIDS, antibody testing, drug treatment, and providing condoms and bleach kits. Outreach educators visit the target areas regularly, becoming recognizable to the target population. Results. The program has been ongoing for 7 months on a weekly basis in 4 specific sections of the targeted community. Of the 1,500 persons reached, most have been black, young adult males. 3,250 condoms, 800 bleach kits, and 2,600 brochures have been distributed. No merchant has refused to distribute the brochures. Three merchants are distributing bleach kits. Persons from the community use the local counseling/test site, and initiate requests to the "AIDS Ladies" for condoms and bleach kits. Conclusions. Although black IVDU's experience multiple barriers to health care and information, they are receptive to AIDS risk reduction information when educators come to "the streets" and develop relationships with the black IVDU's in their own communities.

Th.D.P.38 THE NEEDLE AND SYRINGE EXCHANGE PILOT PROGRAM IN NEW YORK CITY

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Objective To evaluate the first government sponsored needle and syringe exchange pilot program in the United States so as to assess its potential for the control of HIV infection among intravenous drug users.
Methods The Needle Exchange Pilot Program of the New York City Department of Health began operation on November 7, 1988. As New York State is one of 11 states which requires prescriptions for the sale of needles and syringes the New York State Commissioner or Health has authorized this pilot study for the purpose of scientific research. In the absence of treatment on demand, the needle exchange program was considered as part of a multiphasic approach towards the issue of intravenous drug abuse and AIDS. Current IV drug users 18 years of age or older awaiting placement in drug rehabilitation programs throughout the city are eligible. A questionnaire is administered periodically for information on needle sharing behavior, in addition to other risk behaviors. Drug treatment referrals and intensive risk-reduction education is provided. Those who take part must return their used injection equipment before they can receive a sterile needle and syringe. One needle and syringe is distributed per encounter.
Results Within the first two months of operation, 56 persons have enrolled; 39 are men, 17 are women; 14 are Black, 28 are Hispanic, 13 are White, and 1 is Native American. The number of participants entered into treatment is 26.
Conclusions It has been possible to inititate and continue a pilot needle exchange program in New York City in the context of a "Bridge to Treatment" service program, despite misunderstanding of the program's objectives.

Th.D.P.39 RISK OF AIDS IN SERCONVERTER DRUG INJECTORS: A COMPARISON WITH OTHER RISK GROUPS.

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Objective. To estimate the risk of developing AIDS from HIV seroconversion in drug injectors and in a group of subjects with sexually acquired HIV infection.
Methods. A multiple cohort sudy has been conducted to follow subjects for whom the seroconversion period was identified (availability of a negative test preceding the positive confirmed one). Clinical evaluation was performed each 6 months. A modified CDC clinical definition was utilized to classify the clinical stage of patients. The disease progression was analysed according to estimation based on Kaplan-Meier survival curves, and differences between groups were assessed by Wilcoxon test.
Results. 255 subjects who acquired the infection by drug injecting and 122 by sexual contact (86 homosexual males and 36 heterosexual contacts) were enrolled until October 30, 1988. The estimate of AIDS progression rate by four years from seroconversion was respectively 14% in drug injectors and 16% subjects who acquired the infection by sex.
Conclusion. No statistically significant difference in the risk of developing AIDS was found between drug injectors and the other group.

Th.D.P.40 AIDS INCIDENCE AND RISK FACTORS FOR DISEASE PROGRESSION IN A COHORT OF SEROCONVERTER DRUG INJECTORS.

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IMCSA (Italian Multiple Cohort Study on AIDS), AIDS Unit, Dept. Social Medicine (Ministry of Health) and National Institute of Health, Rome, Italy.

Objective. To describe the natural history of HIV infection in drug injectors since seroconversion, and to evaluate risk factors associated to disease progression.
Methods. The enrollment criteria were represented by the identification of the seroconversion period (availability of a negative serological test followed by the positive one). Clinical and laboratory evaluation was performed each 6 months. Data collection on demographic and behavioural features was made by means of individual case reports. The disease progression was analyzed according to estimations based on Kaplan-Meier survival curves.
Results. 255 subjects fullfilling criteria entered the cohort. Male/female ratio was 4:1; mean age was 26 years. The mean period of follow-up until October 30, 1988 was 29 month-person; 13 cases of AIDS occurred up to that date. The actuarial incidence of AIDS was 2.8% by years and 14.5 by four years after seroconversion. The risk of developing increased significantly after two years since seroconversion (Mantel-Cox test).
Conclusion. The duration of exoposure to the virus seems to be the main factor in determinig the disease progression in seropositive drug injectors.

Th.D.P.41 HIV INFECTION IN INTRAVENOUS DRUG ADDICTS.

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Objective.In the Institute of Venerology,2971 patients/71.5% of males,28.5% females/,who were addicted to narcotic drugs injected intravenously,have been tested for the presence of HIV antibodies in the period from Jan 1986 to Jan 1989.They were patients of detoxication wards and/or pensioners of drug treatment centers.Methods.HIV antibodies were determined by the EIA method,and positive results were confirmed by the Western-blot technique.Results.HIV antibodies were found in 21 patients /14 males and 7 females/,which accounts for 0.7% of cases.In 1986--1987,all tests were negative.The first positive HIV test was detected in Aug 1988 after testing of 2254 drug addicts.Since Aug 1988 to Jan 1989,21 sera were positive to HIV antibodies /2.9%/ among 718 patients studied. This indicates that HIV infection is spreading fast in this population.Infections of drug addicts with HIV represent 17% of total cases of HIV antibody--positive individuals in Poland.
Conclusion.Intensive education program should be performed among drug addicts,accompanied with the distribution of free disposible syringes and needles,as well as condoms.Furthermore, problems related to AIDS should be covered by special training program for staff of drug treatment centers in Poland.

Th.D.P.42 RISK BEHAVIOR AND ATTITUDES AMONG RECOVERING IV DRUG USERS

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Objective: To describe a study of how recovering IV drug users appraise risks associated with AIDS. Methods:The presenters describe findings from structured interviews with 248 recovering IV drug users. Variables included AIDS knowledge, social support, locus-of-control, self-efficacy, drug use, and sexual behavior. Structured interview data on Black, Hispanic, and white Anglo methadone patients were collected in nine clinics in New York and Northern New Jersey. Results: More than two thirds (68%) admitted to sharing needles in the past, and almost a third indicated that they had used heroin at least once within the past six months. One in five subjects reported having had sex with an IV drug user on at least six occasions during the past six months. Those who used IV drugs in the past six months reported significantly more IV using sexual partners, years using heroin, cocaine, crack, speedballing, and greater frequency of crack use. Among relapsers, older addicts and users with more years in treatment were more likely to have changed their needle cleaning habits. Current users who reported changing their needle hygiene, were less likely to be insulted if another user refused to share a needle and more often sterilized their needles after others used them. About half of respondents claimed to have altered their sexual behavior over the past six months. Persons who had one or more friends die of AIDS were significantly more likely than others to have changed their needle cleaning and sexual behaviors. Discussion: Consistent with other findings, these data suggest that past drug use, social attitudes related to needle sharing, and knowing persons who have died of AIDS, predict favorable behavior changes. Also correspondent with other investigators' data, this descriptive study found that sexual behavior is more difficult to change than many drug related risks.

Th.D.P.43 AIDS BELIEFS AND BEHAVIOR CHANGE IN MINORITY IV DRUG USERS

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Objective. To identify the IV drug user's (IVDUs) beliefs regarding AIDS and related behaviors.
Methods. Nonprobability sample of IVDUs seen thru the emergency rooms and in the hospitals of 3 inner cities reporting a high incidence of IV drug use and AIDS. Structured interview -- fixed response and open-ended questions.
Results. Interviewed 721 IVDUs: 73.9% male, 26.1% female, 70.1% Black; 19.8% Hispanic, 7.7% White, 2.2% other, 86.9% unemployed. Multiple drug use: 92.5% use heroin, 79.4% cocaine, 69.1% speedballs. General knowledge regarding AIDS transmission; 78.6% report drug use, 82.9% report sexual activities, 61.4% report getting information about AIDS from radio or TV, 52.8% report getting from printed media. 75.7% report changing behavior to reduce risk: 71.9% avoid pregnancy, 43.6% stopped or decreased needle sharing, 41.3% use safer sex, 40.5% clean needles.
Conclusion. IVDUs report making efforts to change their behaviors to decrease their risk of getting/transmitting AIDS.

Th.D.P.44 COCAINE USE AND SEXUALLY TRANSMITTED DISEASES INCLUDING HIV

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Objective: To study the association between cocaine use and sexually transmitted diseases (STDs), particularly HIV,in a community with a high prevalence of both cocaine use and HIV disease.
Materials and Method: Between 10/88 and 1/89, 1,270 women birthing at an inner city hospital in New York had otherwise discarded urines coded and stored. Demographic, Syphilis serology and HIV risk data was collected from 1028 of these patients, identifiers removed and code numbers corresponding to urines applied. In the latter part of the study 299 patients had blood (remaining after syphilis studies) stored and coded. After all identifiers were removed the urine was analysed for cocaine, and other drugs. The blood was analysed for HIV antibody by ELISA and Western Blot.
Results: 13.1% of urines had cocaine (cases) 1.3% marijuana and 1.4% opiates. 48% of cases denied drug use during pregnancy. 92.3% of acknowledged cocaine users denied intravenous use. 17% of cases had positive syphilis serologies compared to 2.8%(R.R.=7.1(95%C.I.3.8%-12.9)) of patients without cocaine (controls). Among controls 0.78%(2/255) had HIV antibody compared to 9.09%(4/44) of cases (R.R.=11.6(95% CI2.2-61.4)). No patient with HIV antibody had other drugs in their urine. One HIV infected case acknowledged intravenous drug use and one HIV infected control was from an endemic country.
Conclusion: 1) Cocaine use among parturients in the inner city is epidemic. 2) Preliminary results suggest a link between cocaine and STDs including HIV.

Th.D.P.45 THE EPIDEMIOLOGY OF AIDS AMONG NEW YORK STATE PRISON INMATES

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Objective. To describe the epidemiologic characteristics of AIDS among New York State (NYS) prison inmates.
Methods. We analyzed demographic, risk factor, disease and mortality data obtained from medical record reviews of all inmates developing AIDS within the NYS Correctional System from 1981-1988.
Results. Through December 31, 1988, 838 cases of AIDS had been confirmed among inmates in NYS correctional facilities, accounting for 1% of the U.S. and 4% of NYS AIDS cases. Cases increased from 3 in 1981 to 205 in 1987, with an incidence of > 450 cases per 100,000 inmates per year since 1985. While most cases (96%) have occurred in males, females have the same high incidence rates (compared to the general population where female rates are 1/9 those of males). Hispanics had the highest incidence rates (2 times other groups) and significantly higher rates of narcotic use and drug related sentences. Intravenous drug use (95%) was the major risk factor. Six percent of cases have had concurrent tuberculosis and 63% of TB cases since 1985 have had AIDS or HIV infection. HIV seroprevalence has been 17% and 19% among in- coming male and female inmates, respectively. To date, 69% of inmate AIDS cases have died and AIDS now accounts for 70% of inmate deaths.
Conclusion. AIDS is the preeminent health problem among New York State inmates and is primarily related to IV drug use.

Th.D.P.46 HIV-INFECTION AMONG IV DRUG ABUSERS IN BUENOS AIRES,ARGENTINA

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Objective. To evaluate HIV-infection prevalence and related factors in an IV drug abusers (IVDA) population.
Methods. The sera of 338 spontaneously attending IVDA were studied thru ELISA HIV-1 (Abbott) and reconfirmed thru immunofluorescence. Presence of symptoms, time of addiction and sexual behavior were assessed.
Results. There were 253 men(74.8%) and 85 women(25.1%); 87.1% (294) was under 30 years of age, the average being 23 years old. The time of addiction average was 3.4 years. Seropositiveness was found in 204 patients(Pt)(60.3%); 55% of Pt showed 1 or more symptoms(fever > 38°C > 1 month, diarrhoea > 1 month, weight loss > 10% > 1 month, adenopathies, skin lesions, splenomegaly); out of the latter, 77% was HIV+ vs. 21% asymptomatic ones. Positive correlation was found between time of addiction and presence of symptoms(1 year = 12%; 3 years = 65%), and between the former and seropositiveness(40% HIV+ after 2 years; 59% after 4 years). Homo- or bisexual behavior was admitted by 23% of the Pt, which percentage did not significantly alter seropositiveness level.
Conclusion. A high proportion of IVDA is HIV+. Time of addiction and presence of symptoms were separately associated to seropositiveness while homosexuality did not involve additional risk for this young group. Greater educational efforts should be made in order to limit the epidemics growth within heterosexual population.

Th.D.P.47 SEXUAL ACTIVITIES OF IV DRUG USERS WITH MULTIPLE SEX PARTNERS

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Objective. To describe the types of sexual activities of IV drug users who have multiple sex partners and their association with serostatus.
Method. As part of a study which tests two interventions to reduce AIDS among IVDUs, 346 subjects were recruited from drug networks, interviewed and tested for HIV antibody. Bivariate analyses, using Gamma and Chi Square values, were conducted to determine the associations.
Results. While almost 90% of IV drug users in this sample had multiple sex partners, less than one-fourth admitted to having sex for money and one-sixth had sex to obtain drugs. The type of sex (except for vaginal sex) engaged in with their multiple partners was significantly associated with the number of sex partners and with serostatus, but only when condoms were not used.
Conclusion. The type of sexual activity is an added dimension to be considered for educational prevention information for IV drug users on HIV risk factors.

Th.D.P.48 MOBILITY, RISK CITIES, RISK BEHAVIOR, AND HIV STATUS OF IV DRUG USERS

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Objective. To determine the mobility of IVDUs and its relationship to risk behaviors and HIV status of more than 400 IVDUs recruited from the streets of the Miami metropolotan area.
Methods. IVDUs have been actively recruited by outreach workers into a centralized assessment center at the medical school at the University of Miami where blood samples and extensive assessments were provided to IVDUs in conjunction with pre and post test counseling. Assessments of sexual, drug taking and other social histories were taken by trained, specialized interviewers. Blood was drawn by a trained phlebotomist, specialized in working with IVDUs.
Results. Of the 56% of IVDUs who traveled outside of their local area, a large majority reported having had sex and a lesser majority indicated that they had shot up with drugs during this mobility. Those having sex, and having said they shot up during this period have a higher rate of seropositivity than those who had less mobility and/or had engaged in fewer risk practices.
Conclusion. There is a potential risk of transmitting the HIV virus from the prime risk metropolitan centers to other areas as potentially high risk IVDUs travel to other cities.

Th.D.P.49

GENERATIONAL DIFFERENCES IN HIV RISK BEHAVIOR AND SEROPREVALENCE RATES AMONG IVDUs

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Objective. To examine generational differences in AIDS risk behavior and seroprevalence rates among IVDUs.
Methods. This analysis is part of an AIDS Community Outreach Project funded by the National Institute on Drug Abuse. Over 500 IVDAs not in treatment were recruited and interviewed with a focus on needle using and sexual behaviors. Bloods were drawn and analysed for the presence of HIV antibodies using ELISA and Western Blot techniques. Generation was obtained by asking date of birth and categorizing age into three categories: Post baby boomers, those born after 1958; baby boomers, those born 1946-1958 and pre-baby boomers, those born prior to 1946.
Results. Generation differences in risk behaviors and seroprevalence exist. While post baby boomers have drug use patterns and sexual behavior patterns similar to the other generations, they are more likely to clean their needles and have fewer sexual partners. Associated with these behavioral differences is the finding that post baby boomers have a seroprevalence rate of 15.7% compared to 25-29% for the other two generations (significant at the .006 level).
Conclusion. Younger generations of IVDAs may be most receptive to AIDS prevention strategies and most ready to change high risk behaviors.

Th.D.P.50

IVDU CHARACTERISTICS ASSOCIATED WITH NEEDLE SHARING

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Objective Ascertain Characteristics associated w/needle sharing in cohort of active IV drug users (IVDUs).
Methods IVDU's were recruited for a prospective natural history study of HIV infection from street outreach. clinics. hospitals and drug treatment programs. Characteristics were compared among IVDU's who reported or denied needle sharing in the preceding 6 mos.
Results Among 1417 active IDVU's. 980 (70%) reported sharing needles in the preceding 6 months. Race. sex. age and marital status were not associated with sharing.

	Share + (%)	Share - (%)	X^2/Fisher
Daily user	45	30	<.0010
Cocaine + other drugs	96	91	.0020
Started before '85	87	83	.0500
Unemployed at least 1 yr	71	78	.0100
Pub. Assist. for 1 yr	75	65	<.0010
Homeless for a period	50	42	<.0100
Arrest in last ten yrs	82	72	<.0001
Serious withdrawal	35	23	<.0001
Used gallery	48	11	<.0001

Conclusions Most currently active IVDU's in this sample (70%) reported sharing needles. The inability to head off serious withdrawal symptoms. more frequent use and economic destitution may be driving forces for needle sharing and gallery use. Multivariate analyses are being carried out.

Th.D.P.51

COCAINE, MARIJUANA AND ALCOHOL AS RISK FACTORS FOR HIV INFECTION IN HOMOSEXUAL MEN: A PILOT STUDY

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Objective. To study the association between use of cocaine, marijuana, alcohol and HIV infection in homosexual men.
Methods. Drug, alcohol, and medical histories were compared in 50 HIV infected (HIV+) homosexual men and 44 HIV uninfected (HIV-) homosexual men, all without a history of intravenous drug use. Sexual histories of 11 HIV+ cases and 11 HIV- controls with were compared for the 7-year period (1978-1984) during which infection occurred and before they were told their HIV status.
Results. Odds ratios and multiple logistic regression analysis revealed a significant association between number of years of cocaine use and HIV seropositivity (p=.013). Odds of being seropositive increased with more prolonged exposure to cocaine (OR=3.7). HIV was weakly associated with levels of marijuana use, but not with levels of alcohol consumption. Analysis of the sexual histories of the subsample suggested an association between high-risk sex and levels of cocaine usage.

Cocaine Use	HIV+	HIV-	Total	Odds (HIV+/HIV-)	Odds ratio
0	9	16	25	.56	1.00
1-3	16	16	32	1.00	1.78
4-15	25	12	37	2.08	3.70

Conclusion. Cocaine, in contrast to alcohol and marijuana, may contribute to risk of HIV infection by promoting risky sexual behavior.

Th.D.P.52

AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOUR IN IDUs ATTENDING A TORONTO TREATMENT FACILITY

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Objective: To describe AIDS-related knowledge, attitudes and behaviour in a group of Canadian injection drug users (IDUs).
Methods: Over a 3 month period, 90/100 (90%) attending a Toronto treatment facility completed an anonymous, self-administered questionnaire.
Results: Of the 61 male and 29 female respondents, 44% were under 30 and 90% were under 40; 90% were heterosexual; 56% reported more than one sexual partner in the past year, with 12% reporting 10 or more. Most had a drug problem for more than 5 years (62%). The commonest primary drug was heroin (61%), with 20% being mainly cocaine users. 71% reported needle-sharing within 5 years, 36% within the preceding month. 96% knew that needle-sharing was a risk factor for AIDS; 79% indicated some awareness about heterosexual spread of AIDS. 88% were personally willing to be tested for HIV and 20% already had been (all were negative). 20% would change their drug use behaviour if they received a negative test; 8% their sexual behaviour. 19% indicated uncertainty as to how they would deal with a positive test, while a further 12% would consider suicide or resume heavy drug use. Current needle sharers could not be distinguished from former needle sharers on selected demographic, attitudinal, and knowledge variables.
Conclusion: IDUs are sharing needles despite knowledge of the risk. For those testing positive, there may be a risk of self-destructive behaviour. Testing should be done only with excellent counselling and ongoing support.

Th.D.P.53

MODE OF HIV TRANSMISSION AMONG SEROCONVERTED INTRAVENOUS DRUG USERS (IVDUs): 1987 AND 1988 COHORT STUDY

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Objective. To investigate mode of HIV transmission among seroconverted IVDUs, especially focusing on their drug and sexual behaviors.
Methods. A total 441 subjects (218 in '87 and 233 in '88); 62% males and 38% females; 51% Blacks, 42% Hispanics, and 7% Whites; mean age=32 years, were recruited from methadone clinics in Manhattan and Brooklyn, New York City. After informed consent, a standardized questionnaire was administered by trained interviewers. Also, blood was collected and tested for HIV antibody by ELISA and Western Blot techniques.
Results. The overall HIV infection rate was 60% in 1987 and 52% in 1988. In 1987 and 1988, respectively, 19 of 23 and 23 of 40 subjects, who admitted to a previous HIV seronegative result, were found to test HIV seropositive. These suspected seroconverters significantly differed from subjects who remained seronegative in frequency of sharing needle (p<.01), sharing cookers (p<.02), and use of shooting galleries (p<.06) during the last 5 years. Among 1987 cohort group, all those who remained seronegative stopped sharing needles, but 12 out of 18 subjects who seroconverted still shared needles.
Conclusion. Needle-sharing behaviors continue to be associated with HIV seroconversion among IVDUs. More effective education to stop needle sharing among IVDUs is needed.

Th.D.P.54

INPATIENT GROUPWORK WITH INNER-CITY MINORITY DRUG-USING AIDS/ARC PATIENTS: IT CAN BE DONE

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Objective. To use a group approach to increase coping in a population often thought too unsophisticated, defended, and non-affiliative to benefit from such a modality. Purposes: 1) educate about diagnosis, services; 2)reduce isolation and depression; 3) bridge to aftercare services; and 4) optimize education and counselling services.
Methods. Large city hospital with daily AIDS census of 65 serves a poor minority community. Patient population is mostly past/present IV-drug/crack users. General nursing staff support adjunctly helps motivate patients to attend group. Two nurses and a social worker use supportive techniques to facilitate this twice-weekly, voluntary, confidential group.
Results. Group size ranged from 6-13. Patients freely self-disclosed and empathized, displaying a capacity to both give and receive support. Patients resolved confidentiality issues through discussion, and without reticence processed themes of atonement, sexual responsibility, stigmatization, and maintenance of hope. Patients rapidly developed a sense of ownership of the group, and acted as outreach to other uninvolved, newly-diagnosed patients.
Conclusion. Contrary to expected concerns that patients would have great difficulty allowing their diagnosis to be revealed among their peers, patients joined together to affirm their commonalities and to forge a constructive camaraderie. The stereotyped image of this population as being incapable of bonding and emotional interdependence is inaccurate. Thus, organized peer support is a necessary part of social work with this population.

Th.D.P.55 THE DISINFECTANT POTENTIAL OF VINEGAR SOLUTIONS USED BY GLASGOW IDUs TO PREPARE HEROIN FOR INJECTION.

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Objectives: Since 1986, many Glaswegian injecting drug users (IDUs) have been using vinegar (a popular condiment) to prepare heroin for injection. This study explores the prevalence and significance of vinegar usage and relates this, wherever possible, to HIV transmissability.
Methods: Fifty IDUs were asked how they prepared their heroin for injection. In addition, the vinegar solutions most frequently used in Glasgow were identified and examined for possible disinfectant activity against HIV.
Results: All 50 heroin users dissolved their heroin in a vinegar/water solution prior to injecting; the vinegar/water ratio varied between 1:1 and 1:3. The heroin/vinegar/water solution would usually remain standing within the IDU's syringe for between 1 and 2 minutes. Both white (distilled) and brown (malt) vinegar solutions inactivated cell-free HIV at concentrations 100 times the amount of virus needed to infect an assaying system containing 10^5 CEM cells. These vinegar solutions also inactivated cell-associated HIV at a concentration of 10^4 infected cells/ml solution.
Conclusion: These findings indicate that, in Glasgow, vinegar plays an important role in the preparation of heroin for injection. Furthermore, its usage might have contributed towards keeping the seroprevalence of HIV among Glaswegian IDUs at a relatively low level of 6%.

Th.D.P.56 SEROPREVALENCE AND DEMOGRAPHIC RESULTS OF INTRAVENOUS DRUG USERS AMONG INDIVIDUALS AT RISK FOR HIV INFECTION IN A COMMUNITY-BASED STUDY IN WINNIPEG, MANITOBA, CANADA.

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Objective. To determine the seroprevalence and demographics of individuals at risk for HIV infections, specifically to compare intravenous drug abuse (IVDA) subjects to other high risk subjects in a community-based study.
Methods. A community-based study of 452 volunteers at potential increased risk of HIV infection was undertaken in Winnipeg, Canada, from 1986-1989.
Results. Overall seroprevalence of HIV infection was 3.1% (14+/452), similar to the rate of 2.6% (180+/6873) based on all diagnostic tests in Manitoba. No seropositives were identified in the 104 subjects at risk of HIV infection through IVDA in the community study and only 2.1% of IVDA subjects tested positive (13/627) in the province. Drugs most commonly abused intravenously were ritalin and talwin in 65%, and/or cocaine in 38%. Significantly more (p 0.001), 75% vs. 43% of non IVDA subjects had less than a Grade 12 education level, 53% vs. 28%, were of Native/Metis race (p 0.001). Fifty-seven percent of the IVDA subjects had more than one risk factor for potential acquisition of HIV while only 20% (p 0.001) of non IVDA subjects had multiple risk categories.
Conclusion. Local seroprevalence of HIV infection remains low in Manitoba. However, local IVDA subjects have important characteristics and must be considered in the design of drug prevention programs aimed to minimize the spread of HIV infections.

Th.D.P.57 INFORMATION ON HIV-1 TRANSMISSION AND SEXUAL BEHAVIOUR IN COUPLES OF INTRAVENOUS DRUG ABUSERS (IDAs).

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Objetive. To evaluate whether information on HIV-1 heterosexual transmission modifies the behaviour and sexual practices of IDAs partners without any known risk factors for HIV-1 infection than sex with a seropositive patient.
Methods. From May 1985 to December 1988, 127 IDAs couples having one of both no other risk factors for AIDS were included in a follow-up study on HIV-1 heterosexual transmission. Every 6 months they were evaluated by means of a questionnaire on sexual uses and received oral and written information about HIV-1 infection and sexual activities of major and minor risk, and we also analised the HIV-1 antibodies.
Results. At time of admission in the study, 66.7% of couples had received informative on HIV-1 transmission by sexual practice and only 8,3% took some prophylactic measure. the mean time of sexual relationship was 44.6 months (1-276m.) with a mean of 12.9±8.5 sexual intercourses monthly. 72/127 couples (56.7%) had 15.2 months follow-up (range 6-36 m.) and 52 are in the initial period. After the 1st control, 95% of couples (57/60) affirmed they have received information (p=0.007) and only 49% (34/69) had realised some prophylactic measures (p<0.001). There was a significative decrease of the sexual (p<0.001) and vaginal (p=0.005) intercourses and an increase in condom use (9.4% vs 42.0%; p<0.001). However, there weren't changes in orogenital and anal relations, semen swallowing and intercourses during menses. All of these without differences between seronegative and seropositive couples, during admission or at follow-up.
Conclusion. Although the information given about HIV-1 transmission was known for the greater part of couples in the follow-up, it has only modified some sexual behaviour in less than half of couples. The most significant changes were the decrease in the number of sexual intercourses and the increase in the number of couples using condoms.

Th.D.P.58 HIV SEROPREVALENCE IN TWO METHADONE DRUG TREATMENT PROGRAMS IN LOS ANGELES COUNTY, 1988

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Objective. To estimate the seroprevalence of human immunodeficiency virus (HIV) among intravenous drug users (IVDU) enrolled in methadone treatment programs in Los Angeles County (LAC).
Methods. Between August and December, 1988, consecutive clients enrolled at two methadone detoxification and maintenance programs were screened for HIV antibody (Ab). Repeat ELISA positives were confirmed by immunofluorescent antibody (IFA) and Western Blot. HIV Ab result was linked without personal identifiers to self-reported demographic and risk factor information.
Results. Of the 223 methadone detox and 66 maintenance clients, 2.4% (7/286) were confirmed HIV Ab positive; rates were 3.0% (6/198) in men, and 1.1% (1/88) in women. Seropositivity among blacks was 15.4% (2/13), whites 2.2% (3/139), and Hispanics 1.6% (2/125). Blacks comprised only 4.5% of those in drug treatment, but accounted for 28.6% of the seropositives. In contrast, whites and Hispanics made up 47.8% and 44.7% of the study population, and 42.9% and 28.6% of the seropositives, respectively. Only 1.7% of clients (5) identified themselves as gay or bisexual, and none were positive. Sixty-six percent (198/289) of clients reported needle sharing activities, while only 26.2% (78/298) reported the use of bleach to clean their needles.
Conclusion. HIV seropositivity among IVDUs in Los Angeles County remains low despite a high percent of needle sharing and provides a significant public health challenge. Effective intervention strategies are urgently needed to prevent the future spread of HIV within this high risk group, and will have their greatest impact if implemented when seroprevalence is low. On-site HIV testing and counseling is well accepted among methadone detox and maintenance clients, and should become an integral part of all prevention strategies in drug treatment facilities.

Th.D.P.59 LOW HIV SEROCONVERSION AND CHANGE IN HIGH RISK BEHAVIOR IN INTRAVENOUS DRUG USERS (IVDUs) FROM 1985-88 IN THE BRONX, N.Y.C.

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Objective. To determine the seroconversion rate and changes in high risk behavior in HIV seronegative (SN) and seropositive (SP) IVDUs in the Bronx, NYC from 1978-88.
Methods. Since 6/85 701 methadone maintained IVDUs enrolled in a HIV natural history study had semi-annual interviews about drug use and sexual behavior, demography and tests for HIV antibody (Ab). HIV Ab results, education and counselling were provided.
Results. Of 661 enrolled in 1985-86, 425 (262 SN and 163 SP) have been followed for a mean of 30 mos. Twenty-five percent were black, 50% Hispanic, 25% white and 52% male. Fourteen of 262 (5.3%) SN acquired HIV Ab during a mean of 29 mos. follow-up (1.5/100 person-yrs). From 1985 to 1988 there was a consistent decrease in mean injections(INJ)/mo. in both SP and SN (p<.001) as well as a decrease in shooting gallery INJ in both groups (p<.01). Reduction in IV drug use began in 1984, continues through 1988 and on regression analysis was predicted by SN status (p=.03), white race (p=.05) and the presence of HIV related illness (p<.05). For 66% of SN and SP continuing to inject the % of cocaine INJ rose steadily from 1984-88 (p=.001). CRACK was used by by 89/425 (21%), started in 1985 and was associated with SP status (p=.04), females (p<.001) and continuing injections (p=.03). Heterosexual contact with IVDU sex partners declined 53% in SN and 51% in SP (p=.003) and prostitution declined 80% in SN and 40% in SP(p=.002) from 1985-88.
Conclusions. This cohort of IVDUs has demonstrated a significant decrease in high risk drug and heterosexual behaviors and a corresponding low HIV seroconversion rate (1.5/100 person-yrs).

Th.D.P.60 SOCIAL, SEXUAL AND DRUG USE PROFILE OF HIV (+) AND HIV (-) WOMEN WITH PID

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Objective: To develop a socio-economic, sexual and drug profile of women at risk for HIV infection. In 109 inner city black women admitted with pelvic inflammatory disease (PID), 14% were found to be HIV positive. 75% of the women were unemployed and 75% reported an income of less than $5,000 a year. Of the 11(10%) who reported an income of more than $20,000 a year, two had working husbands, two had well-paying jobs, two were on disability and three were drug dealers. Of 109 patients 56 (54%) admitted to crack use. Women using crack had twice as many sexual partners per month as non-users and were three times as likely to have more than four partners month.

	HIV(+)	HIV(-)	ODDS RATIO
N	15	94	95% CI
Crack use	13(87%)	43(46%)	7.1
IVDA	6(40%)	3(3%)	20.2
Previous STDs	13(87%)	37(39%)	10.0
sex for drugs	4(27%)	17(18%)	1.6
Contraceptive use	4(27%)	20(21%)	1.3
#sex partners/mo(SD)	2.4(1.9)	2.1(2.6)	NS

Conclusion: 1) HIV (+) patients with PID were more likely to use crack, to have used drugs intravenously and to have had sexually transmitted diseases previously. 2) Women using crack engaged in more sexual risk taking. 3) We hypothesise that crack use may contribute to the sexual acquisition of HIV infection among poor, minority women admitted with PID.

Th.D.P.61 ACCESS TO IV DRUG USERS (IVDU) THROUGH COMBINED EFFORTS OF A PUBLIC HEALTH DEPARTMENT AND INDIGENOUS OUTREACH WORKERS.

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Objective: To access previously untested active IVDU for HIV counseling and testing (CT) through combined efforts of a public health department and indigenous outreach workers.
Methods: In 1988 Denver AIDS Prevention (DAP), a CDC-funded demonstration project and Project Safe (PS), a NIDA-funded street outreach program to IVDU, initiated a working agreement. From August through December 1988, PS's indigenous street outreach workers couriered 164 IVDU to DAP's counseling and testing site (CTS). All IVDU received $5 following pre-test counseling and venipuncture and were scheduled for results and post-test counseling without monetary incentives for the return visit.
Results: Comparison of PS IVDU to other IVDU seen in DAP's CTS between August 1 and December 22, 1988 were [No.(%)]:

	PS	CTS
Total No. tested	164	175
Race/Ethnicity	B 102(62) H 22(14) W 39 (24)	B 10(5) H 26(15) W 139(80)
No. Homosexual-bisexual (H-B)	5 (3)	25 (14)
No. 1st Time HIV Tested	121 (74)	96 (55)
No. HIV Positive: Hetero/H-B	4 (2) / 2 (1)	3 (2) / 6 (3)
Total Returned for HIV Results	24 (15)	139 (79)
No. HIV+ Returned for Results	2 (33)	7 (78)

Conclusion: Indigenous street outreach workers were able to access minority IVDU, most of whom had not previously undergone HIV CT. Return of PS clients for post-test counseling was poor compared with other CTS clients. Whether the engendering of trust through outreach workers or the offer of monetary incentives improves access to and return of IVDU for CT needs further investigation.

Th.D.P.62 MODIFICATION OF NEEDLE USE IN OUT-OF-TREATMENT INTRAVENOUS DRUG USERS

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Objective. To modify drug-using behaviors through ethnographic street-based AIDS health educators.
Methods. Five hundered and five intravenous drug users (IVDU's) were identified through chain referral and targeted sampling in a major urban county of 750,000 people and approximately 15,000 IVDU's, 15% of whom are HIV seropositive. Each was administered an extensive (45 page) structured interview regarding knowledge, attitudes and behavior about AIDS and drug use.
Results. This largely (>87%) opiate-using sample also combines heroin and cocaine (77%); amphetamines and crack have been used by about half the group. Results indicate use of condoms has risen from 23% in 1986 to 42% in 1988; cleaning of needles (usually with bleach) rose from 39% in 1986 to over 70% in 1988. One third of the sample always shoots up at home and 54% began shooting drugs when they were under 21 years old.
Conclusion. While needle hygiene has increased among the IVDU population, the consistency of cleaning and/or not sharing needles could be improved. Because this subculture depends upon oral communications, repeated delivery of health messages is the most effective way to impact behavior and reduce HIV transmission. (Funded in part by National Institute of Drug Abuse Grants #R01DA04319-03 and #R18DA05879-01)

Th.D.P.63 RISK BEHAVIOR IS COMMON AMONG DRUG USERS DESPITE KNOWLEDGE OF TRANSMISSION ROUTES, ACCESS TO STERILE SYRINGES AND HIV ANTIBODY TESTING.

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**Municipal outreach program among drifting youth, Oslo, Norway.

Objectives. To look at the prevalence of HIV and risk behavior among drifting, iv.drug using youth in Oslo.

Methods. The number of iv.drug users in Oslo is assumed to be 1700-3500. An earlier survey had shown that the level of HIV related knowledge was high in this group. At the time of this study syringes was sold without restrictions at pharmacies in Oslo. The municipal outreach program among drifting youth have each year contact with about 900 differant iv. drug users. In 1988 an anonymous questionnaire survey on prevalence of HIV testing, iv. drug use and sexual behavior was performed. The study included 70% (127) of all the iv. using clients of the outreach program during a 5 weeks period. The mean age was 22.

Results. HIV tested=87% (107/127). HIV positive=19%.
Borrowing used syringes past month=29%(37/127). Lending used syringes the past month=30% (38/127). Ever borrowed syringes used by someone they knew where HIV positive=23% (29/124). Median number of lifetime non-paying partners=10. 1/3 of the partners were also iv. drug users. 15% (19/127) reported to have used of condoms by last sexual intercourse with non paying-partner. Those who had the most partners, used condoms the least. 80% (50/63) of females and 30% (19/64) of males reported income from prostitution.

Conclusions. Risk behavior is common in this group of iv. drug users in spite of relevant knowledge, access to sterile syringes and high level of volunteer HIV-testing.

Th.D.P.64 PREDICTORS OF ATTEMPTED SEXUAL BEHAVIOR CHANGE IN A STREET SAMPLE OF ACTIVE MALE IV DRUG USERS IN NEW YORK CITY

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Objective. Inner city male IVUS's are the key bridge to heterosexual HIV transmission. Their resistance or amenability to sexual risk reduction practices is poorly understood. Thus, the objective of this study was to identify predictors of sexual behavior change in response to HIV infection in a street sample of active IVDU's in the lower East Side of Manhattan.
Methods. Two hundred seventy nine male IVDU's were recruited through street outreach contacts with neighborhood ex-IVDU workers. Paid face-to-face structured interviews were conducted to assess HIV-related risk behavior, beliefs, and behavior norms.
Results. Subjects were asked to report behavior changes that they have made because of AIDS. 55% of the sample reported making one or more sexual behavior changes (i.e. condom use, abstinence, reduction in number of parners, avoidance of "high risk" partners). In multiple logistic regression, significant positive predictors included having more than 1 partner during the average month of the past year (p<.018); having friends who made sexual behavior changes (p<.005); and having a relatively strong sense of self-efficacy about being able to make risk reduction behavior changes (p<.018). Ethnicity, being in a sexual relationship, knowing someone with HIV disease and perceived current or future risk of HIV infection were not significantly associated with behavior change.
Conclusion. The majority of a street sample of active male IVDU's reported making some sexual risk reduction. This result is consistent with rates of drug risk reduction obtained in other studies (Friedman, et al, 1987; Selwyn, et al, 1987). The present findings argue for the role of empowerment and normative influences in promoting behavior change.

Th.D.P.65 STREET OUTREACH STRATEGIES FOR INTRAVENOUS DRUG AND CRACK USERS, THEIR SEXUAL PARTNERS, AND ADDICTED PROSTITUTES AT RISK FOR HIV

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Objective. To advocate for substance abusers and their families as an accessible street agency.
Methods. The Association for Drug Abuse Prevention and Treatment (ADAPT) has been established since 1980 and offers substance abuse information, counseling, referral services and advocacy for substance abusers and their families as a street agency. Access is by telephone hotline, drop-in, and street work. Street based interventions reach substance abusers at risk of exposure to HIV who are not in contact with any agencies or treatment programs. ADAPT's health education model was designed to first gain access to this high risk population and then teach them skills for reducing risk and to continue as an information resource. Teams of outreach workers cover specific geographic areas where services are otherwise not available. The outreach workers go into the shooting galleries (drug injection buildings) and crack (smoking) houses in these neighborhoods, meet drug using prostitutes on the stroll, and distribute risk reduction information, condoms, and bleach with instructions for their use to disinfect injecting paraphernalia.
Results. ADAPT has found that street outreach to this population is time-consuming and dangerous, and requires constant contact with the community and a constant presence on the streets. High risk locales must be regularly revisited in a regular pattern of movement that drug users can recognize so that they know how and when to find outreach workers and receive assistance. The outreach worker must initiate contacts in high drug trafficking areas and develop friendly relations with a network of drug users, always being open about what they are doing and why.
Conclusion. Advocacy and street outreach can create peer pressure and peer support, and help spread the risk reduction message among drug users, if the methods the workers utilize are open, respectful and culturally sensitive and combined with knowledge of street language and the street scene.

Th.D.P.66 ORGANIZING INTRAVENOUS DRUG USERS AGAINST AIDS

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Objectives: To organize IV drug users (IVDUs) to support each other in AIDS risk reduction.
Methods. Ex-user organizers with organizing experience (in religious, political, or public health activities) were hired to develop ways to organize IVDUs. Some initial acceptance by local IVDUs had previously been established by educational outreach by ADAPT; the organizers established deeper acceptance by street-level AIDS education, distributing bleach and condoms, and helping users get access to medical and drug treatment services. Persuading and pressuring emergency services and hospital administrations to provide services in ways acceptable to drug users helped win acceptance. Potential indigenous leaders were identified when they distributed bleach to others; helped organizers fill bottles with bleach for distribution; and allocated tasks during the removal of used syringes and other waste materials from an abandoned building containing shooting galleries. An IV drug using prostitutes collective was also organized by ADAPT. Attendance at meetings was encouraged by providing food and daily living supplies.
Results. 27 weekly meetings of an IV-drug-using prostitutes' collective have been held since summer 1988. Topics discussed include drug and sex risk reduction, how to get customers to use condoms, and handling customer violence. Observation by group leaders and ethnographers indicates that the women are developing a group consciousness, lend each other condoms or pick up condoms for each other, and protect each other against customer violence. Group organizing has been slower for male IVDUs; 3 meetings were held in late 1988.
Conclusions. "Outside" organizers can organize female IVDUs who are prostitutes to attend meetings at which AIDS-related topics and other problems they face are discussed. IVDUs who are prostitutes make condom use a group norm as a result. It remains to be determined whether male IVDUs can be organized; whether organization spreads; and whether organization leads to greater risk reduction among active participants and/or among other IV drug users in the area than does standard health education outreach.

Th.D.P.67 LONG TERM FOLLOW UP OF A COHORT OF DRUG ABUSERS OF THE AREA OF REGGIO EMILIA (NORTH ITALY)

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Objective. To examine the natural history of the disease in the drug addict and ex drug addict. To value risk factors and progression in AIDS.

Methods. In May 1985 we began a long-term follow up programme of IVDAs and ex IVDAs with HIV infection, who live in the area of Reggio Emilia (North Italy). This study is being carried out on about 500 patients thanks to collaboration among the Department of Infectious Diseases, the Rehabilitation Units of the area and the prison.

We think HIV began to circulate among IVDAs in our area in 1982-1983.

170 IVDAs HIV+ with two AIDS cases were found out in December 1985. 504 HIV+ with 30 AIDS cases have been found out up today. The patients are followed with six-monthly check up in Day Hospital, wich consist in medical examinations an in serologic, immunologic, and instrumental tests.

111 drug abusers HIV infected, in II and III group of the CDC's classification, were enrolled from June 1985 to June 1986. 70 of them have completed 3 years of their follow up at least, 9 of them died (3 for AIDS), the remainder didn't present themselves for the following controls.

In this study we are describing these subjects in their clinical development (according to CDC classification) and on the ground of some parameters: beginning year of the used drug i.v., passing months from the first confirmed positive test for HIV antibodies, total number of lymphocytes, number of CD4, B_2-microglobulin, IgA, positivity of HIV-antigenaemia, other risk factors as homosexuality and/or prostitution.

Th.D.P.68 A STUDY COMPARING NON HIV-RELATED DEATHS AMONG HIV-SEROPOSITIVE IVDA'S WITH DEATHS AMONG SERONEGATIVE IVDU'S. THE HIV-PREVALENCE AND THE SERO-CONVERSION RATE AMONG IVDA'S.

Christian Sohlberg, Peter Kittelsen, Finn Jensen, Oslo City Health and Environment Department, Per Magnus, Norwegian National Institute of Public Health, NORWAY

OBJECTIVES. The Department of Aids Prevention runs a testing and counselling clinic as well as an out-patient clinic for hiv-positives. The clinics have since the epidemic among IVDA's became known been the most visited testing and counselling facility for IVDA's in Oslo. Between august 1985 and january 1989 approximately 1000 IVDA's have registered at the clinic. The sero-prevalence and the sero-conversion rate among the tested IVDA's will be presented. The main objective of the study is to estimate the mortality rate among all 1000 IVDA's registered, and to compare sero-positives and sero-negatives. The mortality rate will be studied with respect to other background factors.

METHODS. The 1000 IVDA's represent between 25%and 40% of the IVDA population in the Oslo area. All clients at the clinic seek it voluntarily. All information regarding deaths and causes of death are based on statistics obtained from The Central Bureau of Statistics. The hiv-serologic results are based on tests taken at the clinic, or first reported to us by the client and subsequentely confirmed by the department. The causes of death will be presented graphically. Survival-analysis utilizing Kaplan-Meier plots will be used to compare the hazard rates of the two groups.

RESULTS and CONCLUSIONS. Results, statistics and conclusions will be avaiable and presented at the conference.

Th.D.P.69 METHADONE MAINTENANCE IN HIV-INFECTED I.V. DRUG ADDICTS - MEDICAL AND PSYCHOSOCIAL EFFECTS

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Objective: to study the effects of methadone maintenance in AIDS- ARC- i.v. drug addicts on medical, psychological and social parameters.

Methods: open prospective study; 30 i.v. drug addicts (CDC IV, WR 3-6) were enrolled before and during methadone maintenance. Clinical and labor, data, psychological and quality of life parameters and toxicological screening tests were evaluated. The study was based on cooperation between general practitioners, the HIV-outpatient department stuff and institutional psychosocial support.

Results: We evaluated data of 30 patients (20 m 10 f) mean age 29,3±3y, after an average methadone maintenance of 13 (3-24) month. 5 of 30 patients had relapsed, 2 of them only for several weeks. Medical parameters were improved in 20 of 25 patients (body-weight, secondary complications due to HIV and drug addiction, neoinfections). Psychological parameters were improved in 17 of 25 patients. Stabilization could not be achieved in 4 patients because of ongoing i.v. drug addiction of their partners. Drug-delicts stopped in all patients, proctitution in those, who remained in methadone therapy. Positive effects due to quality of life were noticed by all. Change of HIV-stage was observed in only 3 patients, in 2 of them after relapse.

Conclusion: chronical HIV-infected i.v. drug addicts do benefit from a controlled methadone maintenance. Most of them did stop i.v. drug addiction, drug delicts and prostitution as a necessary condition for medical and psychosocial stabilization. Cooperation of all medical and psychosocial institutions is of paramount importance. In addition this stabilization has its place in regard to prevent further spread of HIV-infection.

Th.D.P.70 THE USE OF STERILE SYRINGES AMONG IVDUs THAT HAD GONE THROUGH DETOXICATING TREATMENT AT HOME DIRECTED BY A CENTER OF HEALTH PROMOTION IN MADRID.

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Objective: To study the influence of AIDS prevention campaign messages on 72 IVDUs that had been treated with clonidine, with regard to changing of habits and to permanence.

Methods: Health-epidemiological inquiry on the present situation of 72 IVDU who were treated with clonidine during 1986-1987, with regard to drugs dependence and AIDS risk habits.

Results: 53 (73%) out of the 72 IVDU answered the questions; 18 of them were 25-29 years old, 20 were 30-34 years; 45 of them (85%) were males and 8 (15%) females; 52.5% had been IVDU for 7-10 years. The economical level of the group was 49% under the minimum wage. In Jan '88 : 18 were abstinents, 8 relapsing periodically and 25 remained DUs. Habits regarding HIV risk infection: 80% have a better health control; 70% know and spread out prevention methods; 43% improve alimentation habits; 38% improve family relations. Out of the 25 staying DU, 5 sniffing, 11 occasionally users and 9 remained daily IVDU. As for the spreading of AIDS control methods, as health workers we point out: 45% bring new drug addicts to the Center, 30% recommend the use of steril syringes, 5% recommend the use of condoms. None of the 20 IVDUs use shared syringes, 2 of them exceptionally, and 18 of them use individual syringes.

Conclusion: The above reveals the importance of the detoxicating treatments even if there are relapses due to the influence on the subsequent health condition.

Th.D.P.71 SURVEY OF THE METHADONE TREATMENT PROGRAMME OF THE OUTPATIENT CLINIC OF THE VIENNA PSYCHIATRIC UNIVERSITY HOSPITAL

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Objective: To present a survey of the structure and status of the patients in the programme mentioned above.

Methods: The outpatient clinic mentioned above has been carrying out a methadone detox and maintenance programme since October 1987 and has by now the largest number of patients in Austria. The data presented are results taken from routine documentation.

Results: The following data (average values) concerning the 99 men and 37 women treated were obtained: age at the start of the methadone treatment: 29 years; age at first contact with drugs: 15 years; length of opiate dependency: 12 years; in methadone treatment: 8 months; first methadone dose: 65,25 milligrammes; present-day dose: 77,77 milligrammes; HIV positive: 44% (75% men, 25% women); polytoxicomanic addiction of the HIV positive patients at the time of methadone adjustment: 50% (73,3% men, 26,7% women); working at the start of methadone treatment: 21,3%; working since methadone substitution: 30,9%; previous convictions (drug abuse offences): 64,7% (79,5% men, 20,5% women); initial drug: 69,8% hashish, 19,8% opiates, 5,9% medicants, 0,7% solvents, 3,8% unknown; couples in treatment: 13,2% (both are HIV infected: 33,3%, one partner is HIV infected: 22,2%, both partners are negative: 44,5%).

Conclusion: The programme promotes social and occupational reintegration.

Th.D.P.72 AIDS RELATED BEHAVIOR AND ATTITUDES AMONG IV DRUG USERS IN GREECE

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Objective. Data presented in this study constitute an attempt towards the identification of possible factors influencing the low transmission rate (seroprevalence rates lower than 1%) of HIV among Greek IV drug users.

Methods. Behavior linked to the virus transmission such as needle and syringes sharing practices and sexual behavior have been investigated in a sample of 107 IV drug users who were in contact with health services. Subjects were additionally asked on the main sources by which they get information on AIDS as well as on their personal beliefs and attitudes related to the risks of infection.

Results and conclusions. Preliminary findings show that high risk drug using practices such as sharing of syringes and needles is reported by the majority of subjects (75%) while only 33% of them state having changed such practices due to the appearance of AIDS. Concerning their sexual behavior the majority (83%) use rarely (22%) or even never (61%) condoms during intercourse. From those reporting homosexual contacts (20%) the large majority has sexual contacts with both sexes. Half of the population stated not having changed sexual behavior after the appearance of AIDS. Low levels of awareness and sense of responsibility to HIV transmission dangers is further confirmed by the high rates of those who believe that it is very or even totally impossible to be infected by the virus (55%). Moreover respondents expressed the opinion that the level of awareness for HIV transmission among subjects in their environment is low to non-existent (30%) and that no change has occurred in behavior (47%). A minority only (9%) considered as main source for its personal information on AIDS health professionals, while for the majority (76%) the main source of information was the mass-media and mainly periodical press. Findings are discussed along with hypotheses on the possible reasons of low HIV prevalence among drug users in Greece and implications for prevention are considered. Data derived from this study have been used as a basis for the initiation of an ongoing more elaborate and extensive WHO supported study.

Th.D.P.73 STREET BASED NEEDLE EXCHANGE PROGRAMS: THE NEXT STEP IN HIV PREVENTION

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Objectives. To evaluate the feasibility of a street-based needle exchange program in a community at high risk for HIV infection via contaminated needles. To determine levels of participation in and demographic characteristics of potential client population.
Methods. Using ethnographic techniques, a high risk neighborhood in San Francisco was identified. Prevention Point began operating an anonymous, street-based needle exchange program one day a week. Used needles were accepted into a biohazardous waste container and sterile insulin syringes were dispensed on a one to one exchange basis. Syringes were marked and monitored for return rates. Demographic information was collected unobtrusively. Two methods of exchange were piloted concurrently. In one method, the exchange staff remained in the same visible, stationary location. In the other method, mobile exchange staff contacted IV drug users in locations where high risk activities were taking place.
Results. Preliminary results show that after three months of operation, a street based needle exchange is feasible. Over 225 clients were served, 456 syringes were collected and 456 were dispensed. Overall return rate of banded syringes was 22%. Return of marked syringes was over 50% during current week of operation for the stationary exchange. Problems with security of staff, supplies, and syringe disposal were not encountered. Demographic information and other data will be presented. Information and education about drug treatment was provided to those who requested it.
Conclusions. IV drug users when given the opportunity to acquire sterile injection equipment and return used syringes, in a anonymous, nonjudgmental, and accessible location will do so on a regular basis. The pilot needle exchange resulted in the reduction of the supply of discarded, used, and possibly HIV contaminated syringes in a high risk neighborhood of San Francisco. Administration of the needle exchange was simple, direct, inexpensive, and efficient. This pilot study suggests the need for an ongoing, prospective study of needle exchange as a method for prevention of HIV transmission among IV drug users.

Th.D.P.74 HISTORICAL ACCOUNT OF THE TACOMA SYRINGE EXCHANGE

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OBJECTIVE To describe the history of the origins and operations of the Tacoma syringe exchange.
METHODS This history is provided by the founder (first author) of the syringe exchange (SE). Other authors include those who acted as consultants on research and evaluation, and those who led the effort to obtain public sanction for the SE.
RESULTS The first SE in North America was established in Tacoma, Washington in August, 1988. Close work with the Chief of Police, city government and the local Health Department laid the groundwork for this successful program. Once the SE had been operating for several weeks, the media assisted through positive and factual reporting, which was educational to the community and its policymakers. Concerns of liability and prosecution in the face of strict drug paraphenalia laws needed to be resolved before the SE could begin swapping syringes. Funding for the SE initially came from the pockets of the first author. Small private contributions followed, until January 1989, when the Health Department decided to fund the SE. The SE operates on a one-for-one exchange basis: one clean syringe for each used one. There are no lines to stand in, no forms to fill out. It currently serves approximately 300 injecting drug users (IDUs) per week, in a community with an estimated 3000 IDUs. The SE enables the Health Department's AIDS Outreach staff to gain access to IDUs and offer drug treatment information and detoxification coupons as well as AIDS education. With the promise of funding, the SE is able to expand its hours of operation and to set up additional sites in areas with high prevalence of intravenous drug use.
DISCUSSION The Tacoma SE has progressed from an officially tolerated operation to one that is officially funded. In providing another risk reduction option for IDUs who will continue to inject drugs, the SE fits into an overall scheme of providing choices for those at risk, in keeping with the harm reduction strategies successfully employed in Europe. Further evaluation of the impact of the SE on drug injection behavior and hygiene is necessary to ensure continued public support.

Th.D.P.75 AIDS EDUCATION AND THE TRANSITION FROM NON-INJECTING DRUG USE TO INJECTING DRUG USE

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Objective: To assess the extent to which education about AIDS is sufficient to prevent the transition from non-injecting to injecting drug use.
Methods: 102 subjects were recruited through street outreach, personal referrals and newspaper advertisements for persons who were "sniffing" heroin (using intranasally). All subjects were sniffing heroin at intake, with 41% sniffing at least daily. 52 (51%) had previously injected, but none had injected for more than 2 months in the previous 2 years. Subjects were 58% male; 50% White, 23% Black, 27% Hispanic. All were given an extensive questionnaire about AIDS risk behavior, had their questions about AIDS answered, and received HIV antibody counseling and testing. Subjects were then randomly assigned to an experimental condition, with an additional 8 hours of AIDS education, or a control condition. Follow-up interviews were conducted with 82 (80%) subjects with a mean time of 8 months to follow-up.
Results: All subjects knew that AIDS was transmitted through sharing injection equipment at the intake interview. Fear of needles was given as the primary reason for not injecting by 63%, with concern about AIDS given by only 23% as a reason for not injecting. 10/82 (12%) of the subjects injected drugs during the follow-up period. Additional education was not significantly associated with less injection during follow-up, ($p<.16$). In a logistic regression, having a close personal relationship with a person who was injecting, and having a history of any prior injection were independently associated with follow-up period injection (both $p<.05$).
Conclusion: Intensive education about AIDS was not sufficient to prevent a sizable minority of heroin sniffers from moving to injection even within a relatively short follow-up period. The transition to injection occurs primarily within close relationships with current injectors; programs to prevent the transition to injection need to develop ways of isolating the individual from the effects of such close personal relationships.

Th.D.P.76 THE EFFECTS OF AIDS EDUCATION ON THE KNOWLEDGE AND ATTITUDES TOWARDS AIDS BY SUBSTANCE ABUSERS IN A DRUG DETOXIFICATION SETTING

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Objective. To ascertain the level of knowledge of substance abusers entering a major detoxification facility and the subsequent effects of different formats of AIDS education on their knowledge and attitudes towards AIDS and HIV transmission.
Methods. 100 consecutive admissions to the Beth Israel Medical Center Detox facility were pretested with a 30 minute interview, measuring their knowledge and attitudes about AIDS and HIV transmission. Patients were randomly assigned to different formats of education consisting of exposure to either a large group [≥25] 30 min. video tape presentation followed by 30 min. lecture, or small discussion group [≤8] formats. A post test was administered upon discharge.
Results. N= 100, 71 male, 29 female, 38 Black, 32 Caucasian, 29 Hispanic, Mean age= 35 Mean years of drug use = 13.2, 61 active IV drug users, 39 Non-IV drug users. At pre-test sujects demonstrated a substantial awareness of basic information concerning AIDS and HIV transmission. Although sharing needles was perceived as a major means of HIV transmission by 96% of patients and 50% had shared needles in the last year, these same IVDU's significantly minimized their own needle related risks vs. the risk of sharing needles in general[$p<.003$]. While 91% percent of subjects volunteered that condoms are an effective methods of protection, only 21% had used condoms at all. On post test, there was a significant increase in subjects estimates of their own drug related[$p<.004$] and sex related[$p<.002$] risk for infection and their faith in the effectiveness[$p<.001$] of and the willingness to use condoms in the future. [$p<.006$]. These increases in knowledge and attitudinal changes were not significantly related to format of education.
Conclusion. AIDS education in a detox setting can be an effective vehicle to address denial of risk for HIV infection among substance abusers.

Th.D.P.77 NEEDLE SHARING PATTERNS OF INTRAVENOUS DRUG USERS

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Objective: Examine needle sharing patterns of IV drug users in an attempt to explain lower than expected HIV seroprevalence rate. In Seattle the rate among male homosexuals is estimated at 25-35% and stable since 1985. Methods: In 1988, 273 IV drug users in treatment provided extensive personal interviews regarding drug use and needle sharing practices. HIV antibody testing was done on 169. The demographics of the sample were: male 186(68.1%), female 87(31.9%); (age,$\bar{X}$ =38.4); White 188(69.9%), Black 65(23.8%), other 13(4.8%); primary drug of abuse: opiates 208(77.1%), cocaine 31(11.4%), amphetamines 5(1.8%), ethanol 17(6.3%). Results: In the past year 187(68.5%) had shared needles, but only 55(20.4%) had shared in the past month. For those sharing, the mean number of people shared with in the past 30 days was 1.96, with 25% sharing with only 1 other person. The most popular way of obtaining needles was purchase in a drug store. Subjects admitting to IV cocaine use in the past 30 days shared with more people ($\bar{X}$=0.96,σ=2.3) than those admitting to other IV drug use ($\bar{X}$=0.48,σ=0.72). Only 2(1.2%) of those tested exhibited HIV antibodies. Conclusion: A majority of the IV drug users in this sample currently using IV drugs were avoiding needle sharing. This may relate to ease of obtaining sterile needles in Seattle where it is not illegal.

Th.D.P.78 USE OF CLINICAL CRITERIA TO PREDICT HIV ANTIBODY STATUS AMONG INTRAVENOUS DRUG USERS (IVDU) IN A PROSPECTIVE COHORT STUDY

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Objective. To predict HIV antibody (Ab) status from history, symptoms, and clinical findings among methadone-maintained IVDU's in a prospective study of HIV infection.
Methods. Sensitivity (SNS), specificity (SPC), and +/- predictive value (PPV,NPV) in identifying HIV Ab status were calculated for subjects' history/symptoms and clinical findings from baseline data and clinical/research follow-up, [illegible].
Results. Of 672 subjects 274(41%) were HIV+, 398(59%) HIV-. Results (as percents):

History/Symptoms	SNS	SPC	PPV	NPV	Clinical Findings	SNS	SPC	PPV	NPV
Shooting gallery use	50	74	57	68	≥2 lymph nodes	11	97	71	61
Weight loss	43	72	51	35	bacterial pneumonia	15	98	83	63
Swollen glands	14	97	76	62	tuberculosis	4	100	100	60
Fever	9	97	65	61	oral thrush	23	100	100	65
Diarrhea	5	98	65	60	≥ 2 sx or findings	18	96	76	63
≥2 symptoms(sx)	16	96	73	62	≥ 3 sx or findings	5	100	100	60
≥3 sx	6	99	80	61					

Conclusion. History/sx and clinical findings were not sensitive in identifying HIV+ IVDU's, though the presence of multiple sx and certain findings had PPV ≥ 75%. Absence of symptoms/findings, while specific, had low NPV due to low overall frequency. PPV might be lower and NPV higher in populations with lower HIV prevalence. Clinical criteria, especially in combination, may aid decision-making in predicting HIV Ab in IVDU's, but insensitivity of these criteria and overlap of history/sx with HIV- IVDU's (excluding pathognomonic HIV-related conditions) require reliance on serologic tests to determine HIV Ab status in this population.

Th.D.P.79

CLINICAL SYMPTOMS AND MEDICAL HISTORIES OF A COHORT OF IV DRUG USERS: CORRELATION WITH HIV SEROPREVALENCE

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Objective. To ascertain the frequency of clinical symptoms and histories of medical illnesses and their correlation with HIV seroprevalence in a cohort of active IV drug users (IVDUs).

Methods. A cohort of active IVDUs were recruited for a prospective study of the natural history of HIV infection from street outreach, STD clinics and ER's and drug treatment centers. Persons with AIDS were excluded. Reported symptoms and medical histories from baseline questionnaires were correlated with HIV serological data (ELISA and WB confirmation).

Results. Overall 441 (24.7%) of 1785 participants were HIV seropositive. Significant associations were as follows:

	HIV -	HIV +	P-Value (Chi-square/Fishers)
Dyspnea	7.4%	11.6%	0.007
Fatigue	18.9%	22.9%	0.073
Weight loss	28.7%	35.5%	0.007
Oral Thrush	1.9%	4.1%	0.011
H_x Bacteremia	0.2%	1.4%	0.009
H_x Endocarditis	0.5%	1.6%	0.053

Histories of the following were unassociated with HIV status: Diarrhea, Pneumonia, Tuberculosis, Hepatitis, Cirrhosis, Tumors, and Diabetes.

Conclusion. Although symptoms associated with AIDS-related complex are frequent among active IVDU's who are seronegative, several symptoms are significantly more common in HIV seropositive IVDU's.

Th.D.P.81

THE USE OF A MINIMAL BEHAVIOURAL INTERVENTION AS PART OF A RISK REDUCTION STRATEGY AMONG INTRAVENOUS DRUG USERS

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Objective. To develop a minimal behavioural programme aimed at increasing behaviour change towards safer sex and drug use among intravenous drug users (IVDUs).

Methods. A booklet was developed following behavioural principles consisting of the following sections: Assessment and feedback; Knowledge test; Drug risk, monitoring and identifying client's own risk situations, using problem solving to find better ways to cope with risk, common risk situations and ways to solve them ; Sex risk choosing partners and using condoms, identifying risk situations and ways to cope with these ; Local information. The format of the booklet is written with local drug users in view. The booklet was developed with the help of groups of clients in residential drug treatment agencies who tested and commented on each section.

Results. A booklet has been developed successfully prior to formal evaluation.

Conclusion. Behavioural interventions offer a great deal to those who wish to change their behaviour but have difficulty translating their intentions into practice. No other educational package offers specific advice on monitoring and altering specific areas of difficulty which lie behind making such changes.

Th.D.P.83

COMPARISON OF SEXUAL BEHAVIORS AMONG WHITE IVDU AND NON-IVDU (NIVDU) HETEROSEXUALS IN SOUTHEASTERN NEW ENGLAND

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New England Behavioral Health Study (NEBHS), Brown University, Providence and Memorial Hospital, Pawtucket, RI, USA.

Objective: To compare sexual behavior and risks of HIV transmission or acquisition of White IVDU and NIVDU in an area where > 1/3 PWA's are IVDU and the prevalence of non-whites (~3%) is lower than the U.S. average.

Methods: Cross-sectional analyses of in-depth interviews and serologies from the first 175 White enrollees of a community-based prospective study of the heterosexual spread of HIV in S.E. New England among self-identified high risk heterosexuals. The full cohort is 81% White.

Results:	IVDU (N=62)	NIVDU (N=113)
HIV seropositivity	40%	4%
> 1 partner for the past year	41%	58%
> 30 lifetime partners	36%	21%
Sex with an IVDU	61%	21%
History of STD (ever)	45%	30%
Always used condoms for the past year	11%	5%
Never used condoms for the past year	45%	46%

Conclusion: Although White IVDU were more likely to be HIV+ than NIVDU and have sex with other IVDU, a higher percentage of IVDU always used condoms. Routine condom use was uncommon in both groups. Heterosexual transmission of HIV among White NIVDU was documented. HIV+ IVDU frequently had sex with NIVDU and a subset of HIV- NIVDU are continuing to place themselves at increased risk for acquiring HIV.

Th.D.P.80

RISK FACTORS FOR TRANSMISSION AND CHANGES IN RISK BEHAVIOUR AMONG IV DRUG ADDICTS (IVDAs) IN GENEVA

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Objective: To evaluate risk factors and behaviour with regard to transmission of HIV.

Methods: IVDA serum samples were collected since 1981. From 1985 to 1988, IVDAs were interviewed once (225 IVDAs), twice (115), and more than twice (30).

Results: Among ambulatory addicts in a outpatient methadone maintenance program, seroprevalence increased from 7% (5/70) in 1981 to 36% 56/154 in 1988. In 1986-1988, however, 47/68 (69%) of IVDA inpatients were seropositive.

Table 1 Sharing of needles and syringes (sharers) and non-use of condoms.

	before 1987		1987 and 1988	
Hiv status	sharers*	no condoms	sharers*	no condoms
Seropositive	91% (64/70)	98% (94/96)	5% (2/43)	56% (39/69)
Seronegative	82% (28/34)	88% (46/49)	29% (4/14)	73% (22/30)

*among those still injecting

10% of men have had sexual relations with homosexuals, and 80% with other IVDAs. Among a subsample of 53 HIV+ IVDAs, 31 had a stable sexual partner. Of 18 partners tested, 11 were HIV+; in 5, sexual transmission was the only probable route of infection.

Conclusion: Among IVDAs in Geneva, sharing of needles and syringes has greatly decreased since 1985. However, there remains a potential for sexually transmitted infection. Future preventive strategies aimed at IVDAs must take this into account.

Th.D.P.82

A COMPARATIVE ANALYSIS OF HIV INFECTION AMONG IV DRUG USERS IN TREATMENT AND ON THE STREET

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Objective. To compare the seroprevalence of HIV among IVDUs in treatment and on the street and to determine the differences in distribution by sex and ethnicity/race.

Method. Two separate studies in the Miami metropolitan area have recruited 300 IVDUs respectively from drug treatment programs and from the street. Blood samples were drawn from the clients within the treatment programs, or for the street sample at a centralized assessment center at the medical school. Pre and post test counseling were provided in similar fashion to each of the groups as they were given similar assessments of their sex, drug and other histories.

Results. The street population indicates a much higher seropositivity (33%) than the treatment population (12%). Hispanic data indicate one exception, showing more males to be seropositive in treatment (26%) than in the street population (18%). The treatment population is predominately white (74%), whereas the street population is predominately black (83%). However, in each sample blacks are significantly more seropositive than whites(21% black versus 6% white in the treatment population, 35% black versus 17% white in the street). Overall, females are of greater seropositivity than males.

Conclusion. It is extremely important to actively recruit and establish prevention and control measures for the street population of IVDUs, as well as for those in treatment because of the potential high risk for transmission of HIV.

Th.D.P.84

PSYCHOEDUCATIONAL GROUP APPROACH TO AIDS PREVENTION WITH DRUG ABUSERS IN RESIDENTIAL TREATMENT: IMPACT 6 MONTHS AFTER INTERVENTION

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Center for AIDS Prevention Studies, UC San Francisco, CA USA

Objective. To assess the impact of 6-hour psychoeducational groups on the AIDS knowledge and attitudes of drug abusers completing residential treatment.

Methods. 96 drug abusers in the latter stages of treatment were randomly assigned to receive a 6-hour group protocol or a set of brochures about AIDS. Assessment interviews occurred before randomization, after the intervention, and 6 months after the pre-assessment. Subjects averaged 84% attendance at training, 93% were reached for the post-interview, and 89% (of 79 due to date) have been reached for 6-month followups. Measures were designed to tap AIDS-related knowledge of risk, perceived threat, response efficacy, self-efficacy, communication skills, and social supports.

Results. There was a significant effect at the post-interview in the expected direction in knowledge of AIDS risk ($p=.006$) and a trend in the expected direction in self-efficacy ($p=.07$). By 6 months the knowledge difference had faded, but the differences in perceived self-efficacy had become more pronounced ($p=.02$).

Conclusions. Conducting AIDS education groups in a residential treatment setting can increase participants' knowledge and change some attitudes that put them at risk of acquiring or transmitting HIV infection; however, interventions are needed that are more focused, potent, and long-lasting.

Th.D.P.85

AIDS AND SUBSTANCE USE EDUCATION AND PREVENTION: A COMMUNITY-BASED APPROACH.

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**Alexandra Park Community Centre, Toronto, Ontario, Canada.
***Health Care Consultants (Intl), Toronto, Ontario, Canada.

Objectives: 1. To provide the information and behaviour change skills necessary for prevention of AIDS in substance users. 2. To train workers in effective training techniques for bringing about knowledge and behaviour change in substance users. 3. To ensure than all those in need have access to bleach and syringe-exchange education programs and related services. 4. To provide advocacy for substance users.
Methods: With personal financing, volunteer labour, donations and the minimal resources available to community groups, this program initiated AIDS and substance use education (including workshops for workers), provision of bleach-kits, opening of syringe-exchange education programs, and ensured advocacy for substance users. The program relied on community support and networking, free services from health-care and other professionals, and the donation of money, time and supplies form many sources. The key component of this program appears to be community concern and networking.
Results and Conclusion: Several thousand bleach-kits have been distributed through this program; a number of community groups now offer syringe-exchange education programs; a mechanism for formal training of trainers in AIDS and substance use has been established; general public education on AIDS and substance use is ongoing; advocacy for substance users is increasing in strength. In the absence of government leadership or funding, community groups can effectively provide AIDS education, prevention, and other services if they use networking and shared resources.

Th.D.P.86

MANAGEMENT OF HIV-INFECTED FEMALE IVDA'S

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*Department Obstetric and Gynecology, Freie Universität Berlin
** AIDS Research Center, Bundesgesundheitsamt, FRG

Objective: To evaluate the effects of methadone treatment in a clinical center for Gynecology
Methods: Maintenance to abstinence by step wise reduction in three different groups of a total collective of 71 women.
Group 1: 31 HIV-negative pregnant women
Group 2: 19 HIV-positive pregnant women
Group 3: 21 HIV-positive non-pregnant women
Evaluate by clinical documentation and drug tests
Results: (Selection) in group 1 39 % reached total abstinence before delivery, in group 2 only 16 % and in group 3 67 % reached total abstinence during period of in - or outpatient care; significant differences were found between inpatient and outpatient care.
Conclusion: Maintenance programs are not very common in the FRG Results show, that indications of methadone treatment should be very selective. The sources of maintenance - to - abstinence depends on very different factors, such as drug status, social support, clinical program, personality, and serology of HIV.

Th.D.P.87

Counseling
Counselling

Th.D.P.88

CHANGES IN THE SEXUAL BEHAVIOR OF HIV INFECTED PATIENTS PARTICIPATING IN A GROUP PROCESS.

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Objective: To induce changes in the sexual behavior and use of condom as a preventive measure for diminishing HIV sexual transmission in a group of HIV seropositive homosexual men.
Methodology: 36 seropositive, homosexual, asymptomatic, unmarried men, aged between 18 and 45 years old, requesting psychological support, were selected. The invidiuals were assigned to 3 groups: A (3 months), B (6 months), C (1 year), (90' session, 1 x wk). Several psychoanalytic group techniques, such as interpretation and free association, were used. Killing fantasies, uncapability to establish total object relations, hostile feelings towards homosexuality, uncertainty of presenting clinical symptomatology and dying were interpreted in group sessions with the purpose of promoting condom use and modifying risky practices. Changes were evaluated at the end of all sessions.
Results: The results are presented in the following table:

GROUPS	GROUP A (3 months)		GROUP B (6 months)		GROUP C (1 year)	
BEHAVIOURS	Pre No.	Post No.	Pre No.	Post No.	Pre No.	Post No.
Use of condom	0/12	11/12	0/12	12/12	0/12	10/12
Stable Couple	2/12	2/12	3/12	6/12	6/12	4/12
Hostile feelings for being homosexual	4/12	4/12	6/12	3/12	8/12	2/12
Uncertainty for presenting symptomathology	12/12	12/12	12/12	12/12	12/12	12/12

Discussion: 3 and 6 months groups were associated with changes in sexual behavior, the one year's group structural changes and in the condom's use.

Th.D.P.89

COUNSELLING AND EDUCATION ON AIDS.

Quinhões, Eleonora Pati; Rachid de Lacerda, M.C.; Menan, J.L.L.; Longo, P.M.P.; Moura, E.M.M.; Carvalho Neto, L.D. et al.
Gaffrée & Guinle University Hospital - University of Rio de Janeiro - Brazil.

Objective: To inform people about AIDS transmission/acquisition, prevention, safe sex and the disease.
Methods: Physicians, psychologists, social workers and nurses during private sessions at the "AIDS" outpatient unit of our hospital and at conferences in schools, churches, poor communities, banks, industries and other groups,deliver multiprofessional lectures where all aspects of AIDS are explained.We used slides and other projections with simple language to be easily understood. After the explanation there is an annonimous question session when all the remaining doubts are solved.
Results: The most common questions are about oral, anal, vaginal sex, kiss, manicure, mosquito bite, condom, vaccine, cure, blood transfusion/blood tested, where to find the AIDS test, where to find treatment. It was more difficult to explain, be understood and be accepted all information about condom/safe sex when talking to male adults. There is a greater concern among women than men about learning how to explain or talk about AIDS with their children. It was difficult to talk openly about sex and drugs with adolescents because teachers and parents are not prepared to cope with sex and drugs subjects.
Conclusions:
1. Despite being a volunteer work without any support, we are doing our best.
2. More support should be given for Counselling and Education on AIDS because they are the only way to stop the AIDS epidemic.
3. A special attention should be given to Adolescents because they are learning about life,love, sex and drugs at this very moment and they have the right to live long.

Th.D.P.90

HIV-AIDS Counselling: A Collaborative Project

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There is a growing need to enhance the availability and quality of counselling for persons with HIV infection, those with AIDS, their families and others affected.

The Federal Centre for AIDS Canada, in collaboration with the WHO/GPA and collaborating Canadian provinces has developed a planning approach for improving, expanding and maximizing existing counselling resources in order to increase the capacity for HIV counselling in any community. This initiative, a world first, examines, defines, and facilitates development of the common elements of counselling needed when dealing with HIV and AIDS. The approach looks not only at a common methodology for such counselling but at necessary co-ordination of existing services for the strengthening and expansion of counselling networks. Implicit in the approach is the enhancement of collaboration between health, social service and community based organizations.

This presentation will highlight training needs both in the formal health-social service system and in the broader community based non-governmental area, and provides for this training to be put in place.

Th.D.P.91 AIDS PREVENTION IN THE LEGALIZED SEX INDUSTRY

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* Prostitutes Collective of Victoria , Australia

Having begun in 1983, the Prostitutes Collective of Victoria is one of the most well resourced organisations of sex workers in the world. By 1988 it was funded by a range of agencies to conduct several programs aimed at converting AIDS knowledge into safe work practices in all sections of a diverse, recently legalised sex industry. The programs and their rationales will be explained. They are:

The Safe House Endorsement Scheme : information and industrial relations in legal brothels.
The Sex Industry and the AIDS Debate : Ist National Sex Industry Conference.
Poverty Action Program : empowerment for safe working.
Worksafe/Playsafe : video for new workers and medical service providers.
Service Delivery to Female Sex Workers : making the system work for prostitutes too.
Hello Sailor : AIDS information for visiting sailors.
Needle Exchange : AIDS education of IV users. Drop-in Centre.
Ugle Mugs : A sheet of descriptions to violent and dangerous clients.
AIDS Education to male sex workers.

Th.D.P.92 SURVEY OF PHYSICIANS' NEEDS

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OBJECTIVE: To identify the role the DPH's can play in helping community physicians become updated on AIDS issues. To identify how important physicians perceive AIDS to be in their particular practice. To identify what AIDS information physicians want for themselves and for their patients. To determine from whom physicians would most like to receive AIDS information. To assess how often physicians want to receive AIDS information.
METHODS: A total of 49 physicians were surveyed by public health nurses. Physicians were selected from two sources, half were randomly selected from the Ontario Medical Directory. The other half were sentinel physicians who regularly report communicable diseases to the Department of Public Health. All the interviews were done on a personal basis.
RESULTS: 75% felt that it was important or very important to be informed about AIDS. The most often selected topics include testing, pre and post test counselling, treatment approaches and community resources. The majority of physicians chose the Department of Public Health as their first choice from whom they would like to receive information.
CONCLUSION : There is a need for more active outreach by public health units to community physicians on AIDS. Future planning will include a quarterly mailing to interested physicians on AIDS/HIV illness, the Department of Public Health will adapt an HIV counselling workshop to fit physicians needs, and develop a specific outreach strategy to community physicians to meet their educational needs. Presentation will give more information re findings.

Les adolescents
Adolescents

D.501 EXTRAORDINARY WITHOUT ORDINARY SEXUALITY

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Objective: Education emphasizing negative aspects such as, AIDS, STD's unwanted pregnancy focuses on "extraordinary sexuality". When negative information is stressed, feelings and behavioral strategies necessary for the integration of information and utilization of preventive actions are missed. Policy makers need to shift from a focus on extraordinary to ordinary sexuality.
Method: The Board of Health approached Calgary School Boards to present facts on the extent of adolescent sexual activity, STD, and ectopic pregnancy. Current piecemeal and optional approach to sexuality education was compared to negative sequelae of sexual behavior. The Board of Health recommended that sexuality education programs be mandatory for all students.
Results: Both school boards accepted the proposal and schools will have a comprehensive, sexuality education curriculum provided to all students by 1990. The Board of Health committed funds to training, inservicing and support of teachers in the school system.
Conclusion: In order to promote safer sexual behavior, public health and school officals must ensure that all students receive not only cognitive information about sexuality, but also a comprehensive curriculum that will examine feelings and the behavioral skills in order to practice safer sex techniques. To accomplish this, AIDS education must be placed in the context of comprehensive,compulsory, sexuality education. Public Health agencies can have an impact of the decision to provide such education in a community.

D.502 TITLE: HIV SEROPREVALENCE AND DEMOGRAPHIC SURVEY OF INCARCERATED ADOLESCENTS

AUTHORS: *Baker, Charles J., *Re, O., *Morris, R., *Huscroft, S., *Roseman, J., and *Schultz, B.

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OBJECTIVE: To determine HIV Seroprevalence and I.V. drug abuse factors in adolescent incarcerated within the Juvenile Halls, County of Los Angeles.

METHODS: Blood samples were collected anonimously from 2,005 youngsters. Also, the following were recorded: Age, Sex, Race, history of I.V. drug abuse and SGPT/SGOT testing.

RESULT: Only two samples were positive by Elissa and Western Blot tests. 90% of the youngsters were between 16 and 17 years of age. 92% of were males, 49% were hispanic, 31% were black and 15% were white. History of I.V. drug abuse was recorded in 2% and 3% received SGPT/SGOT tests.

CONCLUSION: HIV Seroprevalence this survey (0.099%) compares favorably with the 0.16% determined 1-1/2 years ago in the same type of pupulation. This difference may suggest greater awareness of high risk behavior for AIDS among adolescents.

D.503 THE USE OF ONE EFFECTIVE MEDIUM - TELEVISION TO EDUCATE CANADIAN YOUTH AND PARENTS ABOUT HIV AND AIDS

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As a result of the Canada Youth and AIDS Study conducted with 38,000 youth across Canada it was found that a high majority of Canadian youth received their information about AIDS from television. The Canada Youth and AIDS Study is representative of Canadian youth in grades 7, 9 and 11, first year University/College, dropouts and street youth. Television as a main source about AIDS was not only prevalent in the in-school population but also those out of school such as dropouts and street youth. In response to this, the Federal Centre for AIDS of Health and Welfare Canada commissioned to undertake three national film productions. Two of these film productions are focussed on youth and the third on parents. One of the youth productions will focus on the 12 to 14 year olds and the second on 14 to 16 year olds. The film production for the older population will have an original story and corresponding rock video segment that will be released separately and reinforce the messages of the film production. The parent film will provide parents with the needed information on HIV, AIDS and healthy sexuality but will focus on how parents can effectively communicate this information to their children.

D.504 A MODEL:TARGETED AIDS EDUCATION AND COUNSELLING FOR ADOLESCENTS IN AN HMO

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Objective. Within a pre-paid health plan population of over 5 million members nationally, a targeted intervention model has been developed to identify adolescents at high risk for becoming infected with the AIDS virus.
Method. All health plan members age 12-21 who present for a health care visit by appointment are given a brief questionaire to be completed in the examining room before the examiner enters. Eighteen (18) simple, brief questions about sexual activity and other risk behaviors are asked. A rapid review of the completed questionaire allows the examiner to determine if the adolescent is at risk, no risk, or potentially at risk for AIDS. The questionaire, once reviewed, is discarded, is not a part of the medical record, but allows a one to one confidential exchange between the teen and examiner. Those adolescents who are identified at risk are referrred to a prevention counsellor for evaluation of risk behavior, education on AIDS prevention and HIV testing, and most importantly, behavior modification. All adolescents referred in the model for counselling are re-evaluated in several months; behavior and risk taking is reviewed; education is reenforced. Adolescents not at risk are referred to an education component of the model.
Projection. Intervention effecting adolescent behavior change may be one of the most definitive methods of preventing high risk adolescents from becoming the next surge of the AIDS epidemic in the 1990's. Information alone is not effective in changing teens' risk behavior. Our model of intervention in a nationwide HMO has the potential of changing the behavior of over a million adolescents in the USA.

D.505 LE SIDA EN AFRIQUE CENTRALE : SYSTEMES D'INFORMATION, ROLE DES MEDIAS ET INTER-FACE ADOLESCENTS-ENVIRONNEMENT

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Objectif. Evaluer la synergie du rôle des médias ainsi que des données et des systèmes d'information sur le SIDA parmi les adolescents en Afrique Centrale.
Méthodes. Une enquête par sondage d'opinion relative à la perception du message sur le SIDA était menée parmi 3000 adolescents à Kinshasa(Zaïre) dont une moitié scolarisée et une autre non scolarisée en 1988.
Résultats. L'enquête a montré que l'indice de performance et d'efficacité des campagnes d'information est très faible. Leur apport est insuffisant pour le besoin d'une fonction d'intégration d'une forte proportion des adolescents(34,6%). Les résultats sont significatifs(56,5%) pour les scolarisés en ce qui concerne la perception du message et moins(38%) pour les autres Cela se traduit aussi au niveau des canaux de communication.
Conclusion. L'étude a débouché sur un ensemble de recommandations en vue d'améliorer les systèmes d'information opérationnels sur les perspectives de prévention et de traitement du SIDA ainsi qu'au rôle des médias. Enfin, des suggestions quant aux variables immédiates à incorporer dans les programmes de santé publique sur le SIDA en Afrique Centrale.-

D.506 STRESSFUL LIFE EVENTS AND SOCIAL SUPPORTS AS MEDIATORS OF SAFE BEHAVIORS AMONG RUNAWAY AND GAY YOUTHS

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Objective: To evaluate the effectiveness of stressful life events and social supports as mediators of safe sex behaviors among runaway and gay youths.
Methods: A review of the literature, focus groups, and a chart review in community agencies were used to construct measures of stressful life events and social supports for runaway and gay youths. Test-retest reliability and internal consistency appear high for each measure. Ninety-five runaways and 30 gay youths were interviewed regarding their sexual behavior in the last three months, life events, and social supports.
Results: Runaways have four times the number of stressful life events as reported by other studies of adolescents; 33% have had a family member die, 60% have moved, 15% were physically assaulted, and 20% raped in the last three months. The unsafe behaviors of those in the social support network is most highly correlated with the adolescents' unsafe sex and drug use behaviors. Gay youths perceived their networks as less supportive and themselves as needing support more than runaway youths. Neither life events nor social support were significantly correlated to high risk behaviors.
Conclusions: Life events and social supports may not be the most critical mediators of high risk behaviors among these groups.

D.507

RISK FACTORS ASSOCIATED WITH A HISTORY OF SEXUALLY TRANSMITTED DISEASE AMONG ADOLESCENTS

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Objective. To identify a profile of risk factors associated with a history of treatment for sexually transmitted disease.
Methods. A national sample of 1,129 college undergraduates, ages 18-23, completed self-administered questionnaires assessing knowledge, attitudes about AIDS, prevalence, type and frequency of sexual behaviors, frequency of condom use and history of treatment for sexually transmitted disease.
Results. Women and minorities were twice as likely to be treated for an STD compared to males or Caucasians, (Prevalence Ratio (PR) = 2.0, 95% Confidence Limits (CL) = 1.4 - 2.8, P=.007; PR=1.9, CL=1.4 - 2.6, P=.001; respectively). Unprotected sexual intercourse was also associated with a positive history of STDs (PR=1.3, CL=1.0 - 1.4, P=.09). Students with multiple sex partners and a higher frequency of sexual intercourse were also more likely to have reported medical treatment for an STD (PR=1.7, CL=1.3 - 2.3, P=.003; PR=1.5, CL=1.1 - 2.0, P=.007, respectively).
Conclusion. Identifying adolescents' behaviors which significantly increase the risk of STDs permits development of more effectively targeted education programs.

D.508

A COMPARATIVE ANALYSIS OF RISK BEHAVIORS AMONG A SCHOOL-BASED AND JUVENILE DETENTION FACILITY SAMPLE OF ADOLESCENTS IN SAN FRANCISCO

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Objective. To describe a comparative risk behavior analysis of adolescents residing in a juvenile detention facility (YGC) and a school-based sample.
Methods. Adolescents, ages 14-18, attending high schools in San Francisco (N=802) and incarcerated at a juvenile detention facility (YGC; N=113) completed identical self-report questionnaires assessing AIDS-related risk behaviors. Surveys were anonymous and completed during the same time-period.
Results. Significant differences in the prevalence of AIDS-related risk behaviors were identified between the two samples. Adolescents at YGC report a higher lifetime prevalence of intravenous drug abuse (12.9% vs 3.7%, P=.0003, PR=3.5, 95% CL=1.8-6.7), more than three lifetime sex partners (86.4% vs 15.1%, P=.0000, PR=5.7, CL=4.6-7.0) a greater proportion with multiple sex partners in the past year (84.8% vs 46.0%, P=.0000, PR=1.8, CL=1.5-2.2) and an earlier age of sex onset (P=.0006).
Conclusion. Adolescents in juvenile detention facilities report a significantly higher prevalence of AIDS-related risk behaviors which substantially increases their risk of acquiring and transmitting HIV infection.

D.509

EVALUATION OF A TARGETED AIDS/HIV EDUCATION PROGRAM FOR SECONDARY SCHOOL STUDENTS IN A MEDIUM-SIZE USA METROPOLITAN AREA

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Objective. To evaluate change in AIDS/HIV knowledge level among seconday school students following a targeted education program.
Methods. An education program was developed involving a minimum of two hours by trained health teachers. The curriculum stressed HIV modes of transmission and risk reduction measures. 500 students were pre- and post-tested with this intervention. The testing instrument asked five demographic questions and 15 cognitive questions. Instrument sheets were also coded by health teacher.
Results. There was an overall gain in knowledge with the mean of correct responses increasing by three points on post-test scores as compared to pre-test scores. Sex, race, age, grade level, and residential area did not account for differences in pre- or post-test results. Significant differences in student knowledge level were found in the post-test by teacher code; such differences on pre-test results were not significant.
Conclusion. A targeted education program for secondary school students can increase knowlege about AIDS/HIV. Differences in the success of the intervention by classical demographic variables were not significant. Significant differences in the success of the intervention were found in regard to teacher codes. Based on the study results, the curriculum itself was successful, however, this success was varied by teacher. Such variation suggests improved teacher training in the delivery of AIDS/HIV education.

D.510

KNOWLEDGE OF HIV TRANSMISSION AND ADOLESCENT SEXUAL BEHAVIOR

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Objective. To assess how the knowledge of HIV transmission affects the sexual behavior of the adolescent.
Method. A survey of 210 students, 109 men and 101 women in 9th to 12th grade, was completed. Knowledge of transmission of AIDS, sexual activity, change in sexual behavior, and source of educational information on HIV infection was assessed.
Results. Of the adolescents surveyed, 67% of the men and 46% of the women were sexually active. Of those who knew the routes of HIV transmission, 56% of the men and 34% of the women had not changed their sexual behavior. Of those who did not know the routes of HIV transmission, 70% of the men and 42% of the women were sexually active. Only 8% of the men and 12% of the women admitted they lacked accurate information about transmission of HIV infection. A full 60% of those surveyed operate with misinformation. Regardless of sex, sexual behavior, and accuracy of information, radio/television and magazines were reported as the most frequent sources of information about HIV infection.
Conclusion. Adolescents are participating at alarming rates in high risk sexual behaviors. While those most likely to be involved in high risk sexual behaviors are those with inaccurate information, what is disturbing are the numbers who know the risks but fail to alter their sexual behaviors.

D.511

INTERVENTION MODEL : WORKING WITH GAY AND LESBIAN YOUTH AT RISK FOR HIV INFECTION

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Objective: To develop an effective, comprehensive intervention program for gay and lesbian youth who are at risk for HIV infection and train professionals to work with this population.
Method: The methods used are focus groups for youth, workshops, and community forums. We have worked with over 1,500 youth in the last year and a half. We also conduct semi-structured focus groups (four per week) and one per week for professionals. The young people that we work with are self-identified gays and lesbians. Seventy five percent of these adolescents are minority youth, ages 12-21 ($\bar{X}$=17).
Results: Development of training manual, printing and publication of articles and brochures.
Conclusions: Materials for this population must be specifically tailored for these adolescents and the professionals who serve them. In contrast to current U.S. government policy prohibiting explicit safer sex practice and guidelines instruction, these materials need to be extremely explicit sexually. Also, these materials need to reflect and acceptance of homosexuality.

D.512

REPORT OF CWLA S COMMITTEE ON SERVING CHILDREN AND YOUTH WITH HIV INFECTION IN RESIDENTIAL GROUP CARE.

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Objective: To address issues of concern to Board members, executives, administrators, clinicians, child care staff and volunteers surrounding the care of children and youth who are emotionally disturbed, infected with HIV, and in need of therapeutic residential group care.
Method: A subcommittee of CWLA's Task Force on Children and HIV Infection undertook the challenge of writing a Guide for Residential Group Care Providers. Experts in legal, medical, and psychosocial issues associated with HIV met with experts in providing services to children who not only exhibit behaviors which put them at high risk for HIV infection, but who are also emotionally disturbed and who might have suffered abuse or neglect at the hands of their parents.
Results: The CWLA subcommittee 1) identified issues associated with administration, advocacy, and public policy, program procedures and prevention; 2) recommended effective responses to those issues; 3) suggested strategies to achieve them; and 4) published the findings and distributed them to the field of practice.
Conclusion: It is feasible and appropriate to provide care and treatment of HIV-infected children in residential group care.

D.513

Information et modification du comportement face au SIDA en milieu jeune : rôle des intervenants-relais

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OBJECTIF: Prolonger l'action d'information menée par la MNEF depuis 86 par une réelle sensibilisation permettant de modifier les attitudes et comportements des jeunes.

METHODES : Constitution d'un réseau d'intervenants-relais : étudiants issus du milieu mutualiste (MNEF) et personnels médicaux et para-médicaux des centres de soins (MNEF, FSEF), dans le cadre d'une expérience pilote menée à PARIS en Avril 89 (formation initiale : 75 personnes).

CONCLUSIONS: Après évaluation, cette expérience sera étendue à partir du module de formation initial (éventuellement adapté) et permettra un travail en milieu jeune qui complètera le dispositif sanitaire et social mis en place par la MNEF, la FSEF et APARTS.

D.514

D.515

D.516

A NATION-WIDE NETWORK OF AIDS PREVENTION FOR ADOLESCENTS 18 MONTH EVALUATION

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Objectives. 1) Design, implement, and evaluate a training program for AIDS prevention educators, 2) Create an interactive network of AIDS educators nation-wide.

Methods. Following a pilot project implemented in the Paris metropolitan region, APS (Association pour la Prevention du SIDA) enlarged its methods and activities of training AIDS educators to include interested persons throughout the country. To date more than 800 auxiliaries have been trained. The association headquarters in Paris serves as a central focus point for the organisation of training sessions, distribution of materials, consulting for educators in the organisation and implementation of their prevention activities.

Evaluation. An anonymous, self report questionnaire designed to evaluate the training and the educators' activities following the training sessions was sent to 300 APS members prior to the First National Conference in October 1988. Highlights of the evaluation follow: 80.4% of respondants rated training sessions 4 or above on a 5 point scale (5 being most positive); there was an 85% and above satisfaction rate on all questions concerning APS' services offered to network members (content of training sessions, consulting etc.), 74% of persons trained by APS implemented programs in their institutions, estimating an average of 200 personnes reached per program, 80% of the respondants judged that they received positive responses from participants in the programs they designed, 97% found the materials furnished by APS to be effective and well adapted to their audiences, 70% expressed interest in continuing to implement AIDS prevention programs and to work with the APS network.

Conclusion. The results of the evaluation show that the majority of persons trained appreciated the services offered by APS and were receptive to the idea an interactive network for AIDS prevention, indicating that this is a positive and effective approach to AIDS prevention. APS plans to publish a bi-monthly bulletin designed to further increase the level and quality of exchange between its members and continues to expand its training and consulting for prevention programs.

D.517

D.518

OUTREACH MODEL FOR HIV POSITIVE ADOLESCENTS AND ADOLESCENTS CURRENTLY AT HIGH RISK FOR HIV INFECTION

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Objective. Careful analysis of current indicators of risk behavior suggest that adolescents may be the next group in the U.S. to be hard hit by the AIDS epidemic. In an attempt to determine needs and characteristics of high risk adolescents in New Jersey, a pilot survey of 27 youths was conducted on the streets of Newark, New Jersey.

Methods. Individuals were interviewed face-to-face between 10:00 p.m. and 2:00 a.m. for brief interviews. Data collected included demographics, living arrangements, health and risk behaviors.

Results. The 14 males and 13 females were 11 to 18 years old. 7 did not live with parents, 11 had been treated for an STD, 10 reported sexual preference as homosexual/bisexual, 7 reported drug use, 13 had dropped out of school, 4 reported having children.

Conclusion. Adolescents at risk for HIV infection and those already infected cannot be adequately served with existing intervention models. The authors proposed the following three-component model be implemented and evaluated for efficacy: 1) outreach to youths on the streets by workers both on foot and from vans for AIDS education, counseling and referral for physicals; 2) storefront youth centers located in high risk areas providing physicals, food, shelter and referrals for medical care and social services; and 3) a 15-20 bed residential facility for youths in need of short or long-term medical care. It is essential that this population immediately receives AIDS education and risk reduction information as well as concrete services.

D.519

FROM THEORY TO PRACTICE: A CULTURALLY, LINGUISTICALLY AND AGE-APPROPRIATE HIV RISK REDUCTION PROGRAM FOR ADOLESCENTS

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Objective: To describe the "Wedge": a four-session educational strategy for HIV risk reduction among San Francisco youth.
Methods: Following six months of pilot testing, a four-session teaching model was launched in February of 1988. The model was designed to incorporate the strengths of existing education strategies: (1) use of established theories of behavior change in program design; (2) emphasis on attitude change and skill development through participatory activities; (3) culturally and linguistically appropriate information delivery; (4) tailoring of program delivery to accommodate youth in public, private, and parochial school settings, detention facilities and community centers; (5) representation of the consequences of HIV infection from a personal perspective. The cornerstone of the strategy is a session conducted by a person with HIV infection, ARC or AIDS. Training is provided for presenters of each of the four sessions.
Results: By June 1988, the program gained national attention. Program efficacy is measured in two ways: anonymous letters from youth participants, and a speaker evaluation form. Recent funding from the Centers for Disease Control will allow for a more formal program evaluation.

D.520

D.521

D.522

Comportement
Behavior

D.523

AIDS EDUCATION IN THE WORKPLACE AND THE FAMILY

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Objective. To investigate the impact of AIDS education as provided in the workplace on the level of correct knowledge about AIDS especially those dimensions relating casual contact as might occur in the workplace. Also, such education may have a secondary effect if parents then educate their children. Therefore, a second objective is to investigate the relationship between parents' knowledge about AIDS and their efforts to educate their own children about AIDS.
Method. Data come from the National Longitudinal Survey of Youth, a national survey of approximately 10,000 men and women aged 23-30 in 1988. Information is available on a variety of employer and individual characteristics including social and demographic information. The sample contains an oversample of Blacks and Hispanics. The analysis focuses on the 3000 school-age children who, by virtue of the sampling design, are disproportionately born of adolescent parents with high risk of being in disrupted families. The children are at higher risk of becoming sexually active at a young age. One of the concerns is the extent to which parents accurately assess their children's risks and steps they take to educate them.

D.524

THE RELATIONSHIP BETWEEN HEALTH STATUS AND PSYCHOLOGICAL WELL-BEING AMONG HEALTHY MEN AND MEN WITH ARC OR AIDS.

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Objective. To evaluate the relationship between health status and psychological well-being among healthy men, men with ARC and men with AIDS.
Methods. Twenty-four homosexual men diagnosed with ARC and 22 homosexual men with AIDS were assessed for psychological well-being and compared with 24 healthy heterosexual male controls (obtained from the Health Watch program, a longitudinal prospective study of healthy aging). All participants completed the Health Watch Questionnaire which provides quantitative scores of health status and lifestyle habits in 7 areas. The psychological well-being scale measures the individual's current and prior stress. Each patient received a score between 0 (poor psychological well-being) and 100 (excellent). The results were analyzed using one-factor analysis of variance (ANOVA).
Results. ARC patients had significantly lower psychological well-being scores than the healthy control group. Psychological well-being scores for AIDS patients were not significantly different from those of the healthy control or the ARC groups, although mean values were intermediate between those groups.
Conclusion. This study provides evidence that homosexual ARC patients experience the highest level of psychological distress (the lowest psychological well-being) when compared to healthy heterosexual men and homosexual men with AIDS. Persons at high risk of developing HIV infection and those with ARC may benefit from stress reduction programs, allowing for a more competent immune response and less susceptibility to progressive disease.

D.525

D.526

PERSONAL AIDS-RELATED BEHAVIOUR AMONG PARTICIPANTS TO THE STOCKHOLM IV INTERNATIONAL CONFERENCE ON AIDS

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Objective. The present survey took advantage of the IV International Congress on AIDS to evaluate personal AIDS-related behaviour of health professionals from all over the world (60 countries). Methods A brief questionnaire exploring a number of AIDS-related items (i.e. HIV-testing, current and past condom use, etc.), was delivered to approximately 850 health professionals who referred to the information desk of the Conference. Results Although participants to the Conference were approximately 6000, it is worth stressing that the questionnaire was completed by the vast majority of those to whom it was delivered (97%). Overall, the same percentage (36%) of interviewed health professionals reported to have undergone HIV-antibody testing and to use condoms regularly. Such proportion was very similar in males and females and in individuals from different nationalities, whereas age below 35 was associated with almost two-times more frequent HIV-testing and condom use in comparison with age above 65. Physicians tended to use condoms one fourth less often than those who did not have a medical degree, while health professionals who were in contact with AIDS patients seemed to be more prone to serotest themselves than those employed in research. HIV-testing was also positively correlated to current use of condoms, but, interestingly, not to condom use five years earlier, reported by 22% of interviewees. Fifty-eight percent of interviewees stated that they would explicitly enquire about HIV-antibody status in new sexual partners. Conclusions One third of the interviewees from all over the world attribute an important role to the regular use of condoms and voluntary HIV-testing in the strategy against AIDS.

D.527

LE PRESERVATIF : ETUDE DES DIFFERENTS TYPES DE MESSAGES A PARTIR DES SYMBOLES TRADITIONNELS

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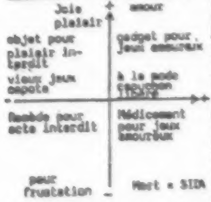
OBJECTIF : Analyse à partir de diagrammes géométriques des niveaux de conscience touchés dans une population lors des programmes de sensibilisation sur le préservatif


Joie plaisir
amour
objet pour plaisir interdit
gadget pour jeux amoureux
vieux jeux capote
à la mode capuchon
Remède pour acte interdit
Médicament pour jeux amoureux
peur frustation
Mort = SIDA

MÉTHODE : A partir des deux axes correspondants au double épanouissement de l'homme : axe horizontal étant le développement de l'individualité soumise aux conditions extérieurs, l'axe verticale aux différents niveaux de conscience (cf figure) et du schéma traditionnel de l'homme entre ciel et sol, rappel des différentes réactions psychiques (ethnique, rationnelle, émotionnelle) et comportementales (sociales et physiques) que suscitent les publicités réalisée en faveur du préservatif.
Etude des facteurs utilisés par les concepteurs de ces campagnes.

EVALUATION de la méthode par l'étude des rapports entre le contenu des campagnes et les processus psychiques et comportementaux provoqués. Cinq campagnes effectuée en 1987 et 1988 permettent d'illustrer cette analyse.

CONCLUSION : Cette étude complète les évaluations qualitatives et quantitatives avant et après une campagne de prévention pour déterminer le niveau et les objectifs à atteindre en fonction de la population ciblée.

Mots-clef - Préservatif, International, Comportement, Campagne, Evaluation.

D.528

SEXUAL DECISION-MAKING AMONG GAY/BISEXUAL MEN IN A LOW INCIDENCE AREA FOR AIDS

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Objective. To examine sexual decision-making under conditions of ambiguous risk among gay/bisexual men in a low-incidence area for AIDS.
Method. Participants in a CDC-funded AIDS prevention study were asked to estimate their likelihood of HIV exposure in twelve sexual scenarios. The scenarios, based on anecdotal accounts from study participants, were held constant on 4 dimensions: receptive for oral sex, no condom use, no ejaculation, partner's serostatus unknown. Variable dimensions included: setting, partner characteristics, and relationship to partner. For comparison, 2 scenarios were replicated, specifying anal rather than oral sex.
Results. In preliminary data from the first 124 (of 364) cases, mean risk scores range from 38 to 79 on a 100-point probability scale. Scenarios identified as high risk (64-79) involve anal sex, anonymous oral sex, or oral sex with a man whose steady partner is HIV-infected. Moderate risk situations (51-56) include oral sex with acquaintances and an alcohol-abusing friend. Low risk scenarios (38-44) involve oral sex with partners assumed to be monogamous.
Conclusion. The ranking of mean risk scores for 12 sexual situations is broadly consistent with risk reduction guidelines which emphasize avoiding unprotected anal sex and "knowing your partner". When information about serostatus is not part of that knowledge, men appear to make "educated" guesses about the likelihood of infection based on situational characteristics such as the setting for sex.

D.529

USING STRUCTURED SEXUAL DIARIES DATA TO ESTIMATE RATES, PREDICTORS AND CONTEXTS OF HIGH-RISK SEXUAL BEHAVIOUR

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Objective: To assess the effects of Age and Type of relationship on the incidence of sexual behaviour of homosexual men in the United Kingdom, especially on the contexts in which high-risk behaviour occurs.
Methods: Analysis of 3950 structured "sessions" from sexual diaries kept for a month by a volunteer sample of 170 gay men.
Results: At most 20% of sexual acts are high-risk, but they are widespread. Thus, although 53% of men engage in anal intercourse, only 9.2% of sexual behaviour is accounted for by it. Type of relationship has systematically greater effect (= ×2) than age for the amount and variety of sexual activity, but interactions are strong for older (≥39) and under-age (≤21) men. No systematic significant effects occur for incidence/men data). Two important subgroups refer to sexual behaviour inside and outside a primary relationship: "Safe in / Unsafe outside" and "Unprotected (condom) in / Unprotected outside".
Conclusion: Rates of sexual behaviours and their relationship content are critical for assessing the extent and type of high-risk behaviour.

D.530

TALKING ABOUT SEX

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Objective. Because sexual matters are rarely discussed publicly, little is known about the language people use to describe their own experience. The need for data to guide and inform the design of a questionnaire for use in the British Survey of Sexual Attitudes and Lifestyles has provided an opportunity to explore these communicational issues.
Method. Unstructured in-depth interviews were conducted with 40 individuals quota-sampled for selected demographic variables. Respondents' reactions to expressions used by interviewers was noted and their own choice of terminology recorded. Particular attention was paid to the meanings that terms had for respondents and their correspondence to standard definitions.
Results. Respondents were willing to talk about sexual matters but often lacked the language with which to do so. Passive understanding of sexual vocabularies was more extensive than active use. There was a general preference for formal scientific terms over informal colloquial ones, although there was some lack of familiarity with, and understanding of, many terms used in health educational literature.
Conclusion. These results highlight the need for those working in clinical, counselling, research and educational settings to take full account of the social content in which terms are used, and the extent to which their meanings are shared, in order to achieve optimally effective communication.

D.531

CHANGES IN SEYUAL BEHAVIOUR OF GAY MEN UNDER THE IMPACT OF AIDS. II

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Objective. To analyze whether further changes in sexual behaviour of gay men are still taking place and whether those already identified in a previous survey (1987) have proved to be stable.
Methods. A questionnaire of 62 questions on different topics relating to sexual behaviour and lifestyle of gay men was circulated by the seven most important gay journals in West Germany in October 1988. The questionnaire is almost identical with the questionnaire distributed for a first investigation in 1987. The 1988 survey is therefore a replication study. The response amounted to 1122 questionnaires in 1988 (1987 : 924).
Results. A preliminary assessment shows a remarkable stability of changes in sexual behaviour of gay men in West Germany. Low risk sex has proved to be accepted by an important majority of gay men. Gay men with a stabilized gay identity are also the most successfull in coping with the risk of HIV infection.
Conclusion. Efforts in prevention activities targeting specific subgroups of gay men are still to be intensified, namely gay men with a lower level of education and men with covert homosexual activities.

D.532

MANIFESTATIONS OF AIDSPHOBIA AT AN OUTPATIENT CARE UNIT IN RIO DE JANEIRO - BRAZIL

Longo, Paulo Henrique Pinheiro; Carvalho Neto, L.D.; Sion, F.S.; Morais de Sá, C.A.
Gaffrée & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO) - Brazil.

Objective: To study the ethiology and incidence of somatic manifestations of HIV negativ individuals concerned about AIDS who came to the AIDS Outpatient Care Unit at our Hospita presenting paranoid states and phobias related to AIDS.
Methods: The study comprised 23 HIV negative individuals (17,04%) with AIDSphobia selecte among 135 patients interviewed, from Feb 88 to Dec 88. We performed physical examination anu used non directive interviews, psychotherapic support and counselling.
Results: Somatic manifestations related to the anxiety are shown in the following table:

SYMPTOMS AND SIGNS	N	%
Sexual dysfunction	19	82,6
Diarrhea	15	65,2
Lack of concentration	12	52,2
Insomnia	10	43,5
Sweats	8	34,8
Skin Alterations	5	21,7
Fever	3	13,0
Trying Suicide	1	4,3

During the psychotherapic sessions it was observed that all the 23 individuals presented a pre-existing sexual conflict, basically comprising latent homosexual impulses, directed to an external object, as AIDS, a sexually transmitted disease.
Conclusions: A conflictive sexuality can reinforce the fear of AIDS, causing psychiatric states and somatic manifestations that can be confused with non specific symptoms of HIV infection. AIDSphobia should be considered when elaborating an AIDS prevention campaign.

D.533

IMMUNE MODULATION FOLLOWING THE DEATH OF A CAGE-COHORT AN ANIMAL MODEL OF PSYCHOLOGICAL STRESS IN AIDS

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Objectives. The psychological stress, experienced by AIDS patients following the death of their sexual partners or close friends, has been suggested to influence immune functions. An attempt was made in these studies to establish an animal model for this type of psychological stress.
Methods. We examined immune functions among several mouse strains (C3H/HeJ, AKR/J and BALB/cJ) following the death of a cage-cohort. Mice were housed in groups of five. At 48 hr intervals, one cohort was killed by cervical dislocation and returned to the home cage. Behavioral responses of the remaining cohorts were noted for 2 hr following each exposure. At the end of four such exposures, natural killer (NK) cell activity was measured in the remaining cohort.
Results. Fighting among the cohorts and biting carcasses were frequently observed in the C3H and AKR but not in the BALB/c mice. Eating carcasses, settling with carcasses were seen more frequently in C3H. NK cell activity was significantly suppressed in C3H, but not in AKR and BALB/c.
Conclusions. These results suggest that 1) the degree of psychological stress experienced following the death of a cohort differ between different haplotype strains, and 2) such behavioral changes can influence immune function.

D.534

RELIABILITY OF DATA COLLECTED ON SEXUAL HISTORIES IN HAITIAN IMMIGRANTS IN MONTREAL

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Objective. To evaluate test-retest reliability of a questionnaire on sexual histories administered to Montrealers of Haitian origin.
Methods. Test-retest reliability of the questionnaire was assessed using 30 subjects (13f., 17m.) aged 15-39. The median of the interval between the two questionnaire administrations was at 15 days with 33,3% of intervals being 28 days or more. French illiterate subjects were asked orally 34 questions related to their sexual history. The 27 most sensitive questions were self administered for French literate subjects, the other 7 questions being administered by interview. Kappa statistic was used for the estimate of reliability.
Results. All obtained kappas were significant at the p<0,0001 level. The lowest values were 0,703 and 0,758 for questions on the change of number of casual sex and homosexual encounters. Six kappa values ranged between 0,800 and 0,900, 8 more were in the 0,900 to 0,999 range, and perfect agreement (k=1,000) was found for 18 variables. Kappas higher than 0,900 were found for number (k=1,000), proportion and type (casual/steady, k=0,959) of lifetime sexual partners and for frequency of condom use with those partners (k=0,912).
Conclusion. Sexual histories can reliably be obtained in the Haitian ethnic minority of Montréal whether these questions are self administered or asked orally.

D.535

BEHAVIOUR MODIFICATION STRATEGY IN AIDS PREVENTION

Bart WYNENDAELE, Msc, Consultant AIDS Task Force, E.E.C. Hedwig GOEDE, MD, Health Education, National AIDS Programme Surinam, Brussels, Belgium

Report on an experiment in Surinam and a discussion on methodology
Objective :To promote participative training models for health educators involved in AIDS prevention directed at behavioural change for specific target groups.
To determine the most effective method for each objective and target group.
Method : Theoretical background and practical experience lead to the use of participative methods by the training of health educators in Surinam. Representatives from different target audiences were trained in information, group work and communication.
Results : Experience indicates a close relationship between the training methods used and the output. Depending on the setting, the degree of personal involvement and the method procedures, changes are obtained in subsequent levels: knowledge, motivation, attitudes and behaviour. For example, a lecture or an article provoked a change in knowledge while attitudinal and behavioural change implied more involvement. A synthetic table indicating correspondence between method and output is proposed.
Conclusions :Prevention can be made more effective when methods correspond more to the expected outcome. A differential approach should also be used for outcome evaluation. The focus of the prevention campaign being behaviour modification, more resources are required for training of trainers, research to devise effective methods and evaluation of the outcome.

D.536

THE USE OF THREE BIOPSYCHOSOCIAL INTERVENTIONS ON THE STRESS LEVELS AND IMMUNE FUNCTIONING OF HIV POSITIVE INDIVIDUALS

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Objective. On the premise that personality coping styles are a co-factor in disease prognosis, we are assessing the effects of 3 biopsychosocial interventions on the stress levels and immune functioning of HIV patients.
Methods. 10 seropositive patients underwent an intensive 16-week intervention involving Bioenergetic Psychotherapy, Meditation designed to stimulate Thymus gland activity & a structured Journal writing program. Each patient received a complete immune profile & biopsychosocial questionnaires at start, mid & end points with 6 month follow-up planned. Results compared to data collected from comparison group not receiving independent variable.
Results. Preliminary data suggest a trend toward enhancement of immune functioning noting, eg.,correlations between overall mood profile including anxiety & depression, & such variables as cortisol and immunoglobulin levels. Therapeutic techniques used were successful in patients learning individual stress management-therefore reducing each patient's overall stress levels as measured by thorough assessment profiles throughout the study.
Conclusion. We anticipate finding a correlation between biopsychosocial interventions designed to promote stress reduction and positive, enhanced immune functioning. We further hope to show how these interventions can be successfully implemented in overall treatment protocols in the functioning of community-based AIDS Assessment Clinic Programs.

D.537

MAINTAINING FOLLOWUP IN PROSPECTIVE EPIDEMIOLOGIC STUDIES OF HIV INFECTION: EXPERIENCE IN THE BALTIMORE MACS STUDY

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Objective To describe methods of maintaining participation in the Baltimore MACS, a volunteer study of the natural history of HIV in gay men.
Methods During a sample 3 month period, methods used to remind study participants (Ps) of their followup (FU) appointments, and return rates for each method were assessed. FU rates from the original cohort were tallied. The effect of incentives such as prizes to maintain FU was evaluated.
Results. 407 Ps had FU visits scheduled between 10/88 and 1/89. 303(74%) responded to a mailed reminder notice by completing their FU visit. 41(10%) responded to a mailed notice plus ≥1 telephone calls. 31(8%) Ps rescheduled but had not yet completed their FU visit, and 25(6%) are being contacted/traced. 7(2%) declined further participation. FU since 1984 is:

Status Known: 870 seen in 1988 (29 with AIDS)
52 deaths (44 AIDS, 8 possible AIDS or non AIDS)
18 moved
57 followed by telephone (6 with AIDS)
Status Unknown: 62 (32% HIV+, 68% HIV- at last contact)
Active Tracing: 94 (3 with AIDS)

Of 1183 volunteer study Ps, 88% are accounted for in 1988. Ps reported that prizes were not a major reason that they continued to volunteer.
Conclusion In this volunteer population, 74% returned for FU visits with 1 mailed notice. In such studies, it is important to commit resources to maintaining FU. Since 1984, vital status is assessed in 88% of the population.

D.538

THE MINNESOTA GENERAL PUBLIC AIDS SURVEY: A BEHAVIORAL RISK FACTOR SURVEY SUPPLEMENT

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Objective. To assess AIDS-related knowledge, attitudes and behavior (KAB) among the Minnesota general public over time, using systematic samplin procedures of the CDC Behavioral Risk Factor Surveillance System (BRFSS).
Methods. During September-December, 1986-1988, the MDH conducted th Minnesota General Public AIDS Survey (MGPAS), an AIDS-specific KAB modul added to the BRFSS core survey (N=1,000+/year for MGPAS). BRFSS (and MGPAS uses a Waksberg multi-stage cluster design.
Results. Belief in having enough information to protect oneself from AID increased, 70% ('86) to 90% ('88). Knowledge of HIV sexual and needle-sharing transmission was consistently high (>93%). Incorrect perceptions o risk declined for blood donation, 45% to 25%; sharing a drinking glass, 21 to 12%; and kissing, 31% to 22%. Attitudes regarding permitting PWA's t continue employment increased from 67% to 85%. Most Minnesotans (84% believed that children with AIDS should be permitted to attend school. I 1988, among 22% who replied 'yes' to "Has AIDS changed your life in an way?", 46% reported taking sexual precautions, ranging from increase perception of risk to increased care in partner selection to adoption of safer sex behaviors.
Conclusion. [1] The BRFSS is an excellent vehicle for state-level AIDS surveys. [2] Compared to NCHS national surveys, Minnesotans appear to have comparable or higher levels of knowledge regarding HIV transmission, lower misperceptions of casual transmission, and a higher degree of acceptance of PWA's in school and work settings.

D.539

TRUST: PREREQUISITE FOR GAY HEALTH

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Objective. To explore the perceptions of gay men regarding; a) the problems they encounter while maintaining their health; and b) their views on how these problems can be solved.
Methods. Data was gathered from a) unstructured interviews with 34 healthy gay men in the Maritimes; b) a log maintained while nursing people with AIDS; and, c) participant observation during 18 months of educating people about AIDS. A substantive conceptual framework was developed using the constant comparative analysis method of grounded theory.
Results. The basic social psychological process of trusting enables gay men to attain holistic health, as they achieve four developmental tasks: (a) unlearning the myths about homosexuality, (b) searching for lovers and friends, (c) reconciling their heterosexual network with their gay identity, and (d) managing health risks. The response of gay men to the threat of AIDS depended upon their achievement of these developmental tasks, and the amount of trust developed.
Conclusions. Recognition of the level of achievement of developmental tasks of gay men, allow educational programs and counselling approaches to be tailored to their particular needs.

D.540

"HOW AN AIDS PATIENT MANAGES HIR LIFE"-A study of seropositives to HIV patients In São Paulo city.

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For the enormity of cases in São Paulo city, 3213 until december, 1988, we think that is urgent a study trying to understand more about the AIDS patient's life.
General objectives-1)To provide subsides in the sense of to understand and deal better with the disease:2)To propose support measures for the patients in their itinerary to death.
Specific objectives-1)To make a evaluation of the social-economic profil of these patients:2)To know the changes of behavior patterns after knowing the positivity of the HIV test, from the social, affective, and familiar point of view.and also their situation in the work market.
Methodology-We have chosen a questionary to be applicatec in seropositives and sick patients that were being followed at the medical care in our service. These patients were chosen in a casual way, but they were all aware of their diagnostic.
Results-The universe obtained was composed by:homosexuals(33%), bisexuals(34%),heterosexuals(17%)drug abusers(23%) and blood receivers(3%). Even though our patients are still in the work market, they face their lives in a fateful and resignated way changing their sexual behavior in the sense of to abstain themselves of their relashionship. They look for support with their family. They also look for religiousity and faith.

D.541

AIDS BEHAVIOR RISKS IN WOMEN OF REPRODUCTIVE AGES IN A FAMILY PLANNING CLINIC.

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As a corollary to an United States Centers for Disease Control seroprevalence study on women of reproductive ages 17-44, a survey was conducted between October, 1987 and November, 1988 on 438 mixed ethnic origin women (31% Black, 40% Hispanic, 27% White) entering into the Baylor Population Program Family Planning Clinic. A self-reported questionnaire consisting of 55 questions on behaviors associated with risk for AIDS in heterosexual women was used in addition to the routine questionnaire on reproductive and contraceptive history. The range of responses to all the risk behavior questions was 134-438.

Responses to single and multiple risk behaviors were examined. The seven high risk behaviors examined included: client--bisexual, IV drug user, IV needle sharer, blood transfusion between 1978-1985; client sex partner--bisexual,IV drug user,and HIV positive. The three low risk behaviors included: client--history of STD, multiple STDs, and multiple sex partners. For the single high behaviors, the positive responses ranged between 1 (n=366) and 22 (n=438). For the single low risk behaviors, the positive responses ranged between 25 (n=422) and 76 (n=215). For the double risk behaviors, the positive responses ranged between 1 (n=430) and 18 (n=420) with the higher numbers in the categoies of IV drug user and multiple sex partners for either client or sex partner. The results of this preliminary risk behavior catergorisation analyses were used to substantiate the need for an education and counseling program to encourage and measure behavior modification in these heterosexual women who are at risk for AIDS and for transmitting it to their partners and babies.

D.542

TITLE: PILOT STUDY OF KNOWLEDGE, ATTITUDE, OPINION AND BEHAVIOUR OR LAGOSIAN NIGERIANS ABOUT HIV INFECTIONS AND AIDS

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*COMMUNICATION EXPERT - EREKO METHODIST CHURCH LAGOS, NIGERIA

OBJECTIVE: To determine indices of Knowledge and Attitude of Lagosian residents using their Beliefs and Opinion, about contracting and preventing spread of AIDS in Nigerian.

METHODOLOGY: The study was carried out by interviewers using specially prepared coded Questionnaire Forms to screen 239 health looking Nigerians comprising of 110, 129, laymen and health personnel respectively in January - June, 1988.

RESULTS: 50% of the population have adequate knowledge of AIDS while 70% and 23% of the laymen and helath personnel believe that KISSING can spread AIDS. Only 50% of the population believe that AIDS has a COMMUNITY VULNERABILITY. 60% of either groups believe that AIDS educational programmes should be given to call girls, parents, teachers, health personnel and blood donors.

90% of the health personnel belief that short term training exposure in AIDS management, and incentives should be given to prospective AIDS health Care providers.

70% - 90% of the group feel that the government should legislate against the importation of AIDS into Nigeria.
CONCLUSION: There is therefore a need for a larger KAO population/study in Nigeria.

D.543

OCCUPATIONAL THERAPY ACTUATION AT A MULTIDISCIPLINARY TEAM TURNED TO AIDS .
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Centro Corsini. (CCII).Campinas.São Paulo. Brazil.

CCII a philanthropic non governamental entity,multidisciplinary compound by: doctors,psychologists, nurses,dentists,physical education teachers and occupational therapists. Research based on individual attendances of HIV infected clientele from CCII, ambulatorial, hospitable, domiciliar. The clientele belongs to different risk groups at different infection stages. Their ages vary from 13 to 47. Besides the social stigma aggravation, the exacerbation of pre-existing psychological conflicts takes place,determining the Occupational Therapy actuation, being the main objective the quality of life improvement, defined from emerging individual needs, like expression and communication, psychological equilibrium maintenance which results in maintenance or improvement of patients organic state, and life or death process acceleration. The Occupational Therapist must consider the social-political-economical and cultural context in order to avoid the restriction of therapeutics process. Results will be discussed, in the presentation.

D.544

TOWARDS IMPROVONG CONDOM USE IN A SEXUALLY TRANSMITTED DISEASE CLINIC.
Beidas, Sary*; Byrnes,D.**. *Saint Michael's Medical Center, ** East Orange Health Department, Newark, N.J.,U.S.A.

Objective. To assess patient knowledge about condoms and spermicidals in a high risk setting for STD and HIV infection.
Methods. Twenty four patients (22 men, 2 women), mean age 25.8 ± 5.7(SD), were consecutively interviewed at an Inner City STD Clinic. Their knowledge of condoms and spermicidals was evaluated through a questionnaire.
Results. Fifteen (62 %) patients knew what the average cost of condoms was. Not one patient could identify any of the spermicidal brands available on the market, also none of the patients used them . Five (21 %) patients never used condoms, while 19 (79 %) patients used condoms only occasionally. Only three patients had preference to a certain condom type. Five (21 %) patients repoted occasional rupture of condoms while in use. One patient reported his use of vaseline for additional lubrication.
Conclusion.These results indicate that current counselling methods may need to be modified. One such modification is to provide each counsellor with a sampler rack of the available condoms and spermicidals in that particular geographic location. This would allow patients to handle each item individually in order to decide which is more appropriate for their needs. Such an approach will improve condom and spermicidal use in this population at high risk for HIV and STD infections.

D.545

THE BRITISH SURVEY OF SEXUAL ATTITUDES AND LIFESTYLES - A PILOT STUDY.
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Objective. To assess the feasibility of a major national study of sexual attitudes and lifestyles in a random sample of the British population.
Method. A stratified multi-stage sample of addresses was taken from the Postcode Address File and one person aged between 16 and 59 randomly selected from each address. Respondents were asked about numbers of sexual partners in different time periods, contraception, homosexuality, sexual practices, drug use, prostitute contact and attitudes towards sexual behaviour. Sensitive questions were contained in a self-completion booklet and completed midway through the interview.
Results. From 1,495 eligible addresses, 974 productive interviews were achieved, a response rate of 65%. Preliminary analysis shows that the sample was broadly representative of the population although men were slightly under-represented. There was marked variability in numbers of sexual partners and specific sexual practices. Those in younger cohorts experienced first sexual intercourse earlier and had higher numbers of sexual partners than older cohorts. The proportion of respondents reporting homosexual experience was broadly similar to comparable European studies.
Conclusion. Good response rates with no serious biases were achieved relative to other surveys of this nature. This pilot study has established a methodology which will be used in a national study of 20,000 individuals.

D.546

THE HIV SUPPORT GROUP: AN ANALYSIS USING DIFFERENT SOCIAL PROBLEM MODELS AND DIFFERENT INSTITUTIONAL SETTINGS
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Samaritan Village, Inc., Health/HIV Coordinator, N.Y.C.,U.S.A.
Mercy College, Adjunct Professor, N.Y.C. & Bedford Hills Correctional Facility Extension and Taconic Correctional Facility Extension

Objective. To analyse HIV Support Groups in relationship to five social problem models: medical, social disorganization, value conflict, deviant behavior and labelling. To analyse HIV Support Groups at five types of institutions: residential drug treatment communities, methadone treatment programs, the criminal justice system (local lock-up, state incarceration, the police , the courts, parole and probation), mental health facilities ar general hospitals.

Methods. Personal observation and study based upon years of experience.

Results. Differences in HIV Support Groups are seen according to what model we use to understand them and the type of institutional setting.

Conclusion. To educate, change attitudes and change behavior, we need to consider what kind of model we use and the differences in the types of institutional settings. More study is needed in this subject.

D.547

SEXUAL BEHAVIOR AND ITS CHANGE AFTER HAVING KNOWLEDGE ABOUT AIDS AMONG BRAZILIAN UNIVERSITY STUDENTS.
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* State University of Campinas, Campinas, SP, Brazil; ** The Population Council, New York, USA; *** CEMICAMP, Campinas, SP, Brazil.

Objective: To assess the incidence of sexual behaviors that constitute risk of contracting AIDS among Brazilian University Students and the impact of information about AIDS on this incidence.
Methods: A structured questionnaire on sexual behavior and knowledge about AIDS was mailed to 2609 students of the first two grades of the State University of Campinas. Analysis was performed using SPSS PC.
Results: The percentage of respondents was 37.4%. The percentage of students not using condons, 77.2% before knowing about AIDS, lowered tc 45.6%. The incidence of oral and anal sex did not change after knowing about AIDS. The percentage of multiple partners, higher among males, was 19.5% before and 11.6% after receiving information on AIDS.
Analysing the group that had risky behaviors before, 86.5% persisted in anal sex, 58.4% not using condons and 55.6% continued having multiple partners.
Conclusion: Knowledge on AIDS did not modify substantially sexual behavior among students. Educational strategies appear as an urgent need.

Counseling
Counselling

D.548

A THREE COMPONENT AIDS ATTITUDE SCALE
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Objective. To plan, implement, evaluate and study AIDS education programs, development of a valid knowledge test and attitude scale is essential. The purpose of this study was to develop a valid, Likert-type scale to assess student attitudes towards AIDS and AIDS prevention. The three-component attitude model, consisting of feeling, belief, and intention to act which is known to be an appropriate way of measuring health attitudes was utilized for the above purpose.
Methods. By reviewing related literature, a table of specifications consisting of two conceptual areas was developed. A large pool of Likert-type attitude statements related to the table of specifications was developed using a variety of sources. These statements were reviewed by a jury of experts for clarity and content validity. Based on this collective analysis, a preliminary scale with 30 items was constructed. The preliminary instrument is being administered to a representative sample of 50 college students. The collected data will be subjected to Pearson correlation for criterion of internal consistency; t-test for discriminating analysis of the items and external criterion.
Results. As a result of these analyses, 15 of the most discriminating original 30 items on the preliminary instrument will be selected for the final scale. For validation purposes, the finalized scale will be administered to a representative sample of 300 college students in a major university in the United States. The collected data will be analyzed by using univariate and multivariate statistical techniques in order to evaluate scale performance, validity and reliability.

D.549

A METHOD FOR COUNSELLING PATIENTS WITH NEUROLOGICAL PROBLEMS ASSOCIATED WITH AIDS

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Objective. To describe a method for counselling patients, family members, partners and health care staff for neurological problems at different stages of illness, associated with AIDS.
Methods. The 'Milan Approach' in family therapy was applied. Interventions by the counsellor, who may be a doctor, nurse or other member of the health care team, include: (a) contributing to the overall assessment of patients; (b) helping patients to solve problems at a stage when they are still able to make decisions; (c) engaging the support of family and friends;
(d) 'translating' the results of formal neurological assessments; and
(e) advising parents in the management of behaviour problems in children.
Counsellors also have a special role in advising and consulting to colleagues about the management of these patients.
Results. Staff stress is reduced in working with neurologically impaired HIV-infected patients. The family and social support systems are engaged at an early stage. Major crises are often averted through counselling at a stage before difficulties become intractable problems.
Conclusion. A coherent, teachable and consistent approach to counselling this patient group can reduce stress and elicit improved coping strategies in the patient, the family and health care team.

D.550

ERVOLINO COUNCELLING/AIDS PROGRAMME

Ervolino,L.A.*;Ervolino Neto,J.**;Carvalho Silva,A.***;
Invited presenter: Torres,M.Cristina****.
*,**,***Health Ministry,Brasilia,DF Brazil;****Health Secretariat,Porto Alegre, RS,Brazil.

Objectives. To improve the prevention level in HIV transmission.
Methods. The Ervolino Councelling/AIDS programme is a Human Resources training process. It uses self analysis to obtain an adequate balance of the individual emotions, which is viewed as a key factor for an effective change to a preventive behavior. Role playing is widely used to create hipothetical situations between the trainee and its peers, family, friends and patients involved with the HIV contamination process. This programme also includes specific training for "multipliers" and "instructors", which are the elements that give technical autonomy to the programme after its implementation.
Results. This programme was applied in Brazil over a period of one year, in 416 health professionals that work with coucelling of AIDS patients. A random sample of 70 professionals was evaluated, giving the following results: 90.6% felt they obtained a necessary emotional balence to deal with their daily problems. 94.4% said they improved their attitude when dealing with AIDS patients. 40.5% of AIDS patients, NOT YET trained, but treated by professionals trained by this method, believe that their attitude concerning AIDS has changed permanently.
Conclusions. The results obtained up to now support the theory that it is highly effective to identify and work the basic emotions of an individual before supplying him/her with technical information for behavior changes..

D.551

THE INTEGRATION OF SAFER SEXUAL PRACTICES AND VERIFICATION OF MEDICAL DIAGNOSIS IN PSYCHO-SOCIAL INTERVENTION AT THE COMMUNITY LEVEL.

William J. Ryan, MEd, MSW, RSW. Director of Support Services, Comité sida aide Montréal.,CANADA

Objective - To describe psycho-social interventions with People With AIDS or persons who are seropositive concerning safer sexual practices and verification of information concerning medical diagnosis. Literature has shown that both of these components have been underemployed in interventions at the point of diagnosis and at the level of community intervention.

Method - To present a therapeutic working group from a community based organization and its integration of safer sex counselling and verification of medical information in the context of crisis intervention at Comité sida aide Montréal.

Results - A population that is better informed about safer sex practices and medical information through the intervention of a community based organism.

Conclusion - It is feasible to integrate these two aspects into counselling intervention at community based organizations.

D.552

TRAINING OF INSTITUTIONAL PROFESSIONALS AS HIV INFECTION/ AIDS PREVENTION COUNSELING TRAINERS IN PERU

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*Programa VIDA, Lima, Perú; **AIDSCOM/AED, Washington, U.S.A.

Objective. Developing a short program for training a multidisciplinary group of professionals, coming from several institutions, as trainers in HIV infection/AIDS prevention counseling, and leading them in the design of a working strategy within their institutions.
Methods. Thirty peruvian institutions, including National and Social Security Hospitals, Institutes developing AIDS research or services on AIDS, social organizations and HIV-screening Laboratories, are invited to send a participant to attend a three-day workshop where information about general issues on the pandemic and its prevention, preventive counseling, post-test counseling, the local history of AIDS and the ways it is being fought, will be presented and discussed. In addition, possible working strategies for each attendant within his/her institution will be pursued.
Results. Invited institutions participated by sending medical doctors, psychologists and social workers. The previous level of knowledge was heterogeneous among them in terms of quantity and quality. Attendants participated enthusiastically in the dynamics. At the end of the workshop, a standarization was obtained on the level of knowledge among participants; their involvement in further work increased, and the specific working strategies within each institution could be set.
Conclusions. The Training-of-HIV/AIDS-prevention-counseling-Trainers Workshop acccounts for an improvement in the level of knowledge among attendants, and an increase in their motivation for further work.

D.553

COUNSELLING WORKSHOP FOR HEALTH PROFESSIONALS

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City of Toronto, Toronto, Ontario, Canada

OBJECTIVE: HIV illness was becoming an issue for health care providers working for Public Health Departments. This workshop was instituted to provide Public Health Nurses with the tools to develop counselling skills re: HIV illness.
METHOD: A two day workshop for Public Health professionals involved in HIV counselling and education. The program used was one taken from material provided by Centre for Disease Control, Atlanta, Georgia. Material was modified to Canadian standards and for use by Public Health Nurses. Training includes role playing, use of videos and lecture material.
RESULTS: To date 48 Public Health Nurses have participated in this workshop. In many incidents, this was the only training available to them to meet the requirements for HIV counselling. Further follow-up regarding outcomes will be presented. There is a plan to make a telephone contact with each participant to determine the relevancy of the workshop. The workshop is presently being adapted to meet the needs of other professionals such as physicians and other health care providers.
CONCLUSIONS: There is a need for workshops to be developed and continued to be offered. Discussions enabled Public Health Nurses to be more aware of the psycho-social issues involved in HIV counselling. Certain principles need to be followed in this type of presentation which will be outlined.

D.554

A Comprehensive Program to Support Individuals Infected with HIV.

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*Womack Army Community Hospital, Fort Bragg, NC, USA,** Walter Reed Army Institute of Research, Washington, DC, USA.

Objective. To describe and evaluate a multi-disciplinary program designed to support people who have been infected with HIV.
Methods. The U.S. Government has a formal policy which states that all individuals on active duty status in the Armed Forces must have an HIV antibody test at least biennially. When an ELISA test comes back positive, a Western Blot is obtained. If this test is also positive, the individual sees a physician who explains its meaning and provides counseling. Immediately afterwards, each person is evaluated by a psychiatrist and given an opportunity to receive pastoral counseling and support. Repeat ELISA and Western Blot tests are then performed at a different laboratory. When the results become available, a physician provides follow-up counseling, formal contact interviews are performed and an internist, social worker and community health nurse are assigned.
Results. More than 100 people have been involved with this program since its inception. The vast majority of these individuals have found the social and emotional support indispensable in improving the quality of their lives. Though difficult to quantify, it is also felt this program has helped people modify or reduce certain high-risk behaviors, thereby reducing the possibility that further HIV transmission will occur.
Conclusion. This program provides a supportive environment for individuals infected with HIV. Similar efforts could be beneficial elsewhere.

D.555

A BEHAVIORAL APPROACH TO HIV PREVENTION AMONG SERO-NEGATIVE OR UNTESTED GAY/BISEXUAL MEN WITH A HISTORY OF UNSAFE BEHAVIOR.

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*Hennepin County Red Door Clinic, Minneapolis, Minnesota, USA; **Twin City Therapy Clinic, Minneapolis, Minnesota, USA; ****St. Paul Health Department, St. Paul, Minnesota, USA.

OBJECTIVE To reduce the incidence of unsafe sexual behavior among gay/bisexual men who have either tested HIV antibody negative or whose serostatus is unknown.
METHOD A pilot program was conducted from 2/88 - 12/88 focusing on individuals who have a history of unsafe sexual behavior within the past year. Program goals were formulated to 1)explore the role of alcohol and other drugs in sexual situations so no sexual activity occurs under the influence of chemicals; 2)increase the number and diversity of non-insertive sexual behaviors; 3)desensitizing feelings about condoms by learning how to playfully and properly use them.
RESULTS Admission criteria was based upon a history of unsafe behavior rather than serostatus. Known seropositive individuals were referred to other programs. Approximately 332 gay/bisexual men were screened at local STD clinics, 106 were determined eligible and 47 were enrolled in the program. They were offered individually tailored treatment plans and participated in group counseling/educational protocols aimed at changing behavior. Participants completed an intake and goal setting session: >60% were able to identify situations that precipitated unsafe behavior in the past (i.e., work stress, loneliness or family arguments) and 75% reported alcohol/drug use concurrent with unsafe behavior.
CONCLUSION Participants who completed this pilot study reported more consistency in safe sexual behavior.

D.556

WORKSHOPS FOR PARENTS OF HIV ANTIBODY POSITIVE CHILDREN

Jennifer Ross. Judith Rosenakis. Haemophilia Foundation of Australia A.N.C.A. (Melbourne). Social Worker. Haemophilia Centre. (Sydney). and H.F.A.

Objective: The needs and concerns of parents of children with haemophilia and HIV are extraordinary, and appear to be greater than those of the children themselves. Many stem from the parents' isolation, both emotional and geographic (in Australia). Following requests the Haemophilia Foundation of Australia applied for a grant to fund workshops with the aim of bringing together people with this common problem to share their situation, and draw upon their own resources to give mutual support.
Methods: Funding was obtained through an Australian National Committee on AIDS Education Grant for the project. As it was implemented through the resources of the H.F.A. and Haemophilia Treatment Centre counsellors, the major costs were fares and accommodation.
An open, flexible format was prepared by H.F.A. and counsellors, and adapted to suit the participants at each workshop. Commitment to a Friday evening, and full Saturday was required each time, and the concluding optional social evening function was always well attended. A concurrent adolescent workshop was held in one city.
Results: Three workshops were held in major cities, with participants travelling long distances from country and interstate to attend. Facilitators were the counsellors from each patient group, allowing important follow up to deal with some of the profoundly emotional concerns raised and discussed. Information sessions on e.g. AZT were offered by H.F.A. resource people, (and always taken up), acting as a ventilation between heavier, more difficult discussion sessions. Following a brain-storming of issues, the groups set their own agenda by choosing discussion group topics. A problem-solving technique was applied to discussion to endeavour to give people a more positive outcome.
Summaries of brain storming sessions, prioritized topics and each group discussion were recorded in a non-identifiable way. These were summarized and sent to participants as reinforcement/reminder of the time together.
Conclusion: Great relief was expressed by participants at being able to share together. While the opening up of sensitive areas e.g. facing death/dying, was difficult for some the opportunity was still appreciated. The overwhelming response from those attending these workshops showed how meaningful and valuable it is for people to come together in this way. The H.F.A. and Haemophilia Treatment Centres plan further workshops for parents, couples, wives, and adolescents.

D.557

IMPLEMENTING AIDS PREVENTION COUNSELING SERVICES AT AN STD CLINIC

Gibson, Paul M.; Gibson, W.P.; Bolan, G.
Department of Public Health, San Francisco, CA, USA

Objective. To integrate AIDS prevention services into the treatment of patients at an STD clinic.
Methods. An organizational approach was taken in developing AIDS prevention services. An HIV Task Force was formed, staff and patients were surveyed and a standardized protocol was designed. All professional health care staff received training in the new protocol, and a staff retreat was held to provide support and resolve concerns.
Results. The clinic has provided comprehensive AIDS prevention services since November 1988. Patients are given a specially developed brochure with AIDS and STD information. This brochure also has a concrete risk assessment that staff review with patients to determine their risk of HIV and other STDs. All patients receive a condom demonstration, a "safety kit" with condoms, and prevention guidelines; bleach is distributed as needed. Staff complete an individualized, written health plan with patients including steps to reduce their risk. These services require 20 minutes in a one-on-one counseling session with each patient. Initial patient and staff response is positive with minimal disruption in clinic flow.
Conclusions. An organizational development approach is needed to implement AIDS prevention counseling services at STD clinics. Further evaluation will determine the long range impact of services on the clinic and patients in reducing their HIV and STD risk.

D.558

THE USE OF HYPNOSIS WITH ASYMPTOMATIC HIV INFECTED PEOPLE

Gochros, Jean S., Ph.D., HIV Unit, Tripler Army Medical Center, Honolulu, Hawaii, U.S.A.

Objective. To explore the use of hypnosis in assisting asymptomatic HIV infected people cope with stress and anxiety.
Method. This paper is based on the author's use of hypnosis with men she is seeing in individual therapy, the members of an HIV+ support group she facilitates, and on the feedback she has received.
Results. In both individual counseling and in support group sessions, hypnosis has helped people cope with interpersonal relationships and such issues as anxiety, fear of death and dying, sense of powerlessness and loss, and reaction to stigmatization. It has also provided techniques for coping with pain.
Conclusion. Observed behavioral changes and feedback from clients and group members suggest that hypnosis can be particularly useful in stress relief and the development of coping skills. At the same time, it must be emphasized that the use of hypnosis and such popular derivatives as "visualization" can also be harmful when used with the implication that it can "heal", cure,or prevent AIDS.

D.559

WHY VOLUNTEERS IN A WELLFARE STATE?

Madsen, Kirsten*; Kristensen, Jørgen Haahr**;
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Denmark is a socalled wellfare state. We live in the economically priviliged part of the World. We are known for taking care of people "from cradle to grave". We expect paid professionels to take care of our health and social problems. This means that we have a large staff of public servants. With this in mind it is unusual for Denmark that it was a political decision to financially support a private organisation to establish and run an AIDS hot-line with volunteers as councellors.

LBL (The National Gay Organisation) was granted money to give information about AIDS to the general public by means of an AIDS hot-line. This project has been very succesfull and so far we have had about 60.000 calls. We have a budget that has made it possible to hire 5½ staff members to support the 45 volunteers, administrate, educate and make publicity about safe sex etc.. The paid staff could actually almost cover the 14 hours of counselling we are doing every day. Yet we have chosen to use volunteers not out of necessity but as an active choise. This decision was made, because when it comes to councelling we find it important to focus on the human side of AIDS and not only the medical/professionel side. Also we think that a lot of what we are learning these years about support, information and behavioral changes very well could be adapted to improve many other areas within the social and medical field.

D.560

ANKALI* PROJECT: CLIENT EVALUATION OF A PROGRAM PROVIDING VOLUNTEER EMOTIONAL SUPPORT FOR PEOPLE WITH AIDS.

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*Albion Street (AIDS) Centre, Sydney Hospital, Sydney, Australia, **St. Vincent's Hospital, Sydney, Australia.

Objective. To evaluate the effectiveness of a volunteer emotional support program for people with AIDS from the clients' perspective.
Method. Clients who had been matched with a volunteer for at least three months were interviewed. An interview schedule was designed to collect information about the quality and quantity of clients contact with volunteers.
Results. Twenty males and one female were interviewed. All had full AIDS. In giving an overall assessment of the usefulness of their Ankali volunteer, seventeen found them 'very helpful, two 'moderately' and two 'slightly'. Volunteers were found most useful for providing friendship and support. Many stated that they used their volunteer as the first point of contact in a medical or emotional crisis. One third of clients had handed over a power of attorney to their volunteer. None had requested a change of volunteer.
Discussion. These results suggest that volunteers are able to provide emotional support for people with AIDS in their home environment, thereby reducing demands on health professionals. The success of the process of matching clients and volunteers is indicated by the low rate of rejection.
*Ankali - an Australian aboriginal word meaning friend.

D.561

A FORMULA FOR ASSESSMENT OF INDIVIDUAL RISK ACTIVITY FOR HIV INFECTION WITH MODIFICATION FOR BEHAVIOR

DeBernardo, Robert L., M.D., Yale University, New Haven, CT., USA

Objective. To develop a method capable of assigning a probability figure to an individual's risk of contracting AIDS, given his or her individual risk factors and preventive measures.
Methods. Numerous reports of clinical and epidemiological studies were analysed to determine the lowest common denominators for risk factors involved in the spread of AIDS.
Results. The probability of an individual contracting AIDS (IRF) is the product of the probabilities of three factors: 1. the transmission efficiency of the the activity (TE), 2. the prevalence of HIV in the area to which the contact belongs (AP), 3. the risk group of the contact (RG).

$$IRF = TE \times AP \times RG$$

This probability can be modified by utilizing the failure probability of each protective measure taken in the encounter, i.e. condoms, testing, etc. Utilizing this formula gives results comparable to the published observation that are available, and allows for predictions when they are not.
Conclusion. The calculated individual risk probability ratio may be a valuable tool to help assess an individual's risk, and help determine the best specific preventive measures to lower his or her risk to acceptable levels for counseling and educational purposes.

D.562

A TRAINING PROGRAM FOR INDIVIDUALS CONDUCTING COUNSELING AND TESTING

Authors: Rosenthal, S.; Fowley, C.; Solomon, Karen; James, R.; Rautenberg, E.; Schultz, S.
New York City Dep't. of Health, New York, N.Y. AIDS Program Services

Objective: To provide nurses, drug counselors, public health educators, social workers, physicians and other health and social service professionals with the skills needed for advising patients/clients about AIDS and conducting counseling related to HIV antibody testing.
Method: A counseling and testing training program was developed to help professionals overcome the barriers to talking about sex, drugs, the implications of HIV disease and death. A five-day, 35-hour course, led by two trainers and limited to 12-16 participants, provides complete and up-to-date information about HIV disease, basic counseling techniques, active listening skills, and development of referral resources. The program is run according to the small group dynamic model.
Results: There has been an overwhelming demand for this training from health and other professionals working in prisons, TB and STD clinics, hospital in-patient and out-patient settings, OB-GYN and family planning agencies, and drug treatment programs. Participants have found the course extremely helpful, and most feel the need for additional follow-up in view of the emotional intensity of the issues and the limited clinical supervision in their work place.
Conclusion: A manual containing the complete curriculum of the five-day course has been prepared for use by agencies in New York City and elsewhere. In addition, the training unit is planning 1/2-day follow-up sessions and 2-day second stage training programs which include case review and consultation, stress management techniques, refinement of HIV-related counseling skills, sharing of referral resources and more intensive training in such areas as addiction, death and dying and women's issues.

D.563

ART THERAPY WITH HIV POSITIVE PATIENTS, MOURNING, RESTITUTION AND MEANING

Fenster, Gail M. Art Therapy Section, Walter Reed Army Medical Center, and the Walter Reed Retrovirus Research Group, Washington, D.C., United States of America.

Objective. To present the importance and value of creative, expressive activities with HIV positive persons.
Methods. Didactic presentation and 20 minute video. The videotape features approximately 150 slides of art productions (by HIV positive military personnel) synchronized to 9 musical selections which match the primary emotions expressed in the art work. A poem written and read by a patient opens the slide program. One of the musical selections ("The Way We Were") is sung by a patient; others are music found meaningful by patients themselves. The didactic presentation describes distinctive features in art work of HIV positive persons and the characteristic changes as the disease progresses. Diagnostic value of drawings to screen for major depression, psychosis, suicide risk, and organicity will be outlined. Techniques found to be effective are described, with relevant hypotheses from the literature. Preliminary results using imagery (followed by drawing) to relieve anxiety, reduce pain, or gain insight into problems will be discussed.
Results. The presentation vividly informs how the HIV positive diagnosis and condition is experienced by patients. Effective interventions using art are presented.
Conclusion. It is important to assist patients to find some meaning for their lives, in order to regain a sense of control and self-esteem. Creative art activities allow patients to provide for their own needs for acceptance, life review, mourning and restitution.

D.564

UTILIZING A FAMILY INTERVENTION MODEL TO PREVENT AIDS WORKER BURNOUT WITH INNER CITY PATIENTS

Walker, Gillian* *The Ackerman Institute for Family Therapy, New York, New York, USA

In many large cities the majority of all new AIDS diagnoses are found in Inner City families. These families present as drug using, multi-problem families, most of whom sustain more than one loss from HIV infection. The complexity of family problems, the stigmatization of AIDS, and the overburdening of AIDS workers negatively affect the way in which these families are perceived and worked with. Furthermore, workers are demoralized by focussing on the individual patient who inevitably dies rather than seeing AIDS as located within a living system whose future s/he can influence. In two years of consultation to pediatric and adult AIDS projects in Inner City hospitals, the Ackerman AIDS team has devised a brief, problem-focussed model of family intervention which allows the worker and family to concentrate on problems of survival and future planning. In this model intervention identifies family strengths and adaptive problem-solving capacities. Members of the extended kin system or other natural networks are identified as resources and invited to become a part of the counselling context. As the worker comes to see the family as a resource, they become colleagues in care instead of entering into the adversarial relationship that feelings of powerlessness generate. David Reiss' illness/family research has shown that when a family can identify or utilize strengths, illness may provide an opportunity for transformation and change.

D.565

HIV POSITIVE SUPPORT GROUPS - A MODEL OF INTERVENTION

Solomon, Karen; Rosenthal, S.; James, R.; Santiago, D; and McLoughlin, S., NYC Department of Health, New York, N.Y.
AIDS Program Services

Objectives. 1. To provide group support for individuals who have tested HIV positive and their partners. 2. To provide barrier free group services to assist those who have tested positive more effectively cope physically, emotionally, and socially.
Method. The Department of Health provides professionally facilitated group services for people who have tested positive and their partners and for people with AIDS. All groups meet weekly and have an on-going, drop-in format. Participation is anonymous, and there are no fees or intake procedures. There is a strong emphasis on self help and leadership training. Peer support, effective confrontation and feedback are utilized in order to address relevant HIV issues such as safer sex, safer drug use (with an emphasis on drug free behavior including utilization of 12 step anonymous program ideology); health promotion and maintenance; partner notification; positive attitude towards self; and control over lives and HIV illness.
Conclusions. HIV support groups are effective models of intervention for those who have tested positive, particularly for those who are substance abusers and their sex partners. The groups serve as an appropriate arena to explore risky behavior including obstacles to behavior change, new and creative ideas regarding negotiating and practicing safer sex, partner notification and becoming drug free.
Results. 1. Participants have been helped to deal with the emotional crisis and transitions that a positive test result precipitates.
2. Services can provide groups education and information that is essential in slowing transmission and possibly symptoms of AIDS.
3. This model has helped to empower those who are HIV+ to become leaders of seropositive groups in other settings, and has provided training for HIV counselors who wish to replicate this model. By enabling them to work with HIV+ individuals and their partners on a long term basis, groups have reduced the burnout frequently observed among HIV counselors.

D.566

BEREAVEMENT ISSUES FOR SURVIVORS OF PERSONS WITH AIDS

Colburn, Kathleen A.; Malena, D.
Hospice of Central Iowa, Des Moines, Iowa,U.S.A.

Objective. To determine if survivors of persons who died of AIDS have a different social and emotional environment in resolving grief.
Method. Personal interview which surveyed what survivors were doing to handle their grief, what resources they had in the community and if they were accomplishing the tasks of grief.
Results. The four tasks of grief are discussed in terms of the social and emotional environment of PWA survivors. These environmental factors appear to interfere with the resolution of three of the four tasks of grief. The result is survivors experience physical and emotional symptoms stemming from unresolved grief.
Conclusion. A structure for a therapeutic group of PWA survivors is proposed. Grief resolution is the primary goal. Specific structured exercises for facilitating the goals of each task of grief are suggested.

D.567

D.568

INTEGRATED IDENTITY THROUGH THE EMOTIONAL SUPPORT APPROACH

Pelfini, Andrew. Program Coordinator: Emotional Support Program. Shanti Project, San Francisco, California, USA

Objective. To substantiate the impact of Emotional Support on identity integration for individuals diagnosed with AIDS.
Methods. One on one peer counseling contributes greatly to the emotional health of individuals facing an AIDS diagnosis. This diagnosis brings about a dual identity conflict in being an individual and being AIDS-identified. The diagnosis of a terminal illness qualitatively disrupts the cognitive, psychological and emotional aspects of the normative life cycle by causing increased stress coupled with physical and psychological readjustments.
Results. Active listening, non-judgmental support and affirmation are three tools of the peer counselor which are applied to increase self-awareness, help maintain homeostasis and provide a sense of stability where rapid change is inescapable for individuals diagnosed with AIDS.
Conclusion. Medical science has not yet replaced the effect of human contact on people diagnosed with AIDS -- nor will it. The Emotional Support approach engenders independent living for People with AIDS.

D.569

Répondre aux besoins de soins des séropositifs et des malades : rôle du multipartenariat associatif.

LEVEQUE D*, MAUREL H**, CORDONNIER J.P.***, ESTOURNEL J.L.**** :

*Président de la MNEF, PARIS ; **Secrétaire Général d'APARTS, PARIS ; ***Administrateur FSEF, PARIS ; ****Administrateur MNEF, PARIS, FRANCE

OBJECTIF : Répondre à la demande de suivi thérapeutique et social des jeunes séropositifs pour le V.I.H. ou malades du SIDA en Ile de France.

METHODE : Mise en place d'une structure de soins associant prise en charge médicale, psychologique et sociale ; structure qui soit également un lieu-ressource en matière de formation des travailleurs sociaux et des professions de Santé. Ce nouveau Centre est créé en multipartenariat associatif (MNEF, FSEF, APARTS) sous la forme d'un Centre de jour relais entre l'hopital et l'Action Sanitaire et Sociale de terrain facilitant l'accès aux soins, à la Prévention, au conseil et à l'orientation.

CONCLUSION : A côté des campagnes d'information et de prévention primaire, Ce Centre rend possible une activité de prévention secondaire répondant aux besoins de soins de l'après dépistage, dans une population jeune.

D.570

D.571

INFORMATION GROUP FOR PEOPLE WITH HIV INFECTION OR AIDS AND THEIR PARTNERS

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Objective: Many people with HIV infection or AIDS and their partners find it difficult to share their fears and feelings and so lack crucial social support. Such people often find it difficult to join support groups but are keen to learn more about HIV. It was proposed to use an "information" group to also provide social support.
Methods: Homosexual men with HIV infection or AIDS or their partners, who lacked social support were recruited from a genito-urinary medicine clinic to join a closed "information" group which met on a regular basis. Each session comprised an informative talk, a discussion and socialising time. The aims of the group were established by members in the first session and evaluated after twelve sessions.
Results: The group was positively evaluated by a majority of members on a number of measures. In particular it was found beneficial that the group was closed, that an informative topic was provided to stimulate conversation and that topics were presented with a practical rather than theoretical slant. These and other characteristics of a successful group are presented.
Conclusions: Social support can be provided and does prove beneficial to homosexual men with HIV or AIDS and their partners through a structured "informative" group. The usefulness of this approach is discussed with reference to other client groups.

D.572

SETTING UP AN HIV/AIDS COUNSELLING SERVICE

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National Aids Counselling Training Unit (NACTU), St. Charles' Hospital, Exmoor Street, London, U.K.

Objective: To compare two approaches to the organisation of HIV/AIDS Counselling services and the selection of the appropriate approach for a given setting.

Method: There are two possible approaches to organising a counselling service for HIV/AIDS. A centralised system can be organised in which a small specialist group of HIV/AIDS counsellors is set up. A decentralised service can be set up in which all hospital and community staff are trained to carry out basic HIV/AIDS Counselling. Key factors in choosing an appropriate model are: Numbers infected with HIV, financial and manpower resources available, transport available for patients, existing compatible health delivery systems, training resources and whether the bulk of care is hospital or community based.

Results: Three successful counselling systems in three countries are compared with respect to these factors and the models adopted.

Conclusion: A successful counselling service depends on choosing an appropriate model for local circumstances.

D.573

TRAINING IN HIV/AIDS COUNSELLING

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National Aids Counselling Training Unit (NACTU), St. Charles' Hospital, Exmoor Street, London, U.K.

Objective: To set out the key elements in training counsellors for HIV/AIDS work.

Method: NACTU has trained over 5,000 workers from the UK and abroad in HIV/AIDS Counselling. Based on experience and evaluation of each course run - a training format has been arrived at.
Results: A two-tier training approach has been adopted with (i) an initial training on factual aspects of HIV/AIDS. (ii) A second training programme based on experiential work aimed at imparting key skills. This is based on a pre-assessment of needs of course participants which then leads to a selection of key modules. Modules include pre and post-test counselling, sexuality and interviewing about sex, counselling persons with AIDS, counselling carers and families, death and bereavement, drug usage, ante-natal and obstetrics, problem-solving skills, identifying dealing with specific psychological problems and organising a system appropriate to local needs.

Conclusions: A successful counselling course for HIV/AIDS must identify key trainee needs, and current skill levels and provide a flexible, modular and skills-based approach to training.

D.574

THE ULTIMATE(?) CHALLANGE OF COUNSELLING - The Noah's Ark-Red Cross Model

Morfeldt, Jan-Olof, Noah's Ark-Red Cross Foundation, Stockholm, Sweden

This presentation will briefly describe the ongoing challange at our centre in Stockholm.

Humanity, solidarity, knowledge, understanding, behavioural modification are key works in our daily work. The ultimate(?) challange of counselling is built on our own and WHO's ideas that complete counselling can only be achived when information, education, AIDS-hot-line-activities, emotional and pratical support are well integrated.

The work also includes that done at our Guests House for HIV-infected people.
The Guest House service is a complement to the care offered at the AIDS-units and may even influence the development of a complete care needed by people suffering from other chronical and life threatening diseases.

The purpose of our activities is on one hand to create a climate of compassion and care in which we can help one another regardless of race, sex, creed, sexual orientation and of whether or not we carry HIV. On the other hand through information and education we try to reach out in wider circles to open up people's eyes for the consequences of HIV in order to create deeper understanding for those who are infected but also to help people stay uninfected themselves.

D.575

COUNSELLING : UNE STRATEGIE POUR L'INFORMATION DANS LES PAYS AFRICAINS FRANCOPHONES.

LEBAS Jacques* ; M'PELE P** ; O'DELL V*** ; AEBERHARD F* ; CARBALLO M***.
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Objectif : Dans le cadre des programmes nationaux à moyen terme de lutte contre le SIDA, des C.N.L.S. d'Afrique francophone, M.D.M. (O.N.G.) et l'O.M.S. (G.P.A.) organisent, ensemble, la formation de formateurs en counselling. Dans le but de freiner la transmission de l'infection à V.I.H. par l'information et l'éducation, de diminuer l'impact sociétal de l'épidémie en informant les personnes relais conformément au contexte socio-culturel et au niveau de ressources sanitaires de chaque pays.
Méthodes : 2 à 3 délégués par pays participent à un séminaire de travail organisé au Congo, précédant une série de séminaires nationaux. Le programme comprend : les aspects médicaux, sociaux, psychologiques et politiques de la crise mondiale provoquée par l'épidémie, les aspects concrets du counselling pré et post test, l'information sur les besoins médicaux et psycho-sociaux des personnes infectées, les données éthiques et juridiques sur la confidentialité et la préservation des droits de l'homme malade dans le contexte de l'épidémie. Le manuel de counselling édité par l'OMS est le document de référence. Les séminaires comportent des sessions plénières et des groupes de travail pour l'étude de cas concrets simulés. Deux animateurs par groupe de travail, un Européen et un Africain, familiarisés avec le counselling et les données locales encadrent le séminaire.
Conclusion : Le programme détaillé et les évaluations des séminaires seront disponibles lors de la conférence.

D.576

A Support Group Model For Counselling Couples Affected by AIDS

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***Couples affected by AIDS, Whitman-Walker Clinic, Washington, D.C, U.S.A.

Objectives: The AIDS epidemic forces couples impacted by the disease to face new issues in their relationships. In turn, therapists and counsellors around the world are forced to re-examine roles and relationships in providing therapy and support. The authors examine issues which couples have faced during the three and 1/2 years this support group has existed. Authors will also describe differences in leading a support group for couples impacted by AIDS then those groups for other issues.
Methods: Support groups have been set up throughout the world to help people who have been affected by HIV disease. For more than three years, couples in Washington D.C. have had the opportunity to attend a support group especially set-up to help them cope with the effects of AIDS on their relationships. They meet weekly to discuss and share with other couples. This has been an on-going, closed, support group.
Results: Support group members continue to rely heavily on weekly meetings to discuss issues between them-selves as couples and others. They find the group more meaningful the longer they are participants and find themselves working on their relationship long after the group session ends. Although members may participate in other support groups individually, they find the opportunity to relate as a couple more important. Facilitators also find themselves redefining their role.
Conclusion: It is important in designing support services to people affected by AIDS, to include special support groups for couples. It is equally important that traditional methods of facilitation be re-examined by professionals around the world.

D.577

GROUP PSYCHOTHERAPY WITH HIV+ DRUG USERS.

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OBJECTIVE: To describe the efficacy of group psychotherapy in caring for people with AIDS and HIV infection who are socioeconomically disadvantaged IV-drug users living in an inner city community of New York.

METHODS: The support group met weekly, led by a psychiatrist and a psychologist facilitating the members to articulate thoughts, feelings and frustrations in a nonrestrictive holding environment. Patients select content and direction of discussion, and exchange information/advice on medical care, social services and housing. A significant number of members are or have been homeless.

RESULTS: The group became a source of improved self-esteem, dignity, mutual understanding, consistancy, and trust. It contributed to efforts to remain drug-free and to mastery of HIV-related concerns about social isolation, stigma, rejection, and death. For many it became a surrogate family, providing unconditional love which had seldom been received from others.

CONCLUSION: The success of the group approach has proven itself on many levels; social, psychological, and medical. It has added to the quality and life span of the members.

D.578

A PROSPECTIVE QUALITY OF LIFE STUDY IN PATIENTS WITH HIV INFECTIONS

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AIDS and other HIV infections are expected to have a serious impact on Quality of Life (QOL) of HIV infected patients; however, till now this has never been documented. In order to test this hypothesis, a method for monitoring and describing QOL for these patients has been developed 1) to measure QOL of HIV infected patients and 2) to describe possible changes of QOL in the course of the disease related to the degree of utilization of health care facilities. The method implies the measurement of variables on individual patients at intervals of 4 months by using fixed questionnaires of 100 questions. Data collected concern demographic situation, activities of daily life, Karnofsky score, Index of Well-being, specific AIDS related complaints, anxiety and depression (STAI, Zung) and expectations for the future. The questionnaire has been designed in such a way that the results can be compared with those of similar QOL studies in other patient categories, i.e. patients after liver or heart transplantation.
From June 1, 1988 35 patients entered the study. By the time of the conference the period of follow-up will have reached one year, which makes feasible first presentation of data.

D.579

EVALUATING PSYCHOEDUCATIONAL INTERVENTIONS IN THE HIV SEROPOSITIVE POPULATION

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MA Department of Public Health, Boston, MA., USA.

Objectives: To summarize evaluation strategies for a 3-session psychoeducational group for persons testing HIV antibody positive.
Methods: The group serves many purposes including the provision of (1) information about medical, mental health, treatment protocols, and other options for health maintenance, (2) information about personal relationships after testing positive, safer sex, needle cleaning, and disclosure of HIV status to family, friends, and partners, and (3) psychological and emotional support. We evaluated psychological changes using the Symptom Check List 90, a self-report mode of psychological assessment which has been tested extensively for reliability and validity.
Results: Overall, 89% of group participants felt the group met or exceeded their expectations. Pre- and post-group measures found group members generally have a reduced level of symptomatology but frequently become more anxious as a result of participation in the group. Among group participants, 66% experienced a reduction of reported symptoms and 64% experienced a reduction in anxiety, while 28% of group participants experienced an increase in each of these measures.
Conclusions: Although some group participants experience increased anxiety, there is a high level of satisfaction with the psychoeducational group for seropositives.

D.580

THE RISKS OF ABSTINENCE: SEXUAL DECISION MAKING IN THE ERA OF AIDS

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Objective. To consider the ramifications of the advocacy of sexual abstinence in response to the threat of AIDS.
Methods. The author is a university based sex educator and counselor in addition to his work as president of the AIDS Foundtion of Hawaii. This paper represents observations from his clinical and educational activities.
Results. The risks of certain sexual acts are well documented. There has been less discussion of the real and potential risks of abstinence. Among these risks are a fast and feast syndrome, confusion about safer sex and the concept of probabilities, sexual guilt and fears, implications for developing and expressing love and intimacy and the interaction of sexual frustration and aggression.
Conclusion. Sex can be risky. Abstinence can also be risky. What is required in the era of AIDS is rational, deliberate and responsible sexual decision making rather than the imposition of a "freeze" on sexual activity for all those who have not been monogamously paired.

Infections chez les consommateurs de drogues par voie intraveineuse
Infections in IV Drug Users

D.581

D.582

ISSUES IN AIDS TRAINING FOR DRUG TREATMENT PERSONNEL

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Objective. To present issues and solutions for AIDS training for staff in drug treatment programs.
Methods. By anecdotal information gathered through the development of a systematic and comprehensive AIDS training program for personnel in drug treatment programs in the United States.
Results. The complexities of AIDS, new developments in the field, the challenges of a dual diagnosis of chemical dependency and AIDS, the stigma of the disease, fears of transmission and staff burnout make AIDS training a unique challenge. Training for drug treatment staff needs to be systematic and comprehensive. The National Institute on Drug Abuse has recognized five phases in the development of such a program: (1) the need for an AIDS training plan; (2) AIDS curriculum development; (3) trainer development; (4) training delivery; (5) evaluation. The components of the five phases include a needs assessment to determine problems that are amenable to training, developing a curriculum around skill enhancement, the use of a scripted curriculum, training the trainers, logistical issues in the delivery of training, and evaluation of training impact and implementation.
Conclusion. All of these phases are interrelated and a successful training program must involve all 5 phases.

D.583

AIDS INFORMATION CAMPAIGN HAS SIGNIFICANTLY REDUCED THE INCIDENCE OF ACUTE TYPE B HEPATITIS IN AN ENDEMIC AREA.

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Objective.To evaluate whether AIDS information campaign has reduced the incidence of acute hepatitis B,which is transmitted by the same routes as AIDS.
Methods. In 1978 a prospective study of acute hepatitis was started in our Department of Infectious Diseases,which is a referral center for an average 81% of cases notified to the local health department.Diagnosis of hepatitis B was based on conventional criteria.
Results. 1106 acute hepatitis B cases have been observed up to 1988.Incidence of the disease and percentage of drug abusers in relation to spread of drug abuse and starting of AIDS information campaign are shown in the table:

	1978	'80	'81	'82	'84	'85	'86	'87	'88
incidence/10^5 inh.	18	24	26	29	20	16	14	4.7	4.9
% drug abusers	15	28	41	42	35	25	25	12	20
	spread of drug abuse					AIDS information camp.			

Conclusions. In our area incidence of acute hepatitis B peaked in the early eighties,coincident with spread of drug abuse.After 1982 it started to decline,probably due to a partial exhaustion of the susceptible population,but a second significant($p<0.05$) drop was observed in 1987-88.Since the number of subjects starting drug abuse in recent years did not decline and HBV vaccination to high risk groups has still little epidemiological impact,we suggest that AIDS information campaign has reduced exposure to HBV and HIV in both drug abusers and the general population.

D.584

SOROCABA AMBULATORY EXTERNAL SERVICE EXPERIENCE RELATED TO AIDS AND ACCOMPANIED WITH USERS OF INJETABLE DRUGS

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In a period going from August 14,1985 to October 31, 1988, after and epidemiological investigation 1 382 analyses were effected to detect anti HIV antibodies (through ELISA recombined methods) on individuals considered of Risk Behaviour.
From 309 (22,35%) users of injectable drugs, that performed the test, 182 (58,89%) positive (+) results were obtained. This group was composed by drug addicted individuals as well as individuals using injectable drugs periodically.
From 182 cases we verified:-
a) Age varied from 14 to 38 years (medium.age 22,21 years)
b) Males, the predominat sex, totaling 138(75,82%) cases.
c) 08 cases (4,39%) corresponded to CDC diagnostic criteria (Atlanta USA, publicized in May 1986) fro group IV.
d) In 14 months maximun attendance period, 10(5,49%) individuals were evolved to death.
e) 126(69,23%) persons were frequenting the External Service, during this period regulary or irregulary, being realized medical, psichiatric and psychologic attendance, with continuos educational work on AIDS.

Follow evaluation of the onew that desired to use injectable drug after knowing the results of the analysis and educational work of the multiprofessional team, we obtained the following results:
a) 66(52,38%) desired to use injectable drugs.
b) 31(24,60%) did not desired use injectable drugs.
c) 29(23,01%) were considered doubtful.

D.585

"UNIK". A PROJECT EMPLOYING FORMER IVDA'S IN HIV PREVENTIVE AND SUPPORT WORK.

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Jorunn Saatvedt, Finn Jensen, Dep. of Aids Prevention, Oslo City Health and Environment Department, NORWAY

OBJECTIVES: There is a need for new approaches in the hiv preventive and supportive work among drug users. This project, established by the Department of Aids Prevention in may 1987, employs, on a full time basis an with normal wages, both social workers and former IVDA's. The aim is to wor out new methods utilizing the special expertise the former IVDA's have, in cooperation with professional social workers.

METHODS: - Support groups for hiv positive former IVDA's, run by a former IVDA and a social worker in cooperation. Strictly for persons not in active drug use. Some of the groups are for women only. - Support groups for activ drug users. - Individual couselling. - Couple counselling. - Open doors in the daytime, with high tolerance for users under the influence of drugs. Informal conversation, coffee. - No formal notes taken, informality and confidence stressed. - The project is being evaluated during the spring of 1989.

RESULTS: By january 1989 the project has run 7 support groups, and been in contact with 70-80 hiv positive IVDA's which constitutes approximately 40% of the known hiv positive IVDA's in the Oslo area. A qualitative evaluation of the methods used will be presented in the paper.

D.586

A COMPREHENSIVE AIDS PROGRAM IN A METHADONE TREATMENT PROGRAM

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Our presentation will consist of an explanation of our methadone program and its six core components related to HIV infection. The components to be discussed are: AIDS education, HIV antibody testing, client advocacy, psychotherapy, and community and street outreach.

AIDS education is mandatory to all clients in our methadone treatment program. Three hours of education is provided within the first three months, and a minimum of one hour is provided every three months. HIV antibody testing is offered monthly on a free, voluntary, and confidential basis to all clients and significant others. This is done with pre/post counseling. Case managers can be utilized by all clients to assist with delivery of services (i.e., housing, legal, social, financial, etc.). Weekly one-hour counseling sessions are required of all clients. Within the context of these sessions, AIDS issues are continually addressed. Groups are offered to infected people and significant others. Support groups are also offered for professional and support staff. Outreach workers actively educate and refer I.V. drug users to community resources. Bleach, condoms, and educational materials are distributed freely within the community. Our presentation will demonstrate the effectiveness of this program as it relates to knowledge, attitudes, and behavior change.

D.587

COCAINE USE DURING PREGNANCY: VALIDITY AND ASSOCIATIONS WITH HIV RISK BEHAVIORS

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Objective: To assess the validity of interview data on cocaine use during pregnancy, and associations between cocaine use and risk behaviors for HIV infection.
Method: Over 150 women who delivered at a New York City hospital without receiving prenatal care completed a brief structured interview about their use of intravenous drugs, sexual partners at risk of HIV infection, and cocaine use shortly before delivery. The validity of self-reported cocaine use in the period immediately before delivery was evaluated against the results of a urine toxicology screen obtained from the infant at delivery. The association between HIV risk behaviors and cocaine use are studied.
Results: The sensitivity, specificity, and positive and negative predictive values of the interview data on cocaine use are presented. The odds of engaging in behaviors associated with HIV infection are compared for cocaine users and nonusers.
Conclusion: Associations between cocaine use and HIV infection may vary between populations. Within particular settings it may be important to develop means of identifying cocaine users so that they may be counselled appropriately.

D.588

OBSERVATIONAL AND NARRATIVE DATA ON PATTERNS OF INTRAVENOUS DRUG USE AS RELATED TO HIV-1 INFECTION

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Objective. To demonstrate the utility of data collected in the natural habitats of drug users for constructing intervention strategies.
Methods. In a longitudinal study of 230 street-recruited Intravenous drug users (IVDUs) in Miami, Florida, the investigators include direct observation of needle using behaviors and elicitation of open-ended interviews on needle using behaviors and attitudes.
Results. In "safe house" settings, compliance with house rules shapes needle using behaviors, so enforcers of house rules are key targets for intervention to prevent HIV infection. Attitudes towards needles are apparently sufficiently flexible to allow change within groups of "shooters."
Conclusion. Data resulting from these procedures provide clear guidelines for intervention but pose problems for rigorous research design. Differential influence of participants in networks of IVDUs may affect demonstration studies that use random assignment strategies for testing impact of specific interventions.

D.589

DEMOGRAPHICS, DRUG USE AND SEXUAL BEHAVIOR OF INTRAVENOUS DRUG USERS (IVDU'S) WITH AIDS

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Objective. Define demography, drug and sex behavior of IVDU's with AIDS.
Methods. Detailed standardized interview of hospitalized AIDS patients.
Results. 112 hospitalized IVDU's with AIDS participated from 10/84-2/88.
Demography: male 72%, female 28%; Hispanic 49%, black 33%, white 14%; Bronx residence 86%; mean age 35 years; unemployed 50%; <12 yrs education 45%; income <$10,000 71%; supporting ≥ 3 people 23%.
Drug Use: median age 1st IV use 17 yrs (range 11-39); 97% used IV heroin (for median of 9 yrs), 95% IV cocaine (median 7 yrs), 25% other drugs IV. ≥ daily IV drug use 62%, "shooting gallery" use 68%, needle sharing 88% (with homosexual men 20%, family members 28%). Other drugs: alcohol ≥ daily 35%, marijuana 86%, mood altering drugs 57%, stimulants 29%. Since 1978 only 31% participated in methadone Rx; 41% were incarcerated.
Sexual Behavior: All sexually active since 1978; mean of 2.6 sexual partners in year before AIDS dx (median 1); sex with other IVDU 54%, with other AIDS pt 7%, male with other male 17%, female with bisexual male 12%,; 17% received payment for sex.
Conclusion. In addition to many women and poor minorities, the "first wave" of IVDU's with AIDS is characterized by teenage onset of IV drug use, subsequent prolonged, frequent IV drug use, polysubstance abuse, infrequent drug treatment and co-existence of high risk drug and sex behaviors. Intervention to reduce transmission should address these complex interrelated issues.

D.590

SELF-REPORTED NEED FOR TREATMENT AMONG IV DRUG ABUSERS IN AN HIV-CLINIC

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Objective. The aim of the study was to ascertain whether there is a self-experienced need for treatment of drug abuse at a HIV-clinic.
Methods. A questionnaire was filled out according to the responses of the patients. Patients were asked about present abuse, present treatment and perceived need for treatment.
Results. After 6 months 171 questionnaires were filled out. The mean age was 33 years and 27% reported no contact with a social worker and more than half (54%) reported no present treatment of abuse. Out of 117 reporting, 63% abuse heroin, 35% amphetamine, 23% alcohol, 11% benzodiazepines, 9% hashish with poly-drug abuse by 32% and 87% had intravenous drug abuse. 54% had a desire for treatment, wanting methadone treatment in a majority of the cases (73%), rehab centers (17%), clinics and detoxification (6%).
Conclusion. This study, shows that there is a significant self-reported need for treatment with a self-reported preference for methadone treatment. It is very important to improve and increase availability to specific treatment as needed. This is of utmost importance both from individual and epidemiological point of view and necessary to prevent an extensive spread of HIV infection.

D.591

A MAJOR INTERVENTION RESEARCH PROJECT AMONG PARENTERAL DRUG USERS NOT IN TREATMENT IN CHICAGO, ILLINOIS.

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Objective: Describe the effects of attempts to change drug and sexual behavior among this population, and differentiate among approaches attempted.
Methods: HIV testing; use of a national face-to-face interview; ethnographic fieldwork; public health outreach worker intervention.
Results: HIV status has varied considerably by ethnic group; interview results (approximately 1500 available) show a relative absence of heroin-only users; cocaine and alcohol are currently predominant; a wide variety of injected drugs are cited as drugs of choice. Some evidence to suggest that "street" IV drug users are in fact changing behavior; educational methods may be working in this population more readily than anticipated. Evidence of approaches most likely to be effective, by relevant sub-populations.
Conclusions: The parenteral drug using population not-in-treatment appears to be considerably more open to new information, and willing to change behavior, than many supposed. The possibility clearly exists that new incidence rates may be being significantly reduced by these means.

D.592

NEEDLE SHARING BEHAVIORS AND HIV SEROSTATUS IN MIAMI, FLORIDA

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Objective. To understand the relationships between the extent of needle sharing by IV drug users and their rates of seropositivity.
Method. As part of an AIDS prevention/intervention project funded by the National Institute on Drug Abuse, 500 IV drug users were recruited from several neighborhoods in Miami, Florida where rates of IV drug use were high. Prior to the subjects' exposure to risk reduction literature and counseling, interviews were conducted to solicit information on social and demographic characteristics, drug use, needle sharing, and other risk behaviors. In addition, blood samples were drawn to determine HIV serostatus.
Results. Rates of seropositivity were in excess of 50% within all cohorts of IV drug users who shared needles, and even higher among black males. These higher rates were typically associated with drug use in "shooting galleries," where needles were available for a fee and were shared by numerous users during the course of a day.
Conclusion. Needle sharing in "shooting galleries" carries a higher risk of exposure to HIV infection than other forms of needle use.

D.593

D.594

DOES METHADONE PROGRAM WITHDRAWAL (M.P.W.) RESULT IN AN INCREASE OF CRIME, OVERDOSE ACCIDENTS AND HIV TRANSMISSION AMONG I.V. DRUG USERS (IVDU)?

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Objective. In Italy 65% of all cases of AIDS are among IVDU. Italian experience shows the failure of methadone maintenance programs, therapeutic communities and naltrexone detoxification programs are promoted instead. This paper's aim is to ascertain whether M.P.W. results in an increase of crime, overdose accidents, and HIV transmission among IVDU. The question is if M.P.W. is a risky intervention while looking for other kinds of treatment.
Methods. The total estimated number of IVDU in the district is 700. The Center has taken care of 511 IVDU from 1981 to 1988. We evaluated all the records of the Police department, local hospitals emergency wards and Center for Drug Addicts of the Local Health District 26 of Veneto Region. Two comparable periods have been considered: 1st period, from October 1986 to September 1987 in which methadone program was widely used (356 IVDU treated). 2nd period, from October 1987 to September 1988 in which M.P.W. was extensively applied (only 89 IVDU treated), and methadone has been replaced with naltrexone or with psycological counselling alone. We compared the number of crimes, overdose accidents, and seroconversions.
Results. Results are summarized in the table.

	1st PERIOD (Methadone)	2nd PERIOD (M.P.W.)
OVERDOSES	16	30
CRIMES	31	27
SEROCONVERSIONS	6	1

Statistical analysis shows no significant difference between the two periods.
Conclusions. Our data indicate that M.P.W. does not result in a significant increase of crimes, overdose accidents and HIV transmission. We conclude that M.P.W. is not a hazardous initiative while looking for other kind of treatments for IVDU.

D.595

EVALUATION DE LA PEUR AU SIDA DANS LES ADDICTES A L'HEROINE

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Objectif. Connaître l'impact de la peur à l'infection par le virus d'immunodéficiènce humaine, en relation avec d'autres stresseurs.
Méthode. Dans un travail préliminaire nous avons étudié 20 stresseurs potentiellement importants pour les addictes à l'héroïne. D'entre eux nous avons choisi les suivants: être atteint d'hepatite; être mis en prison; se voir obligé a voler; être "porteur" du virus VIH; avoir le syndrome d'abstinence; et perdre l'affection du partenaire ou de la famille. Chacun d'eux a été comparé avec tous les autres par la méthode de comparaison de paire utilisée dans la confection d'échelles psychophysiques.
Résultats. Les resultats montrent que "perdre l'affection du partenaire ou de la famille" est chez nous la situation la plus stressante, plus encore que la peur à être "porteur". Par le reste, on trouve des différences entre les individus qui sont et qui ne sont pas en procés de desintoxication.
Conclusion. Ces résultats peuvent être utiles comme éléments motivationnels dans les programmes de prévention.

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D.596

PREVENTION OF HIV-INFECTION IN A METHADONE MAINTENANCE PROGRAM

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Objective. Can a methadone maintenance program prevent HIV-neg. IV drug abusers from getting infected?
Methods. In a retrospective study 21 IV drug abusers being were again tested and the therapists were asked about the risk behaviour and social integration of their patients.
Results. We were able to show for 21 patients who were all HIV-neg. at the beginning of the methadone maintenance program of the Drop-In in Zurich that they remained HIV-neg. over an average period of 3 years. The social integration improved during the program from 48% to 90%. Preceding the program 43 % of these HIV-neg. patients were at high risk for infection. During the program 57 % showed to be clean of heroin and 76 % clean of cocain. The remaining obviously abstained - due to a continous information - from needle sharing.
Conclusion. A well structured methadone maintenance program with a close, consistent and enduring relationship between staff and patients can be of great importance in HIV-prevention.

D.597

AIDS AND I.V. DRUG USE IN PUERTO RICO

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As of 1/17/89, 2055 AIDS total cases (83 % males/17 % females) were officially reported in the Commonwealth of Puerto Rico, USA [623 cases/million]. Most important groups were: 1) heterosex. IVDUs: 1120 cases (56 %); 2) homo/bi men: 402 (20 %); & 3) homo/bi men IVDUs: 257 (13 %). So, 1377 (69 %) of our "adult/adolescent" cases (87 % males/13 % females) are i.v. drug-related [417 cases/million]; this "69 %" puts PR in 1st. place in this category in the USA, followed by the States of NJ (56 %), CT (42 %), NY (40 %) & FL (23 %). Table 1 shows significant increments ($p < 0.001$) of this condition in PR since 1982:

AIDS diagnosis	heterosex. IVDUs		homo/bi IVDUs	
Jan 1982 - Dec 1982:	3		0	
Jan 1983 - Dec 1983:	19	↑ 633 %	3	↑ 300 %
Jan 1984 - Dec 1984:	37	↑ 195 %	24	↑ 800 %
Jan 1985 - Dec 1985:	107	↑ 357 %	43	↑ 179 %
Jan 1986 - Dec 1986:	203	↑ 289 %	57	↑ 133 %
Jan 1987 - Dec 1987:	351	↑ 173 %	72	↑ 126 %
Jan 1988 - Dec 1988:	400	↑ 114 %	58	

(Note: No lesbian &/or bi women IVDUs cases yet). Now, 50 (85 %) of our official 59 children cases are also related to parental i.v. drug use; risk behavior as follows: both parents IVDUs: 21 cases (42 %); mother IVDU: 13 (26 %); father IVDU: 12 (24 %), and previous husband IVDU: 4 (8 %). Besides, initial HIV-1 seroprevalence data reveals: a) IVDUs "not in treatment": 50-73 % HIV+ (Elisa & W. Blot), & b) "in treatment" (methadone): 45-59 %. Also, research in progress shows some co-infection (HIV-1 & HTLV-I) in our IVDUs. Hopefully, 3 recently NIDA-funded preventive projects will improve PR's unique situation.

D.598

THE ADJUNCTIVE ROLE OF ADDICT DIRECTED SUPPORT GROUPS IN THE CARE OF HIV INFECTED ADDICTS

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OBJECTIVE: To assess the contribution of motivational strategies and mutual support groups for the psychological, medical, and addiction related care of HIV infected addicts.
METHODS: Facilitator directed support groups, emphasizing AIDS related concerns, sexual, physical, and emotional responses to HIV disease. Focuses on the impact of addiction history and treatment, and on attitudes toward HIV and life quality. Participants are followed as to the impact of group participation in alleviating AIDS related fears through recovery based living. Compliance of group members with medical follow-up was obtained through contact with physicians.
RESULTS: Between October 1986 and December 1988,206 individuals have attended at least 1 session. 88 people (42%) have attended 40% of the meetings over a 2 year period. Significant reduction in AIDS related fears was observed as was enhanced addiction recovery in all 88. 58 participants receive medical care at Boston City Hospital, and a greater than 70% compliance rate to medical visits was noted in the last 18 months in 47 of these people. In contrast, 10 who attended only 1 meeting or dropped out had a less than 30% compliance for clinic visits.
CONCLUSIONS: Addict directed support groups can provide significant enhancement in addiction recovery, and a reduction in AIDS related fears. Participation can also enhance patient compliance with medical care.

D.599

NONVOLUNTARY TREATMENT OF INTRAVENOUS DRUG ABUSERS TO CURB THE SPREAD OF HIV INFECTION

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Objective. To explore nonvoluntary drug abuse treatment under Criminal Justice System sanction (i.e. probation, parole or civil commitment) to reduce the spread of HIV among intravenous drug abusers (IVDAs).
Methods. The most recent research findings and the input of a convened group of expert consultants were used to develop consensus statements.
Results. It has been suggested that using the criminal justice system as nonvoluntary treatment could keep IVDA's in treatment longer and decrease drug abuse as well as needle use and sharing. Consensus statements included the advantages and the disadvantages of nonvoluntary treatment. Advantages included: helps get IVDAs into drug abuse treatment, keeps IVDAs in treatment longer, makes drug abuse treatment available before another crime is committed, and provides due-process as well as treatment. Disadvantages include: delays in processing, many IVDAs may be found unsuitable for treatment, is costly, and is cumbersome administratively.
Conclusion. IVDAs targeted for nonvoluntary drug abuse treatment might be chronic intravenous drug abusers who could benefit most from treatment. However, nonvoluntary treatment cannot be considered a panacea for dealing with the AIDS problem among IVDAs but could be used in combination with other prevention strategies.

D.600

TREATMENT MODALITIES FOR PREGNANT DRUG DEPENDENT WOMEN AS AN EFFORT TO PREVENT PERINATAL AIDS.

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The interface between AIDS and drugs is a key issue from the standpoint of perinatal transmission. Unfortunately, these women, who are already weakened by unemployment, illiteracy, homelessness, crime and other diseases, including their alcoholism and drug addiction, are now those at risk for the human immunodeficiency virus. Since treatment of this devastating disease in the perinatal patient is not available, prevention issues must be addressed most expeditiously. Family Center is a program designed to provide intensive medical and psychosocial services to drug and alcohol dependent women, in general, and to provide specialize care to those who are pregnant. Comprehensive medical services at Family Cente include a prenatal clinic at the Thomas Jefferson University Hospital which i staffed by obstetricians specifically trained in the field of addiction and high risk pregnancy. Additional treatment modalities include individual, group and family therapy. On site methadone maintenance is provided and in-patient detoxification i available for select patients. Educational services in the form of prenatal an parenting classes are also offered. Maternal medical and obstetrical complications are treated, therefore providing a similar intrapartum course in the drug dependent mother as is seen in the general population of the same socioeconomic and ethnic class. When some of the women arrive for prenatal services, they are already HIV positive. Numerous psychosocial issues emerge when the woman is advised that she is HIV positive. She will be aware of the fact that she and her newborn potentially have a low survival rate. This may limit the amount of emotional energy that she has to expend with regard to dealing with her pregnancy. She may not be able to complete the emotional tasks of the pregnancy and may have mixed feelings about delivering an infant that might be infected. Depression is commonly seen. In many instances, the spouse and other children of the woman also have AIDS so she must consider who will care for her children if she dies first. Options for either interruption of the pregnancy or methodologies for the prevention of future pregnancies are part of the counseling issues. Clinical services for pregnant women at risk for AIDS must be comprehensive and address addiction, the vital perinatal issues, and the high risk behaviors in which they are involved.

D.601

ECHANGE DE SERINGUE ET VIE SEXUELLE DES TOXICOMANES I.V.

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INTRODUCTION : La forte contamination des toxicomanes IV par le VIH1 en région parisienne justifie la réalisation d'une étude de comportement sur leur vie sexuelle.
OBJECTIFS - METHODES : Questionnaire sur la sexualité par un médecin - consentement des patients - Confidentialité - Anonym - Information sur les maladies transmissibles - Proposition individuelle de dépistage VIH1.
POPULATION : Etude réalisée en janvier 87 - Exclusion : 6 cas (refus), 75 toxicomanes de sexe masculin sont inclus. Age moyen 27 ans, Héroinomanes exclusifs 74%, 4 injections IV/jour en moyenne - Durée de la toxicomanie entre 1 et 5 ans : 46%. Echange de seringue 78% dans diverses circonstances.
RESULTATS : Hétérosexualité 65 cas (88%), homosexualité 12%, prostitution 6%, sexualité active : relations sexuelles plusieurs fois par semaine 52%. Nombre de partenaires ≤5 : 55 cas (73%). 73% estimaient avoir une sexualité moins active et 44% un nombre de partenaires moins important du fait de l'usage d'héroine. Parmi les 65 hétérosexuels, 25 pratiquent la sodomie, 50 signalent des pratiques oro-génitales. La fréquence de la toxicomanie est élevée chez les partenaires sexuelles : 52% (39/75) avec échange de seringues dans 28 cas. Usage de préservatifs régulier 4 (5%). Antécédent de dépistage VIH 20 (27%). Taux de séropositivité 53% parmi les 56 patients testés.

D.602

RELATIONSHIP BETWEEN SOCIAL SUPPORT AND LONELINESS AND HOSPITAL SERVICE-SEEKING IN INTRAVENOUS DRUG-USING MALES

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Objective. Psychoneuroimmunologic investigations demonstrate an integration between psychosocial response and immune function. This retrospective correlational study explores relationships between availability and adequacy of social support and objective loneliness on the seeking of hospital services among intravenous drug-using men in a large metropolitan area.
Method. 70 domiciled men with a history of intravenous drug use, an AIDS diagnosis and on a prophylactic regimen were administered the Revised Social Support Questionnaire and Revised UCLA Loneliness Scale. They gave permission for hospital-record review. Service-seeking behavior was defined as number of emergency room visits, number of AIDS-related hospitalizations and lengths of hospitalizations. A multiple hierarchical regression controlled for demographic data, pre-morbid health status and time elapsed since first AIDS-related hospitalization.
Results. Data indicates small support systems, compared with studies of similar groups in another U.S. city, a high degree of loneliness and no statistically significant relationship between these variables and service-seeking behaviors.
Conclusion. While not rejecting the null hypothesis, these data describe a psychosocially dysfunctional group that will seek AIDS-related services in ever greater numbers. AIDS may exacerbate the dysfunctions.

D.603 RESEARCH WITH INTRAVENOUS DRUG USERS. PROBLEMS AND PRACTICAL RECOMMENDATIONS.

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*HIV Center for Clinical and Behavioral Studies, New York State Psychiatric Institute and Columbia University; **Harlem Hospital; ***St. Luke's/ Roosevelt Hospital Center; New York City, NY, USA.

Objective. To successfully recruit 300 IVDUs to participate as subjects in a 5 year study on natural progression of HIV disease.
Method. Several methods of recruitment were utilized: a poster campaign, informational meetings at methadone clinics and inpatient wards, and $10.-/hour payment.
Results. Payment was the main motivation for the initial 40 subjects recruited. This, however, created several problems. Eagerness to enroll led some candidates to falsify information and become aggressive, defiant, and manipulative with the staff. Researchers had to camouflage eligibility criteria, purport lottery selection system, seek exernal validation of information and strengthen internal communication among team members.
Conclusion. Close attention must be paid to the psychological dynamics and usual modus operandi of IVDUs to successfully recruit a cohort and minimize deceit and tensions.

D.604 PROFILE OF USERS OF THE DRUG IV IN THE PERIPHERY OF CAMPINAS

Lima, M.P.S.; Rocha, M.D.C.; Tanibata, P.R.; Mielle, A; Ferreira, R.P.; Lorenzetti, T.M. Hospital e Maternidade Celso Pierro da Pontifícia Universidade Católica de Campinas- S.P. Brasil.

The University Hospital of PUCCAMP attends a region of 1 million inhabitants. It is localized between various districts, the majority, without any infrastructure (water, sewer, health), which caracterizes it as the area most in need of the municipality.
Proceeding from that region a study was made of a group of 62 drug users IV, who spontaneously seeked the hospital, during a period of 10 months.
We observed the following facts: 45 men and 17 women with an average age of 25 years. Schooling: elementary level, all of them being workers without qualifications, and a monthly salary from 50 to 100 dollars.
We also detected that: cocaine was the drug most used, 41 persons, in association with other drugs (propoxifeno, codeine) 11, and the remaining 10 did not use it.

CONCLUSION:
We noted that in spite of the low socio-economic level, the majority of the population studied used cocaine, which in our midst costs 7 dollars a gram. We questioned, therefore, the source for such acquisition, once the income is insufficient for this addition, suggesting that this would be one of the reasons of the rejection of these persons (prostitution, theft). We concluded also that this same drug, by its own characteristic, induces at the use of inumerous daily applications, which explains perhaps our high rate of positiveness for the AIDS virus: 30 patients of a sample of 62.

D.605 PERCEPTION OF HEALTH AND AIDS RISK BEHAVIORS AMONG IV DRUG USERS.

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Objective: To relate the perception of health among a group of IV drug users to AIDS risk behaviors and indicators.
Methods: As part of a study which tests two interventions to reduce the risk of AIDS among IVDUs, 346 subjects were recruited from drug networks, tested for HIV-1 positivity, and interviewed. Bivariate analyses were performed to assess associations between variables, and relative risks (and 95% confidence intervals) were calculated.
Results: 20% of IVDUs reported their health to be excellent; 44% good, 30% fair, and 6% poor, yet 18.5% of IVDUs reported both that their health was excellent and they did not use condoms. The proportion of users who stated that they cleaned needles ranged from 42% of those stating they had excellent health, to 67% stating they had poor health. Even among those with "excellent health", 30% of IVDUs had recently rented needles or syringes that they thought had been used. Seropositives were 1.6 times as likely to report fair or poor health than seronegatives (0.9-2.7).
Conclusion: Perception of health by IVDUs does not necessarily translate into healthy AIDS/HIV practices.

D.606 PROMOTION OF HIV PREVENTION ACTIVITIES IN DRUG TREATMENT CENTERS IN THE UNITED STATES

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Objective: To implement on-site HIV prevention programs for clients and their sex partners in drug treatment centers (DTCs) in the 24 states and cities with the largest number of AIDS cases in the United States.
Methods: HIV prevention in DTCs has been a major priority for the Centers for Disease Control (CDC) in fiscal years (FY) 1988 and 1989 cooperative agreements with State/local health departments. CDC provided specific service requirements, technical assistance, and a model joint plan to assist States/Cities to produce and implement their joint (Health Dept and Drug Abuse Agency) program plans for HIV prevention in DTCs. Program elements included a senior health or drug abuse official to lead the program; support of on-site voluntary, free HIV counseling, testing, and partner notification (CT/PN) services in the largest DTCs providing services to intravenous drug users (IVDUs); outreach to the sexual and needle-sharing partners of the clients; and provision of contraceptive services for DTC clients.
Results. In FY 1988, more than $12 million for CT/PN in DTCs was awarded to the 24 States/Cities with the highest number of AIDS cases. We will present data for FY 1989 for these States/Cities on the number o[illegible]s where CT/PN has been initiated, the median award per State/Ci[illegible] examples of the more advanced joint programs for HIV preventi[illegible]r this high risk population.
Conclusion. Provision of funds, technical assistance, and a model plan have been effective in initiating the provision of CT/PN services in DTCs to provide educational and risk reduction counseling and HIV testing to IVDUs in the 24 States/Cities with the largest number of AIDS cases.

D.607 BEHAVIOURAL CHANGES FOR HIV RISK-REDUCTION IN TWO COHORTS OF INTRAVENOUS DRUG USERS (IVDUs) IN NEW YORK CITY.

Chu, Alvin; Brown, LS.; Banks, S.; Nemoto, T.; Primm, BJ.
Addiction Research and Treatment Corporation, Brooklyn, NY USA

Objective. To assess those behavioural changes that are a response to the high risk for HIV infection experienced by IVDUs.
Methods. During 1987 and 1988, 218 and 223 subjects repectively were recruited from methadone clinics in NYC. Following informed consent, a standardized questionnaire was administered pertaining to behavioural factors and risk for HIV infection.
Results.

Behavioural Changes	1987 n (%)	1988 n (%)
Reduced intravenous drug use	76 (38)	20 (12)
Stopped needle sharing	118 (58)	58 (35)
Reduced sex partners	106 (53)	50 (31)
Increased use of condoms	55 (27)	44 (27)

In both 1987 and 1988 behavioural changes were reported by 93% and 74% of subjects respectively.
Conclusion: The finding of this study indicate that IVDUs are aware of the need for behavioural changes in order to reduce the risk for HIV infection. Continued efforts are necessary to promote greater and more consistent changes that will change the course of the AIDS epidemic.

D.608 HIV SEROPREVALENCE IN HEROIN USERS: A DEMOGRAPHIC AND BEHAVIOURAL ANALYSIS.

Banks, Susan; Brown, L.S.; Chu, A.; Nemoto, T.; Valdes, M.; Primm, B.J. Addiction Research and Treatment Corporation, Brooklyn, NY USA

Objective. To examine the association of demographic factors and heroin use patterns on the HIV serostatus of IVDUs.
Methods. Following informed consent, a questionnaire of demographics and drug behaviours was administered to patients in NYC drug treatment clinics in 1987. Of the 218 subjects, 7.8% were White; 45% Black; and 47.2% Hispanic. 35.8% were female, and 64.2% male. Serum specimens were also collected and tested for HIV antibodies using ELISA and Western Blot assays.
Results. Data analyses showed a 60.1 HIV seroprevalence rate, with 90% of these subjects reporting a significantly greater frequency of intravenous (IV) heroin use in the previous 12 months than seronegative subjects (p=.026). Males began regular IV heroin use at a significantly younger age than females (p=.003), and ethnicity and first regular IV use was significant (p=.052) with White subjects reporting regular IV use at a younger age than minorities. IV heroin users were more likely to be HIV seropositive than non-IV users (p=.040).
Conclusions. The data suggest a clear association between demographic and behavioural factors and the risk for HIV infection in heroin users. This argues the need for diverse educational interventions and early prevention efforts.

D.609

NEEDLE-SHARING PATTERNS AS A PREDICTOR OF HIV SEROPREVALENCE AMONG NEW YORK CITY INTRAVENOUS DRUG USERS (IVDUs)

Yee, Kathleen; Brown, L. S.; Primm, B. J.; Nemoto, T.; Foster, K. Addiction Research and Treatment Corp., New York City, USA.

Objective. To examine the association between patterns of needle-sharing and HIV seroprevalence among IVDU's in NYC.
Methods. Following informed consent, 218 patients, recruited from methadone maintenance clinics in Brooklyn and Manhattan, were administered a standardized questionnaire in 1987. This sample included 45% blacks, 47% Hispanics, and 8% whites, of which 36% were males and 64% were females. Sera were also collected and tested for HIV antibodies via ELISA and Western Blot assays.
Results. The overall seroprevalence rate was 60%. Respondents who did not clean their needles were more apt to frequent shooting galleries (p=.0005). Those who frequented shooting galleries, were more likely to share needles than those who did not (p=.0001). Those who shared needles with the same person for at least one year were more likely to be seronegative (p=.0262) and less likely to use shooting galleries (p.=0001).
Conclusion. This information suggests that interventions directed at reducing usage of shooting galleries, or at least, modifying behaviors in shooting galleries may reduce the incidences of HIV transmission associated with needle-sharing.

D.610

PATTERNS OF COCAINE USE AND ITS ASSOCIATION TO HIV SEROPREVALENCE AMONG INTRAVENOUS DRUG USERS (IVDUs)

Nemoto, Tooru; Brown, L.S.; Primm, B.J.; Chu, A.; Foster, K.; and Ajuluchukwu, D. Addiction Research and Treatment Corporation, New York City, USA.

Objective. To investigate patterns of cocaine use and its association to HIV infection among IVDUs.
Methods. In 1987, a total 218 participants: average age=33 years, 36% males and 64% females, and 45% Blacks, 47% Hispanics, and 8% Whites, were recruited from methadone clinics in Manhattan and Brooklyn, New York City. After informed consent, a standardized questionnaire was administered by trained interviewers. Also, blood was collected and tested for HIV antibody by ELISA and Western blot techniques.
Results. The overall HIV infection rate was 60%. The HIV positive IVDUs significantly more often injected cocaine intravenously (p<.003) and less often smoked cocaine (p<.05) than the HIV negative. Significant intercorrelations (p<.001) were found between frequencies of IV use of cocaine, heroin, and speedball (heroin and cocaine). Multivariate analysis revealed HIV positive IVDUs were older, more frequently used shooting galleries in the last 5 years, more frequently used IV heroin and cocaine, and less frequently skin-popped heroin (all, p<.05).
Conclusion. IV cocaine use were significantly associated with HIV seroprevalence. Also, patterns of drug use (IV, skin popping, and smoking) were differently associated with HIV infection. Research investigating polydrug behavior is needed for AIDS prevention.

D.611

BEHAVIORAL RISK FACTORS OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION AMONG INTRAVENOUS DRUG USERS (IVDUs)

Nemoto, Tooru; Brown, L.S.; Primm, B.J.; Foster, K.; Chu, A., and Ajuluchukwu, D. Addiction Research and Treatment Corporation, New York City, USA.

Objective. To investigate behavioral risk factors among IVDUs, especially focusing on their drug and sexual behaviors, and psychological status.
Methods. In 1986, a total 262 subjects; 162 males and 100 females; 107 Blacks, 116 Hispanics, and 35 Whites, were recruited from methadone maintenance clinics in Manhattan and Brooklyn, New York City. After informed consent, a standardized questionnaire was administered by trained interviewers. Also, blood was collected and tested for HIV antibody by ELISA and Western blot techniques.
Results. The overall HIV infection rate was 61%. A significant association between age groups and HIV status was found, p<.05. Frequencies of heroin and cocaine use before enrollment were positively correlated, p<.001. After enrollment in the methadone treatment program, the frequencies of using heroin, cocaine, and marijuana were significantly decreased, p<.001. The HIV positive subjects started using heroin significantly earlier in their age (p<.01) and reported significantly larger number of needle sharing partners at shooting galleries (p<.02) than those who were HIV negative.
Conclusion. Methadone maintenance programs may effectively cut the use of heroin, cocaine and marijuana. Also needed are AIDS prevention programs, focusing on younger age groups and behavioral factors, especially.

D.612

"PREVALENCE OF PROSTITUTION" AMONG FEMALE HIV +VE INJECTING DRUG USERS IN GLASGOW AND THE ESTABLISHMENT OF A HEALTH CARE DROP-IN CENTRE.

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Introduction: Epidemiological studies in the USA and Europe repeatedly confirm that the major risk factor determining if an individual prostitute becomes infected with HIV is not sexual activity but if they are injectors. The "prevalence of prostitution" among 37 known HIV-positive female drug injectors (DIs) (those clearly stating that they had prostituted) attending one ID hospital was found to be 67% (25/37). However, most initiatives looking at HIV-positivity among prostitutes have come across few who inject drugs; this may result from sampling purely from genitourinary medicine (GUM) clinic attenders and could lead to underestimation of seroprevalence. Concern about HIV and the paucity of health care initiatives directed towards drug injecting prostitutes led to the setting-up of a volunteer-run drop-in centre in May'88.
Methods and Results: The centre operates 3 nights weekly (10pm to 1am) in premises near Glasgow's "red light" areas. It is advertised solely by "word of mouth". Refreshments are made available. Health care, health education (stressing HIV prevention) and access to detoxification centres, GUM clinics and contraception (such as long-acting intramuscular medroxyprogesterone acetate) is provided. All women take away a quantity of condoms, including non-lubricated "Durex Dry" (favoured by some for oro-genital sex). Up to January 1989, 71 female prostitutes had attended, the majority on several occasions. 76% of them were or had been DIs.
Conclusion: It is clear that some HIV-positive drug injectors will prostitute. Prostitutes who are DIs can be contacted through non-statutory initiatives.

D.613

HIV INFECTION IN A DETOXIFICATION UNIT

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Objetive:The greater number of IDAs who start detoxification treatment in Spain come from primary assistance programs, are apparently asymptomatic and don't know the possibility of HIV infection nor its clinical status.
We studied, longitudinally, a group of IDAs admitted in a hospitalary detoxification unit to obtain a first selection of patients tributary of anti-HIV treatment.
Methods: We included 169 heroin abusers (130 males and 39 females), with an age of 25.6 ± 4.5 years and a time of addiction of 66.8 ± 36.5 months, admitted from February 87 to July 88. We analysed HIV antibodies (EIA test) and clinical search for physical signs and symptoms related to HIV infection.
Results: 116/155 (74.8%) were HIV+. 28/116 (24.1%) were included in group II. 37/116 (31.8%) in group III and 51/116 (43.9%) in group IV. The greater number (48/51) of group IV were included for infectious diseases not definite as AIDS (oral thrush and/or hairy leucoplakia)and the rest, (3/51) for opportunistic infections not previously known and AIDS criteria (esophageal candidiasis).
Conclusion: We observed important clinical disorders corresponding to advanced stages of HIV infection (groups III and IV) in the 75% of apparently asymptomatic patients. Efforts must be directed to this group with the aim to steadying their drug abuse as previous step for anti-HIV treatment.

D.614

COMPLIANCE OF MEDICAL FOLLOW-UP IN HIV POSITIVE PATIENTS.

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OBJECTIVE: To review medical follow-up compliance in HIV positive patients.
METHOD: The City Hospital HIV Counselling Clinic offers confidential pre-post test counselling for self referrals. Risk activities were categorised as follows:- injecting drug users (IDU), IDU prescribed/not prescribed Methadone (IDU+METH, IDU no METH), homosexuals/bisexuals (HO/BI), heterosexual (HET), blood and unidentified (OTH). Attendance was divided into Regular (REG); Sporadic (SPO) - maximum of 3 attendances; failure to attend (FTA).
RESULTS: To date 1718 people attended of whom 271 tested positive for antibodies to HIV. All were offered regular medical review.

	TOTAL(%)	TOTAL MALE(%)	TOTAL FEMALE(%)	TOTAL IDU(%)	IDU + METH(%)	IDU NO METH(%)	HOM/ BI(%)	HET(%)	OTH(%)
REG	161 (59)	109(65)	52 (50)	139(62)	61(87)	78(51)	13(76)	4(18)	5(62)
SPO	56 (21)	25(15)	31 (30)	43(19)	9(13)	34(22)	1(6)	11(50)	1(13)
FTA	54 (20)	33(20)	21 (20)	42(19)	0(0)	42(27)	3(18)	7(32)	2(25)
	271	167	104	224	70	154	17	22	8

CONCLUSION: Individuals' compliance can be affected by a number of issues including fear, denial, practical and financial (inaccessibility of hospital, poor public transport, non-availability of child minder, etc.). These results suggest that IDU attendance is no worse than for individuals with other original risk factors.

D.615

SAN FRANCISCO SPEEDBALLS: AN ETHNOGRAPHY OF COCAINE AND HEROIN USERS AT HIGH RISK FOR AIDS

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Youth Environment Study, Inc., San Francisco, CA, USA.

Objective. To analyze the practice of speedball (combined cocaine and heroin) use in segments of San Francisco's intravenous drug using (IVDU) population.
Methods. Interviews with active IVDUs and Community Health Outreach Workers (CHOWs): coding, analyzing and evaluating this data.
Results. Speedball use is common among IVDUs in San Francisco, particularly among older career heroin addicts. It may involve greater injection frequency thar use of heroin alone. A significant portion of people on methadone maintenance continue to inject cocaine, and using a syringe to measure out two doses has been observed. All of these may put speedballers at higher risk for AIDS, in addition to needle sharing.
Conclusions. Focused ethnography can provide answers to questions about specific IVDU behaviors such as speedballing, and this is useful in designing outreach strategies to reduce the spread of AIDS.

D.616

Engaging the Client with Histories of Substance Abuse or Mental Illness

MESSINA, CHAPMAN, SILVA, GUTTERMAN, U.S.A.

Unlike many other ambulatory care settings, the AIDS Day Treatment of the Village Nursing Home in New York City has succeeded in engaging the client with histories of substance abuse or mental illness. Success in this engagement process is due to a specific set of program policies, including an assumption that some clients must be intensively nurtured before they can pusue any self-empowerment goals such as seeking new housing orentering a drug detoxification program. Further, program policy strictly limits institutional intrusions such as lengthy intake interviews, while providing immediate crisis interventionservices -- often within minutes of admission. After admission the client is encouraged to view the program staff as his family, substitutin for a dysfunctional street culture, and allowing a wide influence in the client's life.
In summary, immediate responsiveness to client need appears to engage the client with histories of mental illness or substance abuse. This paper should be of interest to all clinicians and administrators working with these difficult groups.

D.617

Support Groups for Drug Users Affected by HIV and AIDS

STEVEN CRANFIELD, MASSIMO RICCIO, SUSY HOGARTH, RAYMOND MALLOY, EDWARD BARACAT, et al., Drugs Education Group, Terrence Higgins Trust, London, England.

Objective. To establish effective support groups in London for drug users affected by HIV/AIDS and to recommend guidelines for good practice.
Methods. The Drugs Education Group (DEG) is a voluntary body of professionals working in the field of drug misuse which acts as an advisory group to the Terrence Higgins Trust, Europe's largest community-based AIDS organisation. The DEG has initiated a number of support groups in London for current, maintained and ex- users affected by HIV. A separate group has been set up for Italian-speaking people not in contact with other drugs/AIDS agencies.
Results. All groups have highlighted the multiple problems facing drug users in deprived inner city areas: lack of access to medical/drug treatment; poverty; isolation; and poor family and peer support. Locating groups in an AIDS organisation with access to medical/welfare advice and charitable funds allowed for a swift response to many of these issues. This attracted new members and enhanced the groups' abilities to support, educate and empower. All groups had a policy of not segregating current from ex- users. This did not result in relapse amongst drug-free members. Several people associated with the groups have "graduated" from facilitated support groups and gone on to initiate their own self-help groups such as Positive Partners and Mainliners which are establishing national networks for drug users with HIV.
Conclusion. Support groups for drug users with HIV must be adequately funded and initially facilitated by experienced and motivated people. As such they can play a vital role in health education and in empowering drug users.

D.618

SWEDISH AND INTERNATIONAL SYRINGE EXCHANGE PROGRAMMES: EVALUATION AND SWEDISH RECOMMENDATIONS

Robert Olin, National Board of Health and Welfare, Stockholm, Sweden.

During 1988 the Swedish National Board of Health and Welfare evaluated the ongoing syringe exchange programme (SEP) in the Malmö/Lund region. Available data from British SEP (Stimson) and Amsterdam (Bunning) is also considered in this report. The report also gives a picture of the HIV/IVDA situation in Europe. Swedish IVDAs were reached by HIV as late as 1983. Due to the now known variation of infectivity over time, the report discusses the threat of a second wave of HIV spread among Swedish IVDAs. Approx. more than 80% of Swedish IVDAs have been tested, which gives good baselines for prospective epidemiological studies. Although Swedish as well as British and Amsterdam SEPs have been operating for a short term and have had methodological difficulties, the following conclusions are reached:
a) Drug abuse does not appear to have increased in project areas. Nor has any new recruitment for drug abuse been reported.
b) In the Swedish SEP area there has been no further spread of HIV during the 15-month experimental period. However, it is an open question whether this can be put down to the project.
c) Many of the drug abusers getting in touch with the SEP do not have any current therapeutic contacts. Some establish such after contact with SEP.
d) Regular motivation in the therapeutic work of drug abuser rehabilitation services has not been disrupted by SEP.
e) No drop-outs from treatment have been observed in Sweden.
f) The drug abusers themselves view the activities in a positive light (concern for health).
g) All SEP report certain decline in risk behaviour.
h) The needle exchange ratio varies between 55-100 per cent.
i) The educational opportunities generated by SEP are apparent.
The following problem areas are discussed in the report:
1. Congregation of drug abusers intermittently causes disruptions.
2. Distribution of clean tools to IVDAs can be looked upon as an ambiguity at variance with a restrictive drug policy. This problem of two partly opposite goals is thoroughly discussed in the report.

D.619

OUTREACH PROGRAMS IN NORWAY - APPROPIATE INSTRUMENTS IN NATIONAL HIV/AIDS PREVENTION AMONG DRUG USERS.

Bente Nilsen, Municipal Outreach Program, Oslo, Norway.

Recent research reports an accumulation of HIV-infection among drugusers using streets and parks in Oslo city (Norway) as resorts. These groups often withhold from public care, and are not easily reached by the regular health and welfare system.
The main objectives of outreach programs are to seak out and establish contact with drugusers who are in need of help and support. Reaching out to these individuals implies an invasion of their "territories". This enforces a constant development of different methods in social work to ensure the stability of the contact with drugusers.

An important feature of the municipal outreach programs are the unique chance for social workers and psychologists to establish direct and long-term contact with drugusers who live at the streets and are at high risk for HIV-infection and for spreading the HIV-virus.

The outreach program in Oslo provide for syringes and condoms to drug-users in order to prevent the use of dirty syringes and participation in unprotected sex. This is perceived as necessary but not sufficient efforts in HIV/AIDS prevention. In the outreach programs most effort is made to bring drugusers off the streets and into treatment- and rehabilitation programs to ensure more lasting behavioural changes.

D.620

THE AIDS VANCOUVER ISLAND STREET OUTREACH PROJECT

Valerie G. Thompson Williams, Judith English.
AIDS Vancouver Island, Victoria, British Columbia, Canada.

Objectives. AIDS Vancouver Island Street Outreach Program investigated the prevalence of high risk behaviours among street youth, sex trade workers, and IVDU's on the streets of Victoria; evaluated their knowledge of and attitudes about HIV/AIDS transmission behaviours and assessed the effectiveness of the street counsellors in reducing high risk behaviours.
Method. One hundred and one volunteer subjects (48F, 53M; age range=14 to 53, $\bar{x}$=20.9) responded orally to an AIDS knowledge/risk questionnaire.
Results. Two thirds of the subjects reported engaging in high risk behaviour (vaginal or anal sex without condoms and/or sharing uncleaned injection equipment) in the previous month, despite high knowledge scores ($\bar{x}$=81.8% correct). The significant trust in the street counsellors was reflected in the 91.6% of subjects who would use them as a personal crisis support system. Subjects preferred to obtain condoms from street workers more frequently (68%) than from traditional suppliers (19%) and reported using condoms and bleach more frequently.
Conclusions. Significant high risk behaviours exist among the Victoria street population. A high level of AIDS knowledge was not linked to behavioural risk. Preliminary evidence suggests the street counsellors may be able to reduce high risk behaviour. Future research would investigate this.

Professionnels de la santé
Health Care Professionnals

D.621

D.622

PRESENTATION D'UNE BROCHURE EDUCATIVE A L'INTENTION DES PERSONNELS DES ETABLISSEMENTS DE SOINS

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* Médecin du travail, ** Praticien hospitalier, *** Surveillante hygiéniste,
**** Infirmière générale, FRANCE

Objectif : répondre aux interrogations des agents sur l'infection HIV, en des termes simples, compréhensibles par tous.
Méthode : recenser, pendant un an, les questions lors des consultations de médecine du travail à l'hôpital Claude Bernard, et par autoquestionnaire ouvert à l'hôpital Bichat (400 réponses)
- les classer par catégories professionnelles,
- reprendre ces questions dans une brochure et s'efforcer que chaque agent soignant ou non y trouve une réponse adaptée à sa tâche.
Résultats : un fascicule de poche : "SIDA REPONSES AUX QUESTIONS DU PERSONNEL DES ETABLISSEMENTS DE SOINS", comprenant 85 questions-réponses, illustré, a été d'abord diffusé aux 3 000 agents du groupe hospitalier à titre de test (questionnaire d'évaluation joint à retourner). L'analyse des réponses [illegible] en cours et permettra de modifier, si nécessaire, le contenu de la brochure avant diffus[illegible] plus large à tous les personnels de l'Assistance Publique de Paris (65 000 agents), voire à d'autres établissements ou entreprises.
Conclusion : les premiers résultats de l'évaluation permettent de conclure que ce guide répond à l'attente des agents et permet de toucher rapidement un grand nombre de personnels de catégories professionnelles variées.

D.623

SURVEILLANCE ON OCCUPATIONAL EXPOSURE TO HIV AMONG HEALTH-CARE WORKERS IN ITALY.

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Objective.To evaluate the frequency of seroconversion in health-care workers exposed to HIV.
Methods.During a 22-months period,from March 1987,641 health care workers who had been exposed to potentially infectious body fluids were screened for anti-HIV by an ELISA test.Risk factors other than occupational were excluded. 298 cases who had been exposed to anti-HIV positive blood or to unknown body fluids (227 with history of needlestick and 71 who reported contamination of mucous membrane or nonintact skin) were followed up to 12 months after exposure.
Results. At first testing all subjects were HIV seronegative.Updated results of follow-up screening are shown in the table:

Type of exposure	N° cases during follow-up				HIV seroconversion
	1mo	3mo	6mo	12mo	
Anti-HIV+ blood(221)	217	116	83	21	0
Unknown body fluids(77)	64	45	37	28	0

Conclusions. These data show that accidental needlestick is by far the most common type of exposure to HIV reported by health care workers in our area. None of cases tested was seropositive at presentation and none became seropositive after exposure to blood who was known to be anti-HIV positive.

D.624

THE EFFECT OF A DEDICATED AIDS UNIT ON HOUSESTAFF ATTITUDES TOWARDS AIDS.

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Objective: A number of previous studies have revealed housestaff anxieties and career changes due to the AIDS epidemic. This study was undertaken to demonstrate the impact of a rotation on a dedicated AIDS unit upon these attitudes.
Method: Interns from the Department of Medicine in a 1000 bed urban teaching hospital with a large AIDS population completed an original questionnaire at the end of their one month rotation on a 12 bed AIDS unit opened in July, 1988. The 18 item multiple choice and Likert type scale questionnaire was designed to assess the influence of this experience on attitudes towards caring for AIDS patients, fear of contagion, career decisions, and treatment options. To assure anonymity, demographic questions were not included, and results were not tabulated until all forms had been collected.
Results: We report on the first 6 monthly rotations from 7/88 to 12/88 of this continuing study. Eighteen questionnaires were completed for a return rate of 100%. A significant majority (95%) described the rotation as valuable, however of these, 78% felt the rotation should be elective rather than required. Over half of the respondents reported a positive effect on their attitudes towards caring for AIDS patients. The rotation had no significant impact on fear of contagion as 22% reported increased fear and 28% decreased; the rest were unchanged. When questioned about the influence of the AIDS epidemic on their future professional plans, 44% claimed they were less likely to remain in internal medicine and 50% felt less likely to practice in New York City. Only two interns claimed the rotation directly influenced their career decisions. Nearly 3/4 of the interns felt the dedicated unit was the best way to provide care for AIDS patients.
Conclusion: The AIDS epidemic is having a profound, often negative effect, on the recruitment, training, and attitudes of medical housestaff. Our study suggests that the establishment of a dedicated AIDS unit in a major teaching hospital may have a positive influence on this trend.

D.625

KNOWLEDGE, ATTITUDES AND BELIEFS OF PHYSICIANS REGARDING HIV INFECTION IN A LONDON HEALTH DISTRICT.

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**Department of Public Health Medicine, Islington Health Authority, London England

Objective. To assess knowledge about, and attitudes towards HIV amongst hospital and primary care physicians in the Health District of Islington.
Methods. A self-administered postal questionnaire was distributed to all physicians in active medical practice within the Health district of Islington. Twenty questions were designed to seek details about: sources of information on HIV; quantification of degree of risk of infection from various activities; extent of contact with infected patients; and attitudes to confidentiality and counselling of patients.
Results. The data collected were stored in a VT103 computer and analysed using the minitab programme. 376 questionnaires were sent out; 293 (78%) were completed and returned after two reminders. Preliminary analysis suggests that medical journals were the most important source of information about HIV. 52% of hospital doctors but only 16% of primary care physicians had had regular contact with HIV infected patients. These physicians had higher levels of knowledge about HIV infection and were more likely to oppose routine screening or testing for antibodies to HIV without contact. Younger doctors were more up to date with specialist thinking on HIV than older associates.
Conclusions. Comprenensive results will be available by April 1989. Preliminary findings accord with those of other researchers in the U.K.

D.626

AIDS-RELATED KNOWLEDGE, ATTITUDES AND BEHAVIOR OF NURSES AND HOSPITAL ADMINISTRATORS: A COMPARATIVE ANALYSIS

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Objective. To describe differences and similarities of AIDS-related knowledge, attitudes, and behaviors between registered nurses (RNs) and hospital administrators (HAs) located at one hospital.
Methods. In September 1987 an anonymous survey was delivered to all RNs and HAs at a 455-bed acute care teaching hospital. Included in the survey were scales measuring AIDS-related knowledge, attitudes, behaviors, homophobia, and homosexual bias, and items measuring other variables.
Results. Responses were obtained from 77 administrators and 629 registered nurses. The sample was 98% caucasian, 93% female, and mean age was 37.2 years. HAs were more likely to be male than RNs ($p < .000001$). Analysis revealed that the RNs and HAs did not differ in their AIDS knowledge, self- reported behaviors in relation to AIDS patients, or level of homophobia. As a group, HAs possessed a slightly higher AIDS-attitude score, a scale measuring positive attitudes towards PWAs ($p< .01$), and also demonstrated a slightly lower level of bias against homosexuals ($p<.05$). HAs were more likely to indicate confidence in the AIDS information given to the public ($p < .01$). In all, 82% of the HAs and 95% of the RNs indicated willingness to attend a 1-hour AIDS inservice program if this was offered.
Conclusion. It seems plausible that RNs would demonstrate a greater AIDS knowledge than HAs, and that the AIDS-related attitudes and behaviors of RNs would be at least equal to that of HAs. This was not true in this sample, possibly due to the RNs' higher level of patient contact, thereby increasing fear. It is noteworthy that HAs demonstrated a higher level of confidence in AIDS medical information than RNs. Since most RNs and HAs in this and other settings are likely willing to attend AIDS education programs, these programs should be provided in a manner which promote trust in the information provided. Methods to increase trust in AIDS information require further study.

D.627

IMPLEMENTATION AND EVALUATION OF UNIVERSAL PRECAUTIONS IN A LARGE COMMUNITY HOSPITAL

Lampson, Judith; Klimek, J.; Malo-Schlegel, S.; Traficanti, K., York, E.; Cooper, B. (Hartford Hosp., Hertford, CT, USA)

Objective. To develop and test a model educational training program for the prevention of blood borne diseases in health care settings.
Methods. It has been recommended that blood and body fluid precautions be consistently and universally used by health care workers (HCW) for all patients. The concept of "universal precautions" (UP) is a substantial departure from routine, established practices in the hospital and has generated confusion and indecision among HCW, administrators and educators. An educational program was developed for all HCW. Mandatory educational sessions, using video tapes, question and answer periods and a specially prepared brochure, were provided to all employees. A hospital wide advertising campaign using posters and newsletters announced the program. Teaching methods are being evaluated by post-education tests, followup surveys and by direct observations of HCW on the job utilizing "duck-blind" methodology. Employee needlestick occurances and other documented exposure to blood and body fluids will be reviewed. Cost implications of UP will be determined by comparing cost after UP to standard ("disease specific") isolation procedures.
Results. The educational program and evaluation activities are in progress. Dialogue with disciplines most effected by UP (OR, Laboratory, Nursing) has refined details and enhanced acceptance. Cost estimates on UP to date exceed $1.6 million for materials and personnel.
Conclusion. UP implementation can be expensive and disruptive, and should follow thorough planning and preparation.

D.629

HIV/AIDS PROFESSIONAL EDUCATION: PROGRAM DEVELOPMENT AND EVALUATION FOR PHYSICIANS, NURSES AND SOCIAL WORKERS

Hurley, Patricia M.; Malgady, R.; McGriff, E. and Grossman,A.
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Objective. To develop and evaluate a comprehensive program of AIDS education for primary care physicians, nurses and social workers.
Methods. A basic core curriculum (e.g.,immunology, epidemiology/virology, opportunistic infections) was developed and has been revised by clinicians and faculty experienced in HIV/AIDS care. Modules developed focus on minorities, nutrition, intravenous drug use, medicine, nursing and social work disciplines. Interventions included one- two- and five-day workshops, conferences, seminars and a lecture series.
Results. Since 1987, over 6,000 health professionals from New York, New Jersey, Connecticut, Puerto Rico and the Virgin Islands have participated. Pre- and post-tests of knowledge, attitudes, anxiety about working with AIDS patients, and satisfaction with the educational programs were administered. Results indicated that participants demonstrated significant increase knowledge, more positive attitudes, reduced anxiety and high levels of endorsement of the program. Findings varied by participants' prior personal and professional experiences with AIDS, and with geographic location (high/low incidence areas) and profession.
Conclusion. This program has effectively reached a significant number of health professionals in an area of high AIDS prevalence. It has been favorably received and has impacted on professional behavior. Geographic location, as a factor in the level of education needed to maintain HIV expertise, needs further exploration.

D.631

DEVELOPMENT AND RESULTS OF A NEEDS ASSESSMENT SURVEY FOR HEALTH CARE PROFESSIONALS AT A MUNICIPAL HOSPITAL.

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Objective: To determine attitudinal and/or cultural factors that influence the care administered to HIV-infected patients. This was of particular interest since the HIV-infected population at this institution primarily consists of intravenous drug users (IVDUs) and of minorities.
Methods: Informally, we found out that the general consensus was that AIDS patients were stigmatized by the risk factors that cause the disease. As a result of these discussions, we decided to formally assess the attitudes of the health care givers and base our educational approaches on the results. Incorporated into the survey were questions to determine what areas they wanted to learn more about, including behaviors and psychodynamics of homosexuality and I.V. drug abuse. We also included questions regarding the ethnicity of the medical house staff/nursing staff in order to determine if cultural and societal attitudes were influencing attitudes towards the AIDS patients.
Results: The survey was pre-tested among a group of doctors and nurses who cared for the most AIDS patients before implementation. The results of the pre-test indicate strong feelings about the personality and behavior of the IVDA that negatively influences care.
Conclusion: The full results of the survey among medical house staff and nursing staff will be presented.

D.628

ESTIMATED RISK OF HIV INFECTION AMONG SURGEONS PRACTICING IN THE NEW YORK CITY AREA.

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Objective. To estimate the occupational risk of HIV infection in surgeons.
Methods. Surgeons from several hospitals in the New York City area were surveyed by telephone or by mail between July and October 1988 regarding puncture wound injuries occurring within the past 1 year.
Results. 100 (91%) of 110 surgeons contacted by phone and 102 (53%) of 191 contacted by mail agreed to participate. Since there were no significant differences in responses of the 2 groups, the data were combined. 173 (86%) reported at least 1 puncture injury within the past 12 months, with a median of 2 injuries per year. 76% of injuries occurred during surgery with a median injury rate of 4.2/1000 operating room hours. 53% of all injuries involved the index finger of the non-dominant hand. Injury rates were independent of age, sex, type of practice, operative work load, or type of hospital.
Conclusion. If the prevalence of HIV infection in surgical patients is 5% and if the rate of HIV seroconversion per puncture injury is 0.42%, then the estimated average 30 year cumulative risk of HIV seroconversion per surgeon is 1-2%. This risk could be reduced by approximately 50% if an apparatus were developed to protect just the index finger.

D.630

USING LEARNING DOMAINS TO TRAIN HEALTH CARE WORKERS (HCW)

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Objective: To help trainers improve health care workers learning in three domains; cognitive, attitude and skills.
Methods: Analysis from observations of over 50 training programs conducted between 1985 and 1988 for multi-discipline health care workers. Programs (experiential exercises and small group discussions) were conducted in community settings and health care facilities. Observations included participants' and conductors' comments and written evaluations of training programs.
Results: COGNITIVE ISSUES, 1) "What is believable?" Obtain information from credible sources. Acknowledge the unknown. Stress the consistency of new and existing information, development of expanded knowledge base. 2) "How much occupational risk is there?" Inform on research of HCW exposures vs infections, compare to other diseases and other risks HCW accept. ATTITUDINAL ISSUES, 1) "This disease is scary." Acknowledge fears and concerns of HCW and their families before trying to change them. 2) "People who get HIV are bad people." Challenge personal biases, promote tolerance for differences. 3) "It's not my responsibility to work with these people." Develop and/or reinforce professional ethics. 4) "They can't change their behavior." Reinforce belief in ability of people to change; HCW can adopt universal precautions, change attitude; patients can change risk behaviors. 5) "People like me don't get HIV." Identify and acknowledge HCW personal risk. 6) "This is depressing." Convey hope in scientific research, explore potential of disease to transform patient and HCW, reinforce acceptance of HCW's limits and spiritual needs. SKILL ISSUES, 1) "I don't have the skills." Reinforce ability of HCW with training, emphasize adoption of universal precautions, identify relevance of prior skills, provide role models. Conclusion: Research is needed to substantiate the commonality of these learning issues and the value of techniques to provide their resolution.

D.632

SOURCES OF STRESS AMONG AIDS CAREGIVERS

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Objective. To determine common sources of stress among AIDS caregivers.
Methods. Participants in "care for the caregiver" workshops were surveyed by self-administered questionnaire to identify sources of perceived stress in the provision of AIDS care.
Results. Although a wide range of health care providers were targeted by these workshops, physicians chose less frequently than did nurses and mental health professionals to attend. Most commonly cited sources of stress were (1)organizational problems; (2)lack of resources; (3)loss of friends/loved ones; (4)distress associated with death and dying; (5)inability to set limits on work; (6)overidentification with patients; and (7)feelings of helplessness/inadequacy.
Conclusions. AIDS caregivers experience in common several sources of stress in their work. Limitations in organizations' capabilities of responding to the demands of the AIDS crisis are perceived to be as stressful as the emotional demands of patient care.

D.633

THE EFFECTS OF AN EDUCATIONAL PROGRAM ON CHANGING DENTAL CARE WORKERS ATTITUDES AND KNOWLEDGE REGARDING HIV

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Objective. To assess the change in dental care workers attitudes and knowledge about HIV after attending an educational seminar.
Methods. Dental care workers were invited to attend a 3 hour seminar which provided information on transmission, etiology and epidemiology of HIV, oral manifestations of HIV and infection control protocols. Sessions were limited to 20 participants, each of whom were administered a pre and post test.
Results. Completed pre and post tests were received from 117 participants. Knowledge and ability to identify HIV related oral lesions improved significantly (pre 17.7 vs post 45.3). Dentists were less apt to support an individualistic position regarding their right to decide to treat HIV patients (pre 84.6% vs post 56.6%) and were more likely to accept standards of care set by professional organizations (pre 58.1% vs post 71.0%). Change in risk perception was not significant although slight positive changes were seen in general attitudes about HIV.
Conclusion. The seminar was effective in educating dental care workers about the oral manifestations of HIV and changing attitudes about professional obligation. The seminar was less effective in changing general attitudes about HIV and perceived risk of transmission. Future seminars should include a stronger psychosocial component.

D.634

AIDS Education and the Health Worker: A Planning Workshop

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Objectives: (a) Share information about education of health workers in countries of high prevalence of AIDS/HIV; (b)identify critical issues--e.g. curriculum, delivery systems, social & occupational context; national information campaigns; (c)establish global linkages between AIDS health professional educators; (d)formulate an action plan & an organization for continuing communication & development & evaluation of educational methods.
Methods: Two to 2 1/2 hour planning workshop. Panel participants will outline programs, issues, and impact evaluations of specific programs or problem areas. Scholars, public health officials, & health workers at the conference will participate in developing the action plan.
Results: Discussion will include: (a)Current knowledge about education of health workers to deal with HIV issues. (b)Surveys and curriculum of programs to provide information and inform attitudes and behavior of health workers with regard to AIDS. (c)National & small scale training programs & educational delivery systems. (d)How health workers are prepared to deal with HIV infection in terms of stress and patient outcome. (e)Reaching & helping health workers to deal with AIDS & HIV related issues, e.g. access and receptiveness of health workers, belief systems and emotional reactions, & institutional commitments. (f)Local, national, & international structures needed to insure adequate preparation of health care workers as well as ongoing information.

D.635

TEAM-BASED MODEL: AIDS TRAIN THE TRAINER PROGRAM FOR HEALTH CARE PROFESSIONALS

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Objective. To describe and evaluate a model AIDS Train the Trainer Program for teams of health care providers in hospitals.
Method. The Massachusetts Hospital Association in conjunction with the Massachusetts Department of Public Health and The New England AIDS Education and Training Center designed and implemented a team-based AIDS 101 training program for health professionals in areas such as infection control, nursing, social services, etc. Seven two-day training programs were conducted for 152 participants from 34 hospitals. The training combined a cognitive-developmental approach with substantive content in the following areas: support for the care giver, educational principles, HIV testing, clinical information, personal and occupational transmission and risk reduction, and psychosocial issues. A comprehensive manual, mirroring the program, was developed to provide a resource for the participants.
Results. Pre and posttesting indicated positive change across all content areas. Periodic follow-up workshops revealed that the teams of trainers implemented a variety of activities: formal and unit-based programs, support groups, and one-on-one interventions as AIDS resource specialists.
Conclusion. A developmental, team-based approach to a Train the Trainer program, which involves the hospital administration in the selection of a representative team, can strengthen the likelihood that training activities are brought back to the hospital.

D.636

ATTITUDES AND BEHAVIOURS OF HOSPITAL PERSONAL : EVALUATION OF THE AIDS PREVENTIJON CAMPAIGNS IN SWITZERLAND

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SWITZERLAND

Medical staff in hospitals plays an important role in patient care and in assuming opinion leadership within the population. AIDS related attitudes and behaviours of medical personal may positively or negatively affect the course of AIDS prevention. Estimation of professional and private risk of contamination is an important attitude to evaluate.
Methods. Data have been collected within 13 departments (emergency, surgery, delivery, general care, AIDS-centers) of different sized hospitals in Switzerland in 1988, using focus groups discussion combined with an individual questionnaire.
Results. The staff overestimate the risk of contamination at workplace and has insufficient knowledge. Health personal doesn't downplay, however, risk in private life situations. The fears of contamination while being in touch with AIDS patients diminish as experience with such cases increases. Major concerns of AIDS-experienced professionals in general care units relate to adequate care. Fears are still present in departments such as emergency, surgery and delivery rooms. The staff of these services attempts to identify HIV+ patients on the basis of their belonging to a risk group. This may lead to stigmatisation problems.
Conclusions. AIDS cases are well taken care of in general medical units. Overestimation of the risk of contamination at work may create problems regarding quality of care. Such inadequate attitudes may also influence negatively AIDS prevention in general. Information and support for medical care taking units are to be improved.

D.637

D.638

EMOTIONAL ASPECTS OF THE RELATIONSHIP BETWEEN MEDICAL STUDENTS AND AIDS PATIENTS AT A UNIVERSITY HOSPITAL.

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Objective: To improve the relationship between medical students and AIDS patients in a University Hospital ward.
Methods: Study conducted in a general medicine ward, where up to 50% of the 22 patients load is occupied by AIDS patients. Third-year medical students initiating hospital practice participated, during their first 6 months in the ward, in weekly psychosomatic sessions which focused on the student/AIDS patients relationship. The program was based on the spontaneous development of discussions, sugestions and elaboration of material coming from the group itself. The group was formed by 8 to 10 third-year and 1 to 2 sixth-year students and 1 staff cardiologist with personal experience in psychoanalisis as the co-ordinator.
Results: Initially the group discussions centered around complaints and feelings of anger and revolt directed towards the health team in charge of the care of AIDS patients. It was decided that the students should attempt to write down their complaints. The coordinator tried to elaborate and examine thoroughly the group emotions that surfaced: prejudice against homosexual patients, fear, guilt and frustation related to the disease and to the terminal phase. After 2 months it was possible to observe an important change in the reports with an increasing awareness of the patients feelings and the development of a warm caring relationship with them. The improvement of the students performance was noticed and remarked upon by other members of the health team who were unaware of the group discussions.
Conclusions: The existence of group discussions with medical students in charge of AIDS patients where the emotional aspects can be throughly examined and discussed is very important for the improvement of the relationship and the better acceptance of these patients.

D.639

CARE FOR THE CAREGIVERS - A TRAINING MODEL

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Objective. To develop an educational vehicle which addresses the stress experienced by those who provide AIDS care over time.
Methods. Simple techniques in recreational and drama therapy have been integrated into a workshop format. These techniques are used to facilitate discussions among participants focusing on feelings of sadness and exhaustion, as well as inherent rewards that are related to the AIDS crisis.
Results. A two hour didactic and experiential, insight-oriented workshop which addresses the psychosocial needs of health care providers who work in AIDS has been developed and used with over 1,000 participants in eight countries. During the course of the workshop, providers learn to recognize sources of stress as well as acknowledge rewards in their work. Participants are able to use these methods and techniques as well as adapt the model from the prospective of their own training and discipline for use in their own professional and paraprofessional settings.
Conclusion. On-going support and care for AIDS caregivers is vital to the process of reaffirmation, commitment to work, and work productivity, in AIDS service delivery systems.

D.640

IMPROVING THE SKILLS OF HEALTH CARE PROVIDERS WHO TEACH

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The University of Washington AIDS Education and Training Center Program (AIDS ETC) was established in 1987 to prepare health care workers to teach others about HIV/AIDS. In addition to content on HIV/AIDS, the program offers instruction using the AIDS Teaching Skills Curriculum. This curriculum includes chapters on Creating a Climate for Learning, Curriculum Design and Planning, Teaching Methods, Preparing Visual Aids, Recognizing and Responding to Resistance, Leadership and Training Styles, and Delivery. Each chapter contains lecture material, visual aids and suggested learning activities, each designed to prepare participants to provide effective HIV/AIDS instruction to health care professionals. Approximately one-half of the week-long course is devoted to the AIDS Teaching Skills Curriculum and teaching concepts. To date, 250 providers have attended. Examination of the instructor training course is underway. The curriculum package and evaluation results will be displayed during the poster session.

D.641

UTILIZING MEDICAL STUDENTS IN A UNIVERSITY-BASED COMPREHENSIVE AIDS EDUCATION AND COUNSELING PROGRAM

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Objective. To successfully involve medical students in the delivery of AIDS/HIV educational and counseling services as part of the academic program.
Methods. First, second, and fourth year medical students at Vanderbilt Medical School were enrolled in the elective course, AIDS Education and Prevention. This course is coordinated through the Vanderbilt AIDS Project and involves a two-day intensive seminar, weekly supervision sessions, and bibliography. The practice section includes curriculum development, providing education programs, and working with symptomatic HIV clients. Course content includes epidemiology, medical and psychosocial aspects of HIV infection, legal and ethical concerns, human sexuality, and counseling and education methods.
Results. 100 medical students have participated in this program since 1985. Student evaluations indicate the program has increased their knowledge of AIDS/HIV, human sexuality, and pyschosocial issues. The program has also provided them with practical counseling and patient education methods which will be of value in later practice.
Conclusion. Medical students should be provided with an opportunity to participate in AIDS education and counseling as part of their academic program. Such courses should be focused on practice issues and well supervised.

D.642

RELUCTANCE OF HEALTH CARE WORKERS TO TREAT AIDS PATIENTS - AN ANALYSIS

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Objective: To evaluate association between willingness to work with AIDS patients and knowledge of how AIDS is transmitted, ethical beliefs, and fear of contagion.
Methods: Ninety health professionals were surveyed about their willingness to work with AIDS, their attitudes towards AIDS related ethical issues, and understanding of AIDS epidemiology.
Results: 34.4% of respondents expressed reluctance to work with AIDS patients. This was significantly associated with a belief that working with AIDS increased risk for the disease, a belief that health professionals should have the right to refuse to work with AIDS patients, and an unwillingness to treat homosexuals and I.V. drug abusers. No significant differences were noted between those willing and unwilling to treat AIDS patients with regards to professional status, demographics, understanding of how AIDS is transmitted, compassion for AIDS patients, or agreement with certain basic principles of medical ethics.
Conclusion: Reluctance to treat AIDS appears to be based on irrational fears of contagion rather than ignorance about the epidemiology of the disease or a lack or ethics. AIDS education of health professionals should include strategies to reduce fear and to humanize the AIDS patient.

D.643

AIDS EDUCATION AND TRAINING FOR HEALTH CARE PROVIDERS IN VIRGINIA

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Objective. To plan, implement, and evaluate a program of AIDS education and clinical training tailored to the needs of health care providers throughout Virginia.
Methods. Through cooperation with the Virginia Department of Health and the Mid-Atlantic AIDS Regional Education and Training Center, a multidisciplinary team of trainers with expertise in the care of HIV-infected patients was organized with specialties in infectious diseases, psychiatry, social work, substance abuse, nursing, counseling, dentistry, obstetrics-gynecology, and pediatrics. Outreach, publicity, and program planning was accomplished with the assistance of professional organizations and state hospital associations. Free educational programming is available to physicians, counselors, social workers, nurses, prehospital care providers, support staffs, funeral directors, and students in all health fields. A comprehensive baseline needs assessment encompassing knowledge, beliefs, and attitudes was completed by the University's Survey Research Laboratory for physicians, dentists, counselors, nurses, emergency care workers and funeral directors.
Results. Between Jan. 1, 1987, and Dec. 31, 1988, over 15,000 health care workers in Virginia received AIDS educaiton and training tailored to their individual areas of interest and level of need. Serial surveys are planned on a biannual basis to evaluate the effectiveness of the educational intervention, identify program changes needed, and develop impact objectives for subsequent years.
Conclusion. A comprehensive AIDS education program can address the needs of health care workers from a wide range of fields. When combined with ongoing needs assessments and evaluation, such a program can be modified to address specific educational needs as these change over time.

D.644

ANALYSE DES COMPORTEMENTS BIOLOGIQUES ET MEDICAUX FACE A LA RELATION SEROPOSITIVITE TOXICOMANIE (ENQUETE DANS LA REGION ILE DE FRANCE)

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Objectifs.Analyser au niveau du Département de l'Essonne, l'implication des Praticiens dans l'accueil et le suivi des sujets HIV séropositifs et toxicomanes.Proposer des solutions aux problèmes rencontrés par nos confrères.
Méthodes.L'Association HIV 91 a mis en place en Décembre 88, grâce à une subvention du Ministère de la Santé et à la collaboration de la Direction Départementale de l'Action Sanitaire et Sociale, une enquête adressée aux 2592 Confrères (Médecins et Biologistes) de l'Essonne.Un système de gestion de données type DBase (PC compatible XT, disque dur File Card 30 Mo Western) permet d'évaluer des filières de soins médicaux et d'apprécier les problèmes rencontrés avec les tests biologiques.
Résultats.Le taux global des réponses est élevé (48 %).Pour le questionnaire Médical 65 % des généralistes et 35 % des spécialistes ont répondu.Parmi eux 45 % suivent des séropositifs, 30 % des toxicomanes. La fuite du malade et les pathologies intercurrentes sont les difficultés majeures.Pour le questionnaire Biologique 1/4 ne sont pas concernés, 30 % pratiquant le dépistage assurent la confirmation par Western Blot.Les problèmes sont posés par les faux positifs et le dialogue avec le patient.Une lettre d'informations,régulière, est souhaitée par la majorité des Praticiens.
Conclusion.Le taux de réponses très important à cette enquête confirme la nécéssité de mettre en oeuvre une action associative et pluridisciplinaire.

D.645

MULTIDISCIPLINARY AIDS TEAM ROLE IN MORALE AND STRESS REDUCTION AMONG HEALTH CARE WORKERS (HCWS)

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Objective. To describe a multidisciplinary team's role in maintaining morale and reducing stress among AIDS HCWs.
Description. Complexity of AIDS clinical care requires expertise from many disciplines and is associated with HCW stress. Stressors include: cruelty of AIDS, youth of patients(pts), inadequate social and family resources, issues of confidentiality, discrimination, discomfort with patient life styles, ethical dilemmas, death and dying, unrealistic expectations, fear of infection, sense of isolation, and lack of resources.

Over the past 6 yrs, a multidisciplinary AIDS team, initially formed to provide pt care, has functioned to reduce stress and provide support for HCWs. The core team consists of MDs, MSWs, RNs joined by psychiatrists, nutritionist, lawyers, and clergy. Functions include: 1. creation of group identity 2. stable leadership 3. frequent meetings to educate, foster trust, optimism, cooperation and communication 4. allow expression of feelings including grief 5. promote cross cultural awareness 6. support research and attendance at professional meetings to enhance personal growth and sense of achievement 7. memorial services for patients 8. social events to promote cohesiveness 9. permission to care for oneself as priority.
Conclusion. An AIDS clinical care team can enhance staff morale and reduce stress by formal and informal group mechanisms, but requires commitment to team building and maintenance from the onset.

D.647

AIDS & HEALTH CARE GIVERS: KNOWLEDGE, ATTITUDES AND INFECTION CONTROL PRACTICES

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Objective. To determine the knowledge, attitudes and infection control practices among health care givers.
Methods. 241 health care givers, consisting of registered nurses, licenced practical nurses, nursing assistants and technicians, medical technologists and phlebotomists, responded to an AIDS survey in a South Carolina hospital. Scores for knowledge, attitudes and infection control practices were calculated. Data were analyzed using stepwise regression , one-way ANOVA and Tukey's multiple comparison procedure.
Results. In general, knowledge about AIDS appears to be high among these health care givers. However, they still have fear and increased risk perception concerning AIDS. 32 to 72% of the various study groups believed that they can get AIDS by taking care of AIDS patients. Over 60% of the respondents reported that they would prefer to avoid caring for people with AIDS. Only 51 to 64% of the participants wear gloves at all times.
Conclusion. Although health care givers in this study were quite knowledgeable about AIDS, they exhibited fears and increased perceived risk of acquiring HIV infection. A substantial number did not follow the universal precautions recommended by C.D.C..

D.649

SUPPORT FOR STAFF ADDRESSING HIV/AIDS ISSUES IN A DRUG REHABILITATION CENTRE.

Mary Burgess, King's College Hospital, London, U.K.

Objective: To enable staff at a drug rehabilitation centre to identify sources of stress arising from their treatment of clients with HIV/AIDS and to generate management solutions.
Methods: A facilitated support group was set up for all staff, many of whom are themselves ex-users. Forthnightly meetings were held over a six month period.
Results: The principal causes of stress were found to be
(i) ORGANISATIONAL- poor communications; outmoded operational policies.
(ii) CLINICAL - relating HIV to drug abuse: the need to address death; loss of ability to reassure clients about better health after drugs.
(iii) INDIVIDUAL - feeling de-skilled; fear of infection; feeling isolated; quiet over own past drug use.
Solutions included setting up formal and informal forums to ventilate problems. Attempts were also made to clarify stall roles. A training programme was implemented, both to provide clinical updates and to address counselling issues surrounding death. As a result of the group, staff reported feeling better able to acknowledge and control stress.
Conclusion: Staff support groups can be seen as a useful forum for problem solving.

D.646

D.648

HIV EXPOSED HEALTH CARE WORKERS AT MSKCC

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Memorial Sloan-Kettering Cancer Center, New York, New York, U.S.A.

Objective. To examine compliance of Health Care Workers (HCW) to CDC guidelines for significant exposure (SE) to HIV infected patients.
Methods. All HCW reporting significant exposures (needlestick or mucous membrane) to employee health service between June 1986 and December 1988 were referred to an Infectious Disease nurse for interview and follow-up.
Results. Of the 46 referred 11 refused any follow-up, 20 continued follow-up for one year, 25 requested HIV testing, all were negative. The total number of reported SE including known HIV exposures was 418. We suspect under reporting of all SE including those involving patients with HIV infection.
Conclusion. Fewer than one-half of HCW who report SE comply with follow-up. Reasons may include: concern for lack of confidentiality, inconvenience, knowledge deficit, and fear of results. A need for education about risks of needlesticks and methods of reducing the number of occurrences is seen. Concerns about confidentiality need to be addressed.

D.650

NEEDS ASSESSMENT OF STAFF AIDS EDUCATION PROGRAM IN TERTIARY CARE AND INNER CITY COMMUNITY HOSPITAL

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Objective. To develop an AIDS staff education program in 2 hospitals serving East Harlem, an inner city community: Mount Sinai Hospital, a tertiary care center and North General Hospital, a minority-run community hospital.
Methods. A comprehensive needs assessment was performed at both sites by 2 AIDS Education Coordinators through interviews of staff in selected hospital areas, which serve the targeted high risk population, women of childbearing age. A broad spectrum of health care providers and workers were interviewed ranging from physicians and nurses to social workers and clerks.
Results. Greater than 200 staff were interviewed. Despite more extensive prior staff training in the tertiary care center, gaps in basic AIDS knowledge were found. Most staff were concerned about their risk of AIDS transmission regardless of their knowledge level. With the stress of working with high risk patients and with the changing role of staff toward education and counseling, there was a great need identified for ongoing staff support. The need for linkages with other AIDS education activities in the hospital and community was voiced.
Conclusion. An effective AIDS staff education program requires intensive planning and must be responsive to documented staff needs. Staff knowledge should not be overestimated, and training must go beyond information to staff support. The curriculum will be organized in modules and will be customized to the needs of the particular staff of each hospital area. (This effort was funded by the Alfred P. Sloan Foundation).

D.651

A SUPPORT GROUP CAN HELP PRIMARY CAREGIVERS KEEP PACE WITH THE INCREASING IMPACT OF THE HIV EPIDEMIC

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Objective: To describe a multidisciplinary support group of health care providers working with people with AIDS in a primary care group practice within a general medical hospital.
Method: A 15 member group of clinical and administrative personnel met with a mental health group facilitator for 15 weeks. The members discussed their personal experiences with HIV infected patients presently in their caseload.
Results: Sessions included both educational and emotional content, focussing upon both personal and professional concerns such as: feelings about and lack of knowledge regarding alternative lifestyles, IV drug use, or cultural differences; ethical and moral concerns raised by treatment decisions; the impact of the rapid growth of information and technology; and their feelings about caring for people their own age or younger with a terminal illness.
Conclusion: Caregivers who had previously felt isolated, overwhelmed by their experience, and worried about the impact of their own emotional experiences expressed feelings of greater support and community, and an increased interest and capacity to care for people with HIV infection.

D.652

DENI DE LA REALITE ET FORMATION DES PROFESSIONS DE SANTE

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Objectif analyse du déni de la réalité par les professions de santé
Méthode mesure statistique des demandes d'information, évaluation des demandes de formation, évaluation du comportement et des connaissances des stagiaires en cours de formation, questionnaires
Résultats
1) Le déni de la réalité du problème du sida par les professions de santé suit exactement l'attitude de la population générale et son évolution. Le corps médical n'a, au regard de ses responsabilités, ni une connaissance sérieuse de la maladie, ni un meilleur comportement psychologique, et ne perçoit que très vaguement la complexité des situations auxquelles il risque d'être confronté
2) Ce déni, comme celui de la population générale, est fonction de la situation médiatique, mais le statut de savant du médecin le conduit à relativiser le problème pour lutter contre ses propres inquiétudes: peur de l'épidémie, crainte de ne pouvoir y faire face avec ses connaissances, sentiment que les frontières entre les différentes parties du corps médical perdent leur consistance
3) Le déni de la réalité dans les professions de santé est proportionnel au manque de formation adaptée au problème du sida: information insuffisante au niveau universitaire, hésitation et imprécision de la "grande" presse médicale, soumise au même stress que les individus; les conférences ne rattrapent pas certaines lacunes scientifiques et n'atténuent pas le stress psychologique; la formation continue ne prend pas en compte les problèmes sociaux, juridiques, éthiques rencontrés par les médecins; les stages intensifs sont encore construits sur le mode du rattrapage hâtif, où le technique stérilise maladroitement le psychologique et le vécu
Conclusion Seule une conception globalisante de la formation, intégrant tous les paramètres à tous les niveaux, et anticipant la demande du public général évitera une situation de rupture dans les années à venir

D.653

EFFECTS OF HIV AND AIDS WORK ON STAFF INVOLVED IN CARING

L Sherr - St Mary's Hospital/Roehampton Institute: H George - St Mary's, London, U.K.

Introduction - Staff Stress and burnout has been well documented. HIV involves health care staff in screening, clinics,counselling and high intensity care. This study examined the impact on staff, how they coped and to see if coping styles and avenues were predictive of adjustment to stress.
Method - Twenty one staff from front line work in the area of highest incidence in London completed the study investigation. Mean age was 28.6 yrs (range 23-40). Mean work with AIDS/HIV was 16.1 mths. Mean years of qualification was 8.4 years. Staff rated current stress, coping avenues and perceived and experienced stressors.

Results - No subjects were unstressed - 29% fairly,38% moderately and 33% very. All subjects found it desirable to seperate work and outside life, yet one fifth were not very effective at doing this. No subjects turned to groups outside the hospital for support. This has important implicatons for service provision. Low stress subjects attended educational courses whereas high stress subjects did not (mostly used crisis intervention). Educational courses may provide stress innoculation or may be the choice of input for low stress subjects. Information is a key tool in this area and such groups may be ways of equipping staff or provide a forum for informal networks. Stressors were varied. Although they were associated with the death of a patient and ill patients and relatives, a considerable proportion of stressors were associated with interpersonal and practical issues which could easily be addressed.

D.654

COOPERATION BETWEEN PHYSICIAN AND PSYCHOLOGIST : AIDS - A CALL FOR PSYCHO-SOMATO-SOCIAL TEAMWORK

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FEDERAL REPUBLIQUE OF GERMANY

Objective. To describe several ways of cooperation between physicians and psychologists caring for HIV-seropositive persons and AIDS-patients.
Methods. 100 physicians and psychologists completed an inventory asking (1) for their experiences with HIV-positive persons and (2) their expectations of the other profession.
Results. 40% of the psychologists and 95% of the physicians had experiences with the treatment of HIV/AIDS-patients. No significant differences were found in both groups' judgements of the importance of counselling patients with regard to their life style, informing them about their prognosis, and teaching them relaxation techniques. Physicians endeavoured to talk supportingly with their patients, they recognized, however, their own lack in techniques of counselling and psychotherapeutic intervention. Major tasks for psychologists, therefore, would be the training of physicians and other professionals, supervising e.g. theme-centered or Balint groups, offering relaxation and meditation courses, and developing psychotherapeutic intervention programs.
Conclusion. HIV/AIDS-patients need special psychosocial care; new forms of co-operation between professionals must be developed in order to minimize stress.

D.655

PICTURAL INFORMATIONS ARE A GOOD WAY TO CONTRIBUTE TO HEALTH CARE WORKERS (HCWs) EDUCATION.

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OBJECTIVE. Working with AIDS can induce stress, anxiety and overwork as well as intellectual stimulation. This psychological impact could be linked to the lifestyles associated with AIDS, distress over the youth of the patients, neurological complications and dying patients. Also, individual assessment of HCWs remained still anxious about the risk of a nosocomial HIV contamination. Therefore, it will be interesting to give informations about AIDS and lifestyles related to AIDS in order to facilitate the contacts of HCWs with the patients and, also, to give directives in order to minimize the risk of HIV contamination during professional activity.
METHODS. Manuscripts with recommendations were provided. However, behaviours were not sufficiently modified. Therefore, on the occasion of the World AIDS Day, we delivered a pictural information.

RESULTS. For the first time, we were requested on materials and attitudes regarding AIDS patients.
CONCLUSIONS. Specific informations to HCWs are needed to reduce staff's discomfort and to facilitate care to AIDS patients. Specified practical recommendations contribute to a feeling of more security. A pictural information is more attractive than a manuscript and could be a good way to reach this goal.

D.656

PSYCHOLOGICAL STRAINS IN A MULTIDISCIPLINARY TEAM TAKING CARE OF AIDS PATIENTS IN BRAZIL

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Objective. To identify and work through, by an experience in group dynamics, the anxieties and conflict tensions felt by a health team treating AIDS patients.
Method. The investigation was done through the structure of the multidisciplinary team dealing with the group dynamics. Weekly meetings with the research subjects (MDs, dentists, nurses, nutritionists, social workers), were conducted by two dynamically oriented psychiatrists,for one year,in a university hospital. All meetings were recorded and an interpretative reading was done.
Results. The anxieties more frequently seen in the group were generated by the therapeutic limits,the dealing with transgressive behavior of the patients associated with sexuality and drug addiction, and the fear of contamination. The anxieties identified in the group were shared by the different subjects, and provided the elaboration of more adequate defenses.
Conclusion. AIDS associated death, sexuality, and transgression behavior, intensifies conflict tensions in patient care. The limitations of medical knowledge makes multidisciplinary approach a must in AIDS. The group work was a valid instrument to identify and work on anxieties of health team, to develop the psychotherapeutic function, and to improve integration among the health team.

Minorités
Minorities

D.657

D.658 KNOWLEDGE ABOUT HIV TRANSMISSION IN HISPANICS IN SAN FRANCISCO: ACCULTURATION EFFECTS

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Objective. To describe knowledge about AIDS and HIV in a representative sample of Hispanics from San Francisco. Methods. A random-digit-dialing telephone survey of 470 Hispanic adults residing in areas with 10% or more Hispanic population was conducted using items from the National Center for Health Statistics. Results. Results indicated generally excellent knowledge of the true modes of transmission of HIV, but also many erroneous beliefs in "casual" modes of transmission. Acculturation was strongly associated with knowledge, with the less acculturated being much more likely to believe that mosquitos, public toilets, eating utensils and sneezes could transmit HIV. The less acculturated were also less aware that those infected with HIV could look healthy. Women were found to be generally less well informed than men. Conclusion. Knowledge about AIDS and its transmission may be associated with acculturation status in the Hispanic population, since more acculturated Hispanics have more access to AIDS information through English-language media as well as generally having more education.

D.659 AIDS KNOWLEDGE LEVELS AND RELATED SEXUAL PRACTICES AMONG INNER-CITY SEXUALLY TRANSMITTED DISEASE (STD) CLINIC PATIENTS

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OBJECTIVE. To determine the levels of AIDS knowledge and attitudes and the sexual practices of a high risk predominantly black and Hispanic population attending STD clinics in NYC. METHOD. 1178 self-administered questionnaires were completed in STD clinic waiting rooms during a three month period in 1988. Information on basic knowledge about AIDS and modes of HIV transmission, attitudes toward antibody testing, sexual practices, risk reduction behavior and demographics was obtained. RESULTS. 84% of blacks and Hispanics correctly answered questions about AIDS and HIV transmission. Despite high knowledge levels, 66% of blacks and 31% of Hispanics incorrectly identified giving blood and insect bites as risks for acquiring AIDS. Some condom use in the last month was reported by 47% of black and Hispanic males. Sixteen percent of black females ages 20-29 reported exchanging sex for drugs, money or a place to stay. Of these, 39.6% reported some condom use in the last month. Mandatory reporting of HIV status without patient anonymity would deter 21% of black and Hispanic patients from seeking testing. CONCLUSION. These results suggest that further research on the psychosocial, socioeconomic dynamics and sociocultural forces which impinge upon risk reduction behaviors is required.

D.660 A COMMUNITY APPROACH TO HIV PREVENTION IN MINNESOTA'S COMMUNITIES OF COLOR

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Objective. To mobilize intergovernmental and multi-agency collaboration to limit the spread of the human immunodeficiency virus (HIV) among persons of color in Minnesota.
Methods. In Minnesota, as elsewhere in the U.S., the communities of color are disproportionately affected by HIV. In January 1988, MDH developed a HIV prevention plan which acknowledges four racial populations, each with diverse subpopulations and distinct cultures that influence attitudes and behaviors. A unique and effective working relationship was established with the four legislatively-mandated minority councils that advocate to state government on behalf of their communities. With MDH funding, each council sponsored HIV education conferences for community leaders, developed HIV action plans and convened representative task forces.
Results. In May, 1988, MDH made available $400,000 from state and federal funds designated for HIV prevention in the communities of color. Ten American Indian, Asian, Black agencies and one multi-agency Hispanic consortium were funded to provide HIV prevention and risk reduction programs.
Conclusion. The plan stimulated funding of HIV prevention programs, fostered unprecedented collaborations between and within the communities of color and may serve as a model for intergovernmental and multi-agency collaboration elsewhere.

D.661 MEETING THE HEALTH CARE NEEDS OF MINORITIES WITH HIV INFECTION

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Objective. To examine the effectiveness of case management services as a primary needs assessment tool for AIDS agencies in planning and implementing non-hospital based AIDS services.

Method. A demonstration project was established to assess and identify the health care needs, psychosocial needs, and cost of caring for persons diagnosed with AIDS/ARC. Between July 1, 1988 and December 30, 1989, we examined the psychological/behavioral, medical, cost, social service, and demographic characteristics of seventy-four racial and ethnic minorities followed in a non-acute care setting.

Results. Demographic Characteristics: Race - 80% Black, 14% Latino, 1% Native American, 1% Asian, and 1% White; Sex - 85% Male, 15% Female; Risk Factors - 54% Homosexual/Bisexual, 13% IVDU, 4% Homosexual/IVDU, 5% Heterosexual, 1% Hemophiliac/Transfusion Disorders, 19% Multiple Factors; Deaths - 13% died within six months after entering the program; Cost - $2,333/Client; Social Services - Housing, food, clothing, transportation, legal, drug treatment programs, and advocacy; Psychological/Psychiatric Emotional support, character disorders, individual and group therapy, and psychotropic drugs; Medical Diagnosis - PCP, Kaposi's sarcoma, HIV encephalopathy (AIDS Dementia), Histoplasmosis, Primary Lymphoma, Mycobacterium tuberculosis, HIV wasting syndrome, Coccidioidomycosis, and Toxoplasmosis, Herpes simplex, Candidiasis, Cryptococcosis, Cryptosporidiosis, Cytomegalovirus, Interstitial pneumonia, and Renal failure

Conclusion. Racial and ethnic minorities require a complete range of medical, psychological, and social services to maintain them in non-acute care settings. Case management services play an important role in assessing need, identifying appropriate resources, and reducing health care cost.

D.662 AIDS EDUCATION TO MALE SEX WORKERS : Working at the Risk Interface

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Male sex workers are mostly gay and a significant proportion are IV drug users. Many, particularly the young, don't identify with or become adequately serviced by their communities and relevant organisations. An aim of this project is to involve and educate such groups so that the risk gap presented by male sex work is minimised. The program for male sex workers operates within an existing prostitutes' rights groups and provides direct provision of safe-sex information, condoms, needles and the skills and support necessary for converting knowledge to safe work practices. Male workers involved in the project visit agencies and groups to participate at policy level. We contribute an experiential knowledge of the affects on susceptibility to HIV infection of the prostitution sub-culture issues, i.e., homelessness, police and community violence,transsexuality, poverty, illiteracy, drug dependency and the James Dean ethic - live fast, die young.
Direct services provided include some casework and referrals, as well as the drop-in centre in which social contact forms the basis of a supportive peer network.
Conclusion: A potentially dangerous gap in AIDS services has been redressed by facilitating an interface of services in combination with support and direct health and welfare provision on a peer level.

D.663

ASSESSING THE IMPACT OF AIDS INTERVENTION PROJECTS

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Evaluating projects designed to increase knowledge or to change attitudes about AIDS is fairly straightforward. This is not the case if project is designed to prevent HIV transmission. For example, having a control group might make sense scientifically in order to assess what might have occurred without the program. But rarely is this practical with AIDS projects and many consider it to be unethical.

If incidence is low in the target population, there may be too few cases of transmission over a project's duration to measure its effectiveness. In this instance, multiple indicators can be used, including incidence of other STDs, practice of safe sex or other desirable behaviors, and knowledge and attitudes. If the prevalence is high, there may be little opportunity for the program to have an impact on the infected group. But the intervention may significantly reduce transmission to sexual partners.

If the focus is on individuals with high risk behaviors (often the most cost-effective public health approach), it may be hard to reach individuals who do not identify themselves as being at risk or do not frequent places where programs can be implemented. Follow up is also difficult, especially if the target populations are highly mobile (commercial sex workers, IV drug users, and transportation workers). Finally, it is difficult to ascertain whether participants are practicing safer behaviors. This paper gives examples of these problems and proposed solutions based on planned and ongoing AIDS programs in Africa, Latin America, and Asia.

D.665

MARRAIGE, STD AND PROTECTION FROM HIV

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As the realization has grown that the AIDS Epidemic is unlikely to be controled anytime soon by either a vaccine or a drug treatment, interest in social behaviors that reduce STD rates has increased. The most acceptable sexual behavior occurs within marraige, and the relative absence of marraige in the young sexually active black subculture is cited as a contributing cause to the high rate of HIV seropositivity (twice the white rate as shown in the US Military recruit data). US Army studies of syphilis rates done prior to World War II, before the introduction of penicillin, showed that marraige had a protective effect against syphilis.

To examine the possibility that marraige might serve as a protection against STD's and therefore against infection with HIV, a pilot survey was conducted among US Military personnel. The analysis showed a significant difference between the white enlisted married rate of STD's of 13%,and the black enlisted married rate of STD's of 32%, and no significant difference of the latter from black enlisted unmarried rate of STD's of 35%.. Blacks, married or single, engaged in more risky sexual behaviors than did married whites. This preliminary study suggests that marraige as an institution may not be protective against HIV infection, and that fundamental sexual issues must be addressed with all members of a minority.

It is of interest to note that in this age of antibiotics and health consiousness, 13% of these white married males have had an STD and must also be considered candidates for HIV infection. Only 32% of white married males met the Judaic-Christian ideal of monogamy.

D.667

FOCUS GROUPS AS AN EDUCATIONAL INTERVENTION FOR BLACK GAY MEN

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Objective. In order to develop effective strategies for AIDS education and prevention efforts with Black gay and bisexual men, information was gathered from diverse groups across the United States.
Methods. Six focus groups of 2-5 hours in length, each composed of 8-10 Black gay and bisexual men, were convened in New York, Chicago, Los Angeles, Atlanta, Omaha, and Pittsburgh. Methodology based on marketing and group dynamics was used to assess relevant factors, including language, level of knowledge and cultural determinants in HIV-related behavior.
Results. While the initial purpose of the focus groups was to assess information from the subjects, its impact was that of an educational intervention. Participants reported a desire to continue in a group format and to organise similar types of groups. Individuals previously reluctant to become involved in AIDS-related activities appeared motivated to participate because 1) the facilitator did not reside in their city and 2) networks used to compose the group were so diverse that most members knew few if any of the other participants.
Conclusion. Focus groups appear to be a potential model for increasing participation by Black gay and bisexual men in AIDS-related risk reduction.

D.664

FACTORS INFLUENCING AIDS RISK PERCEPTION OF BLACK GAY MEN

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Objective. As AIDS continues to disproportionately affect Blacks in the U.S. (CDC, 1988; Mays & Cochran, 1987), accurate assessment of their perception of risk is needed to design effective risk reduction interventions. One HIV at-risk group for whom we have little empirical knowledge of their lifestyles (Cochran & Mays, 1988) are Black gay and bisexual men. The present study is a pretest effort to design an assessment instrument for a national study of HIV-related behavior.
Methods. Six focus groups, each composed of 8-10 Black gay and bisexual men, were convened in New York, Chicago, Los Angeles, Atlanta, Omaha, and Pittsburgh. Methodology based on marketing and group dynamics was used to determine subjects' AIDS knowledge level, perceptions of AIDS information credibility, and the influence of perceived discrimination on AIDS prevention services utilization.
Results. While knowledge of AIDS and its modes of transmission was high, distinctions regarding HIV, medical treatment and protective behaviors were more diffuse and less well understood. Utilization of AIDS preventive services within the White gay community were generally low.
Conclusion. Current methods of AIDS education, if they are to be effective must be attentive to the role that ethnic minority status plays in illness prevention and health care utilization.

D.666

A PUBLIC HOSPITAL AND THE AIDS EPIDEMIC IN OAKLAND, CALIFORNIA

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Objective: To compare diagnoses, ethnicity, and transmission risks of 55 patients presenting to a newly formed outpatient subspecialty HIV clinic at Highland Hospital, Oakland, CA, with similar data already existing for California.
Methods: Diagnoses, ethnicity, and risk of all 55 patients (51 males and 4 females) seen in a newly formed subspecialty clinic for HIV infection, are reviewed for the period 3/16/88 through 9/30/88. Pts. were provider or self-referred into the clinic.
Results: 46 (84%) of patients had diagnoses of AIDS or ARC, by Walter Reed and CDC criteria, and 4 (7%) patients had symptoms of HIV infection. 63% were Black, with AIDS/ARC dx's: (n=46)

Ethnicity	Homo.	Bi	IVDA	Combined	Total %
Black	26%	7%	24%	6%	63%
White	17%	--	10%	4%	31%
Hispanic	2%	--	--	2%	4%
Asian	2%	--	--	--	2%
Total	47%	7%	34%	12%	100%

Conclusion: When compared with existing statistics for California, and the San Francisco Bay Area, this outpatient sample, represents a large proportion of Black individuals, presenting with AIDS or ARC. Homosexual/bisexual risk, and IVDA are the most common transmission risk factors in this cohort of outpatients seen at Highland Hospital, Oakland, California, USA.

D.668

WHERE BOTTOM-UP AND TOP-DOWN APPROACHES MEET: THE DEVELOPMENT OF A COMPREHENSIVE AND INTEGRATED HEALTH PROMOTION/AIDS PREVENTION PROGRAM ***

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Objective: The paper provides a model for the development of a long-term, dynamic, comprehensive and integrated community based AIDS education/prevention program.
Methods: A multi-agency CBO was sought which would provide a strategic program site targeted to the multiple needs of young at-risk families and the schools in which they are served. This program was developed in partnership with a multidisciplinary research team. The process which led to the identification, participation and on-going needs-assessment of The East Harlem Block School, Inc., a multi-agency umbrella organization in a deprived inner-city community, is described.
Results: This umbrella organization includes 5 agencies with overlapping memberships - an alternative elementary school, 2 nursery schools, 2 day-care programs, a Youth in Action Program for adolescents and a staff of over 100. It thus provides multiple opportunities for interventions targeted at the various segments (staff,families and students).
Conclusion: The case clearly identifies the need feor a bottom-up, top-down approach in order to develop an effective continuum of integrated AIDS education and primary, secondary and tertiary care prevention programs.

**Funded by the Aaron Diamond Foundation

D.669

STOCKHOLM COUNTY COUNCIL AIDS PREVENTION PROGRAM ected towards ethnical minority groups

Luis Abascal, Sweden

Sweden is an immigrant country. Out of 8 million inhabitants, around 1 million are immigrants. Some 400,000 of them live in Stockholm County. To reach this group consideration should thus be taken to the ethnical and multicultural aspects such as language, culture, religion, and different views on sexuality.

What is done today in Stockholm could serve as a pilot experience to be profited by in other multicultural countries.

Stockholm County has around 70% of the HIV-carriers in Sweden. The spread of the virus largely follows that of the U.S.

The aims of Aids Prevention Program are:

- to prevent the spread of the HIV-virus in Stockholm County
- to give information about sexually transmitted diseases and AIDS from a perspective that treats sexuality and relationships between individuals in a positive and open manner.
- to counteract intolerance against risk groups and enhance understanding for individuals infected with the HIV-virus.

The Aids Prevention Program is divided into four different subprojects prioritizing youth, special groups, health staff and information dissemination.

D.671

STEREOTYPE DU SIDA EN ETUDIANTS UNIVERSITAIRES

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Objectif. Connaître le stéréotype du SIDA chez les étudiants de notre université et les possibles variations de ce stéréotype en fonction d'avoir, ou non, une expérience directe avec la maladie.

Méthode. Questionnaire avec 5 maladies (la grippe, le cancer, les maladies de transmission sexuelle, les maladies cardiovasculaires et le SIDA), 16 échelles (p.e. "c'est mortel") et 5 possibilités de réponse: toujours; presque toujours; quelquefois; presque jamais; jamais. On compare le stéréotype du SIDA avec celui des autres maladies, avec ou sans une expérience directe.

Résultats. Les résultats préliminaires indiquent que le SIDA est encore pire que le cancer. Le contact direct avec les malades ne semble pas changer le stéréotype.

Conclusion. Il faut étudier les moyens pour éviter la consolidation de ce stéréotype.

D.673

UNDERSTANDING PRECAUTIONARY AND RISK-BEARING BEHAVIOR; A MODEL FOR THE DEVELOPMENT OF HIV-PREVENTION PROGRAMS

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Objective. A sequential phase model has been developed, to understand sexually risk-bearing behavior as well as the adoption of safe sex practices. Behaving precautionary is seen as a result of a conscious decision, reached in several sequential steps, determined by a variety of factors. Putting the decision into actual behavior may likewise be facilitated or inhibited by several factors. The model elucidates that precautionary and risk-bearing behavior can have divergent backgrounds, depending on the phase a person has arrived at. Depending on these phases the aims of prevention policies differ.
Methods. The model will be illustrated by the results of a telephone survey in a random sample of 1229 Dutch citizens.
Results. Seven % of the sample run the risk of infection without labeling this as risk-bearing. To a large extent this risk stems from having unprotected sex with several partners, or from the sexual contacts of their steady partner with other people. This group needs a different prevention approach than the 27 % of the people who realized the risk-bearing character of their behavior, but were not able to change it in a consistently safe way. Compared with the people who adequately changed their behavior, the former distinguish themselves by a less favorable attitude towards condoms, which weakens their decision to behave in a safe way. If they plan to use condoms they are also less irrefutable in their decision than the latter.
Conclusion. The model is useful to specify aims for differentiated prevention policies and to locate the subgroups at whom these should be directed.

Psychologie
Psychology

D.670

PSYCHOLOGICAL AND SOCIOLOGICAL CORRELATES OF DEPRESSION IN PATIENTS WITH AIDS.

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Objectives. To investigate the relationship between psychological traits and situational factors, and state depression in patients with diagnosed AIDS.
Methods. Subjects (N=22) were recruited from patients attending our AIDS clinic. All subjects had a diagnosis of AIDS as evidenced by opportunistic infections or wasting syndrome. Patients were interviewed by trained clinicians to assess psychosocial variables. Patients completed the following psychometric assessment battery: NEO Personality Inventory, Trait Personality Inventory (TPI), and the Beck Depression scale in addition to a personal background questionnaire.
Results. Correlational analyses showed that scores on the Beck Depression scale were positively and significantly correlated with trait measures of depression ($r=.57$) and anxiety ($r=.64$), in contrast to a significant and negative correlation with trait measures indicating a positive outlook on life ($r=-0.54$) and agreeableness ($r=-0.51$). State depression was not correlated with age ($r=-0.15$), length of time with AIDS diagnosis ($r=-0.01$), and quantity of social support ($F(4,13)=1.07$, $p=.43$).
Conclusions. We present evidence to suggest that psychological traits factors may be important variables in determining increased depression in patients with AIDS. In contrast, other psychosocial factors, age, length of time with diagnosis and quantity of social support may not play important roles. Therapeutic interventions must therefore take into account personality characteristics in the treatment of depression in AIDS patients.

D.672

D.674

LES VECUS PSYCHOLOGIQUES A L'EGARD DU TRAITEMENT PAR ZIDOVUDINE EN SUJETS HIV POSITIFS.

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Objectif: Exposer les vécus psychologiques à l'égard du traitement par Zidovudine dans un group de 20 sujets HIV positifs (6 LAS, 9 ARC, 5 AIDS) en traitement ambulatoire.
Méthodes: On a conduit des colloques psychologiques ambulatoires en concomitance des contrôles médicaux (1 fois par semaine le premier mois, 2 fois le deuxième mois et après, 1 fois par mois). On a aussi effectué des tests psychodiagnostiques (Baumtest, test de Machover et de Rorschach).
Résultats: On remarque que, bien que le médicament soit perçu comme indispensable, souvent les patients revèlent des doutes sur son efficacité. Ce fait montre, à notre avis, le lien entre ce médicament et le besoin du patient de nier sa maladie qu'il est obligé à rappeler tandis qu'il doit prendre son comprimé. Le temps-intervalle entre les doses représente symboliquement le temps-intervalle qui le sépare de sa morte.
Conclusion: On souligne la nécessité pour le médicin de connaître et de considérer l'interférence des vécus envers ce médicament si l'on veut assurer l'efficacité du traitement même. Cet étude montre aussi l'importance du support psychologique au cours de traitement par Zidovudine.

D.675

ÉVALUATION COGNITIVE-COMPORTEMENTALE DES SUJETS POSITIVES À L'HIV.

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Objectif. Nous avons voulu étudier les aspects psychologiques des sujets positives à l'HIV pour structurer des programmes de support psychosocial.
Méthodes. À ce moment nous avons examiné 70 sujets positives à l'HIV avec le Cognitive Behavioural Assessment-2.0. Après nous avons analysé les données obtenues avec un programme spécifique pour notre ordinateur. On a consideré comme groupe de contrôle la population (720 sujets) sur laquelle le test a été taré. Enfin nous avons évalué la significativité statistique des résultats avec le test du chi carré.
Résultats. De l'analyse des tests il a émergé que le 40% des sujets a des problemes psychologiques. L'anxiété est au niveau pathologique dans le 23% des cas. Aussi la dépression a frappé le 23% des patients et il faut remarquer que ces dépression ont un risque suicidaire très élevé. Le trait de la personnalité qui a apparu le plus commun parmi les toxicomanes(t.) a été le psychoticisme (39% des cas). Il a aussi apparu, bien que sans significativité statistique, une plus grande vulnerabilité psychologique et un plus mauvais adaptation social des t. en comparaison des homosexuels. De toute façon aussi le 30% des homosexuels utilise des drogues. Pour réduire l'usage des drogues, les renseignements et l'éducation sanitaire, après la découverte de la positivité à l'HIV, paraîtrait utile au 50% des t..
Conclusions. Donc un support psychosocial paraîtrait indiqué dans le 40% des sujets positives à l'HIV et, nous croyons, pas seulement pour des raisons psychiatriques mais aussi pour des possibles négatives implications sur le plan psychoneuroimmunologique.

D.676

SUICIDAL THOUGHTS AND ACTS IN HIV INFECTION SUSPECTS

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For many persons, infection with Human Immunodeficiency Virus means the immediate development of AIDS and an early death. Suicide becomes a viable alternative to avoid long illness and to obtain control over the situation. In many cases, AIDS will not be developed in years. In order to evaluate the occurrence of suicidal thoughts, 400 subjects were evaluated within 4 categories through the use of a questionnaire: 1) Persons who go to get tested for antibodies against HIV for the first time; 2) Persons who go to receive their results for the first time; 3) Repeat testers; and 4) Persons who attend a testing site but do not get tested. Results indicated various patterns related to the persons at increased risk for suicidal thoughts and acts.

D.677

INFLUENCE OF LONELINESS AND SOCIAL SUPPORT ON THE EFFECTIVENESS OF A BEHAVIORAL INTERVENTION WITH HEALTHY MALES AT RISK FOR AIDS

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Objective. Increased anxiety and depression have been associated with receiving a positive diagnosis for the human immunodeficiency virus (HIV-1). This may serve to further compromise an already vulnerable immune system, resulting in an increased risk for opportunistic infection and worsened disease prognosis. Aerobic exercise training appears to have a buffering effect on the distress associated with receiving one's anti-HIV-1 status. A reasonable question is whether aspects of being in a group intervention per se influence these effects.
Method. To investigate this we assessed self-reported loneliness and social support at three times in the course of the intervention. Healthy gay males (N=46) at risk for the acquired immune deficiency syndrome (AIDS) wishing to know their anti-HIV-1 status participated in this study. Subjects were randomly assigned to no-contact control (N=18) or exercise (N=28) groups. The exercise group received 45 min of aerobic training 3 times per week for 10 weeks. All subjects learned their anti-HIV-1 status at week 5.5 and completed the UCLA Loneliness Inventory and the Social Provisions Scale at baseline and again at weeks 5 and 10. A 2x2 factorial analysis of variance was performed for each of the measures at all of the timepoints.
Results. There were no interaction effects between anti-HIV-1 status (+ vs -) and group (exercise vs control) on either measure at any timepoint. Further, the only significant main effect was at week 5 where the anti-HIV-1 (+) reported greater loneliness than the anti-HIV-1 (-) [(41.25 vs 34.89, F(1, 34)=4.25, p<.05)].
Conclusion. The overall lack of discrimination among the groups at the various timepoints of the intervention suggests that loneliness and perceived social support have minimal influence in the reduction of psychological distress reported for the intervention with individuals receiving their anti-HIV-1 status. This strengthens the notion that it is the specific intervention, aerobic exercise, per se, rather than merely the effect of being in a group administered intervention which accounts for the salubrious effect reported. Supported by NIMH, P50MH42455-03.

D.678

EVOLUTION DES REACTIONS PSYCHOLOGIQUES CONSTATEES CHEZ LES HETEROSEXUELS SEROPOSITIFS (ANTI-VIH) ASYMPTOMATIQUES.

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En 1989, le nombre de séropositifs asymptomatiques est estimé en France à 300 000. Les deux régions les plus atteintes par les infections à VIH étant l'Ile-de-France et la Provence-Alpes-Côte d'Azur. La proportion d'hétérosexuels exclusifs est en constante augmentation, tant en ce qui concerne les cas de SIDA avéré (10,3% en France au 30/09/88) que les porteurs asymptomatiques. Parmi une cohorte de 100 hétérosexuels asymptomatiques, 16 (11 femmes/5 hommes) ont fait l'objet d'un test de dépression (échelle d'Hamilton-Pelicier), d'un test d'anxiété (échelle F.A.R.D.), d'un test de l'arbre (Renée Stora) et d'un entretien semi-directif. 3/16 n'ont aucun symptôme dépressif. 8/16 présentent une dépression mineure. 4/16 ont une dépression légère et 1/16 une dépression grave. Part rapport à l'annonce de la séropositivité, un taux d'anxiété élevé apparaît en général après une période de sidération de durée variable. Ce taux d'anxiété élevé dure jusqu'au 12e mois et lui succède une phase de réorganisation (psychologique et comportementale) où l'anxiété décroît. L'intensité de l'anxiété semble plus marquée chez les hommes et elle augmente nettement après 26 ans dans les deux sexes. Cette anxiété est plus importante dans le pôle relationnel. Lors de l'entretien directif, ce sont les thèmes de préjudice (y compris d'ordre médical), de victime, d'inculpation de la société (carence d'information), d'exclusion qui émergent le plus fréquemment. Le test de l'arbre dénote une quête d'équilibre personnel et un besoin d'acceptation par l'entourage.

D.679

DEVELOPMENT OF A QUESTIONNAIRE TO DETERMINE KNOWLEDGE, ATTITUDES AND BEHAVIOUR TO HIV INFECTION

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HIV infection has been called by many a behavioral condition. As long as there is no cure or vaccine, the only alternative to avoid infection with the Human Immunodeficiency Virus is avoiding the practices employed by persons at increased risk for infection. In order to develop educational campaigns, it is necessary to evaluate the levels of AIDS knowledge and attitudes.

A questionnaire was developed and validated using a group of judges.

Item validity was determined. Then, a pilot study was done using 430 subjects of which 43% were at increased risk for infection by HIV.

A final form of the questionnaire was developed after the pilot study.

The questionnaire is directed to Spanish-speaking subjects.

D.680

LES ATELIERS SUR LES ACTIVITES SEXUELLES A RISQUES REDUITS: UN NOUVEAU MODE DE VIE INTEGRE A SA SANTE SEXUELLE

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Objectif. Décrire l'organisation des ateliers et présenter les données évaluatives recueillies de février à mai 1989.
Méthodes. Des groupes de 15 personnes sont formés et animés par un sexologue et un assistant-technique. Les participants sont des hommes ayant eu des contacts sexuels avec d'autres hommes (gais et bisexuels). Ils recoivent 2 sessions de 3 heures dont les objectifs sont 1) d'acquérir des connaissances sur les act. sex. à risques réduits, 2) développer des attitudes positives, 3) développer et maintenir de nouveaux comportements et 4) améliorer la qualité de sa vie sexuelle. Le matériel utilisé comprend des dépliants, affiches, vidéos et la distribution d'une trousse. Un questionnaire est distribué au début et à la fin des ateliers.
Résultats. Les résultats provenant des questionnaires concernent les objectifs et analysent les connaissances acquises, la modification des attit., les cpts., et la place de la sexualité dans la vie personnelle.
Conclusion. Nécessité de ce type d'intervention. Besoin de l'implication des participants. Situer les act. sex. à risquer réduits dans un contexte de nouveau mode de vie.

D.681

AEROBIC EXERCISE TRAINING ATTENUATES THE STRESS OF A POSITIVE TEST FOR ANTI-HIV-1

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Objective. Receiving a positive test for the anti-human immunodeficiency virus (HIV-1) has been associated with increases in anxiety and depression. This could lead to a further suppression of an already compromised immune system resulting in an increased risk of opportunistic infection and a worsening of disease prognosis.
Method. Forty-six healthy gay males, never tested and therefore not knowing their HIV-1 status, were randomly assigned to either an exercise intervention (N=28) or control (N=18) group. HIV-1 antibody status was determined at week 5 and subjects received their diagnosis 72 hrs later. The Profile of Mood States (POMS) was administered at baseline, week 5, 7, 8, and 10, while an aerobic fitness evaluation was conducted at baseline, week 5 and 10. The intervention, consisting of 45 min of aerobic exercise training 3 times per week for a 10 week period, resulted in a significant improvement in fitness levels in both anti-HIV-1 (-) and (+) subjects after 5 weeks.
Results. Anti-HIV-1(+) controls displayed a significant increase in Tension-Anxiety (10.7 to 18.2, t(1,6)=18.75, p<.01), Depression (9.3 to 26.8, t(1,6)=2.6, p<.05) and Confusion-Bewilderment (5.3 to 11.8, t(1,6)=6.2, p<.05) scales of the POMS in response to their diagnosis (week 5 to week 7). Conversely, anti-HIV-1(+) exercisers did not show such changes in the Tension-Anxiety (11.8 to 12.6, t(1,11)=.37, p>.05), Depression (10.4 to 14.0, t(1,11)=.58, p>.05), and Confusion-Bewilderment (7.2 to 8.7, t(1,11)=.70, p>.05) POMS scales over the same period.
Conclusion. These findings indicate that a training program of modest aerobic exercise buffers the detrimental mood changes that accompany receiving news of anti-HIV-1(+) test, thus providing a promising behavioral approach to helping those infected with HIV-1.

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Les femmes
Women

D.682

MEASURING AND REDUCING RISKS OF HIV TRANSMISSION AMONGST FEMALE PROSTITUTES IN BIRMINGHAM, ENGLAND

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Background. Birmingham is a city of 1 million, with a surrounding conurbation of another 2 million. In 1987 police arrested about 2000 individuals for prostitution offences, 898 in Birmingham.
Project. To measure and reduce risks of HIV transmission amongst female prostitutes, an outreach team was employed, assisted by ex-prostitutes. 258 female prostitutes were interviewed.
Results. 25% had injected drugs since 1983, or had injecting boy-friends. 77% of services to clients involved penetrative sex, including oral sex, but condom use was high (90%). Sexual "risk events" were reported more frequently by injectors and their partners and by prostitutes who did not solicit on the streets. 33% did not know anal sex for women is high risk. The prostitutes average 22 clients per week. 16% had never been arrested. We estimate at least 1200 prostitutes in the city, providing 26,400 episodes of commercial sex each week. At £10 a time this industry must turn over at least £13 million a year.
Conclusions i) Prostitution is a potential multiplier for the HIV epidemic unless condom usage can be kept very high,
ii) With this level of demand from clients risk reduction through policing or harassment is unlikely.
Data will be presented on prostitutes knowledge of HIV, together with further analysis of activities with their clients and boyfriends.

D.683

SEROPREVALENCE AMONG A LOW HIV PREVALENCE POPULATION: HIV SCREENING DATA FROM A FAMILY PLANNING POPULATION

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OBJECTIVE. To identify HIV seroprevalence among family planning patients, and to enable family planning providers to plan prevention strategies.
METHODS. HIV screening data from a voluntary screening program of 1310 female family planning patients attending San Francisco Bay Area Planned Parenthood Clinics was analyzed to determine seroprevalence among this population . Data was collected between January 1988 and January of 1989. As the number of seropositives is too small for tests of significance, the demographic and risk spread will be reported.
RESULTS. Six women were determined to be seropositive for HIV. This constitutes .46% of the total female population tested. Among these seropositives were 3 Whites infected by high risk heterosexual partners, 1 Black who had a history of IV drug use, 1 Asian with a bisexual male partner, and one Native American whose only risk was heterosexual multiple partners. While these numbers are small, they may be under-estimates of the true seroprevalence in this population, as only a third of the women found to be at risk through routine risk screening chose to seek HIV testing.
CONCLUSION. Given the ethnic diversity of the seropositive population, and the fact that 5 out of the 6 women were infected through heterosexual contact, these data suggest that there is a small but significant pool of HIV in the sexually active heterosexual community in the San Francisco Bay Area. This indicates a need for continued screening as well as a need to include more of this at risk population .

D.684

ETHNICITY AND HIV RISK
SCREENING DATA FROM A FAMILY PLANNING POPULATION

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OBJECTIVE. To identify ethnic predictors of HIV high risk behaviors in a family planning population, and to enable family planning providers to plan prevention strategies targeted toward specific ethnic groups
METHODS. Behavioral risk screening data collected from 512 female family planning patients attending San Francisco Bay Area Planned Parenthood Clinics was analysed to determine the ethnic correllates of HIV high risk behaviors. Data was collected during December 1988 and January of 1989. Analyses included tests of proportion and chi-square.
RESULTS. Twenty seven percent of the population reported some HIV risk.Whites, who constituted 59.52% of the total population, comprised 74.07% of the population at risk. Blacks who constituted 23.25% of the population accounted for 12.40% of the population at risk. Latinas who constituted 9.38% of the total population accounted for 8.76% of the risk population. Asians who constituted 7.16% of the total population accounted for 3.64% of the risk population.Within the population at risk , Black, Latinos and Asians were more likely be at risk due to multiple sexual partners than White, whereas Whites were more likely to be at risk due to having bisexual partner. Whites with multiple partners were significantly more likely to report multiple risks (p< .001), including IV drug use and IV drug using partners than were the ethnic minorities.
CONCLUSION. These data suggest that within this population Whites demonstrate more allover risk than do ethnic minorities. This needs to interpreted with caution, however, as there may be a significant bias toward minorities underreporting HIV risks, due to cultural patterns, and since this screening was not anonymous, fear of discrimination.

D.685

RAPID CONDOM DAMAGE BY COMMON SEX LUBRICANTS.

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Objective. To evaluate the degradation kinetics of sex lubricants upon the strength of latex condoms.
Methods. Condoms were lubricated along the distal half and tested at intervals for change in their strength. Standard US (ASTM) tensile strength and elongation tests (T&E) were conducted, as were standard international (ISO) air burst tests.
Results. Sixty seconds' exposure to mineral oil (common to many widely used sex lubricants) caused approx. 90% lowering of tensile strength and elongation values (T&E) and air burst volume and pressure values of test condoms. T&E and air burst values were also significantly affected by Vaseline Intensive Care, Johnson's Baby Oil, Crisco, Nivea Hand Lotion, Vaseline Petroleum Jelly, Mazola (corn oil), Wesson (soybean) Oil, and olive oil. Some silicone oils significantly affected T&E and air burst values after 45 min. or longer exposure times.

Twenty-four hour exposure to 20% aqueous nonoxynol-9 spermicide did not affect either air burst or T&E values. However, 15 min. exposure to some spermicidal preparations and to KY jelly caused significant reduction in T&E elongation values.
Conclusions. The rapidity of the effect of commonly used sex lubricants upon condoms is far greater then generally appreciated and may be the source of considerable breakage of condom during sexual intercourse.

D.686

HIV TRANSMISION TO STABLE FEMALE PARTNERS OF INFECTED MALES.

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Objective. To determine the prevalence of HIV infection in female sexual partners of HIV-positive men.
Methods. A group of 52 women who had consulted the Infectious Diseases Hospital in Buenos Aires City was selected. Their common feature was to be the stable and exclusive sexual partner of a HIV-positive man. These women neither were drug addicts no declared other risk factors. Their ages ranged between 17 and 35, median 23 years old. In 25% of the cases it was possible to determine the period of the sexual relationship with the HIV-positive male partner, which ranged between 6 and 72 months, median 24 months. 98% of the HIV-positive men presented as risk factor IVDA. Anti-HIV antibodies were screened by EIA methods and confirmed by Western blot.
Results. Among the 52 women studied, 7 presented antibodies in the first test performed (13.4%) and 45 were negative at the time. They were advised to take control measures, especially condoms. Further on, only 19 women were studied: in 2 of them anti-HIV antibodies were detected in the second test 8-14 weeks later. Among the remaining 17, one was positive 24 weeks later. The sera of 11 women who could be followed 6-18 months later were negative.
Conclusion. the incidence of heterosexual HIV transmision was at least 19.2% in stable female partners of HIV-positive males.

D.687

THE MEDICAL AND EMOTIONAL/SUPPORT NEEDS OF WOMEN WITH HIV

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Objectives. To describe the medical needs and psychosocial concerns of women with HIV. To describe a model for support groups for women.
Methods. Initial findings were obtained from 8 members of a support group for women. A further 12 women were given a structured interview.
Results. Qualitative analysis revealed the following issues:
I. Medical Needs -- Women reported difficulty in obtaining an accurate diagnosis of HIV infection and immune status. Two-thirds of the women reported increased symptoms specific to their hormonal and reproductive physiology, but only vaginal candidiasis was accepted by physicians as a marker of HIV status.
II. Emotional Needs -- Women were more likely to experience shock at diagnosis, and to feel anger at the infecting partner. Isolation within their own support networks and even within the AIDS community was noted. Stress levels increased for those involved in the caregiving of HIV-infected men, those with infected children and those mourning the loss of child-bearing possibilities.
III. Support Group Issues -- Despite varying backgrounds, common concerns were found on issues such as reactions to diagnosis, disclosure, relationships with men and the need for improved access to medical and treatment information and services.
Conclusions. That researchers have not fully investigated the medical needs of women with HIV. That support groups for women can be effective, where tailor-made to their specific needs.

D.689

On being HIV - positive, European, female, and "non - existent".

Amanda Heggs. Copenhagen, Denmark. Positive Women's Support Group, Copenhagen. Denmark

The main topic of this paper will be the situation of HIV-positive women, (non IV drug abusers) in Denmark, and the trials and tribulations of this group in establishing self - help groups.

The underlying theme of the presentation will be the struggle of this group for recognition in a community which, until quite recently, refused to recognize that heterosexual HIV - positive people even existed.

The paper will attempt to discuss the social isolation experienced by HIV-positive women in this country, and the attempts made, by means of selv - help groups and our own presentations in the media, to break this isolation. The following is an extract from a speech held by the author at WHO's regional office in Copenhagen on World Aids Day, 1988:
"To be a Positive woman is incredibly lonely. Heterosexual circles are simply not used to the idea. When I was diagnosed, I contacted the Aids - Hotline, looking for support and information for women with HIV / Aids. There was absolutely nothing for us women. Today the situation is not much better - but now we've started our own support group - we're getting stronger".

The paper is based upon the author's own personal experiences as an HIV - positive woman.

D.691

WOMEN AND AIDS IN LATIN AMERICA: LESSONS FOR THEIR FUTURE

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Objective: To illustrate the importance of developing AIDS prevention interventions targeting non-prostitute women in Latin America.

Methods: An examination of existing AIDS prevention programs in Latin America reveals a complete absence of programs targeting women not engaged in prostitution. The epidemiology of AIDS throughout most of the region currently mirrors that of the early years of the epidemic in the U.S. with over 90% of cases region-wide occurring among men. The changing epidemiology of AIDS in the Dominican Republic, where over 40% of cases reported in 1988 occurred among women, suggests that this pattern is likely shift.

Results: An unmeasured number of women have more than one sexual partner, placing them at risk for HIV/AIDS. The fact that an unknown percentage of men have multiple partners, including female and male prostitutes and other men, also places "monogamous" female partners at risk. These risks must be acknowledged and addressed. To date, targeted prevention interventions in Latin America focus primarily on reaching men who engage in sex with men (primarily self-identified "gay" men) and female prostitutes. Program planners tend to ignore that non-prostitute women are also at risk.

Conclusions: Program planners must recognize that non-prostitute women in Latin America are also at risk for HIV/AIDS. Programs are needed that provide them with the information and skills needed to enable them to modify their behavior to reduce their risk of exposure to HIV.

D.688

CLINICAL ASPECTS IN THE FIRST 81 AIDS CASES AMONG WOMEN IN MILAN

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Objective. The main risk-factor for AIDS in Italy is IV drug use (IVDU). A considerable number of cases occour in women. Objective of this study is to describe clinical aspects of AIDS in women.
Methods. 478 cases of AIDS (16.4% of total italian cases) were recorded from 1984 to 1988 in L. Sacco Hospital, Milan. All informations have been collected from clinical records.
Results. 81 out of 478 (16.9%) AIDS cases were diagnosed among women. 46 of them (56.8%) were IVDUs, 16(19.7%) were previous IVDUs (ex-IVDUs),17(21%) were sexual partners (SP) of anti-HIV pos. men (15/17 recorded from 1987) and 2 (52.5%) were transfused (all before 1985). PCP was significantly more frequent as indicator-disease in SP (10/17) and ex-IVDUs (7/16) than in IVDUs (6/46) (p 0.001 and p 0.01 respectively), while deep mycosis (DM) was more frequent in IVDUs (15/46 vs. 3/33, p 0.05). Kaposi's sarcoma (KS) was observed in 7 cases (8.6%) and lymphoma in 2. ADC was present in 6 cases (5/6 IVDUs).
Conclusions. DM have been confirmed to be more frequent in IVDUs, while ex-IVDUs have clinical course similar to SP. KS is relatively frequent among women.

D.690

NICE GIRLS DO GET AIDS: A SUPPORT SYSTEM FOR MIDDLE CLASS WOMEN WITH HIV INFECTION

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Objective: To present a rationale for and a model of support needs for middle class women in the US: identifying needs, establishing services, and making them available to patients.

In early 1988, two seropositive professional women requested that a supportive network be created for middle class women. Existing support groups focused on IV drug problems and did not meet their needs. At times, attending these groups made them feel even more estranged from other patients. A survey of treatment agencies and individuals showed that a need for this service existed. A support group began meeting twice monthly in August 1988. As of January 1989, 35 women have attended the group or social activities. The problems which have surfaced will be discussed along with the measures taken to address them. Recently services have begun for the husbands and boy friends in a separate group. Guidelines for creating similar services in other lacalities will be offered.

D.692

PREVALANCE OF ANAL INTERCOURSE IN WOMEN AT A COUNSELING-TESTING SITE

Connolly, Doris; Brennan, A. Winters, D. Gocke, D.
Robert Wood Johnson Medical School, New Brunswick, New Jersey, United States of America.

Objective. The high risk of HIV-1 transmission by anal intercourse is well-recognized for homosexual men, but the frequency of this activity in heterosexuals is not well known.
Methods. We questioned 100 consecutive female clients of our HIV counseling and testing service about their participation in anal intercourse and other risk activities using a directed questionnaire. Their ages ranged from 17-46 years. 82 were white, 9 black, 7 Hispanic and 2 Asian.
Results. Twenty-one reported anal intercourse at some time in their life. Eleven reported the frequency to be "occasional", 5 reported varying frequencies as often as once weekly, 1 reported a preference "all the time", and 4 declined to report frequencies. The 6 individuals reporting frequent or preferred anal intercourse also admitted to multiple sexual partners and unprotected sex.
Conclusion. Thus, 21% of an unselected sample of heterosexual women attending an HIV counseling center had experienced rectal intercourse at least once. 6% who did so frequently also engaged in other high risk behavior. This study supports the need for health care providers to recognize the frequency of anal intercourse in heterosexuals and to provide topic specific counseling.

D.693

EVOLUTION
AMBULATORY
SOROCABA AMULATORY AIDS EXPERIENCE WITH PROSTITUTES

GONCALVES, V.L.C.- Dos Anjos, R.M.P.- Ramos, T.F.- Gomes, M.C.O., BRAZIL

Our study has been realized with 54 promiscuous sexual life women, in a period going from January 1986 to November 1988, and among the following was observed:-

1. Medium age 26,68 years (14 to 41 years).
2. 24 women have children, and among them 67% have more than 01 and less than 05 children
3. 28 women (51,85%) mentioned and/or was confirmed that had Transmissible Sexual Disease in some period of their life.
4. 15 women (27,7%) used or are using injectable drugs.
5. 13 women (24,07%) present B type Hepatitis positive marking.

From the mentioned 54 women, 15(27,7%) presented positive HIV (ELISA recombined method)

1. Medium age 23,66% (14 to 31 years).
2. 07 women have children (medium 3,14 children).
3. 09 women (60%) among the ones of positive HIV, mentioned and/or was confirmed, had some transmissible sexual disease in some period of their life.
4. 10 women (66,6%) used or are using injectable drugs.
5. 03 women (20%) present B type Hepatitis positive markings.

None of the said women presented AIDS symptoms.

D.695

ASIAN WOMEN AND AIDS - RESEARCH ISSUES
Yoon, Soon-Young, PhD in Anthropology, New Delhi, India

This paper identifies behavioural research issues on Asian women and AIDS. It points out that current Information/Education for Health strategies used to educate female prostitutes and women about AIDS are often oblivious to the main problem of women's powerlessness. Research is needed on sex tourism and how it contributes to the vulnerability of women and children to AIDS. Also, more information is needed on the "veil of ignorance" which puts women into a communications "purdah" or seclusion. Even when confronted with health information about sexuality, women may not acknowledge it with a behavioural change as it would violate cultural rules of this communications "veil". Efforts to mobilize women's groups at community level can help to bring women out of this "seclusion", but these efforts have yet to gain widespread support. The paper identifies a number of research/action areas which would help Asian AIDS programmes to support women who are struggling to translate knowledge into behavioural changes.

D.697

THE SEX INDUSTRY AND THE AIDS DEBATE - Australian Conference
Overs, Cheryl.,* Bates, J.*
*Prostitutes Collective of Victoria, Australia.

The Conference aimed at AIDS, to disseminate information to the community and the sex industry and to consolidate and develop the policy required to maintain low infection rates.
Conference participants included a range of sex workers and managements, service providers, administrators and policy makers. Keynote addresses and workshops covered subjects including: testing policy; education strategies and health and welfare issues. Extensive "special" interest workshops were held (i.e., transsexual workers' issues, condom design).
Speeches and workshop recommendations have been published and widely disseminated. Groups were formed of workers from each state where none previously existed.
(4) An exchange of information occurred and a network established which will effect greater consistency and effectiveness in policy and program development aimed at limiting the spread of HIV in the sex industry.

D.694

LES KINOISES FACE AU SIDA: UNE TOPOGRAPHIE DE RISQUE
Bukarangira wN*; Walu Engundu**, Schoepf, B.G.**, Payanzo N***
* Harvard School of Public Health, Boston, USA; ** Projet CONNAISSIDA, Kinshasa, Zaire; *** Institut Pedagogique National, Kinshasa, Zaire.

Objectifs. Les femmes et enfants sont particulièrement à risque du SIDA en Afrique. Comprendre les causes sociales profondes des risques et des contraintes aux changements de comportements. Evaluer les risques des femmes dans des circonstances diverses.
Méthodes. Observation-participante, entrevues en profondeur et analyse institutionnelle qui lient la macrosociologie au comportements des individus.
Résultats. Une topographie des relations sociales avec leurs circonstances matérielles et psychosociologiques particulières permettent d'évaluer les risques différentiels des femmes différement situées dans la société. Il ressort des liens précis démontrant comment les comportements individuels sont médiatisés par les institutions socioculturelles.
Conclusion. Des changements socioculturels qui augmentent les ressources dont disposent les femmes de toutes les conditions sociales sont nécessaires à la prévention du SIDA chez les mères et leurs enfants à naitre.
Mots clefs: risque, femmes, ressources, changement

D.696

AIDS RELATED KNOWLEDGE AND ATTITUDES IN FEMALE CLIENTS OF SELECTED HEALTH DEPARTMENT CLINICS, HOUSTON, TEXAS
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** Department of Health and Human Services, City of Houston, Texas, U.S.A

Objective to determine AIDS-related knowledge and attitudes in women attending selected City Health Department Clinics in Houston, Texas.
Methods. Between 2/29 and 9/30/88, 959 women attending Family Planning, Maternity and Sexually Transmitted Disease (STD) clinics completed an anonymous, self-administered risk assessment questionnaire and a brief knowledge (9 questions) and attitudes (4 questions) questionnaire.
Results. Overall, 68% of the questions were answered correctly. Questions concerning modes of transmission (parenteral, perinatal, sexual) were known (89% correct), but knowledge of natural history of the the disease was limited (44% correct). Women with < 6 years of education did worse (p<.001) than those with >6 years; Hispanic women (68% correct) had fewer correct (p<.001) than blacks (86% correct) or whites (87% correct). Hispanic women who completed the questionnaire in Spanish were especially disadvantaged (57% correct). After controlling for education by multiple linear regression, ethnic differences remained. Eighty-two percent (82%) of respondents believed an IV-drug using partner should "always" wear condoms but only 38% indicated their partner would do so.
Conclusion. Overall knowledge was limited in this population. Hispanic women completing the questionnaire in Spanish and women with < 6 years of school were at a distinct disadvantage with respect to knowledge about HIV.

D.698

CONDOM INSTRUCTIONAL BOOKLET FOR FEMALE SEX WORKERS (An Integrated Process)
Pareja, Reynaldo, Rosario, Santo. PROCETS, Ministry of Public Health, Santo Domingo, Dominican Republic

For the development of a Condom Instructional Booklet nothing was assumed. A study was first made to determine the knowledge, attitudes and habilities that female sex workers of Santo Domingo, D.R. had in regards to condom use and correct placement steps. Once the errors, negative attitudes, and patterns of use with their clients were determined and analyzed, a pilot instructional booklet was designed with a creative focus group of female sex workers and an artist.
This pilot was pre-tested. Results showed very low grasp of key message, "condom protects against AIDS." Two simplified versions were done and pre-tested again. With the results, a combined final version will be printed in sticker format to be placed in motel, hotel, and brothel rooms.

The whole process and materials will be shown.

Sexologie
Sexology

D.699

AFFECTIVE DISORDERS AND HIV INFECTION IN INTRAVENOUS DRUG ABUSERS (IDAs).

Jocas Carlos, Tor J, Muga R, Llistar R, Pascual J, Planas P.
Service of Internal Medicine. Hospital "Germans Trias i Pujol". Universitat Autònoma de Barcelona. Barcelona, Spain.

Objective: To evaluate if affective disorders (anxiety and depression) are associated with HIV seropositivity in IDAs that presumablelly adquired HIV infection by sharing needles practices.
Methods: We tested anxiety (STAI-Trait) and depression (Beck's Depression Inventory) in 201 inpatients IDAs (156 males and 45 females) admitted in a detoxification unit, from January 87 to December 88. Patiens were tested the first day of admission. Furthermore co-factors as schooling level, prison, social status, and daily heroin doses were evaluated. HIV antibodies were analysed by EIA test.
Results: Sharing neddles was the only risk practice, dismissing by clinical anamnesis other risk practices. 143/201 patiens (71.1%) were HIV+ and 58/201 (28.9%) were not. Differences for seropositivity were on time of addiction (74.81 ± 32.52 m in HIV+ and 55.81 ± 39.91 m in HIV- (p<0.001)) and social status (p<0.0001) being the series homogeneous in sex, age, schooling level, prison, daily heroin doses and use of other drugs.
Anxiety was high (direct scores)1.5 type deviations) in both groups (58.6% in HIV- and 47.6% in HIV+) (p=NS), being moderate or important depression also similar in both groups (61.4% for HIV+ and 56.1% for HIV-)(p=NS).
Conclusions: Anxiety and depression are frequent in heroin abusers but the affective disorders are not related to HIV serostatus. Thus, the infection resulting of sharing neddles does not seem to be influenced by affective disorders.

D.700

CONDOM USAGE DECISIONS AMONG GAY MEN

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**Memorial Sloan-Kettering Cancer Center, New York City, U.S.A.

Objective. To understand gay men's decisions to use or not use condoms.

Method. Focused interviews.

Results. Analysis of qualitative data from an ongoing study of sexual decision-making among gay men expands our understanding of condom usage within this population. The initial 80 interviews indicate that varying appraisals of the risks associated with insertive and receptive intercourse (anal and oral) highly influence condom usage. Men who believe that condoms prevent transmission of HIV during anal and/or oral intercourse are likely to use condoms. However, men state the following beliefs as reasons for not using condoms during fellatio and anal sex: 1.Receptive anal intercourse without ejaculation or preseminal fluids does not transmit HIV. 2.HIV is not transmitted to the insertive partner during anal intercourse. 3.Receptive oral sex without ejaculation or preseminal fluids does not transmit HIV. 4.Receptive oral sex even with ejaculation or preseminal fluids does not transmit HIV because saliva and gastric juices kill the virus. Furthermore, some men decide to abstain from oral and anal intercourse because they believe that condoms decrease erotic pleasure or are ineffective protection against HIV transmission.

D.701

CONDOM USE AMONG HOMOSEXUAL MEN

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Objective. To investigate condom use during sexual activity and to identify any problems associated with the use of condoms.
Methods. A postal questionnaire survey of 262 homosexual men.
Results. It was found that, in spite of the general move by homosexual men towards safer sex practices, half of the men continued to engage in insertive anal intercourse. Almost 90% ejaculated during this activity of whom one third did not use a condom. Additionally, 90% of those who ejaculated during oral sex did not use a condom. Thirty two percent of those who had used a condom during anal intercourse reported at least one incident of condom breakage. When looked at in terms of frequency of individual condom use, it was found that 1 in 27 condoms break during this activity. Examination of the reasons reported for breakage indicated that physical stress on the condom was almost always thought to be responsible for these incidents.
Conclusion. Given that current condoms have been designed for vaginal use, these results indicate the need for an investigation of a separate specification for homosexual anal intercourse.

D.702

SEXUALITE DES PERSONNES DEVENUES SEROPOSITIVES ANTI-VIH

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*Hôpital HOTEL-DIEU ;**Faculté des Sciences, Lyon, France.

Objectif : La sexualité des personnes devenues séropositives anti-VIH nous a paru importante à explorer du fait des difficultés sexuelles relatées et de l'absence d'étude de référence sur ce thème.
Méthode : En 1988, nous avons distribué un questionnaire anonyme à 86 personnes séropositives anti-VIH suivies dans les centres spécialisés de Lyon. Une centaine de questions portaient sur leur vie sexuelle, affective, relationnelle, leurs représentations corporelles et leur caractère.
Résultats : Les résultats montrent que cette population remplit volontiers un questionnaire sexologique complexe (5 refus dénombrés seulement). Dans les suites de la découverte de la séropositivité anti-VIH, l'individu se perçoit comme dévalorisé avec un vécu corporel de mort, de salissure, de transformation irrémédiable. La sexualité est anéantie du fait d'une sidération importante du désir relatée particulièrement chez les homosexuels. Les sujets en couple initialement décrivent une chute de la communication dans leur relation à l'autre tandis que 50 % des couples évoluent vers la rupture ou l'amoindrissement relationnel. L'information sur la séropositivité anti-VIH est donnée au partenaire sexuel unique dans 80 % des cas, et dans 3 % des cas si les partenaires sont multiples.
Conclusion : Cette population semble dans l'attente d'une écoute et d'une reconnaissance de ses difficultés. 30 à 40 % demandent une aide sur le plan sexuel qu'il nous paraît indispensable de proposer, associée au cadre de suivi médical de ces personnes.

Consommateurs de drogues par voie intraveineuse
IV Drug Addicts

D.703

COUNSELLING INTRAVENOUS DRUG ABUSERS ABOUT AIDS AND HIV-TEST IN THE OUTPATIENT METHADONE CLINIC

Haas, Henriette and Kurz, T.

Department of Social Psychiatry University Hospital, Zürich, Switzerland.

Objective. Should the test be recommended to methadone patients and how to deal with ill patients.
Methods. Therapeutic consultants of 2 centres for drug-addicts were questioned about 97 well-cared for patients.
Results. Desperate reactions about a positive test were rare.
In 2 of the 3 observed cases the positive test was combined with first symptoms of AIDS. Negative as well as positive patients protected themselves an others better and showed increased compliance in medical care after knowing their status. Patients however who had avoided the test changed their behavior less during the period of evaluation inspite of numerous public savety campaigns. The severly ill patients tend to deny their situation (often with the help of drugs) most of the time. However at those rare moments when denial breaks down and yields to despair the need very much an open discussion with a person they can trust.
Discussion: The most important issue is to combine methadone treatment with professional counselling and medical care. Only within a good relationship to the therapist can a normal cathexis of the body and the object relations be reestablished in the former IVDA, which then results in better prevention.

D.704

ACCESSIBLE HEALTH CARE FOR IV DRUG USERS

Elovich, Richard and McCarthy, M. AIDS Coalition to Unleash Power, New York, New York, USA.

Objective. To discuss new case management strategies for HIV-infected IV drug users (IVDUs). Methods. Interviews with recovering and active addicts, drug treatment professionals, physicians and community based health care workers, ADAPT. Discussion. In evaluating treatment for HIV-infected IVDUs, we need to question existing models for treating IV drug use. Methadone maintenance programs are characterized by an emphasis on controlling and monitoring the addict rather than on effective treatment of the disease. This strategy is inappropriate for treating HIV infection. The centralized research model has an inadequate treatment capacity and is inaccessible to most IVDUs. Flexible, community-based treatment, mobile support service units, and outreach programs for IVDUs are underfunded, while research programs are designed to interest established funding sources. There is a need to make drug treatment available on demand in combination with health care for HIV infection: an active IVDU who is not dealing with his/her addiction cannot be expected to keep doctor's appointments. Because most IVDUs live outside the health care system, they do not have access to prophylactic treatments for HIV infection. They enter the health care system after they are symptomatic. IV drug users, routinely handled with prejudice and coercion, need to understand informed consent and patients' rights before receiving experimental AIDS therapies. Support services must accompany the HIV test. Conclusion. Workable strategies for case management of HIV-infected IVDUs should be flexible, community-sited, accessible, and together with drug treatment, available on demand.

D.705 EVALUATION OF A SUPPORT PROJECT FOR IV DRUG USERS WITH AIDS IN AMSTERDAM

Boom, Frans van den; Derks, Jack; Driessen, Anita
Netherlands Institute of Mental Health, Utrecht, Netherlands

Objective: evaluate effectiveness, feasibility and endurance of a support project for IV drug users with AIDS
Method: Often ivdu do not have stable relationships or supportive networks. Contact with family of origin may often be disturbed. Referral from the hospital to the 'home'situation can be difficult, because of the absence of a home(life) and/or a supportive network. In Amsterdam a support project for IVDU has been operative since January 1989. The program will be evaluated with respect to feasibility, endurance, effectiveness and client satisfaction, using Goal Attainment Scaling, Problem Oriented Records, and psychiatric screening instruments.
Results: The first results of the study will be presented.

D.706 Socials characteristics of drug-addict and seropositive female patients for human immunodeficiency virus.

AUTHORS: Macias José R.*, Gómez Angela**, Franchi María**, Matar Pablo**, Federman Liliana** and Astarloa Laura***.-Francisco J.Muñiz Hospital. Buenos Aires. Argentina.
OBJECTIVE: Analysis of the differents socials characteristics in females patients seropositive for human immunodeficiency virus (VIH) and drug-addiction antecedents.
METHODS: Analytic and critic investigation. Socials relations studies of 55 female patients seropositive for human immunodeficiency virus (VIH), who at their entrance had symptoms of infectious diseases and drug-addiction antecedents , between 10/1/87 and 12/31/88.
ABSTRACT: According to Clinic Classification of diseases caused by VIH proposed by CDC in May,1986: one patient (1,82%) belongs to Group I: eleven patients (20%) belong to Group II; 40 patients (72,73%) belong to Group III, and three patients (5,45%) belong to Group IV.
All of the mentioned patients were drug-dependent.
The age of these patients oscillated between 16 and 38 years.
One of them was homosexual (1,82%), seven were bisexual(12,73%) and fourty-seven heterosexual (85,45%).Twenty eight of them (50,90%) had had sexual relations , and shared needles, with people infected with AIDS, and 44 (80%) used to have this kind of relations with several people.
Many of them (85%) had antecedents of one or more sex-transmisible diseases and/or viral hepatitis B.
The serology of VIH was investigated. Confirmatory tests laid out a 100%positive.
We found three groups of differents socials characteristics.
In accord with the authors classification, they propose three groups: A-B-C
CONCLUSION: Group A: 4 patients (7,27%)

Group B: 39 patients (70,91%)

Group C: 12 patients (21,82%)

D.707 HIV TRANSMISSION IN SIMULATED CONDITIONS OF SHARING OF HYPODERMIC EQUIPMENT

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Objective. To examine transmission of HIV under simulated conditions of sharing of hypodermic equipment by intravenous drug users.
Methods. In a laboratory setting, hypodermic equipment was exposed to HIV (free virus) in medium. Attempts were made to culture virus in medium after eight conditions of exposure:
(1,2) contaminated needle-and-syringe left lying for an interval of one minute or one hour after exposure ("Shooting Gallery"); (3,4) exterior of needle exposed and left lying for 15 seconds or a minute ("Needle Stick"); (5) liquid medium exposed to HIV-contaminated needle ("Shared Cooker"); and (6,7,8) complete or incomplete decontamination with bleach and/or water ("Decontamination"). Three separate trials were made under each condition.
Results. HIV was successfully cultured under all three trials each of the "Shooting Gallery/One Minute Interval", the "Needle Stick/15 Seconds Interval", and the "Decontamination Twice With Water" conditions. HIV was not cultured from any of the three trials of each of the "Shooting Gallery"One Hour Interval", the "Needle Stick/One Minute Interval", the "Shared Cooker", the "Decontamination Twice With Bleach", or the "Decontamination Once With Bleach" conditions.
Conclusion. HIV contagion from empty, contaminated syringes, or under needle-stick conditions, appears to be time-dependent. HIV would appear to be viable for a longer period (minutes as opposed to seconds) in the interior of hypodermic equipment than on the exterior surface. HIV decontamination by bleach rinsing appears to be efficacious; mere water rinsing does not appear to be effective.

D.708 CONTRIBUTION DE LA PHENOMENOLOGIE ET LA PSYCHANALYSE A LA PRISE EN CHARGE INSTITUTIONNELLE ET INDIVIDUELLE DES TOXICOMANES INFECTES PAR LE VIH.

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L'approche phénoménologique temporelle des difficultés psychologiques rencontrées par les toxicomanes confrontés au sida illustre le défaut fondamental que représente l'atemporalité chronique chez le sujet présentant des conduites addictives toxicomaniaques. Les aspects spatiaux et corporels sont étudiés. La clinique analytique permet de mieux appréhender les mécanismes de défense mis en place par le sujet toxicomane séropositif pour le VIH ou déjà en traitement pour le sida. Le concept de la conduite ordalique donne une explication à l'intégration du sida comme une nouvelle conduite de risque chez le toxicomane.Ces deux approches sont complémentaires et dégagent de nouveaux axes psychothérapeutiques en matière de prise en charge institutionnelle et individuelle des toxicomanes infectés par le VIH.Plusieurs cas cliniques de patients suivis pendant deux années minimum sont exposés.

D.709 HIV INFECTION IN I.V. DRUG ABUSERS :

Leite, E.A.; Hamerschlak, N.; Szterling, L. ; Carvalho, M.B.; Lima, M.P.J.S.; Bellucci, S.B.B. . Centro Corsini.(CCII). Campinas.Sao Paulo.Brazil.

Objective: To measure the prevalence of the HIV infection in I.V. drug abuse. (spontaneous request).

Method : The I.V. drug abusers in attendance of CCII are tested for HIV (E + WB). The patients are oriented by a multidisciplinary education and assistencial program and the seronegatives are retested more or less in each 3 month.

Results : 81 I.V. drug abusers, 43 (tested positive with HIV infection) were seropositives between 11 and 35 years of age (32.5% less than 20 years of age) and 43% with less than one years of I.V. 36 patients have been attended drug user. 01 from group I, 13 from group II,14 from group III, 03 from group IV and 05 which have not been classified.

Conclusions : The risk of an acquisition of HIV between I.V. drug abuses is extremilly high, where me can see that most of the seropositives an contaminabed with less than one years of I.V. drug user.

D.710 AIDS AND PSYCHOSOCIAL TREATMENT

Orgnero, Irene; MSW,Private Practice, Calgary Alberta, Canada.

Objective. An exploratory study systematically examined the hypothesis that a specific social work intervention, Heimler's Social Functioning, would provide effective psychosocial care to persons with AIDS. Methods. The method employed to test the hypothesis was a single system design, specifically, the ABA model.The study was replicated with seven subjects, five of whom were homosexual males, one a bisexual male and one a female intravenous drug user. Four subjects completed the study, two died and one withdrew because of memory loss. The instruments used to measure needs and response to treatment across the three phases included Heimler's Scale of Social Functioning (Heimler, 1967) and a Self-Anchored Scale specifically designed to measure the person's feelings and perceptions of memory and body images changes. Results. Findings revealed that distress permeated all dimensions of the person: physical, emotional, intellectual, social and spiritual. The intervention alleviated perceptions of distress and promoted coping that increased quality of life.

Psychologie
Psychology

D.711

USE OF PROPRANOLOL FOR AGITATED BEHAVIOR IN AIDS

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Objective. Although AZT is useful for the treatment of HIV encephalopathy, behavioral disturbances in these patients may remain during treatment with this drug. Propranolol has been described to be useful for agitation and other behavioral disturbances associated with Huntington's chorea, a disorder which also affects primarily subcortical structures. Propranolol was used to treat agitated behavior in a patient with AIDS dementia.
Methods. A 29-year-old homosexual man had progressive gait and cognitive impairment over a 3-month period. He became doubly incontinent and confined to bed because of poor balance. After 3 weeks of therapy with oral AZT he became able to ambulate. However, he was hypomanic and disruptive. Incontinence persisted. Propranolol (120 mgs in two daily doses) was added to the therapeutic regimen.
Results. Addition of propanolol resulted in marked improvement within 10 days. Incontinence, paranoia and outbursts of agitation disappeared. Propranolol was discontinued after 10 weeks and improvement persisted. The patient continued to take care of himself at home and was fully ambulatory and oriented. A mild attentional deficit persisted.
Conclusion. This clinical observation suggests a role for propranolol in the treatment of the behavioral disturbances observed with HIV encephalopathy. Experience with a cohort is needed to substantiate this observation.

D.712

Coping With the Psychological Effects of an HIV Infection in Patients in Obstetrics and Gynecology

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Standort Charlottenburg FU-Berlin, Bundesrepublik Deutschland

Aim
The influence of various psychological and sociological factors such as drug addition of female patients with an HIV infection and/or their partners, sexual contacts, personality characteristics on their mastering the illness.
Group examined
Out of 111 patients with an HIV infection who had special counselling from 1985 to 1988, 45 were interviewed on a volunteer basis.
Method
Besides the interview a neurological-psychatric examination and behaviour analysis were conducted between interview and in-patient treatment.
Results
In the group of drug addicts, we saw counter-productive forms of coping with the illness. This was shown by deceit, behaviour which was inappropriate to the illness, outbursts of anger and despair.
Conclusions
The psychological and sociological programmes accompanying medical treatment, including a partial maintenance programme using polamidone as a substitue drug can influence the negative manner in which drug addicts cope with being HIV positive in an positive way.

D.713

ANGER: AN IMPORTANT PSYCHOLOGICAL MEASURE IN HIV DISEASE?

Levy,Elinor*;Knapp,P.*;Linde,R.**;Mayer,K.**;Stoddard,A.*** and McCusker,J.***
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Objective. To establish baseline values and associations for psychosocial and immune parameters in a cohort of sexually active gay and bisexual men.
Methods. The first 130 members of a cohort from the FCHC were given a battery of psychosocial questionnaires (including Anger Expression Scale, Hardiness Test, and Profile of Mood States) and had blood drawn for immunological measures (quantitation of CD4 and CD8 subsets, lymphoproliferative assays). Thirty two of these subjects were HIV antibody positive and 8 had developed HIV disease related symptoms.
Results. Differences between groups were found for the number and % of CD4 lymphocytes and % of CD8 lymphocytes and the response to the mitogens PHA and ConA using one-way ANOVAs. Suprisingly, the groups did not differ in any of the psychological measures. However, there were intriguing differences in correlations between the groups. The most interesting involved the anger expression scales as indicated in the table below. (* $p < 0.10$, ** $p < 0.05$)

	HIV-	HIV+A	HIV+S		HIV-	+A	+S
Ang-In v CD4#	0.22	-0.45*	-0.55	Ang-In v CD8%	-0.01	0.23	0.78**
Ang-Out v CD4%	0.05	-0.29	-0.42	Ang-Out v T8#	-0.20	0.42	0.79**
Ang-Out v PHA#	-0.04	0.31	-0.85**	Ang-Out v CD3%	-0.0	0.41*	-0.75**

Conclusion. Both anger-in and anger-out were associated with fewer CD4 and greater CD8 cells in the HIV+ groups. Furthermore, anger-out was associated with lymphocyte function. The expression of anger may be an important variable for longitudinal studies of psychosocial co-factors in AIDS.

D.714

PSYCHOLOGICAL IMPLICATIONS AMONG PATIENTS WHEN RECEIVING ANTI HIV POSITIVE

Marques,M.M.;Fontana,M.A.S;Gouvêa,S.G.E.;Rossi,G. ; Lima,M.F.J.S.;Bellucci,S.B.E..
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In the holistic vision of the work with patients HIV positive, the Psychology division has been developing a global work that has its aim in the patients emocional stability and better quality of life. This approach, plus a therapy that helps the patient to receive the positive results from HIV test, allowed us the conclusion that when working established stages, there are no reactions such as suicide, psychiatric scaring and deliberate intention to transmit the virus like it is shon by the press. Obseved among 82 patients in this case from the initial shock with responses such as effective cry or psychological numbness (emotional blocking), having perceptions interlaced with : improper thougts, emotions generated by events and fixation of non resolved situations. Having as reaction continuons anxiety or disphoria and showing as a constant a necessity of affective integration. We also notice that these patients show difficult to have the correct understand of being an assymptomatic carrying of the virus but by not being sick. These patients when working properly, will modify internaly their state of shock.

D.715

PSYCHOSOCIAL ASSESSMENT OF MINORITY WOMEN AT RISK FOR AIDS: A PSYCHOMETRIC PILOT STUDY

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Objective. A pilot study to describe the psychometric evaluation of several instruments designed to assess the major stresses experienced, the coping responses used, the factors affecting these responses and psychosocial outcome with 73 minority drug abusing and homeless women.
Methods. Reliability, content, convergent and divergent validity was assessed on the following instruments: Inventory of Current Concerns, Coping Scale, Social Support Questionnaire, Profile of Mood States, Social Self Esteem Inventory and Locus of Control Scales.
Results. Factor analysis isolated five dimensions which accounted for 72% of the variance. These dimensions included Emotional Distress, Coping Responses, Social Support Perceived as Useful, Situational Attributions and Personal Attributions. The alpha reliability coefficient for all subscales was .82. Content convergent and divergent validity was established. Contrasting groups analysis on a small sample of low-risk women indicated statistically significant differences in the majority of subscales assessed.
Conclusions. The psychometric investigation of instruments which provide a multidimensional approach to assessing coping and psychosocial adjustment of minority women at risk for HIV infection can enhance the assurance that subsequent nursing interventions are implemented based on reliable and valid information.

D.716

THE AIDS DEMENTIA COMPLEX (ADC) AND IMPAIRMENTS OF AMBULATORY ACTIVITY

Keilp, John G.*; Tryon, WW.**; Brew, BJ.*; Sadler, AE.*; Aronow, HA.*; Price, RW.*; Sidtis, JJ.*. * Memorial Sloan-Kettering Cancer Center, NY, NY, USA; ** Fordham University, Bronx, NY, USA.

Objective: To assess the relationship between symptoms of the AIDS dementia complex (ADC) and decrements in overall ambulatory activity.
Methods: 16 HIV-1 infected patients with early symptoms of the ADC were evaluated with the Neuro-AIDS Study Group neurological history, examination and neuropsychological (NP) battery. Each then wore a 2" x 3" electronic motion detector [Actigraph (TM): Ambulatory Monitoring Inc., Ardsley, NY] on the waist continuously for a period of 7 days. Minute-to minute recordings of waist movements greater than 0.1 G were obtained.
Results: Subjects with abnormal reflexes and limb incoordination showed lowered levels of overall ambulatory activity ($t=1.94$, $df=14$, $p=.07$), as did those with marked abnormality of either smooth pursuit or saccadic eye movements ($t=2.57$, $df=14$, $p=.02$). The number of these abnormalities correlated significantly with decrements in activity ($r=-.60$, $p=.01$). NP tests assessing speed of planned, coordinated motor movement were also correlated with activity level (timed gait, $r=-.54$; Trail Making A, $r=-.52$, and B, $r=-.59$; Grooved Pegboard dominant, $r=-.49$, non-dominant $r=-.51$: all $p<.05$), but self-ratings of both mood and psychiatric symptomatology were not.
Conclusions: Analysis of this initial sample of ADC patients indicates that activity decreases markedly as motor control becomes impaired. A more detailed analysis of 24-hour variability in activity is currently in progress on a larger sample, to further investigate these relationships.

D.717 IMPACT DE L'ATTITUDE DES SOIGNANTS SUR L'ETAT PSYCHOLOGIQUE DES PATIENTS ATTEINTS DU SIDA.

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* Infirmière, Hôpital Hôtel-Dieu, Montréal, Québec, Canada;
** Psychologue en pratique privée, Montréal, Québec, Canada;
*** Personne atteinte du sida, Montréal, Québec, Canada.

Dans le but de saisir l'influence des attitudes des soignants sur l'évolution physique et psychologique des sidéens, un échange entre infirmière, psychologue et personne atteinte du sida sera animé autour de la question de la perception, de la signification d'une maladie terminale tant pour les patients que pour les soignants. L'expression des réactions individuelles et collectives nous permettra d'évaluer l'ampleur des mécanismes de défense contre la peur d'une mort transmissible.

L'approche systémique préconisée vise essentiellement à explorer les besoins de sollicitude, de compassion et de contribution entre soignants et patients dans le processus de survie à une maladie terminale et à démontrer les bénéfices secondaires d'une attitude humaniste inscrite dans une approche multi (ou inter) disciplinaire comme soulagement de la douleur globale.

LE SOUTIEN PSYCHOLOGIQUE COMME EXERCICE.

VERTADIER, Alain.
Association AIDES, Comité de Paris, France.

Objectif. Diminuer l'anxiété en enrichissant la "visualisation positive" des personnes séropositives HIV ou malades.
Méthodes. Groupe de six à huit personnes dont deux séronégatifs.
Chaque réunion comporte exercices et échanges d'expériences entre les participants et feedback.
Exercices : relaxation musculaire et mentale, expression graphique (dessins) et rêve éveillé. Thème des exercices : les aspects considérés comme négatifs (la mort, la souffrance, la déchéance physique) et les aspects positifs (la résolution des difficultés physiques, morales et sociales).
Cette méthode modifie la "vision globale du monde" de la personne, de son environnement à travers les organes des sens, les représentations des rôles dans son entourage (médical, familial ou professionnel), les conceptions sur la maladie, la guérison, la santé. Elle invite chacun à découvrir sa force intérieure. Nous appelons cette technique "vision force".
Résultats. Trois groupes, soit 28 personnes ; durée d'appropriation de la méthode : 4 séances de 4 heures tous les 15 jours. 25 disent utiliser cette méthode seuls un an après le début des exercices pour mieux gérer des situations difficiles et ont enseigné cette méthode à d'autres.
Conclusion. Cette une approche peut être caractérisée de "formation-conseil" (formation : il s'agit d'apprendre quelque chose de nouveau. Conseil : cet apprentissage est accompagné).

D.721 LE COMPORTEMENT SEXUEL A-T-IL CHANGE A CAUSE DU SIDA ? ETUDE DANS LA POPULATION ZAIROISE.

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Hassig SE*,** et T.D.Kashala*.
*Ecole de Santé Publique, Université de Kinshasa/Zaïre
**Tulane SPHTM, New Orleans, LA, USA.

Objectif:Evaluer les changements dans le comportement sexuel à cause du SIDA au Zaïre et en étudier le "comment".
Méthodes:Les répondants ont été selectionnés informellement vu les difficultés pour avoir l'information sur les habitudes sexuelles d'une personne utilisant les méthodes traditionnelles d'enquêtes. Les enquêteurs ont été choisis dans les différentes couches socio-économiques du pays. Les répondants sont un voisin ou ami avec qui la causerie sera avec moins de réticence sur son comportement sexuel. A la fin de causerie, l'enquêteur note les informations enregistrées par coeur sur un questionnaire à l'insu du répondant.
Résultats: Sur les quelques cas vus, les tendances semblent refléter la situation telle que connue empiriquement dans le parler quotidien des gens. Les filles non-mariées ont tendance de réduire le nombre de partenaires sexuels. Les hommes (mariés et non-mariés) utilisent de plus en plus des condoms.
Conclusion: Ces résultats préliminaires suggèrent que la population au Zaïre est en train de changer ses pratiques sexuelles. Ceci ne fait qu'accroitre notre optimisme dans le grand combat pour vaincre le fléau du SIDA.

D.718 IMPACT PSYCHOLOGIQUE DU SIDA ET STRATEGIES D'INTERVENTION AUPRES DES SIDEENS.

de Montigny, Johanne, M.Ps. Psychologue en pratique privée, Montréal, Québec, Canada et Consultante en psychologie au Comité Sida Aide Montréal (CSAM).

Les données cliniques présentées visent à analyser et à évaluer l'impact des réactions psychologiques chez des patients atteints d'une maladie terminale afin de permettre l'élaboration de stratégies d'adaptation à la situation paradoxale de survivre à la menace d'une mort imminente.

Par le biais d'exemples de cas cliniques suivis en bureau privé, à domicile et à l'hôpital, on pourra nuancer les méthodes d'approche et élaborer un modèle d'intervention adapté aux étapes évolutives entre le diagnostic, le pronostic et la phase terminale de vie. Il sera question des particularités entre les thérapies individuelles et de groupes ainsi que des particularités entre les groupes de personnes atteintes du sida, de personnes séropositives et des proches de ces deux groupes.

Les éléments de contenu tentent de clarifier le rôle du psychologue et d'orienter d'autres professionnels et/ou intervenants face à la problématique psychologique du sida.

Sexologie
Sexology

D.720 SEXUAL DEVELOPMENT AND THE SERO-POSITIVE GAY MALE

Marcotte, Glen*; Valentich, M.**
*AIDS Calgary, Calgary, Alberta Canada, **The University of Calgary, Alberta, Canada.

Objective: To describe the impact of sero-conversion upon the sexual development of the gay male. Implications for the involvement of social work are discussed.
Method: A literature review and intensive, unstructured interviews with 3 Western Canadian sero-positive gay males. Additionally, the senior author draws on background knowledge gained while working with an AIDS community group.
Results: The use of the Eriksonian developmental schema and Marcia's identity status models were found to be useful in understanding the concurrence of thanatos and eros. After a positive diagnosis, the sero-converted gay male seeks to resolve these essential forces representing the end and beginning of life. The integrity vs. despair crisis is brought forward into early adulthood. Issues related to identity achievement and intimacy are also discussed.
Conclusion: Sero-conversion impacts seriously on the sexual development of gay males. Social work and other helping professions require knowledge of the gay male's developmental dilemmas as well as the norms of the gay subculture. Dialogue between sero-converted gay males and the social work profession may result in more effective clinical social work service as well as better designed and implemented community-focused services. Social work can take a leading role in destigmatizing and diffusing the health crisis and bridging the private need for confidentiality and the public issue of quarantining.

D.722 FREQUENCY OF SEXUAL INTERCOURSE ACCORDING TO MARITAL STATUS IN THE GENERAL POPULATION.

Per Magnus, H Stigum, JM Sundet, IL Kvalem, JK Grønnesby, LS Bakketeig. Department of Epidemiology, National Institute of Public Health, Oslo, Norway.

Objective. To understand the potential for HIV spread in the general population, empirical data on patterns of sexual behavior are needed. We here present data on the relative frequency of sexual intercourse in heterosexual relationships with respect to present marital status.
Method. The results are based on the responses to an anonymous postal questionnaire sent to a simple random sample of 10.000 Norwegians aged 18 through 60 years. The response rate was 63%. The analysis is restricted to single and married (including cohabiting) subjects reporting heterosexual activity during the past year. The dependent variable is the mean number of intercourses in the past month according to own and last partners present marital status, regardless of number of partners.
Results. The mean number of intercourses per month was 4.3 for singles whose last partner also was single (N=898), and 2.0 if the last partner was a married person (N=94). Married subjects with extramarital partners during the past year report a monthly frequency of 6.7 with spouse (N=279), and 1.7 with extramarital partners when the last partner was single (N=122) and 1.3 when the last partner was married (N=140). Married subjects without extramarital affairs in the past year report a frequency of 7.0(N=3743). The present data elucidate patterns of sexual activity and may used as data input in mathematical models for understanding and predicting the HIV-epidemic.

D.723

SEXUAL PRACTICES AND HIV INFECTION IN SOME ZAMBIAN PRISONS

Maboshe,M*;Simooya,O*;Hira,S**;Chimfwembe,E*;Perine,P***;
Mukunyandela,M* et al.
*Tropical Diseases Research Centre, Ndola, Zambia;**University Teaching Hosp., Lusaka, Zambia;***Uniformed Services University of Health Sciences, Bethesda.

Objectives.1.To establish seroprevalence of HIV infection among inmates in 5 urban prisons in Zambia. 2.To study their sexual practices.
Methods.All inmates who had been in prisons for atleast 3 months were entered in the study and their clinical, social and sexual information was collected. Serum samples were screened for HIV-1 antibodies using ELISA (Abbott) and those tested positive were confirmed using Recombigen (Cambridge) and Immunofluorescent assay. In Lusaka, rectal smears were taken from prisoners and controls (STD clinic attendees) for gonococcal cultures.
Results.The overall HIV-1 seroprevalence was 256 (16.1%) of 1593 prisoners and rates varied among the prisons:

Prison	HIV prevalence %	Homosexuality %
Mukebeko Maximum	9.2	13.8
Mukebeko Medium	15.2	13.3
Kamfinsa,Kabwe	14.8	18.2
Lusaka Central	29.0	4.7
Lusaka Remand	19.8	0.0

The overall prevalence of homosexual activity was in 203 (12.2%) of 1668 inmates. 15 (9.6%) of rectal smears taken from prisoners were positive for gonococcal cultures while none of the smears from control men were positive.
Conclusion.HIV infection is prevalent among inmates in some Zambian prisons and homosexuality exists under deprived sexual conditions.

D.724

Overview of WHO/UNESCO experience in intiating school health education programmes to prevent AIDS and other STDs.

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*UNESCO Education for the Prevention of AIDS Programme, UNESCO Paris; **World Health Organization, Education Systems Specialist, Health Promotion Unit, Geneva

The National AIDS Plans of developing countries will be analysed with a view of identifying the extent to which they include formal school AIDS education programmes; the dimensions of the problems these programmes are intended to address; and the essential results, if any, that have been obtained by these programmes up to date.

In parallel with the above study, the AIDS-education materials available at the WHO/UNESCO School AIDS Education Resource Centre (UNESCO, Paris), and addressed, in particular, to students, teachers, school authorities, and parents, will be reviewed and a critical and comparative analysis of their approaches to AIDS education content; and teaching/learning strategies and methodologies, will be presented, along with sample illustrative materials.

D.725

ALCOHOL AND HIV DISEASE PROGRESSION IN INTRAVENOUS DRUG ADDICTS.

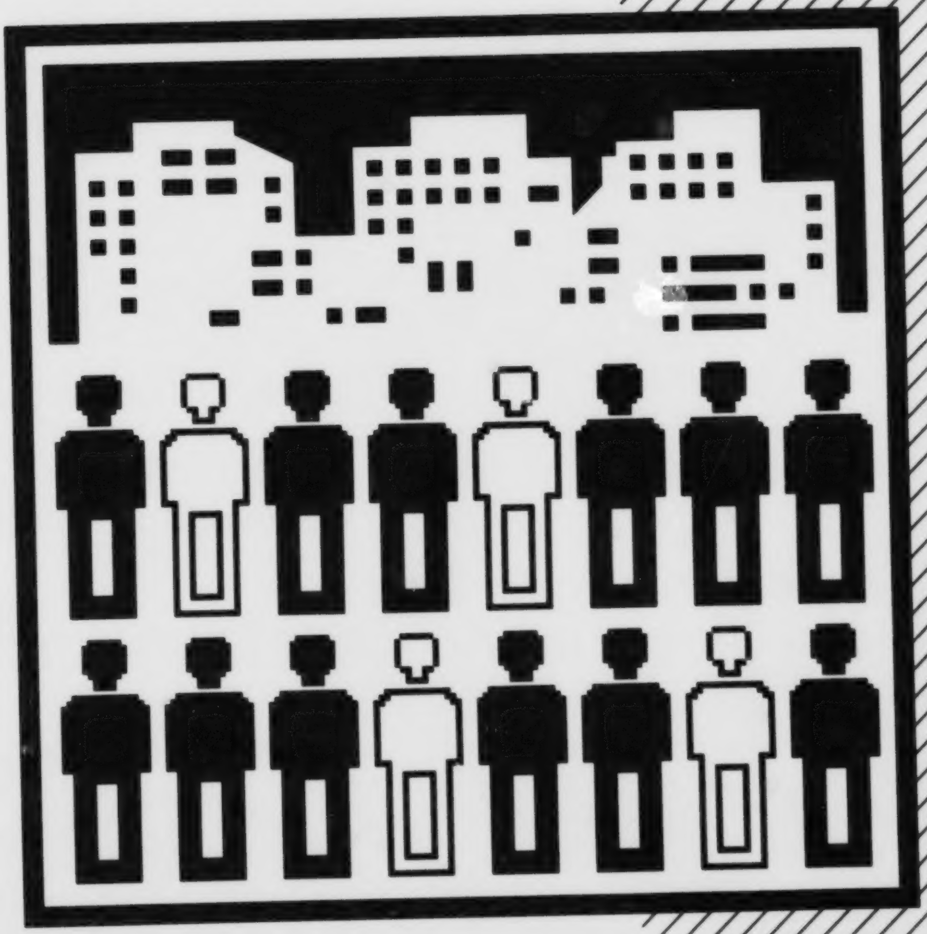
Lake-Bakaar, G. and Rao, R.S. SUNY-Health Science Center, Brooklyn, N.Y.

Alcohol weakens ego controls and is lymphocytotoxic. It might therefore increase the risk of exposure to HIV as well as accelerate disease progression.
Objectives To evaluate the effect of alcohol on the rate of HIV infection and on HIV disease progression.
Methods Alcohol history evaluated prospectively in 201 IVDA using a questionnaire. Good correlation with CAGE responses, serum GGTP levels and repeat random interviews. HIV antibody detected by repeat ELISA testing (Abbott).
Results

	HIV negative	HIV positive	AIDS
n	52	106	42
Age(M±SD)	35.8±7.9	35.4±8.2	36.9±4.9
Females	20 (38%)	33 (31%)	13 (33%)
Alcohol (40g/d and over)	34 (65.3%)	63 (60.4%)	36 (85.7%)

Alcohol abuse is significantly greater in AIDS than non-AIDS IVDA (P = 0.016: Fisher's exact test). In contrast there is no significant difference in alcohol use between HIV negative and HIV positive patients (p 0.05).
Conclusion Alcohol does not significantly increase the risk of HIV exposure but may affect the rate of progression of disease in HIV positive subjects.

SECTION E



Le SIDA, la société et le comportement

AIDS, Society and Behaviour

Vivre avec le SIDA : le point de vue de personnes atteintes
Living with AIDS: A Person with AIDS Perspective

M.E.O.1 WOMEN'S ISSUES

Heggs, Amanda. Copenhagen, Denmark.

M.E.O.2 CHILDREN'S ISSUES

Channess, Barbara. North Cross, GA, USA.

M.E.O.3 WOMEN'S ISSUES

Maison, Belinda. Tobinstort, IN. USA.

M.E.O.4 HEMOPHILIA

Guimares, Rogerio Fiaro. Brazilian Interdisciplinary AIDS Assoc. Brazil.

M.E.O.5 AIDS IN THE CARIBBEAN

Sealy, Godfrey . Trinidad and Tobago.

M.E.O.6 HOMOPHOBIA AND AFRICA

Ssebbenja, Peter. Kampala, Uganda.

M.E.O.6.A ISOLATION OF PWAs/MEDIA RELATIONS

Bangura, Hassan. Sierra, Leone.

Éducation-SIDA : Leçons à tirer des pays en voie de développement
AIDS Education: Lessons from Developing Countries

M.E.0.7

PLANIFICATION D'UN PROGRAMME D'INFORMATION ET D'EDUCATION POUR LA PREVENTION DU RISQUE D'INFECTION A V.I.H. A PARTIR D'UNE ENQUETE C.A.P.

AUTEURS : DIOUF Ousmane* ; NDOYE Ibra* ; PETITGIRARD Anne**
* Ministère de la Santé Publique - SENEGAL
** GPA/OMS - GENEVE -

OBJECTIF Définir une stratégie globale d'Information et d'Education pour la Prévention de l'infection à VIH et du SIDA.

METHODOLOGIE L'enquête CAP a combiné la méthode d'entretiens de groupe et de questionnaires individuels à partir d'une base de sondages (645 personnes). Les résultats ont été suivis d'une planification d'activités par programme.

RESULTATS Définition de principes directeurs
. situation à risque par rapport à groupes à risque
. articulation des activités de terrain autour d'une dynamique participative
. nécessité de prendre en compte aussi bien le milieu urbain que rural.
- approche multimédia
- Définition des étapes de conscientisation-sensibilisation, motivation et action (changement de comportements)
- choix des objectifs et stratégies, modalités de supervision et d'évaluation
- définition d'un cadre organisationnel.

CONCLUSION
Le lien entre la recherche et l'action assure la pertinence des programmes et renforce la dynamique participative.

M.E.0.8

THE ROLE OF HEALTH EDUCATION IN PREVENTION OF AIDS (UGANDA'S EXPERIENCE)

Gaifuba, J.K., Ministry of Health, Uganda Government. Uganda

This paper outlines the strategies and objectives of the Health Education programme in attempts to prevent and control the spread of AIDS in the country. Emphasis in this paper is put on the utilisation of different government and non-governmental organisations and their involvement in control measures and also the role of the community members in the preventive activities.

Secondly, the paper also outlines different methods and approaches of the educational strategies in educating the masses for a change in behaviour.

Thirdly, the paper discusses the misconceptions held by the people on the mode of transmission of AIDS in the community and how to dismiss these misconceptions for a change in behaviour.

Finally, the paper also highlights the impact of the educational programmes in different target groups in the population.

M.E.0.9

STREET TEENAGERS AND AN AIDS PREVENTION PROGRAM IN BRAZIL

Wiik, Flavio Braune*; Filgueiras, A.**; Castro, M. L.***.
*Brazilian Interdisciplinary Aids Association; **S.O.S. Child;***street kids educator.

Objective. To describe and contextualize the living conditions of poor teenagers who live on the streets and/or in institutions in Brazil's large urban centers, in particular, Rio de Janeiro. Present estimates number 30,000 street kids in Rio de Janeiro alone. A recently developed prevention program for the street teenagers will also be presented.

Method. People who work with the street teenage question were invited by the Brazilian Interdisciplinary Aids Association-ABIA to discuss the urgent need for designing a informative and educational program on Aids prevention in view of the alarming statistics on HIV infection and Aids in this population. Street kids educators were used to bridge the gap between social researchers and the teenagers, whereby prevention measures were introduced in culturally appropriate language. A audiovisual show, posters, folders and cartoons were produced in view of this reality.

Results. The program was developed in 5 street teenage groups in Rio de Janeiro. The informative material and its discussion was based on the idea of what it is to be healthy and how important it is to prevent Aids from their own point of view and experience.

Conclusion. Aids prevention programs are more efficient in transmitting prevention measures if the target group's socioeconomic and cultural background is known and if this knowledge is used as a base for introducing humanitarian values such as self-respect, solidarity and group support.

M.E.0.10

AIDS EDUCATION FOR YOUNG PEOPLE IN A MULTILINGUAL SOCIETY

Diouf, G.*; N'Doye, I.*; M'Boup, Souleymane**; Sow, A.*; Sow, P.G.*; MDiaye, M.***; et al. *Association Jeunesse Anti-Sida et MST (A.J.A.S.); **Universite of Dakar, Senegal; ***Ministry of Health, Dakar, Senegal

Objective: To develop an increase in AIDS awareness among the young people in Senegal, West Africa, to help prevent the sexual transmission of HIV.

Methods: Since many individuals may or may not alter their future sexual behavior by simply reading a pamphlet or by viewing an information poster, we created a young organization in Senegal (A.J.A.S.) to develop other means of communication to help educate young people about the transmission of AIDS. We enlisted the help of various departments at the University of Dakar and of the National AIDS Committee.

Results: 1) Small group meetings were organized to meet with young people in the schools and youth organizations to discuss AIDS and other sexually-transmitted diseases and how to prevent them. 2) We have invited young artists to disseminate information about AIDS in a creative way to the general public at sporting or cultural events. 3) We have enlisted actors and musicians to write plays and songs about the dangers of unprotected or promiscuous sexual activity in relation to HIV transmission. These have been performed in various districts of Dakar to help reach those individuals who may not have access to or even be able to read information pamphlets. 4) We have developed slide shows and video presentations to visually help facilitate discussions about the issues surrounding AIDS.

Conclusions: To deal with the need for public education concerning AIDS, new and vigorous efforts need to be made to reach young people who will be entering their sexually-active years. Techniques used must address the cultural, language and literacy barriers which may be present in a specific country or region.

M.E.0.11

THE GAGA BAPTISM OF THE CONDOM: FOLKLORE AND RELIGION AS ADJUNCTS OF AIDS PREVENTION AMONG HAITIAN MIGRANT AGRICULTURAL WORKERS IN THE DOMINICAN REPUBLIC

Didiez, Nelson; Arbaje, M; Rosario, S; Guerrero, E; De Moya, E.A.; Troncoso, I; et al.
PROCETS, Ministry of Public Health, Santo Domingo, Dominican Republic.

Objective. To show how folklore and religious feelings can be used in order to promote participation in the struggle against AIDS, community organization and condom use adoption among Haitian migrant agricultural workers in the Dominican Republic.

Methods. A Haitian Creole-spoken AIDS prevention program was launched in July 1988 by the Ministry of Public Health and the Dominican Institute for Social Security focused on migrant agricultural workers in the sugar mill fields. Pre/and post intervention CAP studies are carried out in each community. Intervention comprises mobile units and local radio stations emission of AIDS prevention messages, formation and training of community health committees, collective baptism of the condom during yearly Easter Gagá rites, and universal availability of subsidized condoms at grocery stores.

Results. Pre/and post intervention CAP studies show a significant increase in the levels of awareness of AIDS and in condom use adoption. Eighty-eight health committees have been formed in order to consolidate and amplify the gains through interpersonal influence. The baptism of the condom in Gagá rites incorporates its use into culturally accepted behavior.

Conclusion. Cultural understanding and respect of the mores and beliefs of Haitian migrant workers has brought about an enthusiastic response on their part to the AIDS prevention program.

M.E.0.12

LESSONS LEARNED FROM FAMILY PLANNING COMMUNICATION PROGRAMS

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*Center for Communication Programs, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland, USA

Objective. To identify key lessons from family planning programs relevant to AIDS education.

Methods. Evaluation of specific IEC interventions on related behavior.

Results. More than twenty years of experience in family planning programs worldwide demonstrates that well-designed information, education, and communication interventions not only increased knowledge and influenced attitudes, but also changed behavior. Major lessons learned from family planning communication programs to date are: 1) initial research is essential, both to reach target audiences and to persuade media gatekeepers; 2) mass media can motivate people to seek information and services. The impact is multiplied by promoting intermediate steps, such as: calling a hotline, entering a contest, joining a group activity, or attending a health facility; 3) popular entertainment can incorporate messages about sexual responsibility in a way that will be perceived and acted upon; 4) peer group counseling and services are effective in reaching both high and low status groups; 5) morale of service providers is a crucial factor that can be enhanced by appropriate IEC interventions.

Conclusion. Much can be learned from previous family planning IEC experience which is applicable to AIDS education programs.

Les proches et la famille
Close Friends and Family

M.E.O.13

AIDS AND THE FAMILY

Bor, Robert; Miller, R.; Goldman, E.; Johnson, M.; Lee, C.; Kernoff, P.
Royal Free Hospital and School of Medicine, London, England.

Objective. To describe the impact of AIDS on families presenting for counselling in a London Teaching Hospital over a four-year period (1984 - 1988).
Method. Families have been interviewed in different hospital units (Haemophilia, S.T.D., AIDS Counselling, Casualty, Medical Wards) over a period of four years. The 'Milan Method' of family therapy has guided the interview approach. Families have been seen at all stages; from the time of diagnosis of an individual, to the period of bereavement. Two thousand interviews have been conducted. Common themes have been recorded.
Results. AIDS is a potentially powerful source of stress on relationships between family members and between the family and other social systems. It exacerbates existing relationship difficulties and leads to new problems. Over 40 common themes emerged from these interviews. These related to (a) dynamics within the family (20); (b) stresses in the structure of the family (5); (c) problems in the family after someone has died from AIDS (5); and (d) problems betweenthe family and other social systems (10).
Conclusion. AIDS has a profound effect not only on the HIV-infected indivdual but also on his or her relationships with others. This includes increased stresses within the biological family and the family of affiliation. Counselling approaches which address these may help to reduce psychiatric morbidity in the survivors.

M.E.O.14

GAY MEN WITH AIDS: FAMILY OF CHOICE VS. FAMILY OF ORIGIN

Patten, John,* Walker, G.** * **The Ackerman Institute for Family Therapy, New York, New York, USA

Objective: A gay man diagnosed with AIDS needs to resolve the disjunction between his gay partnership and friends and his family of origin.
Description: Gay people, in order to establish a gay identity in accord with their sexual orientation, frequently leave their family of origin and sustain long-term cut-offs while establishing a gay family of choice which may or may not include a long-term partnership. When the gay man is diagnosed with AIDS, he often feels a need to resolve this disjunction. His desire or attempt to reconnect to the family of origin may create intense stress as the gay person reenters a world which can reinvoke longstanding internalized conflicts. This stress may generate vulnerability to increased illness.
The workshop will deal with the delicate balance between forging reconnections and maintaining gay identity in the face of life-threatening illness and will include a discussion of issues of gay identity, techniques of working with families of origin to create bridges between parents and gay children whose values they may or may not share as well as techniques of working with the gay couples when one partner makes a decision to reconnect with his original family. The area of reconnection requires a high degree of clinical sophistication and extensive knowledge of gay issues. The workshop will analyze the dangers as well as the possibilities for success in reconnection. Videotape excerpts from Stages of Illness, an Ackerman AIDS training tape, will be used to illustrate themes.
Conclusion: Psychotherapeutic understanding and themes can significantly help in the area of reconnection to family of origin.

M.E.O.15

THE DEVELOPMENTAL AND FAMILY SERVICES UNIT - A MODEL AIDS PROJECT SERVING DEVELOPMENTALLY DISABLED CHILDREN AND THEIR FAMILIES

Hopkins,Karen; Gross, J.
Albert Einstein College of Medicine, Rose F. Kennedy Center, Bronx, New York, USA

Objective: To assess the developmental needs of HIV infected children to provide rehabilitative and psychosocial services inorder to improve the quality of life by optimizing developmental functioning.

Methods: This paper describes a model pediatric program that uses a multi - disciplinary team to assess the developmental and psychosocial needs of HIV infected children and their families. The unit includes developmental pediatricians, social workers, psychologists, a medical ethicist, physiatrist and occupational, physical and language therapists, each of whom perform complete evaluations. The weekly multi - disciplinary conference results in the formulation of an Individual Family Services Plan (IFSP) for each child and his family.

Results: 30 children and their families have been evaluated and are in the program. Family compositions were non - traditional and varied. The disabilities and rehabilitative needs differed as well. The most frequently required services were occupational therapy and psychosocial intervention to increase parental coping skills in handling developmentally disabled, chronically ill children.

Conclusions:Children who are HIV+ are living longer and will have serious deficits. The need to develop services to address the unique developmental and psychosocial needs of these children and their families is paramount.

M.E.O.16

Effectiveness of a Support Group with Families of HIV infected children: A One Year Follow-up. S. Crandles*, A. Sussman**, M. Berthaud**, A. Sunderland** F. Cancellieri*. *Kings County Hosp.; Brklyn, NY, U.S.A; **SUNY-Health Science Center at Brooklyn, Brklyn., NY; U.S.A.

Objective: To examine the effectiveness of a weekly support group for the caregivers of HIV infected children in 1) reducing social isolation and depression, 2) increasing self esteem and education regarding HIV, and; 3) developing a support network.
Method: This report describes the group's development over a 1 year period (46 sessions). 31 families of 36 HIV infected children were invited to attend the weekly support group held in an urban hospital. Participants are referred by staff and by group members. Members include parents, grandparents, and foster parents. Two social workers, a physician assistant and a psychiatric resident facilitate the group while a third social worker leads a children's play group concurrently. Traditional group psychotherapy techniques are utilized.
Results: Groups size ranged from 3 to 13 participants. The average number of participants increased from 6 to 8. Seropositive mothers who acquired HIV heterosexually comprise the largest subgroup; they also attended most frequently. Males failed to attend or remain in the group. Themes such as members' concerns about their health, sexuality and relationships, and struggles with being single parents emerged. With time, these women came to focus more on their own emotional struggles and issues and less on more practical concerns of the care of their children. Members attended funerals and visited grieving families at the time of the death of children. They also celebrated the childrens' birthdays and went on group outings.
Conclusion: A support group for the families of HIV infected children was found to help them cope with the stress and pain of pediatric AIDS. Seropositive mothers demonstrated the greatest need and interest in this intervention. The authors retain their recommendation that this modality be an integral part of comprehensive care.

M.E.O.17

MULTIPROFESSIONAL EXPERIENCE WITH HIV INFECTED PATIENTS'FAMILY MEMBERS GROUP IN RIO DE JANEIRO, BRAZIL.

Moura, E.M.M.; Carvalho Neto, Lahire Dutra; Menan, J.L.L.; Longo, P.M.P.; Rachid de Lacerda, M.C.; Morais de Sá, C.A.
Gaffrée & Guinle University Hospital, University of Rio de Janeiro (UNI-RIO) - Brazil.

Objectives:
1) To inform family members of HIV infected individuals about transmission/prevention and follow up of the patient.
2) To give emotional support.
3) To estimulate family members and friends to participate in the Social and Health Politics in Brazil.

Methods: Since July 1987 when it started, the study group included psychologists, two social workers and one (female) doctor that meet weekly for one and half an hour with family members and friends of our patients. During this time period 60 family members and friends of 36 patients were included. Eleven family members continue to participate on the study group even after their patients death.
Results: Among the 60 family members and friends followed, including those who came exclusively for information, 54 (90%) could cope better with the difficulties of living with an infected person, in 49 (83%) it was observed a clear decrease in the anxiety and depression process. Finally in October 1988, 5 (8,5%) decided to organize an Association Group of Family Members of AIDS Patients in Rio de Janeiro to discuss and fight against negative situations generated by the AIDS.
Conclusions: The objectives were achieved notwithstanding the enormous social stigma of AIDS. The preliminary results suggest that is possible to extend this experience to other hospitals or centers with AIDS care, as happened in 1988 when doctors from other states of Brazil coming for training on AIDS care participed on the group and felt the importance of the experience.

M.E.O.18

DISCUSSANT:

Scribailo, Steven. PWA Coalition, Vancouver Canada

Stratégies innovatrices pour l'éducation des minorités au sujet du SIDA
Innovative Strategies for AIDS Education with Minorities

M.E.O.19

SAMM-Stepping AIDS is My Mission-A Minority Adolescent AIDS Education Program.

Cargill, V.A. Assistant Professor of Medicine, University Hospitals of Cleveland, 2074 Abington Road, Cleveland, Ohio 44106 216-844-1278

SAMM is a two year old minority adolescent AIDS education program. Targeted to predominantly black adolescents at risk, SAMM uses peer pressure to provide a supportive environment to maintain safer behaviors. Founded on volunteerism, SAMM utilizes community persons, black health and parahealth professionals, and adolescents to provide AIDS education. Sites are not limited to schools, but rather target adolescents at community centers, detention homes, and Job Corps. Education is provided in a nonjudgemental style, using familiar street terms, as well as black adolescent jargon. Slides of black persons in various stages of HIV infection are also used, in addition to a panel of black PWAs/PWARCs/HIV positives who interact with the teens and answer questions. At the end of each session is a social event (dance when permitted), where the SAMM volunteers as well as the disc jockey serve as undercover AIDS educators. By providing free tee shirts, caps, refreshments and entertainment, SAMM's message is not only to stay safe but to be proud. We believe that our teens are each unique, valued individuals. AIDS education in our format is linked to self-respect and empowerment.

M.E.O.20

Triple Jeopardies - Reaching Ethnic and Racial Minority Youth who are Gay - Identified and/or IV Drug Users

Gayle, Jacob A. Kent State University American School Health Association, Kent, Ohio, USA.

American youth are identified as one of the next waves of individuals greatest at risk for HIV infection. Black and Hispanic youth are of special concern regarding increased incidences of HIV infection due to disproportionate HIV antibody seropositivity rates in these racial and ethnic groups. Furthermore, those "minority" youth who are intravenous drug users and/or homosexually active (gay or bisexual) may be at even greater risk because of practices often associated with these behaviors. This presents challenges beyond those singularly identified with reaching either "minority" youth or gay/drug-using youth alone. Very few school-based educational initiatives target such youth in particular.

The American School Health Association has developed strategies to train school-based professionals to prepare for the challenges here-described. This presentation will present some of these strategies.

M.E.O.21

AIDS EDUCATION IN COMMUNITIES OF COLOR: HOW TO MAKE A DIFFERENCE

Hassan, Rashidah Lorraine. Bebashi, Philadelphia PA. USA.

Those individuals most at risk for HIV infection are also most at risk for a cadre of other maladies which have not as yet been successfully addressed in the past by health education. Heart disease, diabetes, hypertension, unplanned adolescent pregnancy infant mortality, all have been addressed in health education targeted toward poor, under educated people of color with very little success. AIDS education can not be successful in altering behavior without defining cultural sensitivity, recognizing cultural mores, consideration of language and cultural/ethnic communications.

A model of education will be presented which incorporates the principals of education blended with the realities of cultural influences. The "how to's" of accessing the community needs, targeting specific populations and developing realistic education and service programs will be highlighted.

M.E.O.22

INTEGRATING HIV/AIDS INFORMATION INTO SCHOOL HEALTH EDUCATION FOR MINORITY STUDENTS

Warren, Rueben C. Centers for Disease Control Atlanta, Georgia, U.S.A.

Health education has been taught in the public school system for many years. Unfortunately, strategies to assure relevant and meaningful information have been limited. In fact, much of the school curricula, in general, serve as a barrier rather than an enabler to learning for minority students.

Minority and/or low income students often have limited financial and/or geographical access to health care. Consequently, health issues are low on the priority scale for many of these students. Therefore, innovative models are needed if school health education is expected to influence the knowledge, attitudes, or behaviors of minority students.

This presentation focuses on integrating HIV/AIDS information into a salient health education model for minority students. Emphasis will focus on the students' health goals, other conflicting goals, and competing values and beliefs. Recommendations will be made to assure that the health messages are relevant to the total life circumstance of the students. The relationship between knowledge, attitude, and behavior will also be reviewed.

M.E.O.23

AIDS AND MINORITIES: STRATEGIES FOR PREVENTION

Dumpson, James R.; Fraser-Howze, Debra; & Lopez, Mary Louise Black Leadership Commission on AIDS, New York, NY, USA

Objective: To pose innovative approaches to reduce AIDS-related risks of poverty, addiction and educational deficiencies, and therefore the risk of AIDS.
Methods: 1. Include minority leaders in policy formation and decisions. 2.Review and restructure operations of and financial support to municipal hospitals in urban centers overwhelmed by minorities with AIDS. 3.Development of culturally-sensitive approaches to adolescents to reduce experimentation with "unsafe" sex and drugs. 4.Focus on the hub of the epidemic--minority women of childbearing age and their infants--with a high-saturation education/prevention campaign. 5.Focus on the IV drug abusing population, the majority of which is Black and Hispanic, and provide new and radical outreach programs.
Results: Currently, in New York City, the Black Leadership Commission on AIDS has mobilized and now is advising the city, state and federal health systems. BLCA programs are now seeking funding for adolescent outreach and education/prevention centers for African-Americans.
Conclusion: The belief is increasing among African-Americans in the U.S. that AIDS was introduced into this community by outside forces in an attempt to kill off the race. This view of biological genocide is a serious barrier to the implementation of AIDS prevention efforts by governmental, health care and educational systems which are not trusted by minority communities. The way to correct this situation is to utilize minority leadership in decision-making, and minority staffing in direct service. By placing special culturally-sensitive concentration on minority women of childbearing age, their infants, IV drug abusers and adolescents reaching the age of sexual and drug experimentation, prevention can attain some success. Only the full and active participation of minority leaders in all systems can make this possible.

L'entraide : Une stratégie d'adaptation
Self-Help: A Coping Strategy

M.E.0.24

SELF HELP GROUPS AND THE AIDS PATIENTS

HECTOR BALTHAZAR
Canadian Council on Social Development, Ottawa, Canada.

There is a paucity of evidence showing the Aids Community is fully aware of the potentials of the self-help group model in dealing with many personal, emotional and social problems the condition gives rise to. This session will present a range of possibilities the self-help group model offers Aids Patients, their Families and their Friends.

Also treated will be the gains the Aids Community can draw from associating with the Self Help Community as well as the contributions the Aids Community can make to it. The reasons why the Aids Community does not work closely with the established centers such as Self Help Clearinghouses will be explored.

The work that a number of self help groups with an advocacy agenda will be presented with the view of exploring both the applicability of such an option for Aids Patients and the strategies groups have used in dealing with specific concerns.

M.E.0.25

SELF-HELP: A PERSONAL PERSPECTIVE

Kowalski, Alex. Vancouver Person's with AIDS Society. Vancouver, Canada

M.E.0.26

THE AIDS PREVENTION CONCEPT OF THE DEUTSCHE AIDS-HILFE CO-OPERATIVE MODEL

Ian Schäfer, Norbert Specht, Deutsche AIDS-Hilfe e.V.
Nestorstr. 8 - 9, 1000 Berlin 31, West-Germany

Objective: To describe planning, realization and monitoring by a nationwide working non-governmental organization in the Federal Republic of Germany. Methods: In 1985 non-governmental groups were founded as AIDS-Hilfen in the sense of self-help groups. The distance to governmental health authorities was essential for the access to target groups as gays, i.v. drug users and prostitutes (in the sense of anti-discrimination). Brochures in an open and explicit language were published. The motto was "if you have a sexual disease you have to talk about sex and sex can still be fun". The acceptance of different kind of lifestyles is another main rule for the successful work of non-governmental organizations. Deutsche AIDS-Hilfe is the umbrella organization now of 80 local counselling centers which are well accepted by target groups and the general public. Results: Continuous discussion, expert meetings and feed-back by people with AIDS/HIV and numbers of target groups led to promising results in risk reduction and social acceptance of people with HIV and AIDS. Conclusion: To reach specific target groups you need a specific language especially for discreminated minorities. A non-governmental organization seems to be the best educational partner.

M.E.0.27

THE DIFFICULTIES OF PWA COALITIONS IN PROVIDING SERVICES TO ACTIVE DRUG MISUSERS

Mordaunt, John. London Lighthouse, United Kingdom.

M.E.0.28

PHYSICIANS SELF SUPPORT GROUP

Chateauvert, Michel Ville Marie Social Service Centre, Montréal, Québec, Canada.

Under the auspices of Comité SIDA Aide Montréal I have been facilitating for the past 6 months a self-support group for physicians who have a significant proportion of people with AIDS as patients.
I will present the difficulties in getting such a group off the ground and attempting to keep it focused on meeting some of the emotional and educational needs of the participants. Issues such as the following will be addressed: the alleged reluctance of physicians to share their feelings; the difficulties in exercising leadership amongst a group of highly autonomous professionals; emotional impacts of having a large practice of people with AIDS.

M.E.0.29

SELF HELP EXPERIENCE IN AFRICA

Anumudu, Nicolas. Ministry of Social Development, Youth and Sports, Social Welfare Division, Owerri, Nigeria.

Les facteurs culturels déterminants dans les attitudes à l'égard du SIDA
Cultural Determinants in Responding to AIDS

M.E.O.30

M.E.O.31 WORLDVIEWS AND SEXUAL PRACTICES IN SRI LANKA: THE ROLE OF ANTHROPOLOGICAL APPROACHES IN A GLOBAL PROGRAMME

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* Social and Behavioural Research Unit, Global Programme on AIDS, World Health Organisation, Geneva, Switzerland.

Objective. The objective of the paper is to highlight the complex interplay between culture as a boundary-maintaining mechanism and high risk sexual behaviour as one which tends to erode such boundaries.
Method. The paper will focus on the difference in values between youth and adult groups in relating to the tourist industry in Sri Lanka, taking into account the potential the latter has for spreading HIV through male homosexual tourists. A combination of quantitative and qualitative survey data on KABP (WHO model) and on boy prostitution will be employed. The quantitative analysis forms the background for the explanation of behaviour as moderated by the caste system and by the cultural mechanisms for the integration or rejection of those whose behaviour deviate from the norm.
Results. The age of respondents is inversely related to the level of knowledge of HIV/STD aetiology as well as to degree of risk behaviour. Apparently the young have a better capacity for adapting their sexual behaviour to new situations even though they are aware of the dictates of traditional sexual mores. The caste and caste network serve as a regulating mechanism for: (a) initial access to the sexual trade and, (b) eventual reintegration into traditional society and life style.
Conclusion. The implications of the findings for the national STD/HIV control programmes are discussed. The need for a micro-social approach to an understanding of the problems of boy prostitution and other forms of high risk behaviours is emphasised.

M.E.O.32 COMPORTEMENTS SEXUELS ET CONTEXTE CULTUREL
UNE APPROCHE METHODOLOGIQUE DE LA PREVENTION DU SIDA

Philippe ENGELHARD, Moussa SECK, ENDA-TM, BP 3370 - DAKAR

OBJECTIFS : *concevoir une méthodologie souple et peu coûteuse capable de donner rapidement une physionomie des comportements sexuels et de leur contexte culturel dans une région ou un pays. A partir de ces données définir des messages préventifs et des canaux de communication efficaces pour atteindre les zones géographiques et les groupes sociaux segmentés de façon pertinente.*
METHODE : *Elle consiste dans un premier temps à déterminer d'un point de vue heuristique les segments de population et les zones géographiques à risque "élevé" et à les comparer à des "groupes témoins". Dans un deuxième temps on procède grâce à des tests statistiques simples à une segmentation plus fine. Le pays testé a été le Sénégal. Au total 1.500 personnes ont été touchées en zone urbaine au moyen de questionnaires, et en zone rurale au moyen de "FOCUS GROUP".*
RESULTATS : *Il apparait que l'information nécessaire à la mise en oeuvre d'un plan de prévention est moindre qu'on ne l'imagine généralement. Le concept de groupe à risque est beaucoup trop restrictif notamment celui de "Prostituées" auquel il faudrait substituer la notion de "Femmes Libres". Par ailleurs 15 % des hommes et des adolescents ont un comportement très risqué.*

CONCLUSION : *L'interface des régions ou des groupes à "Risque" avec la "Population moyenne" exige une grande attention. La réponse à la complexité des segments réside dans la décentralisation à la base de la communication.*

M.E.O.33 REACTION DE LA SOCIETE ZAIROISE ENVERS LE SIDA.

Rukarangira wa Nkera,Harvard School Of Public Health,Boston,U.S.A.

Objectif:Comparerles résultats des études C.A.P. faites à Lubumbashi deuxième ville du Zaire,en 1987 et en 1988 afin d'évaluer les connaissances acquises après une année de campagne nationale contre le SIDA.

Résultats:Un apercu de changement des connaissances d'attitudes et de comportements révele des contraintes persistantes,et permettent de voir les liens entre le SIDA et l'économie,la culture et la société.

Méthodes:Deux échantions dont les réponses libres ont été codées et analysées statistiquement.

Conclusions:Les campagnes de masse doivent être soutenues par des interventions directes au niveau de la communauté afin de créer des réseaux de soutien aux changements de comportement.

Mots Clés: Evaluation,C.A.P.,Changements,Contraintes.

M.E.O.34 CROSS-CULTURAL TRAINING FOR AIDS PROVIDERS SERVING CULTURALLY DIFFERENT PATIENTS

Noel A. Day,* Amanda Houston-Hamilton DMH,* Patricia Evans MD,** (*Polaris R&D, **Department of Public Health, San Francisco, USA)

Objective To increase the sensitivity of AIDS services providers to the cultural aspects of serving ethnic minorities who are HIV infected or at-risk of AIDS
Methods Written guidelines based on the cultural values of seven minority ethnic groups were developed and a training program designed for providers addressing the AIDS-related health, social, emotional and supportive service needs of Black, Hispanic, Indian, Filipino, Chinese, Japanese, and Vietnamese patients and their families. Guidelines and training focussed on the values clients bring to their interactions with providers and the effects of those values on their behaviors and their expectations regarding provider behavior. Attention was devoted to values affecting establishment of rapport, diagnosis and treatment planning, and cultural values regarding topics like sexuality, homosexuality, abortion, dying, and disease etiology. Training aimed at increasing provider's awareness of their own cultural values and of the range of possible behaviors conditioned by client cultures
Results 368 providers were trained including nurses, AIDS educators, emotional support counselors, hotline volunteers, social workers, prison staff, drug counselors, and agency administrators. Evaluations show increased understanding of behavioral differences and willingness to consider cultural issues in planning and delivering treatment and services
Conclusion Providers can be more effective and experience less frustration if they provide service in culturally appropriate ways

M.E.O.35 IS THERE A UNIQUE ROLE FOR ANTHROPOLOGY IN THE STUDY OF AIDS?

Feldman, D.A.
Department of Epidemiology and Public Health (R-669), University of Miami, School of Medicine, P.O. Box 016069, Miami, FL 33101, USA.

Anthropologists have become increasingly involved in AIDS social research and activities. This paper will briefly review some of the major contributions by anthropologists to the study of AIDS, in the areas of epidemiology, health education, evaluation of social services and health care delivery, analysis of social change, explanatory models, and risk reduction programs. The central role of the ethnographic method in anthropological research will be assessed within the context of AIDS-related investigations. Experiential data through participant observation may provide the essential framework for understanding the cultural context of AIDS-related behavior. Anthropologists may offer a unique role in the study of this global pandemic.

Les facteurs culturels déterminants dans les attitudes à l'égard du SIDA
Cultural Determinants in Responding to AIDS

M.E.O.36 LES ENQUETES CAP SUR LE SIDA. EXPERIMENTATION D'UNE TECHNIQUE D'ENQUETE PAR DISCUSSIONS DE GROUPE SUR UN ECHANTILLON D'ETUDIANTS ZAIROIS

Verbeke, Ronald[*] et Katengaza-Lahaye, Amina[**]
[*] Université de Mons, Belgique, [**] Université catholique de Louvain, Belgique

Objectif: élaboration et expérimentation d'une technique d'enquête CAP (Connaissances, Attitudes, Pratiques) en matière de SIDA dont les modalités se veulent adaptées au contexte socio-culturel de l'Afrique centrale.

Méthode: nous avons mis au point une technique d'enquête consistant en (1) discussions de groupe, (2) impliquant peu de directivité, (3) déclenchées par le récit d'anecdotes relatives au SIDA et (4) se déroulant dans un contexte familier et une atmosphère détendue. Ces modalités d'enquête ont été expérimentées sur 42 étudiant(e)s zaïrois(es) résidant à Bruxelles, répartis en 9 groupes de 4 à 6 sujets. Parallèlement, nous avons procédé auprès d'un groupe contrôle à une enquête classique consistant en entretiens individuels à l'aide d'un questionnaire standardisé.

Résultats: les informations obtenues par la technique originale d'enquête basée sur des discussions de groupe se sont avérées significativement plus riches (en quantité, en originalité, en diversité et en nuances) que celles obtenues par une méthode traditionnelle impliquant des réponses individuelles à un questionnaire.

Services sociaux : expériences et évaluations
Social Services: Experiences and Evaluations

T.E.0.1

NEW YORK STATE'S RESPONSE TO AIDS: A ROAD MAP FOR HUMAN SERVICES

PRESENTERS: Cesar A. Perales, Commissioner, NYS Department of Social Services; Barbara J. Sabol, Executive Deputy Commissioner, NYSDSS; Jeffrey L. Carples, Deputy Commissioner, NYSDSS; Nicholas A. Rango, M.D., Director, AIDS Institute, NYS Department of Health; and Dennis P. Whalen, Deputy Director, NYS Division of Substance Abuse Services, New York, NY, U.S.A.

This forum will describe the development and operation of New York State's (NYS) integrated network of health and human services for people with AIDS, and will suggest ways to establish similar interagency systems in other places. Approximately 20,000 AIDS cases were reported in NYS by January 1989, including a growing number of cases among women and children. The overall numbers are expected to rise to 90,500 by 1995, requiring a significant expansion in health and human services. In this forum, representatives of three NYS public agencies will discuss the coordinated human services model that serves the needs of thousands of individuals and families with HIV-illness. HIV has afflicted a diverse population in NYS. State agencies provide a continuum of care that meets the differing needs of gay men, IV-drug users, individuals and families, women and children, adolescents, minority and non-minority groups, the homeless, urban and rural dwellers. Governor Mario Cuomo's Five Year Plan (to be given to participants) outlines the requirements for case management and provision of medical, non-medical, and substance-abuse services. Panelists will describe the system of Designated AIDS Care Centers; child foster care programs, such as Leake and Watts; health-related facilities for substance-abuse treatment; shelters for homeless people with AIDS, and other programs. They will also highlight unresolved issues and challenges.

T.E.0.2

COMPTE RENDU ET EVALUATION D'UNE EXPERIENCE DE FORMATION DES TRAVAILLEURS SOCIAUX SUR LA SIDA. (DIRECTION GENERALE DE LA SANTE FRANCE.

TOURETTE TURGIS Catherine de l'Université Paris et Rouen. France
BONNEAU Jacqueline de la Direction de l'Action sociale au Ministere de la Solidarite. de la Santé et de la Protection sociale. Paris. France

Historique de cette formation. La place des Programmes de formation dans laCampagne de Prevention menee par la France. Le module Theorique et Pedagogique de cette formation. Approche pluridisciplinaire et multi-partenariale. Les Contenus (Savoirs Internes et Savoirs Exterieurs) Modalites d'evaluation des stages. Les changements et les raisons des changements introduits dans le processus de formation. Premiers Echecs dans la Dynamique des Groupes. Hypotheses et Interpretations. Demande de Formation de la part des Formateurs. Creation d'un groupe BALINT pour les Formateurs. Premiers effets sur la dynamique de la Formation.

Premieres Theorisations de ces formations. Comparaison d'une experience conduite en France et dans les Territoires d'Outre Mer. Phase d'enquête menee dans les Institutions accueillant des toxicomanes seropositifs. Premiere Evaluation conduite a partir d'entretiens non-directifs et d'un questionnaire. Les effets pervers de la Formation. Perspectives epistemologiques. theoriques et cliniques.

T.E.0.3

EVALUATION OF THE SOCIAL SERVICES NEEDS OF HIV+ WOMEN ENROLLED IN A COHORT STUDY IN KIGALI, RWANDA

Keogh, Pauline*; Almedal C**; Allen S* *#; Muhawenimana C*#; Tice J*; Hulley S*. *Center for AIDS Prevention Studies, University of California, San Francisco CA USA; **Norwegian Red Cross, Oslo, Norway; *#Projet San Francisco, Kigali, Rwanda.

T.E.0.4

OBSTACLES TO USE OF PUBLIC SOCIAL SERVICES AND WORKERS IN AIDS PREVENTION AND CONTROL PROGRAMMES

Lloyd, G. Tulane University, New Orleans, LA USA

Objective: To assess potential usefulness of training workers in the public social services for prevention education and casefinding in AIDS prevention and control programs, and to identify obstacles to such efforts. Methods: Informal discussions were held with trainers and supervisors in public social services in six settings-two each in Pattern I, II and III areas. Results: although public social services offer a pool of workers with some degree of training in counseling or education, obstacles and constraints in both developed and developing countries seriously restrict adding roles/functions related to HIV/AIDS. Public social services are almost universally:
(a) accorded low status; (b) prone to high personnel turnover; (c) subject to chronic mismatch of service demand and resources; (d) apt to narrowly define problem area and restrict clientele; (e) operate in rigid hierarchical structures; and (f) vulnerable to political interference. Taken altogether, these variables are powerful obstacles in the way of training and using public social service workers for carrying out additional tasks related to AIDS prevention and control. Additionally, in many places, workers see any AIDS-related activity as intensifying the stigma or low status of their work and resist training. Conclusion: Training existing public social service personnel for roles in AIDS prevention and control programs may be more expensive and less effective than recruiting and training personnel in new HIV/AIDS-specific public social service agencies.

T.E.0.5

THE SOCIAL IMPACT OF AIDS IN BRAZIL

Herbert, Daniel. Associacao Braseleira Interdisciplinas de AIDS, Rio de Janeiro, Brazil

T.E.0.6

SOCIAL SERVICES RESPONSE TO AIDS IN QUEBEC

Green, Miriam. Ville Marie Social Services, Montreal, Quebec, Canada.

Empowerment : Réappropriation de la santé, les expériences des personnes atteintes
Empowerment: Reappropriation of Health and Experiences of Persons with AIDS

T.E.0.7 INTRODUCTION

Lapointe, Bernard.

T.E.0.8 PLUSS, AN ORGANIZATION OF BODY POSITIVES IN NORWAY ENCOMPASSING ALL GROUPS.

Arne N. Husdal, Sylvia Kalbakk, the board of Pluss and members, Oslo, Norway

Objective: Having an active organization, unique compared to similar groups throughout the world, we would like to present our ideas, our achievements so far and our methods and aims.
Methods: Positives must fight two major evils, the virus and the difficult enviroments. Both evils seem extremely to conquer, but they are related and not impossible. Many people, experts and humanists fight with us, but there are no recepies for either way; towards getting well or creating justice. Nobody can fight better than positives. In Norway we fight along with the government and we are supported by the official institutions and other organizations. But just as important is our independence. In Pluss, positives support each others, we offer alternative treatments, we consider information vital for each individual and we stand forward and exhibit ourselves to show force of will of living - as we also have to fight public fear, prejustice and discrimination.
Results: It is too early to present a complete evaluation. But already we have become an important suppliment for each individual member, to the traditional health and sosial services and to the society. We keep in touch with all primar health stations and hospitals throughot the country. We have 170 members (equals 25 per cent of all registered positives). By june we will be able to pre sent more results.

T.E.0.9 Michel Galto, AIDES, Federation Nationale . Paris, France

T.E.0.10 THE ROLE OF AIDS SERVICE ORGANIZATIONS IN DEVELOPING PUBLIC HEALTH POLICY AND SERVICES FOR HIV DISEASE.

Hymes, James P.* Philadelphia Department of Public Health, AIDS Activities Coordinating Office, Philadelphia, Pa.

This presentation will present a model of a large urban Health Department interfacing with AIDS Service Organizations (ASOs) in the provision of education and direct services to communities and individuals with HIV disease. These various programs will include: prevention activities, HIV testing and counseling, coordination of service delivery, and policy and planning. The Philadelphia Department of Public Health is unique. The AIDS Activities Coordinating Office (AACO) is a comprehensive department defined as a separate entity. All services mandated under the aegis of public health exists with AACO (Surveillance, Prevention, Policy and Planning, and Service Delivery). An additional component, AIDS Agency Services Unit, combines all of the above functions on a contractual basis through ASOs. These ASOs serve as active participates in their role as conduits for effective public health activities within the local communities. This level of involvement empowers the larger community to address its own needs rather than through a select group of bureaucrats defining the community needs. This presentation will provide a model for ASOs to impact the local department of Health for the enhancement of AIDS resources, services, and policy development. ASOs who are beginning or having difficulty with local health authorities will be given a model to work more effectively with local authorities.

T.E.0.11 INFORMATION FOR EMPOWERMENT

Delaney, Martin. Project Inform. USA.

T.E.0.12 THE LEARNING ABOUT AIDS PROJECT - A PARTICIPATORY APPROACH TO HEALTH EDUCATION ABOUT HIV INFECTION AND AIDS

Peter Aggleton, Department of Education, Bristol Polytechnic
Bristol, England

Objectives - To identify a rationale for participatory education about HIV and AIDS and to describe the processes of development, dissemination and evaluation on the Learning about AIDS project.

Methods - The Learning about AIDS project is a national project developing and disseminating innovative health education materials for use in adult education about AIDS. Interim materials were disseminated by the Health Education Authority in 1987, and a considerably enhanced training package will be published in February 1989. A major dissemination of these materials has commenced in the 14 health regions in England involving health educators and trainers working in the health service, in education, in social services and in the voluntary sector.

This paper will identify a rationale for participatory education based on group work and describes the manner in which Learning about AIDS materials were developed. It discusses the value of such an approach in fostering self-empowerment, community development and social change.

The dissemination strategy will be described as well as the steps that have been taken to use process and product evaluation to assess the outcomes of the project.

Problèmes de la communauté gaie
The Gay Community Issues

T.E.0.13 LES HOMOSEXUELS ET LE SIDA

Pollak, Michael. Paris, France

T.E.0.15 NETWORKING: A PREVENTION AND CARE STARATEGY FOR THE GAY MINORITY IN SOUTH AFTICA.

Pegge, John* **, Isaacs, Gordon* **, and Miller, Steven**.
*GASA 6010 Counselling Services, Cape Town, and ** AIDS Action Group, Republic of South Africa.

Objective. To secure an effective preventive and care strategy for the gay minority in South Africa, a group without legal status.
Method. An analysis has been made of the impact of government policy, legis- and practice on behaviour modification and care of the HIV-infected in the gay minority.
Results. Government and official bodies have failed to recognise HIV infection and its prevention in the gay community. They have failed to consult with gay community groups and have not provided financial and educational resources. Widespread antibody testing and epidemiological research has been afforded the highest priority. Confidentiality has not been guaranteed, and no legal constraints have been placed on pre-emplyment testing. Legislation has been enacted allowing for the detention if HIV-seropositive persons. Social Security is inadeqaute to meet the survival needs of single persons. No provision has been made in the health budget for antiretroviral therapy. The effect on the gay community has been the emergence of powerful politcal consensus regarding oppression. Networking has been the most strategic method to identify and utilise human and material resources. This has secured large-scale sexual behaviour modification and community care of the infected.
Conclusion . Despite a lack of legal status and the failure of government to contribute and collaborate networking between volunteer groups and individuals has secured behavioural change through education and care for the infected.

T.E.0.17 ORGANIZATIONAL PRECONDITIONS FOR COMMUNITY ACTION: A REPORT OF GAY AND MINORITY COMMUNITIES IN NEW YORK CITY

Melinda A. Cuthbert, Yale University, New Haven CT, USA.

Objective. To identify the preconditions for gay and minority communities to initiate and sustain action in response to AIDS.
Methods. Structured interviews were conducted with 60 key respondents from 53 organizations in New York City: 17 from non-profit organizations; 4 from religious organizations; 17 from community based organizations; and 22 from government agencies.
Results. Analysis revealed that gay leaders and organizations were able to develop extensive networks between organizations to deliver services, transmit valuable information to network members, organize and politicize clients, mobilize resources, as well as, lobby the government for coverage of this new illness under existing programs and extension of services. Respondents from organizations in the minority community were involved almost exclusively in direct service, had no resources to commit to network building or lobbying, had much less information about government programs and funding cycles, and felt they had no impact on programming or policy development.
Conclusion Comparative analysis of these communities suggests that the key preconditions for the mobilization of community action include: 1) the existance of pre-existing recruitment networks, 2) diverse funding bases, 3) priority of AIDS issue in community, 4) developed client and external constituencies, and 5) definition of AIDS as a socio-medical rather than a moral issue.

T.E.0.14 COVERAGE OF SELECTED DRUGS UNDER STATE MEDICAL ASSISTANCE (MEDICAID) PROGRAMS IN THE U.S.A.

Schatz, Benjamin
* National Gay Rights Advocates, San Francisco, California, USA

Objective. To determine whether seven medications are covered by U.S. state medical assistance (medicaid) programs for people with HIV infection, and to analyze policy consistency among differing states.
Method. Survey of medicaid agencies in all 50 states and Washington, D.C.
Results. State medicaid agencies have broad discretion to determine which drugs they will provide; thus, levels of coverage for HIV+ people vary widely by location. Differing practices exist regarding coverage of specific drugs, need for prior authorization, reliance on physician recommendation, and willingness to provide medication to asymptomatic HIV+ person. 90% of states routinely fund AZT for persons with AIDS; 74% for asymptomatic HIV+ persons. 65% routinely fund aerosolized pentamedine for persons with previous pneumocystis; 49% for HIV+ persons with no previous pneumocystis. Most but not all states (73%) fund all federally licensed drugs in survey (AZT, acyclovir, septra, dapsone, and fansidar) if physician prescribes for persons with AIDS; only 25% cover unlicensed drug (ganciclovir). 29% indicate that certain drugs available to persons with AIDS are not available to asymptomatic HIV+ persons.
Conclusion. Standards governing availability of drugs to HIV-infected individuals under U.S. medical assistance (medicaid) programs vary dramatically from state to state. National coordination would increase consistency and fairness.

T.E.0.16 HOMOPHOBIA IN THE DEVELOPMENT OF PUBLIC POLICY ON AIDS IN THE UNITED STATES OF AMERICA

Rosenthal, Eric*; Ziegler, A.** *Human Rights Campaign Fund, Washington, D.C.; **Public Health Foundation, Washington, D.C., U.S.A.

Objective: To examine the effects of homophobia in developing public policy on and combatting AIDS in the United States.
Methods: To interview public policy makers inside and outside of the United States government. To examine case studies in which government policy has been affected by homophobia.
Results: AIDS is a disease which in the United States primarily affects gay and bisexual men. The political process, which determines most funding levels for AIDS research and prevention, is influenced by homophobia.
Conclusion: Homophobia has played a role in developing AIDS policy in the United States. Homophobia is an impediment to sound public health policy on AIDS. It has slowed progress in preventing the spread of the disease. Methods must be found to remove the influence of homophobia in the development of AIDS strategies in order to formulate and implement the most effective AIDS policy.

Rôle des ONG dans la lutte mondiale contre le SIDA
The Role of NGOs in the Global Response to AIDS

W.E.0.1 THE KEY ROLE OF A NATIONAL NON-GOVERNMENTAL AIDS EDUCATION PROGRAM IN CANADA

Walters, David J; Wardrop, K.; Burr, R.; Gemmill, I.
Canadian Public Health Association, Ottawa, Ontario, Canada.

Objective. To describe a unique AIDS Education Program based in a Public Health Organization which takes a lead role in Health Promotion in Canada.
Methods. As a multidisciplinary professional Association of 3,000 public health workers, the Canadian Public Health Association is active in programming on local, national and international levels. In 1986, the CPHA undertook a contract with Health and Welfare Canada for a comprehensive AIDS Education Program. CPHA assembled an Expert Advisory Committee, professional staff, and initiated five Program Components: Research, Consultation & Coordination; Media & Advertising; National Clearinghouse; Seminars/Conferences; & Educational Resources.
Results. The CPHA Program took the lead in stimulating Canadian AIDS education initiatives. It established the first multi-media campaign in Canada in March 1987 which included TV public service announcements highlighting the risk of sexual spread of AIDS and urged the use of condoms for the first time on major networks in Canada and indeed North America. A series of regional and national conferences advocated attention to AIDS education on a broad, multisectoral level. Education resources have included 4 million brochures, 500,000 fact booklets, videos for the Workplace and Schools. The Clearinghouse has answered to thousands of requests for tailored education resource packages.
Conclusion. A non-governmental Public Health Association approach provides a responsive and effective resource to AIDS programming which mobilizes the expertise and credibility of a well established professional membership and administration.

W.E.0.2 SIGNIFICANCE OF THE AMERICAN RED CROSS ROLE IN HIV/AIDS ED

Carole Kauffman*, M. Cotton*
American Red Cross, National Headquarters
Washington, D.C. USA

Objective: To describe factors contributing to the successful and far reaching HIV/AIDS education programs of the American Red Cross (ARC), as well as challenges facing organizations to sustain these efforts over time.

Methods: Working in consultation with the U.S Dept. of Health and Human Services, the ARC initially mounted a nation-wide public information campaign consisting of videos, PSAs, and pamphlets. This campaign shifted to targeted educational programs for youth, minorities, and the workplace and now includes intensified interventions with hard-to-reach populations. Utilizing quantitative and empirical data, details of the program's growth and factors contributing to successful implementation are described.

Results: As a trusted organization, ARC has HIV/AIDS education programs in all 50 states, trust territories and military stations world-wide. These educational materials have also been used and translated by other Red Cross Societies including Russia and South Africa.

Conclusion: The role of non-governmental organizations has been identified as critical in helping stop the spread of HIV infection and providing needed services. Sensitivity to religious, multi-cultural, and minority concerns has been complex but central to success. The need to monitor and evaluate programs will increasingly be needed to justify the sustained financial and human resources required. Many other organizations have become involved in these efforts.

W.E.0.3 SWIFT...AND SURE? THE UK VOLUNTARY RESPONSE TO AIDS

Stephanie Malach*; J Grimshaw**; Dr S Mansfield*; U O'Brien*.
*London Lighthouse, London, UK
**Director, Landmark, London, UK

Objective To describe and analyse the response of UK voluntary organisations to AIDS since 1981, and assess their impact on service delivery.
Method From a small base, AIDS non-governmental, voluntary organisations have grown dramatically. They now number approximately 200 and are arranged in a pyramidical structure (defined in terms of paid staff and budget size). An analysis of the history, management structure and scope of service provision of a select sample of these organisations was carried out.
Results Most were set up after a major UK Government advertising campaign on AIDS. Traditional collectivist structures predominate, typified by lack of internal cohesion, planning and direction. However some organisations are developing new managerial structures which combine traditional hierarchical structures with collectivist ways of working. Services provided by the latter grouping are responsive, flexible and able to meet the needs of people with HIV, ARC and AIDS, who in turn form a significant proportion of their volunteers and paid workers.
Conclusion The UK voluntary response to AIDS was swift but development has been hampered by little or no structured planning. The effectiveness of organisations, their ability to develop and sustain services, and to nurture the role that people with AIDS play within them, is linked to management structure.

W.E.0.4 Role of non governmental organisations and NGO networks in the control of HIV infection.

Lucas, Susan; Poore, P. UK NGO AIDS Consortium for the Third World.
UNITED KINGDOM

Non governmental agencies (NGOs) in both developed and developing countries have taken a leading role in responding to the AIDS/HIV epidemic. Their impact has been reinforced by formal and nonformal groupings or networks. The UK NGO AIDS Consortium for the Third World was one of the first of these networks, and activities of member agencies illustrate the richness of the NGO response.
Activities include:
1) Expansion of existing programmes. NGOs involved in health care have intensified efforts to provide steril equipment, and preventive care. Agencies involved in education and development have expanded their role to include dissemination of information on HIV infection and AIDS.
2) Helping to establish and fund local agencies, as a result of local initiatives.
3) Provision of appropriate information. Agencies which have already specialised in wide dissemination of appropriate information resoponded to the need of a variety of audiences for information on HIV transmission and prevention.
4) Provision of manpower and training facilities; particularly integrated into existing services. Some NGOs from the UK have trained or funded staff specifically working on AIDS/HIV.
5) Funding of specific AIDS-related projects.
6) Creation of networks; the main roles of the UK network have been;
  - -information exchange, sharing of experience
  - -pressure group/campaigning role, strengthened by the joint approach of 30+ member agencies
  - -Representation of NGOs at international meetings; many agenceis are small, with few staff, and do not attend.
  - -Acting as focal point for communication (with Global Programme on AIDS (GPA), U.N. agencies, British Government departments, othe NGO networks, etc.)

Roles of NGOs vs GPA.
The importance of NGOs is now recognised, but a mechanism has still to be established which will ensure that the individual strengths of each NGO are used effectively. Creation of NGO networks will improve cooperation.
Conclusion:
Networks can offer valuable experience to NGO members. Members of such groups will always tend to be those already involved, and there are concerns about adding further layers of administration. The experience in the UK so far has been positive, and encourages the creation of networks elsewhere.

W.E.0.5 ROLE OF NON-GOVERNMENTAL ORGANISATIONS IN THE STRUGGLE AGAINST AIDS. CASE STUDY - UGANDA RED CROSS SOCIETY

Lubega, Juliet*; Mueller, O.**; Senoga, J.*; Sebbowa, R.*.
*Uganda Red Cross Society, Kampala, Uganda; **League of Red Cross and Red Crescent Societies, Geneva, Switzerland.

Objective. To describe the efforts, impacts and problems of the work of non-governmental organisations in a developing country in the struggle against the AIDS epidemic.
Methods. The Uganda Red Cross has contributed to the nation wide government guided AIDS Control Program in the fields of information/education, blood donor recruitment and protective material distribution for healthworker. Information materials, based on a KAP study carried out before, have been produced and translated into major languages. Red Cross Fieldofficers have been trained in dissemination.
Results. Uganda Red Cross Society through her grass root levels network with the technical and financial support of her sister societies is contributing largely to major parts of the AIDS Control Program in Uganda.
Conclusion. The work of non-governmental organisations in AIDS control has a large impact in developing countries. The Red Cross movement with its infrastructure and networks has the power to contribute positively.

W.E.0.6 DEVELOPING A PROGRAMME OF WORLD HEALTH ORGANIZATION SUPPORT FOR NON-GOVERNMENTAL ORGANIZATIONS IN THE FRAMEWORK OF NATIONAL AIDS CONTROL PROGRAMMES

Grose, Robert, Mann JM
Global Programme on AIDS, World Health Organization,
SWITZERLAND

Objective To promote and support the involvement of non-governmental organizations (NGOs) in national AIDS control programmes (NACPs).
Methods At country level, WHO and NACP staff and NGOs consult to determine mutual interests and areas of opportunity. NACPs and NGOs exchange technical data and feedback on implementation. A mechanism for funding NGOs from NACP funds has been developed. With international NGOs, WHO exchanges information with a wide range of organizations, using their networks to disseminate appropriate material and as a focus for channelling information to the Global Programme on AIDS.
Results NGOs have been responding to AIDS since the first unrecognised patients began arriving at NGO-run health centres and hospitals. AIDS service organizations arose spontaneously and often in advance of local or national governmental responses. The need for collaboration felt by NGOs, governments and intergovernmental organizations is resulting in increased complementarity and integration.
Conclusions Collaboration among NGOs, governments and intergovernmental organizations exists and is developing rapidly in support of national AIDS control programmes. The momentum needs to be maintained with active support from all parties.

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W.E.O.7 COMMUNITY ORGANIZATION FOR HIV PREVENTION: PROGRAMS AND PRIORITIES OF THE CENTERS FOR DISEASE CONTROL

West, Gary R.*, Kohmescher, R.N.*, Schindler, S.E.*, Cahill, K.*, Bowen, G.S.*, Johnson, R.**, et al. *Centers for Disease Control (CDC), Atlanta, GA, U.S.A. **United States Conference of Mayors, District of Columbia, U.S.A.

Objective: To provide financial and technical assistance to community-based organizations (CBO) to carry out HIV prevention programs targeted to individuals whose behavior places them at increased risk.
Methods: CDC, in coorporation with State and local health departments, The U.S. Conference of Mayors, national and regional organizations has begun a financial and technical assistance program to assist CBOs (especially those that represent and serve minority populations) to plan, implement, and evaluate HIV prevention activities which meet the needs of local communities. Financial and technical assistance are provided through closely-monitored CDC cooperative agreements.
Results: Since 1987, over $50 million has been awarded to more than 400 CBOs throughout the U.S. for HIV prevention programs and activities. The U.S. Conference of Mayors has also awarded CDC funds of over $2.5 million to 86 CBOs. CDC has begun an additional program of direct assistance to CBOs in the 27 areas most affected by HIV. Collaboration and coordination among health departments and private organizations involved in HIV prevention have increased as a direct result.
Conclusions: CBC has established several mechanisms for providing financial and technical assistance to CBOs. The authors will provide an overview of the national program, report on experience to date, discuss technical assistance and other needs of community organizations, and discuss problems and issues relevant to implementation and evaluation of such programs.

La lutte communautaire contre le SIDA dans les années 1990
The Community-Based Response to AIDS into the 1990s

W.E.0.8 ROLE OF COMMUNITY BASED ORGANISATIONS IN THE AUSTRALIAN RESPONSE TO AIDS

Whittaker, Bill*
*Australian Federation of AIDS Organisations, Australia

Objective: To discuss the development of the community response to AIDS in Australia, including achievements and difficulties encountered. Comparisons will be made between the Australian response and initiatives in other countries. The challenge of developing a community response to AIDS in Asian, African and other regional countries using aspects of the Australian model will be examined.
Discussion: Community based AIDS organisations have played a vital role in Australia's response to AIDS. The Australian community response is one of the most successful in the world. Each Australian State has established an AIDS Council, which are volunteer oriented community based organisations. These Councils' provide AIDS education, support services and advocacy on key issues. The Australian AIDS Councils have in turn set up a peak body called the Australian Federation of AIDS Organisations. Australia is now at the point where special AIDS education programs and support services for those affected by AIDS are required outside principal cities. This is presenting new challenges for community organisations in overcoming geographical problems and limited human and financial resources.

W.E.0.9 THE COMMUNITY BASED AIDS RESPONSE IN THE 1990's.

Holm, Jim. National Aids Network, Washington, D.C. USA

The community based response in the United States has been unprecedented. Affected communities provide a continuum of services to care for people living with AIDS and to prevent the spread of HIV. Over 650 community based organizations, receiving a mix of private, public, and individual funding, are either registered with or members of the National AIDS Network (NAN). NAN's strategic plan for the 1990's includes an assessment of the community based response. NAN believes no single funding source can provide the necessary support. One necessary step is to replace Federal demonstration projects with a long term commitment to funding prevention and care. However, leaders of the community based response must accept greater responsibility for accountability when working with funders. As the epidemic becomes more mainstream, leaders ask why we should expend special resources we don't spend for other diseases. If we do not, the U.S. medical system's infrastructure will be overwhelmed. AIDS will force reform of the system.

W.E.0.10 INNOVATIONS IN HEALTH CARE DELIVERY FOR HIV INFECTED INDIVIDUALS

Breslow, Judith B.; Hostetter, C.; Horner, M.; Dolecek, G.; Hutchings, J.; Health Resources and Services Administration, Public Health Service, Department of Health and Human Services, Rockville, Maryland, U.S.A.

Objective To highlight examples of innovative HIV service related programs developed by grantees of the Health Resources and Services Administration (HRSA) of the U.S. Public Health Service (USPHS)
Methods HRSA is the agency within the USPHS responsible for supporting health care delivery programs for various populations with special needs, including those infected by HIV. Among the HIV service grants awarded to date are 21 service demonstrations focusing on improved case management, 13 projects focusing on out of hospital care of children with AIDS, 19 projects designed to provide intermediate and long term care facilities for people with AIDS, and 13 training programs which focus on improving the quality of HIV services delivered by health service providers of various disciplines.
Results Among the above projects, there are examples of innovative service delivery and training approaches which will be highlighted in this presentation. The value of those selected is the potential for replication in other settings.
Conclusion Optimal use of public funds is achieved when they are applied to the development of unique, community responsive models of health care delivery, and when such models are made available for application in other settings. While each community's needs are unique, lessons learned in one area may often be applied in others.

W.E.0.11 COMMUNITY GROUPS INTO THE 1990's

Mantell, Mary. Network of Voluntary Organizations in Aids and HIV. United Kingdom.

W.E.0.12 COMPARATIVE STUDY OF COMMUNITY-BASED AIDS SERVICE ORGANISATIONS

Morrison, Ken. McGill Centre for Medicine, Ethics and Law, Montreal, Quebec, Canada.

Objective: To describe a comparative survey of community-based AIDS service organisations from Sweden, Holland, Denmark, West Germany, Belgium, France, Norway and Canada.
Method: An analysis grid was developed and utilised for a comparative analysis and review, based on interviews and published reports of the operations and structure of these organisations. The analysis grid permitted both lateral and vertical comparisons in all details entered.
Results: The analysis grid included parameters such as operational structures, budget, sources of financing, epidemiological circumstances, socio-political climate, case load, programmes or services delivered, target populations, institutional cooperation, developmental changes and decision-making mechanisms.

Similarities include the common circumstances of rapid development and change, in target populations served and basic services offered (some services were restricted to speific groups or were offered in conjunction with those of other organizations).

Critical distinctions occurred in the areas of use of volunteer labour force, membership decisionary powers, executive discretionary powers, means and levels of financing, cooperation with other AIDS service organizations, legal and social atmosphere, and level of interaction with public institutions.
Conclusion: Community groups operated more effectively if one or more of the following conditions were met:
1. maintenance of close contact with community infrastructure (their community base);
2. close co-operation with already existing health and welfare networks and with other community organisations;
3. adequate and diverse funding arrangements;
4. a social climate of acceptance and/or tolerance around such issues as homosexuality, discussing sexuality and drug use.

W.E.0.13 DISCUSSANT

Paltiel, Freda. Health and Welfare Canada, Ottawa, Canada.

Le SIDA en milieu de travail
AIDS in the Workplace

W.E.O.14

AIDS AND THE WORKPLACE: UNITED STATES POLICY AND EDUCATION INITIATIVES

Bunker, John F., The Circle, Inc., McLean, Virginia U.S.A.

Objective: To describe public, private, and labor union efforts to address AIDS workplace policy development, employee education, and supervisory training in the United States.
Methods: Extensive literature search and personal communication with leaders in the public, private, and labor union sectors. As a participant in two recent GPA/WHO sponsored AIDS in the Workplace consultations, the author has conducted extensive interviews on topic area.
Results: The majority of American workplaces have not adopted a formal policy in response to the HIV epidemic. A minority of corporations and public sector institutions have established workplace policies. A relatively small number of large corporations have instituted educational programs and supported collaborative efforts to increase awareness of the issues in the business community.
Discussion and Conclusion: Several excellent models for workplace policy development and employee education have been developed in the United States. However, several critical issues have not been addressed: a collaborative leadership initiative on the part of the public, private, and labor union leaders to focus on AIDS in the Workplace issues; the unique needs and challenges faced by small businesses in dealing with HIV infection; and the lack of evaluation efforts to monitor the effectiveness of AIDS policy and employee education initiatives.

W.E.O.15

HIV/AIDS - A PSYCHOSOCIAL TASK FOR MANAGERS.

I. Osterberg, Anita Sandblom, G. Rehnstedt, J-Å. Gunnarsson, Personnel and Organisation Department, Stockholm, Sweden.

Objective. To carry out an HIV policy for the 60.000 employees of the city of Stockholm.

Methods. In december 1987 the Board of Personnel and Organisation in Stockholm decided on an HIV policy. The policy is to work against the spread of the infection, against prejudice and discrimination and to promote a sense of responsibility, compassion and respect for our fellow human beings. The political decision on the policy was followed by an information project run by the Health and Environment Policy Unit. The aim of the projekt was threefold: to introduce and put into practice the policy, to create a psychological preparedness in the workplaces and to increase the knowledge about HIV. In planning the projekt two conditions seemed essential: 1) the support of the top managers of the Departments and 2) a positive climate for attitude change. The primary target group were managers and in each Department top management was first approached. With their active participation three-hour seminars were arranged for small groups of up to 20 participants. The idea was to create a situation where meeting with and talking to others would go along with the message. In the seminars basic facts have been presented about the virus, the progression of the infection and its ways of transmission. Sexuality, responsibility and prejudice as well as global aspects have been discussed. The policy emphasizes fear, not risk of transmission, as the serious problem at work. This has been the basis for the discussions about the psychosocial consequences the infection might have unless we actively fight them.

Results. By the summer of 1989 200 seminars will have taken place for about 3000 managers (about 80 % of the total). The wide perspective on HIV/AIDS and the opportunity to discuss questions of their own have made the seminars appreciated by the participants.

Conclusions. The method used to implement the policy has proved to be successful. In every Department where the top manager has given his support to the project the message has been received and the anxiety seem to be reduced.

W.E.O.16

AN AIDS PREVENTION PROGRAM DESIGNED FOR CIVIL CONSTRUCTION WORKERS IN RIO DE JANEIRO

Ramos, Silvia*; Afonso,C.**; Gomes,C.*** and Ramos,M.J.***.
*Brazilian Interdisciplinary AIDS Association; **Audiovisual Training Center; *** social workers of civil construction companies. Rio de Janeiro, Brazil.

Objective. To describe the socioeconomic profile of 350,000 civil construction workers in Rio de Janeiro, showing the risks they face due to the AIDS epidemic, and present a prevention program especially designed for this population.
Method. Formation of a multidisciplinary task group to develop the prevention program; research of the cultural patterns, linguistic codes and sexual behaviour of the target population; production of audiovisual and printed materials; and, preparation of a instruction manual for use by social workers and health professionals who work in the construction companies.
Results. The program was developed in 10 civil construction companies in Rio de Janeiro during a 6-month period. The workers responses were analyzed in meetings with ABIA's staff and the professionals who implemented the program in the companies.
Conclusions. The program's ability to sensitize the target population and transmit prevention measures was considerably higher than former AIDS campaigns. Emphasis on solidarity, humor and culturally appropriate language are key instruments in communicating AIDS prevention measures. Multidisciplinary task groups should be a model for further programs directed to specific social groups.

W.E.O.17

AIDS in the Workplace:
An African Model from Uganda

D STONE*, J Kasawara**, D Weeks***, Paul Cohn****
*Johns Hopkins University/AIDSCOM, **Federation of Uganda Employers, ***Consultant AIDSCOM, ****USAID/Kampala. U.S.A.

Objective: The AIDS epidemic has forced employers around the world to confront controversial and sensitive subjects. Since education and counselling are the best known defense for slowing the rate of HIV infection, creative methods need to be developed that provide skills for prevention within cultural constraints.
Method: Phase I of a 3-year prevention project with the Federation of Uganda Employers included hiring and training staff, + marketing of a new project, as well as identifying the initial companies or factories to participate. Individual workplace educators were identified, trained and provided education materials and condoms. Program was evaluated during Phase I in order to ensure objectives in AIDS prevention were being met, and strategies developed were culturally appropriate.
Results: Using pre-existing organizations such as the Federation of Uganda Employers proves to be a successful strategy in providing information on HIV infection to employees and their families. A cooperative effort with a national organization, local companies, and an International Donor allow Ugandans access to information and prevention services in their place of employment.
Conclusion: This "AIDS in the Workplace" project has successfully completed its Phase I implementation and may provide a model for AIDS prevention in other countries.

W.E.O.18

NEUROPSYCHOLOGICAL IMPAIRMENT OF HIV-INFECTED PERSONS: LEGAL IMPLICATIONS FOR THE WORKPLACE

Barnes, Mark, John, I. and Berti, C.
AIDS Law Clinic, Columbia University School of Law, New York, New York, USA

Recent studies have found that the neuropsychological test performance of HIV-infected persons may be lower thanthat of seronegative controls. These studies have concluded that central nervous system involvement may begin early in HIV infection and cause mild cogntive deficits in otherwise asymptomatic persons. As a result of these reports, some employers, including the United States Armed Services, have removed HIV-infected personsfrom jobs requiring the operation of mechanical equipment, in the fear that these employees could pose an unacceptable safety risk. However, under applicable employment law, at least in the United States, use of HIV infection as a proxy for functional impairment is illegal, unless it can be shown that each person with HIV infection is so impaired and that tests measuring this impairment have been validated to predict actual workplace performance. Further, accepted principles of employment law dictate that discriminationmay also not be legally based on predictions of an employee's future functional impairment,if that employee is currently ableto perform the duties of a position. This paper will describe the applicable employment and discrimination law principles, evaluate the evidence for this alleged impairment, and will conclude that at this time, exclusion of HIV-infected employees from postions based on suspicions of functional impairment cannotbe legally justified.

W.E.O.19

REGIONAL AND TIME DIFFERENCES IN THE EFFECTS OF AIDS-HIV (A-H) EDUCATION ON CHANGES IN KNOWLEDGE AND FEARS AMONG WORKSITE EMPLOYEES

[illegible], Harvey S.*#, Versini,D.** and Roth, D.#
*University of California, San Francisco School of Medicine; ** California School of Professional Psychology, San Francisco;# AIDS Virus Education and Research Institute (AVERI), San Francisco, USA

Objective: To describe the temporal, regional and demographic variables associated with a self-reported decrease in worksite AIDS fears (WAF) and documented increase in A-H knowledge after a specified 2 hour A-H education intervention. Methods: Two-hour A-H education seminars were presented to 1,437 white-collar worksite employees (< 30 per seminar) in U.S. AIDS-endemic areas and Vancouver, British Columbia, during 1987-1989 by AVERI. The seminar consisted of a 20-minute videotape of a person(s) with AIDS, a one-hour slide presentation by a physician with AIDS expertise, and a question-answer session. Standardized pre- and post-knowledge and attitude questionnaires and evaluations were completed by attendees using Likert scales. Results: Mean A-H knowledge scores increased significantly from 68.2% at time 1 (S.D. 13.2) to 88.2% at time 2. (S.D. 5.1)(p<.001). Significantly lower time 1 A-H knowledge scores were associated with female gender, lower educational status and not knowing someone with AIDS or a positive HIV blood test. Worksite fear of "working with someone who has AIDS or is at higher risk" decreased from 48.8% of attendees at time 1 to 21.0% at time 2 (p<.001). Of those with persistent fear, 17.7% had less fear than at time 1. At time 2, 62.2% of attendees reported no WAF or less fear than at time 1. A decrease in WAF was associated with female gender, married or committed relationship status, knowing someone with AIDS or a positive HIV blood test, white race (all p<.01) and a higher educational status (p=.03). 94.2% of attendees agreed or strongly agreed (AOSA) with "It was important to have a physician expert on AIDS present to answer questions." 5.8% AOSA that an AIDS videotape alone would have been sufficient; 47.2% felt the videotape and slide presentation were complementary. Time 1 knowledge scores did not differ significantly by year of presentation; there was a trend towards increased WAF at time 1 comparing successive years. First quarter 1989 data will be reported. Geographic differences in A-H knowledge and WAF exist and are associated with knowing someone with AIDS or positive HIV blood test. Demographic data: Gender: 31% men, 69% women. Race/ethnicity: 71% white, 13% Asian, 9% Black, 6% Latino. 53% knew someone with AIDS or ARC; 30% knew someone with a positive HIV blood test. Conclusions: Our data indicate that white collar worksite employees will admit to WAF when asked anonymously and that their A-H knowledge may be quite variable. A specified 2 hour A-H educational intervention can lead to increased A-H knowledge and decreased WAF. Credible health professionals with A-H expertise may be very important in such interventions and to effect appropriate knowledge and attitude change. Recognizing demographic associations will be useful in targeting specific worksite subpopulations more resistant to knowledge acquisition and fear reduction. AIDS videotapes alone may not be sufficient to effect A-H knowledge and/or WAF. This model of A-H worksite education may be applied to other worksites to increase A-H knowledge, decrease WAF, increase worksite productivity, decrease the spread of HIV in the non-worksite environment, and limit employer and non-employer related A-H health care costs.

Le SIDA dans les médias
AIDS in the Media

W.E.O.20

MEDIA AIDS EDUCATION: THE BOOMERANG EFFECT

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Public resistance to AIDS prevention is becoming increasingly apparent, especially among young people. Objective. The study seeks to identify media campaigning strategies capable of overcoming this psychological resistance.

Methods. A three-year comparative study of TV and film materials from Africa, Australia, N. America and Europe is reported, using traditional programme evaluation techniques and electronic audience research methods recently developed in the media advertising industry.

Results. The most successful campaigns are those which give hard facts about AIDS in a simple and straightforward manner. Advertising campaigns featuring elaborate, symbolic or melodramatic imagery, or dramatization, are perceived defensively by those at high risk of HIV infection and can have 'boomerang effects', polarizing public opinion on the urgency of AIDS and the civil rights of HIV-infected persons.

Electronic analyses of moment-by-moment audience reactions to materials are reported, attributing the adverse effects of media AIDS prevention to lapses in production accuracy or sensitivity of, in some cases, a few seconds only. Moments at which materials become verbally or visually redundant/ambiguous are found to increase psychological resistance by high-risk individuals, while generating unnecessary fears in those at lesser risk.

Conclusions. International AIDS campaigns are favouring media techniques which can do more damage to public attitudes than good. Adverse effects of AIDS information on public fears and discrimination may be directly due to mass campaigning approaches. The conventional techniques of TV advertising are not appropriate in AIDS prevention and should be replaced by the more straightforward techiques urged by health educators for 70 years.

W.E.O.22

CORRELATION BETWEEN LARGE SCALE MASS MEDIA CAMPAIGNS ON AIDS PREVENTION, AND HOMOSEXUAL AND IVDUs GIVING-UP RISK PRACTICES IN MADRID

Martinez, Agustin*, P. Estébanez**, C. Manzano*, R.Estebánez*; * Journalist, Universidad Complutense, Madrid; ** Doctor, Madrid City Council, SPAIN

Objective: To know the influence of mass media information campaigns on the HIV risk practices in Madrid.
Methods: Descriptive study of the information on AIDS given by 4 Madrid newspapers, 6 radio stations and 2 TV channels during 1986 and 1987. Study of HIV risk practices among 578 IVDUs and 488 homosexuals who were treated at a Health Promotion Center of Madrid City Council.
Results: Press information study shows the information was given in different stages, appearing at the beginning of '87 a greater number of articles (500% increase) with a much more preventive content compared to those at the beginning of '86, much more alarmist and scientific. By the end of '87 it drops to 40%. Risk practices among the groups considered slightly decrease during 1987 among homosexuals; but the use of sterile syringes by IVDUs increased 75% during the first semester (March and April) and decreased during the last period of 1987. Information on the moment in which the change of habit took place is 80% coincidental during the first months 1987. The reaction of this group to general mass media information has been 60-80%.
Conclusions: Our research shows a correlation between the quantity and quality of the information and the abandon of risk practices, thus confirming the great importance of mass media informations on AIDS preventive methods.

W.E.O.24

FLAGRANT BIAS AND LACK OF REPRESENTATION OF WOMEN'S GROUPS AND EXPERTS IN MEDIA COVERAGE OF MAJOR AIDS ISSUES

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Objective: To assess the lack of representation of women's groups and experts in the media coverage of Aids, NYC press reports on two issues that particularly effect women—partner notification and enrollment in treatment trials—were reviewed. National press examples of the exclusion of women's groups as sources were also reviewed.
Methods: In NY in 1988, negotiations over passage of a law "permitting" limited partner notification received constant press coverage. Collected clippings from 4 NYC newspapers show constant representation of the opinions of gay groups as this legislation evolved; but, even though partner in NYC would primarily be employed for prevention efforts directed at black and Hispanic women, the same clippings do not show that any women's or black or Hispanic groups were asked to comment on the adequacy of the legislation. Similarly, in stories covering the general lack of enrollment of women in treatment trials, papers as diverse as the NY Times and Village Voice presented the various opinions of white, male physicians that poor, minority women are unreachable and lacking "motivation and understanding." Having evidently sought no women's experts as sources, these papers missed the story that the three major NY treatment trials administered by women have had no problem recruiting women patients. A People magazine cover story on women and Aids in which the 6 experts quoted were all white (and 5 male) and the major 1988 Washington Post story on partner notification which, again, treated this as solely a gay male issue are among national examples of the exclusion of women's groups and experts as sources. Conclusions: Aids coverage which depends almost exclusively on white males as sources results in a failure to properly examine issues and in factual error.
In some instances, press bias has been so severe it has blocked the thorough public discussion needed for policy formation.

W.E.O.21

LES MEDIAS A L'EPREUVE DU SIDA : ANALYSE THEMATIQUE ET COMPARAISON DE LA PRESSE FRANCAISE ET AMERICAINE.

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Objectif et méthodes : Depuis le Mal de Naples, la presse occidentale a vu resurgir une thématique que d'aucuns croyaient oubliée, celle d'une maladie épidémique, mortelle, transmissible par le sang et par le sexe.
Le but de la présente étude est d'analyser au travers des études disponibles
- une analyse thématique de 4 quotidiens français entre le 1/01/1986 et le 1/06/1986; une comparaison du nombre d'apparition du thème-SIDA dans 6 quotidiens français entre juillet 1981 et Juin 1986; un recensement du nombre d'occurences du SIDA dans 3 quotidiens et 3 hebdomadaires entre 1982 et 1985.
- la spécificité du " phénomène médiatique SIDA ".
Résultats : Quatres périodes peuvent se détacher depuis la déscription princeps de la maladie : 81-82 : le mystère; 83-84 : le " parler science " et la grande leçon d'immunologie comparée; 85 : l'explosion médiatique et les premiers pas vers une écriture " sociale " du SIDA; 86-87-88 : les années de gestion de la séropositivité comme de la maladie. Sur quelques 290 articles collectés ainsi dans 4 quotidiens nationaux : 70 (24%) sont exclusivement consacrés au SIDA, relèguant le cancer (9,3%), les procréations médicalement assistées (9,3%) ou le tabagisme (1%) au deuxieme rang.
Une comparaison avec les données américaines (W.A Check : Rev.Inf.Dis. 1987 5 : 987-1000) permet d'établir une constance dans les liens unissant presse et SIDA.
Conclusion : Cette revue de presse comparative permet de mesurer le chemin parcouru.

W.E.O.23

THE UK NATIONAL AIDS HEALTH PROMOTION PROGRAMME - RECENT DEVELOPMENTS

Kapila, Mukesh; Wellings, K; Perl, S; Hagard, S.
Health Education Authority, London.

Objective. To describe recent developments and critically review the evolution of the National AIDS Health Promotion Programme in the UK.
Methods. Since 1986, public education efforts have been monitored through consumer research and other public response indicators.
Results. The 1986-87 mass media campaign created high levels of public awareness. But a survey in November 1987 showed significant levels of public anxiety about AIDS, increasing public complacency and no heterosexual behaviour change. A new 1988 campaign was directed at young people and suggested, for the first time, some heterosexual behaviour shift with claimed reductions in casual sex and increased condom usage. The 1989 campaign is aimed at improving the quality of public knowledge, and creating a continuous presence for AIDS issues in the public mind.
Conclusion. The UK Programme has evolved substantially over 1986-89, with each stage informed by specific evaluations. New community and interpersonal approaches have been designed. Target audience specific activities have been developed addressing, for example, homosexuals, ethnic minorities, prisoners, people in the workplace, youth and women. To maximise programme outreach, priority is placed on interagency collaboration across the national/local interface. Programme development is a dynamic process responding to changing epidemiology and altering socio-cultural perceptions of HIV/AIDS.

W.E.O.25

EVALUATION OF THE NATIONAL AIDS MULTI-MEDIA PUBLIC INFORMATION CAMPAIGN

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Objective. To discuss the impact of the U.S. Government's national AIDS public information campaign to inform and educate the American public about AIDS and HIV infection in terms of knowledge, attitudes and beliefs.
Methods. The vast amount and types of HIV/AIDS activities occurring throughout the U.S. makes assessment of a national information campaign very difficult. Methodologies used to assess the impact (i.e., household interviews, telephone surveys, analyses of television and radio data) will be presented.
Results. Evidence from the National Centers for Health Statistics' monthly Health Interview Survey (approximately 3000 households per month), number of calls to the National AIDS Hotline, distribution of educational materials by the National AIDS Clearinghouse, along with other State data will be described. Time correlation between campaign activities such as airing of Campaign PSA's, mailing of the brochure "Understanding AIDS" to all U.S. households, and telephone calls to the National AIDS Hotline will be explored and their implications discussed.
Conclusion. There appears to be a correlation between the campaign activities and public knowledge, attitudes and beliefs regarding AIDS. Further studies are required to assess whether the campaign efforts are directly related to these changes.

Services de pastorale
Pastoral Care

W.E.O.26

PASTORAL CARE IN AIDS MANAGEMENT
Rader, Alison; Malama,M.; Campbell,I.D.; Chaava,T.
The Salvation Army Chikankata Hospital, Masabuka, Zambia.

Objective. To describe pastoral care as part of integrated AIDS management in the context of home based care and prevention.
Methods. The management of AIDS at Chikankata Hospital has followed a pattern of home based care with hospital intervention where required. Management is described as an integrated approach to the disciplines of clinical care, education, counselling, administration and pastoral care. Implementation of this concept at Chikankata has been expressed through the formation of a multidisciplinary team. The dynamics of the team are discussed with reference to integrated management and then with specific reference to pastoral care.
Results. Pastoral care is presented as a valid and necessary component of care for patients, families and communities affected by AIDS, particularly in the context of African spiritual tradition. After defining pastoral care, its application is described in terms of patient responses, behaviour change, death, and quality of life.
Conclusion. It is proposed that without provision for pastoral care management is incomplete, and that pastoral care can be appropriately implemented through an integrated, multidisciplinary team approach to care and prevention for patients, families and communities.

W.E.O.27

AN EVANGELICAL DENOMINATION RESPONDS TO AIDS
Finger, Reginald, MD, MPH*; Malloy, Michael, ACSW**.
*Nazarene Health Care Fellowship, Kansas City, Missouri, USA
**Christian Counseling Services, Nashville, Tennessee, USA & Association of Nazarenes in Social Work, Kansas City, Missouri, USA

Objective. To utilize the material, human, and spiritual resources of a religious denomination to deliver compassionate care to those with HIV infection and their families; to educate pastors and laypersons in the church in order to facilitate a scientifically sound and compassionate response to HIV.
Methods. The evangelical community has often been perceived as holding a judgmental and unsympathetic attitude toward those with HIV, because of the risk behaviors in which many of them have participated. In July 1988, over one hundred local and national leaders of the Church of the Nazarene met in New York state to explore HIV-related issues and to plan for educational outreach to the denomination and for a coordinated compassionate response. This conference is believed to be the first of its kind for an evangelical denomination. Since the conference, an informal network of leaders has been formed to continue the efforts.
Results. As a result of these efforts, the established urban ministries of the Church of the Nazarene in New York, Washington DC, and San Francisco are more effectively serving people with AIDS. Pastors and laypersons across the church are increasingly willing to minister to PWAs in the local churches.
Conclusion. The evangelical community represents a potentially powerful resource for education and human services. The combination of valid medical and epidemiologic information about HIV with a sound theological basis for relating to those with risk behaviors, results in effective compassion.

W.E.O.28

JEWISH LAW, VALUES AND THE SOCIAL ISSUES ARISING FROM HIV DISEASE
Freedman, Benjamin; McGill University and the Jewish General Hospital, Montreal, Canada

Jewish law (halakha) and associated literature comprises one of the oldest and most developed systems for the analysis of bioethical issues. The method employed proceeds by means of analogical reasoning from concretized values and ethical schemata. The schemata relevant to HIV include the extent and particulars of the duty to guard against infection as relevant to, e.g., blood and body fluid precautions; the commandment of "caring for/visiting the sick" (bikkur cholim) as related to AIDS care and hospices; social and medical confidentiality (prohibitions on 'talebearing,' r'khilut and lashon hara); and, the adjudication of conflicts between a duty to aid another and the duty to preserve one's own health. Details of these halakhic schemata as applied to current difficult social issues raised by HIV disease are of interest in their own right, and provide a useful contrasting perspective on values and their prioritization.

W.E.O.29

RELIGIOUS LEARDES IN SÃO PAULO BRAZIL JOIN THE AIDS PREVENTION AND CONTROL.
Inglesi E.: Fernandes M.E.:
Centro de Referência e Treinamento em Aids , São Paulo, Brazil.

Objective: To decrease the global impact of HIV infection in the general population through the religious leaders.
Methods: a. Mobilization b. Sensibilization c. Conscientization d. 20 hours training in human sexuality, clinical, epidemiologic ethical, legal, psicosocial .
Aspects on Aids:
Evaluation: A questionaire was apllied before and after the training course.
Results: The religious leaders of 14 different religious groups decided: A. To promote information and prevention on Aids to their communities.
B. Give spiritual support to HIV pacients and families.
C. To open houses to take care of HIV patients.
D. Organization of ecumenic events ever 2 months for solidariety and non discrimination.

W.E.O.30

BAHA'I CONCEPTS TOWARD AIDS PATIENTS AND SOCIETY
*Davachi, Farzin, **Davachi, N., °Wingi, M., **Sefu, L. and **Mbanga, M.
*Department of Pediatrics, Mama Yemo Hospital, **National Spiritual Assembly of the Baha'is of Zaire and °University of Kinshasa, Kinshasa, Zaire

Objective: To describe the Baha'i teachings in relation to the AIDS patient and society.
Methods: The AIDS epidemic has caused worldwide concern from religious and secular organizations. In the absence of a unified stance, we reviewed the Baha'i writings to elucidate the Baha'i recommendations.
Results: The Baha'i Faith is an independant religion which believes in the harmony between science and religion - that these two potent forces must go hand-in-hand for the benefit of mankind. It believes in the fundamental unity and solidarity of the human race. It rejects all forms of prejudice and therefore believes that AIDS'victims should receive support and compassion without trace of discrimination. It regards marriage as a "fortress of well-being" and encourages the practice of chastity before marriage and fidelity afterwards as a protection to the individual and the society. It requires total abstinence from habit-forming drugs except for medicinal purposes prescribed by a physician.
Conclusion: As a strong supporter of human solidarity, the Baha'i Faith rejects all forms of prejudice against AIDS' victims. It offers clear teachings which can serve as a protection to the individual and the society. The practice of these principals has the potential to control this epidemic.

W.E.O.31

DISCUSSANT

Pieters, Stephen A. Universal fellowship of Metropolitan Community Churches, L.A. USA.

Innovations en matière de prévention et d'éducation au sujet du SIDA
Innovations in AIDS Education and Prevention

Th.E.O.1

INNOVATIVE AIDS EDUCATION FOR ADOLESCENTS: STRATEGIES FOR BEHAVIOR CHANGE

Conant Sloane, Beverly; Dyer Chamberlain, M.; Berry, K. and Van Treuren, R.
Dartmouth College, Department of Health Education, Hanover, NH, U.S.A.

Objective. Although adolescents and young adults have long been identified as a population at risk for contracting the human immunodeficiency virus (HIV), few educational programs have targeted this group. Dartmouth College has developed a comprehensive AIDS education program designed to change young people's behavior and develop their skills in decision making, problem solving and communication.
Methods. There are three main components to Dartmouth's AIDS education program: a peer education program consisting primarily of a live student presentation or "Roadshow" on AIDS, a program of distributing free condoms on campus, and a program of distributing "safer sex" kits on campus. To determine which of these educational strategies appeared to be the most effective, the Department of Health Education conducted a pilot study. 200 students (100 male, 100 female) were randomly selected and asked to complete an anonymous questionnaire. There was a response rate of 73%.
Results. The study found the peer education "Roadshow" to have the most significant impact on behavior. 93% of students who had seen the show said they practiced safer sex at least some of the time, as compared to 72% who had not seen the presentation. The availability of free condoms and safer sex kits had no significant behavioral impact, although they were helpful in bringing the AIDS issue to student's attention. Subjects perceived the average Dartmouth student to be at less risk than almost every population group suggested. Males perceived less risk than females [F (1,134) = 17.62, p < .001], despite the fact that males reported more sexual partners (M=2.25) than females (M=1.19).
Conclusions. Based on this study, peer education techniques appear to bear promise for effective AIDS education programming. Many researchers have noted the value of role modeling and peer counseling in areas such as smoking cessation, contraceptive education, and alcohol and drug abuse. Other strategies (free condoms, safer sex kits, media announcements) may not be significant in and of themselves, but can serve as useful reinforcers of the peer education message. Dartmouth College has successfully performed and evaluated the peer education "Roadshow" program at colleges and high schools across the United States. The College has also developed a videotape and training manual for purposes of instructing others in this innovative approach. Challenges for the future will include making young people more aware that they are at risk for HIV transmission, and devising more effective programs of AIDS education for adolescent populations.

Th.E.O.3

EQUIPPING KINSHASA PUBLIC BUSES WITH A CASSETTE PLAYBACK SYSTEM IS EFFECTIVE IN AN AIDS PREVENTION CAMPAIGN

N'Galy, B.*; Kalombo,Kitoto*; France, B.**; Eke, T.***; Eiger, R.**; Nzuzi, N.****; *Coordination Bureau, National AIDS Programme, Kinshasa, Zaire; **Population Services International, Washington, D.C., USA; ***Human Sciences Research Center, Kinshasa, ****SAPPS Agency, Kinshasa.

Objective. To determine the effectiveness of using the Kinshasa City Bus System as a means of disseminating AIDS prevention messages to the general population.
Methods. Thirty public buses were equipped with a looped cassette playback system (LCPS) which provided a specially designed fifteen minute vocal recording of music intercut with selected AIDS messages. The message was continuously played during a four week period in September, 1988. In the fourth week, random interviews were conducted among departing passengers.
Results. Of the estimated 234,240 passengers who rode these buses during the test period, 240 were interviewed (140 males, 100 females). Among the respondants 153 (64%) spontaneously recalled hearing both music and health education messages. Of these, 123 (80%) were able to recount specific AIDS messages contained in the cassette. After further prompting, 19 of the 87 passengers who could not initially identify the message, recalled hearing some of the AIDS messages. In total, 142 (59%) of the 240 interviewed passengers retained at least one of the specific AIDS messages.
Conclusion. The use of the LCPS in Kinshasa public buses appeared to be an effective method of disseminating AIDS prevention messages. There are an estimated 600,000 daily bus passengers in Kinshasa. If the system can be effectively maintained, a significant percentage of the urban population of Kinshasa could be reached through this medium.

Th.E.O.5

The Futures Workshop as a method for mobilization and coordination in Aids prevention.

Urwitz V, Ohgren M, Juvall T, Stockholm, SWEDEN

Background: The Stockholm Youth Prevention Project aims at making people who meet youth in their daily work part of preventive action. Stockholm county has 1.7 miljon people organized in 42 districts.

Objectives: Mobilization and coordination of local people and resources for youth prevention in Stockholm County. Development of local action plans.

Method: The Futures Workshop (FW) is a method developed to make grassroots-people and field workers use and share their experience in solving problems and planning specific local activities in reaching out to young people. The FW is unpretentious, creative and fun. It takes one day and 15-25 people from different organisations can take part.

Present experiences and results: During one year the FW has been used in 14 districts. Out of this has developed for instance: locally adapted plans and activities to reach parents. Social group work with girls at risk. Local overall plans for work with sex and relationships through the different stages of school. In all 14 districts there are local coordination groups.

Th.E.O.2

DEVELOPMENTS OF THE NATIONAL AIDS TELEPHONE HELP LINE IN THE NETHERLANDS, 1985 - 1988.

Middelhoff, Monique ACM and Roosjen, JL.
Dutch Committee on AIDS Control, Amsterdam, Holland

Objective. To describe the developments of the Dutch helpline.
Methods. The Dutch National Committee on AIDS has established a fully professionalized AIDS hotline. From the start (1985) data have been collected and computerized: age, gender, area, sex.orientation, HIV-status, problems, items discussed and referral. Monitoring of trends and anual reports are made.
Results.70 calls are answered daily.Mostly heterosexuals(85%) and age 20-40 (70%).There are more calls from cities (Amsterdam 53/10.000), then from rural areas (12/10.000). Nr.1 issue is transmission (50%) followed by prevention(increasing) and questions about testing. In more than 25% referral to testfacilities, g.p.'s etc. has been adviced. Homosexuals are also reached, but not (yet) ethnic minorities and i.v.-drugusers.
Conclusion. 20.000 people yearly use this easily accessible opportunity to talk anonymously about AIDS related problems and fears. For many this is sufficient. A substantial % is referred to more personal guidance. The hotline has been instrumental in detecting trends in HIV related concerns in the general population.

Th.E.O.4

HIV TESTING 'ON THE STREET'

Rekart, Michael L.; Chan, S.; James, E.; Barnet, J., STD Control, Ministry of Health, Vancouver, British Columbia, Canada
Objective To report the results of 199 HIV antibody tests performed on street-involved persons in Vancouver by the AIDS Street Nurse Program.
Methods HIV testing and counselling was performed at the request of 199 street-involved persons in two distinct areas of Vancouver where street-involved persons congregate. The tests were performed from August through December 1988.
Results Sixty-nine percent (69%) of those tested were male and 65% were 14-29 years of age. Fifty-five percent (55%) were active prostitutes, 51% were intravenous drug users, and 40% professed to be bisexual. A total of 10 persons were HIV positive out of 199 tested (5.0%). Most persons had multiple risk behaviors but the activities of highest risk were bisexual prostitution in males and intravenous drug use (IVDU). Of 33 tests in bisexual male prostitutes using intravenous drugs, 4 were reactive (12.1%). An additional 3 of 29 (10.3%) bisexual male prostitutes not using intravenous drugs tested positive. The remaining positive tests occured in 1 of 4 tests in bisexual males not engaged in prostitution or IVDU, 1 of 6 female heterosexual IVDUs, and 1 of 7 female heterosexual prostitutes not injecting drugs. Of note, there were no reactive tests in 49 heterosexuals without additional risk nor in 28 female IVDU heterosexual prostitutes.
Conclusion Amongst street-involved persons in Vancouver, intravenous drug use, prostitution and bisexuality are common. HIV sero-positivity is at a critical stage for interventions (5%) and strategies should be focussed on bisexual male prostitutes.

Th.E.O.6

INCORPORATING AIDS EDUCATION INTO FAMILY PLANNING

Varela, Luis,* Lópes-Juáres, A.**, Rodrigues, G.**
* The Population Council. México, D.F.
** MEXFAM, A.C. México, D.F.

Objectives. To incorporate AIDS prevention activities into ongoing family planning programs. To determine the effect of AIDS involvement in the promotion of family planning.
Methods. AIDS educational activities were included into two family planning programs, one aimed at youths (4 communities) and one aimed at urban marginal population (5 communities). Project activities were preceded by training of staff and development of educational materials. A range of activities were carried out (community and school talks, waiting-room talks, counseling), and most participating centers designated one day a week for AIDS education.
Results. Attendance to activities and demand for talks and lectures exceeded the project goals. Survey shows increased AIDS knowledge among those attending events. However, no changes were detected in the demand for condoms distributed as part of the family planning program. Likewise, no changes were found in the number and type of clients, and no negative consequences of associating AIDS to family planning were detected.
Conclusions. Family planning programs can be effective educating their clients about AIDS without detriment to the promotion of family planning.

Th.E.O.6.A Voir/See page 1059

Politiques sociales: expériences et critiques
Public Policy: Experiences and Critiques

Th.E.0.7

UNE STRATEGIE D'INFORMATION PAR RAPPORT A L'ACTION DES POUVOIRS PUBLICS FRANCAIS

Frédéric EDELMANN*, Jean-Florian METTETAL**, Franck FONTENAY*
*ARCAT-SIDA, CNIS, **Hôpital Necker, ARCAT-SIDA, CNIS, FRANCE

Objectif: Etablir les conditions d'une information indépendante en France sur la question du SIDA
Méthode: Analyse sur une période de cinq ans des choix politiques en matière de lutte contre le sida, du comportement des gouvernements successifs par rapport aux organismes institutionnels ou non institutionnels stables; des réponses apportées aux organismes non institutionnels. Suivi de la presse non médicale.
Résultats: La juxtaposition, d'une part des décisions administratives, d'autre part des déclarations d'intention, enfin du calendrier des échéances politiques, indique clairement que les pouvoirs publics français n'ont commencé à prendre conscience de l'enjeu - sans en tirer toutes les conséquences - qu'à partir de l'été 88
Les gouvernements n'ont pas pas trouvé, dans les organismes institutionnels gérant la santé publique, les mécanismes d'alarme leur auraient permis d'y voir plus clair - à l'exception des personnes en charge du SIDA mais qui n'étaient pas à même d'être écoutées. Ils se sont fiés à l'image que leur renvoyaient les média, c'est-à-dire à un un discours portant surtout sur les aspects scientifiques, imprégné par l'autosatisfaction de la découverte du LAV, peu conscient de la complexité des problèmes de santé publique, et donc non critique à l'égard des pouvoirs publics. Enfin, ils ont toujours donné le pas aux organismes institutionnels, même lorsque leur incompétence était établie, de préférence aux organismes non institutionnels. Ces derniers n'ont obtenu de soutien qu'à la condition d'un clientélisme qui les a *de facto* institutionnalisés.
Conclusions: L'action des pouvoirs publics en France est freinée par les traditions politiques, par les pesanteurs institutionnelles, par mauvaise circulation de l'information sur ces mécanismes et l'occultation involontaire des questions de santé publique par les media traditionnels. Les auteurs ont tiré les conséquences de leurs conclusions en créant un mensuel d'information dont le contenu rédactionnel est protégé par une triple condition d'indépendance (financière, politique, associative), condition d'un système d'information critique non passionnel

Th.E.0.8

Th.E.0.9

REPORT OF THE CHILD WELFARE LEAGUE OF AMERICA TASK FORCE ON CHILDREN AND HIV INFECTION

Pressma, Donna; Anderson, V.M., MD.; Horowitz. R.M. Esq.; Emery, L.J.*; Annin, J. Burt, JD*; et. al. *CWLA, U.S.A.

Objective: To establish guidelines and suggest public policy based on what is currently known medically, legally, and in social work practice about the care of children infected with HIV, how it will affect their care at home, in child welfare agencies and how it will affect agency personnel issues.
Methods: The Child Welfare League of America, a membership association of 500 public and voluntary child welfare agencies and 1000 affiliates in the US and Canada, formed a Task Force on Children and HIV Infection immediately after convening an international roundtable: Attention to AIDS: Responding to the Growing Number of Children and Youth with AIDS. The Task Force, representing 57 member agencies, experts from medicine, law and agencies serving HIV infected individuals met periodically to produce a tool for providers of services to children.
Results: The Report of the Task Force, "The Initial Guidelines" has been distributed to five hundred member agencies and approximately 2000 other child serving agencies. A training institute was delivered to representatives of 125 agencies.
Conclusion: If HIV infected children are to be willingly served within existing services wherever possible, the preparation process must include sustained education of all staff and substantial negotiation regarding the application of principles established by serving adults.

Th.E.0.10

AIDS AS A CHALLENGE AND AN INNOVATION IN HEALTH CARE AND HEALTH POLICY

Josephsen, Knud, HIV-positive (ARC), member of the Danish Positive Group, gay, social worker, Copenhagen, Denmark

Objective. Demonstrate the Danish experience of an active participation and dialogue between PWA/HIV and the health care delivery system.
Methods. The barriers between the physicians' professional culture and in the organization of health care towards an open, multidisciplinary strategy of treatment need to be broken down. The experience and the needs of people with AIDS and HIV-positives are best understood, when PWA/HIV are actively involved. It is important to look upon illness, HIV and AIDS as a "proces of learning" for both the patient and the health care provider. There is a need for psycho-social support, which includes "quality of life" as part of medical care. It is paramount, that open communication and constructive dialogue between people with AIDS and HIV and the health care system takes place. This can be done individually and in a group structure. The dialogue is a necessity in order to innovate and develop the health care system. The Danish experiences with such a dialogue are few, but positive.
Conclusion. People with HIV/AIDS are pioneers. They should be utilized in a more consumer-conscious organization of patients, which can contribute to innovate the health care system and health policy.

Th.E.0.11

AIDS AND SOCIAL POLITICS

Arne Grønningsæter, Vice-president, Norwegian Association of Social Workers, Oslo, Norway

Objective: To present an integrated approch with regard to preventing the spreading of AIDS. The social workers must cooperate with the risk-groups and the HIV-infected in the struggle against AIDS - and in caring for people with AIDS.
Methodes: The point of departure is that AIDS is as much a social and cultural problem as a medical one. To face the consequences of this diseas we must strive to change people's behavior. We would therefore present a paper on a social policy-based work against the spreading of HIV and care for the infected.
Important elements in the Norwegian anti-AIDS-work are:
1) voluntary means, 2) protection of the human rights of the risk-groups and the HIV infected, 3) open and direct information on sexuality, including homosexuality, 4) information directed to individuals and communities, and less use of big campaignes directed to the population as awhole, 5) information directed to the risk-groups mediated in cooperation with their organisations, as well as to the general public, 6) cooperation between the authorities, the risk-groups and the HIV-positives, 7) cooperation between the different risk-groups.
Conclusion: We believe that the use of this means has led to a more tolerant society and a decreasing number of HIV-infected. HIV/AIDS is putting the humanistic and democratic way of thinking to a test, and makes it important to underline this values.

Th.E.0.12

STATE AIDS LEGISLATION AND POLICY TRENDS: 1983-1988

Ryan, Caitlin, George Washington University, Washington, D.C., U.S.A.

Dimensions sociales du SIDA
Social Dimensions of AIDS

Th.E.0.13 PSYCHOSOCIAL SEQUELE OF AIDS -- AN INDIAN PROFILE.

Dr SWAMINATHAN SUNDARARAMAN* Dr SOLOMON S.* Dr TARA R.* Dr RAJKUMAR S.*; Ms SUBHA*.
* Madras Medical College, Madras, India.

OBJECTIVE : To describe the psychosocial sequele of AIDS in India. METHODS : This is a descriptive report on 5 families of HIV seropositive individuals of low socio-economic class, living in Tamilnadu, a southern state in India, where an exceptionally large number of cases of HIV infection has been detected. The various psychosocial stressors these families have been exposed to, after the detection of infection, the subsequent communal, social and sensory ostracization, deprivation of homes, victimisation, unique to the Indian setting is highlighted. The families were subjected to an open ended interview and evaluated. The reaction of the infected individuals, the reaction of the family itself, the psychosocial impact, and the societal reaction are studied. Attempt to detect psychiatric and psychological morbidity was made.
RESULTS : Though this situation has not produced severe psychiatric morbidity as yet in the study group, some of them did reveal minor psychological problems viz. depression, agitation, insecurity with respect to illness itself, ambiguity about societal acceptance, uncertainity about their means of living and their future as independant citizens.
CONCLUSION : This should not be treated as an isolated problem affecting just a few families since it is a reflection of the community attitude to HIV infected individuals. The implication of this psychosocial phenomenon in the light of India's socio-cultural conditions and increasing prevalance of AIDS must be borne in mind.

Th.E.0.15 SOCIAL ORGANIZATION AS A DETERMINANT IN HIV TRANSMISSION

Kreniske, John.
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Objectives: To determine the interaction between social organization and the transmission of HIV infection in the Dominican Republic.
Methods: Field work, structured interviews and participant observation.
Results: The economic plight of groups within the population as well as traditional mores and patterns of behavior of selected sub-populations places these groups and individuals at elevated risk of infection. Sexual workers, young boys who become sexual workers, sexually active adolescents and young people, migrant workers to the United States and seasonal workers to the Dominican Republic from Haiti stand at variable but elevated risk.
Conclusion: Increasing poverty allied with ongoing movement of the population may create a setting conducive to the spread of HIV infection. In this setting, prevention of HIV infection requires the formulation of interventions which are sensitive and appropriate to those sub-populations which may suffer the greatest risk. Among those groups which it seems must be considered are tourists, Dominican workers returning from the United States and Haitian workers entering the Republic to cut sugar cane. Work by Dominicans along these lines will be reviewed and some possible areas where collaborative research and development of interventions might be attempted will be suggested.

Th.E.0.17 RISK-PERCEPTION, RISK-TAKING AND RISK MANAGEMENT AMONG INTRAVENOUS DRUG USERS: IMPLICATIONS FOR AIDS PREVENTION

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Objective. To describe "perception of risk" within IVDU subculture and its relevance in developing interventions to reduce the risk of HIV infection among IVDUs and their social network.
Methods. Formal ethnographic methods were employed in developing rapport and establishing identity with the community. Data was collected through techniques including directed conversation and observation, "on the street" and in shooting galleries. In addition, standardized questionnaires were given to 120 IVDUs in a drug treatment program.
Results. Results show risk taking to be an integral part of IVDU subculture. Daily, IVDUs risk arrest, overdose, becoming victims of theft, violence and illnesses related to drug use. 90% found that the longer they remained active in the subculture, the more risks they took. Five times as many found "taking a risk successfully" more satisfying than "successfully avoiding a risk." While needle sharing was considered pre-AIDS to be no or low risk by 80%, 77% now consider it a major risk. 70% mentioned AIDS as the catalyst for this change in risk perception.
Conclusions. Efforts to prevent transmission of HIV by advocating that IVDUs reduce high-risk activities will need to consider the role of and attraction to risk-taking. Interventions (information and education) appealing only to the rational judgement of the individual may not be the most effective "means for changing behavior. Providing a concrete "means for change" (bleach for cleaning, new needles) in combination with the "ideas for change" may have a greater impact. Indigenous risk management strategies (running partnerships, etc) may be used as a model for AIDS risk-reduction techniques.

Th.E.0.14 APPROCHE SOCIO-DEMOGRAPHIQUE D'UNE POPULATION DE MALADES DU SIDA HEBERGES DANS DES APPARTEMENTS THERAPEUTIQUES A PARIS ET SA BANLIEUE.

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De mars 1987 à février 1988, 38 malades du Sida ont été hébergés dans la Région Ile-de-France, dans des appartements de relais thérapeutique et social (APARTS), en vue de leur réinsertion sociale et/ou professionnelle.
Les auteurs proposent une analyse sociodémographique descriptive de la population accueillie et précisent certaines données relatives aux modalités de contamination.
Les malades accueillis représentent 8,4% des patients hospitalisés ou en traitement dans les hopitaux relevant de l'Assistance Publique à Paris (Centres Hospitalo-Universitaires).
Les premiers résultats indiquent que la population correspond à la distribution épidémiologique des cas de Sida enregistrés à la Direction Générale de la Santé (Paris). La surmarginalisation sociale serait un facteur indépendant de la contamination et de l'appartenance à des groupes à risque identifiés par les autorités sanitaires françaises. Les données descriptives et analytiques permettent d'identifier différents types de modalités de marginalisation qu'entraîne l'infection au VIH.

Th.E.0.16 SOCIOLOGICAL ANALYSIS OF AIDS PREVENTION AMONG HOMOSEXUAL MEN.

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* Gay and Lesbian Studies Department of the University of Utrecht, The Netherlands.

Objective. To assess AIDS prevention activities among men with homosexual contacts in The Netherlands, United States, United Kingdom, France, Sweden, Switzerland, and Germany in order to develop better conditions for successful prevention campaigns among other risk groups and the general population.
Methods. With the support of the Global Programme on AIDS of the World Health Organization in Geneva and national researchers an inventory and analysis was made of 1) the most important prevention activities among men with homosexual contacts in the various countries, and of 2) the factors involved in explaining the prevention effects in the target groups.
Results. In all countries investigated, impressive behavioral changes took place among men with homosexual contacts in the direction of safer sex and diminishing chances of HIV-seroconversion. Important factors related to success of those prevention activities are: 1) the community based and explicit character, 2) the non-moralistic, facts and human rights oriented approach; 3) the emphasize on personal freedom and responsibility combined with the introduction of sexually attractive safer sex alternatives for behavior at risk; 4) the avoidance of scapegoating processes and of tendencies to separate HIV infected from non-infected people, 5) the support of HIV positives and PWA's by counseling and anti-discrimination activities, 6) the development of prevention feed back oriented psychosocial research, 7) the use of community based media trusted by the target group, 8) the use of political strategies to develop target group based and general AIDS organisations.

Th.E.0.18 DE CAMPAGNES GENERALES A DES APPROCHES COMMUNAUTAIRES

Perreault, Michel Ph.D. C.E.R.M.E.S. Paris, France.

Même si le développement du sida comme épidémie n'a pas encore engendré les effets sociaux destructeurs de l'ordre social constatés par les recherches historiques sur les épidémies passées, des recherches récentes (Pollak 1988) montrent que les personnes qui n'ont pas de connaissance personnelle des victimes et qui ne se sentent pas elles-mêmes exposées, sont celles qui ont les positions les plus favorables à la mise à l'écart des malades et séropositifs au dépistage obligatoire des étrangers ou de membres de groupes identifiés comme plus à risque. Il y a nécessité de développer et d'évaluer des approches communautaires qui permettent à ces personnes d'avoir une connaissance personnelle des malades et porteurs et de construire une solidarité effective. Actuellement la prévention passe surtout par des campagnes générales de sensibilisation qui ne font appel qu'à la responsabilisation individuelle: ces campagnes ne contribuent-elles pas à accroître le sentiment de sécurité personnelle face à une peur qu'elles contribuent à augmenter ainsi qu'à maintenir l'absence de solidarité, deux conditions susceptibles d'aboutir à l'exclusion des victimes réelles et potentielles, exclusion qui peut être génératrice de graves désordres sociaux.

Information
Information

M.E.P.1 A STRUCTURED EDUCATIONAL SUPPORT GROUP FOR HIV INFECTED INDIVIDUALS

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A six session structured group model for HIV seropositive individuals was developed as part of a randomized control study of newly identified HIV seropositive individuals. 95 individuals have participated with average of 8-9 per group. Most groups have been heterogenous with regard to risk factors, age and sex. This psychosocial intervention consists of professionally lead groups with educational as well as psychological and social components. Educational content includes information about transmission of the virus as it relates to daily living and sexual practices; medical aspects of HIV infection, health promotion, disease prevention strategies are reviewed. Skills in stress reduction and communication are taught, individuals share feelings, experiences, and coping strategies.

Groups have decreased the social isolation of HIV postive individuals. Many have developed sufficient cohesiveness to continue as peer support groups. Peer groups seek consultation of professional group leaders as new issues emerge such as changing medical information, illness and death of group members.

M.E.P.2 REPORT FROM A PUBLIC HEALTH PSYCHOSOCIAL CLINIC FOR GAY AND BISEXUAL MEN WITH HIV-RELATED PROBLEMS

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Objective. Critical discussion of team formation and team function. Discussion of the need for a clinic aimed especially at gay men. Preliminary analysis of the problems presented by the clients. Tentative evaluation of the therapies and services offered.
Methods. Statistical description of the more than 325 clients. Critical essay on the delicacies and vicissitudes in building a team, forming an agreed philosophy on client work and maintaining efficiency and cohesion.
Results. The clinic has almost equally served both seropositive and seronegative clients. Recurrent themes in both groups similar and centre often on problems around sexuality and low self esteem. The more secretive a person is about homosexuality the more liable does he seem to be prone to anxiety. Low esteem is a risk factor for developing (alcohol) abuse which in turn increases the tendency towards risk sexual behaviour. There seem to be a strong need for addiction recovery facilities directed towards gay men.
Conclusion. Building a team aimed at a gay clientele with HIV-related problems means encountering problems on many levels - yet there are strong motives for specialized clinics with this commission. "Gay competence" and tolerant compassion required.

M.E.P.3 AIDS-STIGMA AND ANTI-GAY PREJUDICE: PUBLIC REACTIONS TO AIDS-RELATED POLICIES AND TO GAY MEN IN THE U.S.A.

Herek, Gregory M. and Glunt, E.K.
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Objective. To examine the relationship between attitudes held by the U.S. public toward AIDS-related policies and gay men.
Methods. Two samples were used: 1) 133 adults from 5 U.S. cities who completed written questionnaires; and 2) 859 adults from a subsequent national telephone survey. Responses to a battery of AIDS-policy items were factor analyzed, scales were constructed, and regression analyses conducted to determine the best predictors of AIDS-related policy attitudes.
Results: Two factors consistently emerged for AIDS-policy attitudes. Factor #1 items proposed punitive measures to be taken toward persons with AIDS (e.g., quarantine); this factor includes a strong component of blaming people with AIDS for their condition. Factor #2 consisted of items generally endorsed by public health authorities (e.g., education about safer sex). The factors were uncorrelated in the small sample; in the national sample, they were negatively correlated among Whites, but not correlated among Blacks. Attitudes toward gay men were predictive of scores on both factors, with some analyses suggesting that they exert a particularly strong influence on attitudes toward punitive policies.
Conclusion. Attitudes toward AIDS-related policies are multidimensional; ambivalence about AIDS may appear in the form of agreement with punitive as well as constructive public health policies. Influencing U.S. public opinion may require concurrent attempts to reduce anti-gay prejudice.

M.E.P.4 COMMUNICATING AIDS INFORMATION TO HISPANICS: THE IMPORTANCE OF LANGUAGE AND MEDIA PREFERENCE

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**Salud Medical Center, Woodburn, Oregon,
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Ojective. To design an effective AIDS education program for Hispanics in Oregon based on language (Spanish/English) and media preference as well as to increase information on AIDS knowledge and attitutes for Hispanics, the fastest growing minority group in the U.S.
Methods. The first part of the program began in January of 1988 with a survey study of 216 Hispanics from three clinics in Oregon to examine beliefs about AIDS and to determine the principal sources of information access for this population.
Results. Major findings from this study showed that respondents whose primary language was Spanish tended to have fewer information sources and relied relatively more on broadcast media than printed media. Despite recent nationwide AIDS education efforts, almost one-half of Spanish-speaking only respondents denied having received AIDS information before. In addition, almost one-half of the sample did not believe or were unsure whether condoms could prevent the transmission of AIDS. Compared to primarily English speakers, respondents whose primary language was Spanish were more likely to believe that AIDS could be casually transmitted and less likely to believe that condoms could prevent transmission.
Conclusion. Based on the results of this study, a culturally and linguistically appropriate media campaign targeted at Hispanics in Oregon was developed and implemented.

M.E.P.5 ' AIDS - A PROACTIVE APPROACH TO MENTAL HANDICAP '

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This paper aims to outline the proactive approach required to meet the educational needs to provide the necessary information to those closely involved in the care and training of people with a Mental Handicap both in the community and in residential settings and for the parents and their children , so developing a positive attitude in relation to the many aspects of education and social change required.

There is already a subculture within this field which has developed many stigmatizing effects which delay hamper and hinder progress for and colour attitudes to our fellow citizens and to have any further additional labels which may further handicap their chances of being accepted as a full member of society can only disenfranchise them further.
The aim of the Society of Mental Handicap Nursing within the Royal College is to provide a format which will help those reading our booklet to promote a positive attitude to the changing needs of those with a Mental Handicap in any setting.

M.E.P.6 EVALUATION OF AIDS EDUCATION PROGRAMS FOR OFFENDERS

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Objective. 1) To determine AIDS risk and baseline levels of knowledge, attitudes and behaviors for adult and juvenile offenders. 2) To compare offender knowledge, attitude and behavior outcomes after participation in different methods of AIDS education.
Methods. Random assignment of 204 offenders to 1 of 4 methods of AIDS education: printed material only, video only, video and discussion with a nurse educator (RN), and discussion with RN only. Pre and post-tests (knowledge, attitudes and behaviors) and a risk assessment were administered.
Results. The self-reported behavioral assessment showed the target population to be one with considerable risks. A small, but significant increase in knowledge and attitude mean scores occurred from pre to post-test for 3 methods (t-test, $p < .05$). No significant difference was found between these 3 interventions (ANOVA). Findings from a 3 month follow-up study of changes in behavior after training will be presented.
Conclusion. Although the baseline levels of knowledge about AIDS were higher than expected, adult and juvenile offenders did benefit from receiving AIDS education while in the Corrections system. Shifting to a curriculum that focuses on specific techniques for achieving behavior change may have greater potential for success with this special-needs populations.

M.E.P.7

AN APPLICATION OF SOCIAL MARKETING TO THE DEVELOPMENT OF AIDS EDUCATIONAL MATERIALS.

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*COUNTY OF ORANGE HEALTH CARE AGENCY, CA. U.S.A.
**MONTOYA, RASCHE, ORANGE, CA. U.S.A.

OBJECTIVE: TO DEVELOP WRITTEN MATERIALS ABOUT AIDS EDUCATION FOR PERSONS WITH LIMITED EXPOSURE TO FORMAL EDUCATION AND WHOSE PRIMARY LANGUAGE IS SPANISH.
METHODS: THE HEALTH CARE AGENCY UTILIZED THE PRINCIPLES AND TOOLS OF SOCIAL MARKETING TO DEVELOP A SPANISH LANGUAGE AIDS EDUCATION BOOKLET TARGETED AT THE LATINO MONOLINGUAL SPANISH SPEAKING POPULATION WITH LITTLE EXPOSURE TO FORMAL EDUCATION. THE FORMAT IS THAT OF A "FOTO-NOVELA" (SOAP-OPERA COMIC BOOK). THIS FORMAT WAS CHOSEN BECAUSE IT IS CONSISTENT WITH A POPULAR GENRE OF ENTERTAINMENT IN LATIN AMERICA. ALTHOUGH THE MESSAGE WAS DEVELOPED WITH MAXIMUM RELIANCE ON VISUAL CUES AND A MINIMUM RELIANCE ON TEXT, THE WRITTEN CONTENT IS ESSENTIAL IN CONVEYING IMPORTANT AIDS EDUCATION. THEREFORE, IT WAS WAS DEVELOPED IN A FORMAT WHICH CAN BE UNDERSTOOD BY INDIVIDUALS WITH NO GREATER THAN A PRIMARY LEVEL OF EDUCATION. THE BOOKLET WAS EVALUATED BY FOCUS GROUPS AND A SEPARATE ASSESSMENT OF THE LEVEL OF READING DIFFICULTY WAS CONDUCTED. THE ASSESSMENT OF READING DIFFICULTY WAS FOR DIALOGUE, CAPTIONS AND INSTRUCTIONS.
RESULTS: FOCUS GROUP RESULTS REVEALED THAT THE BOOKLET HAS A HIGH DEGREE OF CONCORDANCE AND ACCEPTABILITY IN THE TARGET POPULATION. THE DIALOGUE WAS JUDGED TO BE AT THE THIRD GRADE LEVEL; THE CAPTIONS AT THE FOURTH GRADE LEVEL; AND THE INSTRUCTIONS AT THE SIXTH GRADE LEVEL.
CONCLUSIONS: IT IS SUGGESTED THAT THIS IS A USEFUL METHOD FOR DEVELOPING AIDS EDUCATION MATERIALS THAT ARE APPROPIATE FOR THE LANGUAGE, EDUCATIONAL AND CULTURAL CHARACTERISTICS OF PARTICULAR TARGET GROUPS. THE FOTO-NOVELA IS CURRENTLY BEING USED WITH GREAT SUCCESS IN OUR CLINICS AND AIDS COMMUNITY EDUCATION OUTREACH EFFORTS.

M.E.P.9

AIDS IN THE INNER CITY: A BLACK COMMUNITY ORGANIZATION'S RESPONSE TO THE AIDS EPIDEMIC.

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Objective: To assess the factors which encourage minority community organizations to become involved in AIDS prevention.
Method: A local organization, noted for its involvement in community affairs, including AIDS education and drug abuse services, was asked to participate in the study. The anthropological field methods of participant-observation and in-depth interviewing were used in a study conducted over a period of six months. The researcher worked as a volunteer with the AIDS education unit and developed contacts within the organization and the community.
Findings: The organization's entry into AIDS prevention was aided by three important factors: 1) the organization had a strong central leader who was commited to the community and to AIDS education; 2) the flexible structure of the organization enabled it to respond to problems within the community; and 3) AIDS education could be conducted through existing services provided to drug-using clients.
Conclusion: The initial response to AIDS prevention activities by this organization was facilitated by strong local leadership and concern for community welfare. Secure funding sources were critical in developing and building programs. Leadership and funding each affect an organization's response, but may be of critical importance at different times.

M.E.P.11

AIDS EDUCATION IN COMMUNITIES OF COLOR: A PRIVATE-PUBLIC PARTNERSHIP MODEL

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Objective. To describe a model for AIDS education in communities of color.
Methods. People of Color Against AIDS Network (POCAAN) developed a four level strategy to engage communities of color in AIDS education. Level One is to identify issues in terms that are relevant to, and in the idiom of the community. Level Two is to organize community support from both private and public sectors. Level Three is to mobilize the community to confront AIDS through coalition building. Level Four is to motivate individuals to change behavior via direct education, and advocacy on behalf of these individuals.
Results. The strategy was successfully implemented in communities of color statewide. Issue identification occurred via discussions with community leaders and focus groups. Community support was secured through POCAAN's participation in community events, development of culturally specific materials including a nationally acclaimed comic book for youth of color, and the Famous Last Words media campaign, engagement of local and state health departments, and organization of AIDS events including a regional conference attended by 350 people. Mobilization of communities was achieved by providing leadership for collaborative education projects taken on by 10 community agencies. Motivation of individuals is currently being addressed by POCAAN and collaborating agencies, who now have credibility in the communities.
Conclusion. AIDS education within communities of color can be achieved by organizing that culminates in the provision of education by indigenous community organizations, with the leadership and oversight of a central agency.

M.E.P.8

USING NATIONAL AND REGIONAL MINORITY ORGANIZATIONS TO PROVIDE CULTURALLY RELEVANT HIV INFORMATION AND EDUCATION IN THE UNITED STATES.

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Objective. To describe a program for developing and strengthening the participation, of national and regional minority organizations in educational efforts to prevent the spread of HIV infection in the U.S.
Method. In 1988, the Centers for Disease Control funded 33 national and regional minority organizations to develop culturally relevant information and education projects targeting minorities at risk. Description of programs and preliminary data on their impact and reach, obtained from quarterly reports, will be provided and includes such variables as number of persons reached, changes in knowledge, attitudes and beliefs. Strategies for coordinating activities, coalition building and networking efforts will be discussed.
Results. To date over 900 persons participated in 30 national and local workshops. Preliminary data indicates significant change in knowledge, attitudes and beliefs. Twelve public service announcements using celebrities were developed for TV and theatre audiences. Preliminary figures suggest 87% day after recall, 78% 2-week recall, and 78% 4-week recall for theatre viewers. Other significant findings and evidence of networking and coalition building among grantees will be presented.
Conclusion. National and regional minority organizations are effective vehicles for providing unique and culturally relevant information and education to minorities in the United States.

M.E.P.10

AIDS EDUCATION PROGRAM FOR HAITIAN IMMIGRANTS IN MONTREAL

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As of January 1989, 108 (15%) of the 713 adult cases diagnosed in Québec since 1979 were born in Haiti and 20 of the 30 pediatric AIDS cases in this province were born to Haitian mothers.
Objective: To improve AIDS awareness among the 40 000 Haitian immigrants in Montréal.
Methods: Because this community was stigmatized in the early years of the AIDS epidemic, our first goal was to enlist community leaders to support the planning of an AIDS educational program and then to help increase the credibility of the messages. Focus groups were used to formulate French and Creole messages in the fall of 1987. Educational tools included: pamphlets, posters, video, public service announcements in community radio, TV shows and newspapers. A phone response center was also made available.
Results: A 6 week multi media campaign was organised in the spring of 1988. Four weekly radio shows on AIDS prevention were aired on 2 community radio stations and ads were put in two community newspapers. Educative materials distributed included: 3095 pamphlets, 439 buttons, 138 posters displaying the GHP-SIDA's slogan: "Ak Sida, Atansyon pa kapon!". Between July and December 1988, 22 (8%) of 269 randomly selected adult Haitians in Montréal reported having participated in an activity organised by GHP-SIDA.
Conclusion: An AIDS education outreach program is now available for a community that until recently was stigmatized. Continued involvement of all community leaders is essential to the success of the program.

M.E.P.12

IMPLEMENTING A CULTURALLY SENSITIVE AIDS PREVENTION PROGRAM FOR HAITIAN IMMIGRANTS IN NEW YORK CITY

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Objective. To describe the rationale and development of an AIDS Prevention Program for Haitian Immigrants in NYC.
Methods. Studies in NYC have shown a high prevalence (6%) of HIV infection in recent Haitian immigrants. The Haitian community presents many barriers to AIDS prevention programs including: 1. A history of stigmatization regarding AIDS;2. Nonwritten language impeding the development of printed education materials; 3. Inadequate access and utilization of medical resources both here and in Haiti; 4. Lack of understanding of concept of prevention of disease; 5. General mistrust of authorities because of both immigration status, and relationships with authority in Haiti.
Results. Components of an effective AIDS Prevention Program should include: 1. HIV counseling and education offered in Creole as a routine part of medical visits when indicated. 2. Active participation by Haitian physicians and community press in educating the population. 3. Unique outreach activities including: videos, skits, and comic books. 4. Public service announcements by prominent members of the community on radio & TV.
Conclusion. In this population the patient's perception of both risk and prevention may be impeded because of multiple barriers. An organized approach must be utilized in order to overcome suspicions and increase utilization of appropriate services.

M.E.P.13 AIDS KNOWLEDGE, LANGUAGE USE AND RESPONSE TO SPANISH AND ENGLISH RADIO MESSAGES OF LOW-INCOME MEXICAN-AMERICAN WOMEN IN SOUTH TEXAS.

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Objective. To determine the educational relationship between AIDS knowledge, language preference and response to AIDS public radio messages for Hispanic women in South Texas.
Methods. We surveyed 212 women in two predominantly Mexican-American housing projects, employing language of preference for each. Scales were constructed to measure Spanish Language Use (SLU), correct/incorrect knowledge of HIV issues (AK+/AK-), risks for HIV (R), recent awareness of AIDS (Qact), sharing HIV information with children (CKO), reported messages from PSAs (RTOT), and enthusiasm for media messages (OPIN).
Results. We found positive correlations between SLU and AK- ($p \leq .0001$), AK+ and CKO (p=.0002), and Qact and AK+ ($p \leq .0001$); and a negative correlation between SLU and AK+ ($p \leq .0001$). In analysis of media, there was no significant association of RTOT and SLU (p=.47), CKO, R, AK+, or Qact. Of note were correlations between AK+ and OPIN (r=-.33, p=.0006); and OPIN and SLU (r=.31, p=.003).
Conclusion. Spanish language preference in these Hispanic women was associated with less net AIDS knowledge and greater enthusiasm for specific messages on HIV risks, precautions and testing. The data suggest that Spanish language media is effective in outreach to Hispanic women with less AK+.

Médias
Media

M.E.P.14 AIDS: THE LANGUAGE, MEDIA, AND PUBLIC RESPONSE

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Objective: To examine the impact of media coverage of AIDS in community papers and magazines, and to ascertain differences in public and media response to AIDS following the Ontario Ministry of Health $7 million dollar "Let's Talk" media education campaign.

Methods: An examination of local print media coverage of AIDS related articles both before and after the Ministry of Health "Let's Talk" campaign. Additional examination of pre-test instruments distributed at AIDS education presentations. A critical examination of the language used by the media in coverage of (a) medical reports, (b) lifestyle articles, and (c) public and private response stories.

Conclusion: The Ministry of Health advertising campaign has had some impact on the general public. However, while many people now believe AIDS cannot be contracted by casual contact, great confusion still exists around transmission and risk categories. Continued education is required, but such education must be targetted at specific audiences if it is to be successful.

M.E.P.15 UTILIZING THE MASS MEDIA TO PROVIDE CULTURALLY RELEVANT HIV EDUCATION TO HISPANIC AMERICANS

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**KCET TV/Hispanic Health, Los Angeles, California, U.S.A.,
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Objective. To present a working model for developing effective, culturally relevant mass media HIV education programs for Hispanics.
Methods. Essential components of the model will be illustrated and its practical application described by tracing the development of three video instruments (SIDA is AIDS, ALICIA and AMERICA RESPONDS TO AIDS FOR HISPANICS) from initial concept development to production and utilization. Effectiveness of the model was assessed via field tests on stratified samples from the target population, viewer ratings, press coverage, ratings from national experts, number and types of calls to national and local hotlines, and number of requests for the products. A set of principles for developing effective, culturally relevant mass media interventions for minority populations will be provided.
Results. Preliminary analyses of SIDA is AIDS data suggest: over 16% increase in volume of calls to the national hotline; press coverage in all major newspapers in the market areas; and overwhelmingly positive ratings from national experts. Viewership ratings were either good or extremely good in 80% of the major markets.
Conclusion. Utilization of this model will increase the effectiveness and reach of mass media efforts targeting Hispanic Americans.

M.E.P.16 DEVELOPING A LARGE SCALE AIDS MEDIA CAMPAIGN BY COMBINING PUBLIC AND PRIVATE SECTOR RESOURCES

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Objective. To educate the public about AIDS through a statewide media campaign.
Methods. The Oregon Health Division collaborated with two private advertising agencies to produce an AIDS education media campaign. The Division contributed seed money and public health expertise and obtained input and endorsements from political leaders, health care providers, AIDS activists and religious leaders. The private sector donated all creative and production talent and advertising time and space. All material was produced at cost. The campaign's effect was measured by two statewide random digit dialing surveys of 600-800 people each conducted at the beginning and end of the four month campaign.
Results. The campaign was launched in 10/87 by the governor. During the following four months, six T.V. spots were aired 1,932 times; four radio spots were played 3,916 times; 34 newspapers ran at least one of six print ads; 120 billboards, 275 interior and 75 exterior transit ads were placed; and 20,000 bumper stickers and 5,000 copies of 4 posters were distributed. After the campaign, 68% of those polled had seen or heard parts of the campaign. Recognition of specific campaign slogans varied between 66% and 83%. Persons polled after the campaign were more likely to believe that HIV could be transmitted from mother to fetus (78% vs 85%, p=.001), less likely to believe it safe to have sex with someone who tested negative for AIDS (44% vs. 39%, p=.05) and, among 18-39 year olds, more likely to accept the use of condoms (56% vs. 65%, p=.03). The campaign cost Oregon taxpayers $70,000. The value of donated private-sector time and services was estimated at one million dollars. Eight national and international awards have been received for the campaign.
Conclusion. Combining public-sector seed money and public health expertise with private-sector media talent and resources that are largely donated is an effective way to mount a large AIDS public information campaign.

M.E.P.17 THE IMPACT OF MEDIA EVENTS ON PUBLIC INTEREST IN AIDS

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Objective. To assess the impact of major media events on general public concern about AIDS, as indicated by calls to the AIDS hotline, King County, Wash.
Methods. The Seattle-King County Health Department's AIDS Prevention Project staffs an information and referral hotline 50 hours per week. Data are routinely collected on the number of incoming calls, gender of callers and risk level with regard to infection with HIV. We analyzed trends in numbers and types of calls with respect to major print and electronic media events.
Results. Calls to the hotline increased immediately following major media events. In the 3 days following the National Mailout, the number of calls doubled compared with the average number of calls during a comparable time period. We noted increases in requests for antibody testing in low risk sites, and similar peaks after other media events including the release of CDC data on the risk of HIV infection from blood transfusions (May 1987), and national network coverage of the International AIDS Conferences, 1987 and 1988. The percentage of calls from females and no risk or low risk individuals also increased following these events.
Conclusion. Major media events have a strong influence on the general public's interest in AIDS, and provide an opportunity for local hotlines to dispel myths and continue educating populations who might not be reached by other campaigns. The impact of the National Mailout was similar to that of a major print or electronic media event, indicating a need for further study of the relative effectiveness of a costly, labor intensive education strategy like the National Mailout.

M.E.P.18 PERCEIVED RISK OF HIV TRANSMISSION FROM A PROMISCUOUS BISEXCIAL PATIENT WITH AIDS AMONG LAY PEOPLE AND PUBLIC HEALTH SPECIALISTS

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Objective. To see 1)The Magnitude of HIV transmission risk perceived by lay people and public health professionals immediately after mass media reported that a man with AIDS had had contacts with 150 prostitues and homosexcial males prior to the development of the diseas and 2)attitude towards preventive policies with restrictive measures of varying degrees in comparison with the size of perceived risk.
Methods. Study I: Questionnaire study was conducted within a week after the news was released on 893 lay people (students, office workers) and 38 public health specialists Study II: Questionnaire study on 570 university students regarding the above described risk estimation juxtaposed with their attitudes toward preventive programs
Results. Study I: Number of transmission perceived by the lay people was much greater than that by the specialists (mode, 100-999 vs. 0-9)
Study II: No attitudinal difference between the group with higher estimation and the one with lower estimation
Conclusion. 1)Lay people tend to overestimate the risk of HIV transmission and may be more vuluevable to the influence of mass media. 2)Attitudinal change may be associated with fear and anxiety but not with the professed magnitude of transmission risk per se.

M.E.P.19 THE METAPHORS OF AIDS: REPORTING AN EPIDEMIC IN PUERTO RICO

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Objective. To analyze quantitatively and qualitatively the reporting of AIDS in the daily press of Puerto Rico (PR).
Methods. All articles from 1981-1988 in the five daily newspapers of PR which mentioned the word "AIDS" (2511) were classified by type (news article, feature, etc.) and source (from PR or elsewhere), and analyzed.
Results. There was a stepwise several-fold increase in number of articles in each of four periods beginning June 1981 (when first medical article on AIDS was published), May 1983 (when JAMA article concluded that there could be household spread), July 1985 (when Rock Hudson announced he had AIDS), and September 1987 (when the U.S. government refused money to PR for AIDS because of political bickering). Content of articles also changed for each period, but not percentage of articles from PR. Emphasis in the first period was on scattered items of information; in the second, the risk to those with non-risk behavior (undertakers, etc); in the third, political arguments on incidence, condom advertising. etc.; in the fourth, nonspecific information rather than political pronouncements. However, metaphors have tended to be political rather than sexual or racial.
Conclusions. The PR press has responded to AIDS like its U.S. counterparts by increasing both the amount and nature of information in response to incidents which changed public perception of the disease, but the metaphors in PR have been different.

M.E.P.20 AIDS INFORMATION CENTER IN LIMA, PERU

Luján, Manuel*; Goicochea, Pedro**; Varela, Luis***; Coleman, Patrick****.
*Peruvian Health Ministry, Lima, Perú, **Proyecto SIDA, Lima, Perú, ***Population Council, México, ****The Johns Hopkins University/Population Communication Services, Baltimore, Maryland, USA.

Objective. To improve press coverage of AIDS in Lima, Perú, through the implementation of an AIDS Information Center.
Method. The following activities have been carried out to design and operate an AIDS Information center:
1. A content analysis of AIDS press coverage.
2. Development of an information strategy based on the distribution of press releases relevant to AIDS prevention.
3. Organization of educational activities for journalists and other mass media professionals.

Results. The content analysis showed that AIDS news are abundant in the local Lima press, however, they are permeated with innacuracies, contradictions, distortions and sensationalism. Additionally, the scientific/technological discourse is often used to advance moral positions toward AIDS, and very little space is devoted to prevention issues. Press releases emphasizing prevention have been sent to newspapers and magazines; one third have been published in 8 different periodicals. Nevertheless, no releases promoting condom use have been accepted for publication. Journalists participating in the center's AIDS seminar felt AIDS reporting should be improved. To this effect, 30% felt they needed to increase their knowledge and 20% felt they needed up-dated information.
Conclusions. The AIDS Information Center has had an initial impact on the quality and quantity of AIDS reporting in Lima by slightly shifting the emphasis to prevention issues. Additionally, it has enlisted the cooperation of mass media professionals who are increasingly using the center's services.

M.E.P.21 AIDS MEDIA & ANTI-DISCRIMINATION: A CRITICAL PRESENTATION

Saalfield, Catherine; Navarro, Ray
Whitney Museum Independent Study Program, New York, U.S.A.

Objective: To provide a critical analysis of U.S. mass media representations of the AIDS pandemic, and to offer an alternative to these.
Methods: Critical analysis will include references to semiotic, psycoanalytic, feminist and anti-racist analyses of U.S. mass media production. Video clips of mass media and alternative productions will be available for viewing and discussion purposes.
Results: By examining some of the images of PWAs available in the mass media in the U.S. we are more able to fully understand the nature of discrimination against this community. The proliferation of these images does not imply a growing sensitivity to the PWA community. We intend to prepare a screening of videotapes (or clips from several tapes) that place this discrimination in a historical context. This will include a brief analysis of past representations of IVDUs and homosexuals and how these stereotypes complicate the media's attempts to report on the pandemic. We will also present material that seeks to explode these stereotypes. Much AIDS-related video work is being made by alternative producers such as video collectives comprised of women, PWAs, etc. We intend to provide a forum in which to discuss some of the implications of this work and how it is significant at this stage, especially in relation to concepts such as the CRI. We also intend to make a list of available alternative productions along with infomation re: distribution, rental/purchase fees, etc.
Conclusion: Alternative video productions offer more coherent, anti-discriminatory representations of the AIDS crisis and are therefore more appropriate as educational tools than mass media productions.

M.E.P.22 AIDS MAKES NEWSPAPERS SELL.

Arredondo, C.; Conde, F. , Coronado, A.*, Gil, E.*.
Ministery of Health.-Spain.

Objective. Collective social groups related with AIDS (health personnel, anti-AIDS organizations, social workers, trade unions...) that have been analyzed through qualitative means, demonstrate a negative attitude towards the usual form and content used by the media to present information about the disease.

The diffusion of information that is uncontested or even false creates uneasiness and uncertainty in all social groups (mosquito bites, syringes left behind in park and beaches, tourists...). All of these increase fear in the population and produce misinformation by creating confusion in the information issued. To a great extent the media themselves are responsible for negative attitudes and fear of the disease because this misinformation encourages something very difficult to fight against; rumours doubt...
Conclusion. The report demonstrates the need for the media to receive an adequate training that will permit them to approach AIDS with objective criteria and effective information.

Milieu de travail
Workplace

M.E.P.23 EMPLOYMENT AND THE SOCIAL CHALLENGES OF AIDS

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*New York University Medical Center, 530 First Ave., NY, NY 10016 USA
**Multitasking Systems of New York, NY, NY, USA

Objective. Psychological problems caused by job discrimination among people with AIDS can be reduced through re-employment in a supportive workplace.
Methods. Multitasking Systems of New York (MTS), a specially created "quick-print" company, employs people with AIDS. MTS provides job counseling, placement and vocational rehabilitation, including training.
Results. As of Feb. 1, 1989, MTS registered 120 applicants, hired 10 unemployed people with AIDS and referred 15% of applicants to other employers. Linkages have been made with community-based agencies and government to provide support services, as well as with New York University Graduate School of Business to conduct applied research into relationships between AIDS and work. An MTS-initiated review led New York State to change policy to begin including people with AIDS in job training and vocational rehabilitation programs.
Conclusion. Providing jobs is an innovative, effective way to meet the social challenges of the AIDS crisis. Employment addresses the emotional, economic, legal and ethical needs of the individual with AIDS and society.

M.E.P.24 HEALTH CARE WORKERS AND AIDS: RISK PREVENTION AND EDUCATION

Clavreul, Genevieve, **World Immunological Network Project Foundation**, Los Angeles, CA, USA

OBJECTIVE To outline and describe the need for a consistent educational program in hospitals and clinics geared toward preventing the spread of AIDS between patients and healthcare workers
METHODS Interviews and observations were conducted at private and public hospitals and clinics throughout the United States to determine what institutional efforts were being made to educate staff about taking protective measures against AIDS infection. Physicians, nurses and health aides were interviewed and observations
RESULTS In nearly all of the hospitals and clinical settings investigated, no adequate formal program related to the risk of staff to AIDS infection was in place. Procedures for using masks, gloves and gowns were poorly defined. For the most part, staff took precautionary measures when caring for an identified AIDS patient. However, in cases where the risk is present but less evident, such as in pediatrics,obstetrics, gynecology or intensive care units, staff members were considerably more cavalier about gloves, gowns, masks, using extra precaution in handling syringes and contact with body fluids
CONCLUSION There is a clear need for a consistent and concentrated effort on the part of hospital and clinic administrations to institute formal lectures, classes, and seminars on AIDS risk prevention for staff. Formal procedures need to be implemented, with supervisory staff held accountable for overseeing and insuring that they are followed. Brochures, video presentations and posters should be used to underscore in-house policy

M.E.P.25

THE METRO TORONTO AIDS EDUCATION PROGRAM: A MODEL FOR LOW-BUDGET MUNICIPAL TRAINING

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Objective: 1. To provide all Metro employees with the knowledge and skills necessary: to prevent transmission of AIDS; to abide by Metro AIDS Policy, Human Rights, Health and Safety and other legislation: to practice Universal Precautions for infection control; to cope with the psychological, social, and ethical issues raised by AIDS and similar disorders.2. To provide all persons serviced by Metro with the knowledge and skills listed above and to ensure a consistently high level of service to Metro residents regardless of their status with respect to the AIDS virus.

Methods: The program has a low budget with minimal staff and resources,but Metro has more than 12,000 regular employees alone (including health-care, child-care, land-fill, and sewage treatment workers), many with low English or mother-tongue literacy levels. Because information alone is not enough to bring about behaviour change, the program uses a small-group (25 or less), interactive lecture/workshop (2-3 hours depending on needs of audience)approach. Although it may sound costly, this approach ensures high cost-effectiveness by allowing trainees to break through denial, to confront the reality of AIDS in their own lives, and to discuss concerns. It also allows demonstration of infection control techniques, discussion of issues specific to each workplace and to each individual, and ensures that each trainee has met a person who they can contact with future questions in a confidential manner.

Results and Conclusions: Program is cost-effective in that many people in very different occupations and with very different literacy levels can be trained so that both knowledge and behaviour change occurs.

M.E.P.26

EFFECTING BEHAVIOR CHANGE THROUGH POLICY AND TRAINING

Gerberding, Julie Louise , M.D., San Francisco General Hospital, San Francisco, California, USA

Objective: How a hospital's interdepartmental approach to the implementation of Universal Blood and Body Substance Precautions effected staff behavior change.

Methods:
- Questions most commonly asked during initial training sessions indicated areas of greatest concern
- Infection Control Committees observations through hospital rounds and problem-solving consultations
- Major problem areas identified are then targeted as "the Question of the Week" in week-long mini-educational campaigns for staff
- Knowledge is measured through pre/post tests in the second training program

Results:
- Ascertain whether supplies and equipment are available
- Immediate feedback passed to affected departments
- Ascertain cost increases or decreases due to implementation
- Knowledge gain from the training will be demonstrated in employee practice

Conclusion:
- Universal Blood and Body Substance Training transcends the formal program and becomes an on-going, on-site process which is evaluated by changes in staff performance

M.E.P.27

AN EMPLOYER-BASED APPROACH TO AIDS PREVENTION, EDUCATION AND MANAGEMENT

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Many employers lack comprehensive, current and reliable AIDS-related information to use in the workplace. AIDS prevention and education for the general public was cited as an unmet need by the (Washington) State Governor's Task Force on AIDS. The Seattle-based Washington Employers' AIDS Prevention Alliance (WEAPA) is a *participatory* private sector response to the need for AIDS/HIV infection preventive education and AIDS-related information in the work environment.

WEAPA has two main goals: 1) the promotion of AIDS/HIV infection preventive education at the worksite, and; 2) the provision of AIDS/HIV infection management tools to employers.

WEAPA provides educational materials, presentations in AIDS prevention, and technical assistance on legal, benefits, cost, and communication issues related to AIDS. WEAPA is co-sponsored by private and public sector organizations. Participation in WEAPA is through membership (nominal annual fees based on work force size) and includes all services. After one year of operation, WEAPA has 154 employer members, representing an almost equal cross-section of large (>501 employees), medium (51-500 employees) and small (2-50 employees) employers. WEAPA's first annual conference, an introduction to AIDS/HIV infection prevention and management for employers, was attended by all members. 31% (47) of the members received technical assistance in developing human resources policy and procedures, managing insurance and benefits programs, and keeping current on legal issues related to AIDS. 20% (30) of members report having employees who self identify as having AIDS or being HIV positive. WEAPA is an innovative private sector prevention and education model applicable for any metropolitan/geographical area. WEAPA has begun to work with other communities interested in worksite AIDS education.

M.E.P.28

AN AIDS EDUCATION INTERVENTION IN A MULTINATIONAL HOTEL INDUSTRY

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AIDS Training and Information Centre, South African Institute for Medical Research, Johannesburg, South Africa.

OBJECTIVE. To formulate, implement and evaluate an AIDS education intervention in a multinational hotel industry.

METHODS. A three-phase intervention was adopted to create an awareness of AIDS amongst all hotel employees. Firstly, executive management attended an AIDS seminar. Secondly, a multidisciplinary team of professionals visited the different hotel regions to address senior, middle and supervisory management about AIDS, and to plan for preventive education. In the final stage, 30 hotel employees were selected on specific criteria for training. Of these, 20 were black, 10 white, with an even ratio of male to female. Two successive groups of 15 people participated in a five-day training course. The objective of the course was to certify them as AIDS educators so that they could disseminate information to all hotel employees. A follow up to monitor progress is carried out at monthly intervals.

RESULTS. In a period of four months 3337 (33%) out of a staff compliment of 10319 were informed about AIDS. Surveys and questionnaires reflect increased AIDS knowledge and awareness. Additional research is necessary to evaluate attitude and behaviour change.

CONCLUSION. The success of the intervention to-date results from a cadre of educators who can provide continued in-house information, and also from management committment to promoting AIDS awareness to all hotel employees,eg. condom vending machines were installed in all hotels.

M.E.P.29

RESPONDING TO AIDS: TEN PRINCIPLES FOR THE WORKPLACE

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Citizens Commission on AIDS for New York City
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In response to concern among employers and employees about appropriate policies and programs concerning AIDS, the Citizens Commission on AIDS for New York City and Northern New Jersey has developed ten principles to guide businesses, unions, and other organizations. These principles are:

1. People with AIDS or HIV (Human Immunodeficiency Virus) infection are entitled to the same rights and opportunities as people with other serious or life-threatening illnesses. 2. Employment policies must, at a minimum, comply with federal, state, and local laws and regulations. 3. Employment policies should be based on the scientific and epidemiological evidence that people with AIDS or HIV infection do not pose a risk of transmission of the virus to coworkers through ordinary workplace contact. 4. The highest levels of management and union leadership should unequivocally endorse nondiscriminatory employment policies and educational programs about AIDS. 5. Employers and unions should communicate their support of these policies to workers in simple, clear, and unambiguous terms. 6. Employers should provide employees with sensitive, accurate, and up-to-date education about risk reduction in their personal lives. 7. Employers have a duty to protect the confidentiality of employees' medical information. 8. To prevent work disruption and rejection by coworkers of an employee with AIDS or HIV infection, employers and unions should undertake education for all employees before such an incident occurs and as needed thereafter.
9. Employers should not require HIV screening as part of general pre-employment or workplace physical examinations. 10. In those special occupational settings where there may be a potential risk of exposure to HIV (for example, in health care, where workers may be exposed to blood or blood products), employers should provide specific, ongoing education and training, as well as the necessary equipment, to reinforce appropriate infection control procedures and ensure that they are implemented.

As of February 1, 1989, over 300 corporate and non-profit organizations in the United States have publicly endorsed these principles. They serve as a model to other groups concerned with these issues.

M.E.P.30

Workplace AIDS Education: An Evaluation of CDC Employees

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Centers for Disease Control (CDC), Atlanta, Georgia USA

Objectives: To examine the impact of an educational intervention on employees' AIDS knowledge, attitudes, beliefs, risk perceptions, HIV test-seeking and level of comfort working with a person with AIDS or HIV.

Methods: A questionnaire designed to measure these factors was self-administered in a pre-post test design by 383 (93%) of the CDC employees attending a one-hour AIDS education seminar.

Results: Survey respondents were generally white (81%), married (64.8%), female (60.3%), and college educated (70.2%). Mean age was 41.6 years. Overall, participants' awareness and attitudes about AIDS improved significantly ($z = 8.3$, $p < .001$). However, many participants reported only modest comfort in working with someone infected with HIV (70%). Accurate AIDS knowledge was modestly predictive of how comfortable people would feel working with someone who is infected. Most of the participants who had already been tested (25.2%), had been tested at blood banks. Although CTSs had not been used in the past, CTSs were reported as a major potential site to visit for testing. Additionally, people remain confused about the safety of the nation's blood supply (60% were incorrect) and what the HIV antibody test shows (50% were incorrect). Respondents rated themselves at low or no risk (90.4%). Nevertheless, over one-third were single adults and 11% felt that they were at risk or were unsure of their risk.

Conclusion: Continued AIDS education targeting these issues and intensive evaluations of such workplace programs are warranted.

M.E.P.31 EDUCATIONAL STRATEGY ON AIDS AT WORKPLACES.

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Centro de Referencia e Treinamento-Aids, Sao Paulo, Brazil

Objective.The State of Sao Paulo, Brazil, is the most industrialized region in South America with aproximately 100,000 big Companies, and because so many people can be reached at the workplace,one of the primary targets for Aids Education considered by the Department of Education and Training from the Secretary of Health was the workplace.
Methods.Once a month we realized a trainning course with 20 hs. for human resources and Health care providers from big companies with the folåwing classes. Epidemiology, Clinical, athical, legal social and educational aspects on Aids. Evaluation of the trainning is done with pre and pos-test with basic questions due to HIV patient in the workplace.
Results.409 human resources and Health care workers were trained from 149 big companies. 70% of them developed massive campagnies and helped with their own material other smaller companies
Conclusion. The response of the trainning course was considered very effective decreasing discrimination and misunderstood.

M.E.P.32 RULES FOR ADEQUATE CARE AFTER ACCIDENTAL SKIN LESIONS WITH RISK OF EXPOSURE FOR BLOOD BORNEINFECTION

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Accidental skin lesions in staff handling possibly HIV-infected material often provoke strong feelings of anxiety for an infection. Thus, there is a need for firm rules how to act in order to prevent overacting and to ensure adequate measures. After several incidents we have formed rules how to advise people in different positions. These rules are divided into four parts each applicable to persons in different roles, summarized as follows.
1. On the spot any blood should be washed away and if bleeding occurs one should try to squeeze out the blood. The exposed person should be brougt to the occupational health service together with full details on the suspected material.
2. The local safety delegate has to help the person in question to make a report of the accident.
3. The local foreman has to ensure that the exposed person is adequately treated, gets good support, and is taken to the health service, that a comprehensive report is duly written, and that the exposed person's family gets support and advice.
4. The health service concerned must elucidate the circumstances, take all indicated tests, give prophylactic medication, and organize proper follow-up.

M.E.P.33 RESULTS ON THE EFFECTIVENESS OF AN AIDS IN THE WORKPLACE EDUCATION PILOT PROGRAM

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*American Red Cross, Washington, D.C., U.S.A.

Objective: To assess the short-term impact of an AIDS curriculum in the workplace, and to explore factors associated with knowledge, attitude, and behavior change.

Methods: Pre-post survey results from N=131 employees in six companies were analyzed using paired t-test comparisons and McNemar test statistics to determine the significance of change. Kruskal-Wallis and Chi-square test statistics were used to assess the relationship between change and participant or employer demographic characteristics.

Results: Statistically significant changes ($p <.01$) in knowledge of the mode of transmission, risk perceptions, workplace attitudes toward PWAs, prosocial and risk reduction behavioral intentions were found. Participant gains following participation were greatest for persons who were less knowledgeable, less confident, less tolerant of PWAs, and less likely to engage in prosocial behavior, to communicate about AIDS, or to have done anything previously to reduce their risk for exposure ($p < .01$). Relatively few individual or corporate predictors of change were observed.

Conclusion: Short-term effects of an AIDS education program in the workplace can be demonstrated, particularly for those individuals at greatest need of basic information. Future research and curriculum needs are discussed.

Famille
Family

M.E.P.34 FAMILY TREATMENT APPROACH FOR HIV INFECTED CHILDREN

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Objective. The index patient with HIV infection identifies a whole family at risk where the mother is infected, possibly the father and at times one or more siblings. The experience of chronic illness paralleled by the escalation of multiple losses places a heavy emotional burden on AIDS families. Prior to their HIV infection, these families, present a formidable challenge by the mere fact of their poverty, stigma, rejection, unresolved grief, and poor coping skills.
Method. Clinical observations from case analyses and therapeutic intervention with 45 families at our institution revealed the following. 1) Trauma and fears experienced by young adults losing their children. 2) Isolation and rejection from family members and friends causing the deterioration of couple and family relationships. 3) Full spectrum of uncontrolled emotions due to fatal illness - hopelessness, depression, and suicidal ideation. 4) Guilt in infecting loved ones and fear of infecting further, pervasive anxiety related to future pregnancies in young women. 5) Anxiety related to lack of financial support, sexual involvement, medical outcome. 6) Need to plan for bereavement and the future of the survivors.
Results. Mobilizing as many family members and friends as possible and eliciting their support creates an effective support network. Better coping skills and more functional family intervention ensue. Treating cases outside the family context is ineffective and often detrimental.
Conclusion. In order to diminish family chaos, sustain family equilibrium, improve compliance and provide families with renewed energy and quality of life, timely and targeted family interventions are crucial to the comprehensive management of HIV infected families.

M.E.P.35 MULTI-FAMILY SUPPORT GROUP FOR TRANSFUSION RELATED HIV INFECTION

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Objective: To decrease the isolation of the recipients from their families, to educate patients and their families about HIV infection and to provide a safe environment in which the patients and their families can express their feelings.

Methods: Group was composed of recipients and any of their family members that could/would attend. The contract was for 6 consecutive weekly evening sessions which lasted 90 minutes. Content included fear of isolation, anger, frustration, issues of loss of control, shame and grief. Education was very important in this population as they were psychologically unsophisticated and grew up in an era in which exposure to infection could result in death.

Results: Group provided a safe environment in which members (age range: 26-76) could share their feelings. These feelings had been denied at home, resulting in family disequilibrium. An ongoing support network was begun.

Conclusion: Important strides were made within this group to restore the homeostatis of the family units. This group model could help others who, because of their beliefs about infectiousness, reinforced by society's fears, are not getting adequate support or medical care.

M.E.P.36 BISEXUAL MEN AND THEIR PARTNERS WORKSHOP SESSION

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Objective. This workshop is designed to explore the issues related to bisexual behaviours in men which may subsequently lead to H.I.V. transmission within the general community. To discuss the research data on which the rationale of the workshop is based.
Methods. By examining case histories, to identify a range of sexual and emotional behaviour patterns which may, for a variety of reasons result in H.I.V. infection of men in a primary heterosexual relationship. Such factors as non-cognitive homosexual behaviour, denial of risk behaviour, adolescent type sexual behaviour patterns and unpremeditated homosexual experiences will be considered. Emotional barriers to behaviour change and methods to overcome these barriers will be discussed. Factors which rien force positive changes will be presented with the background research information on which they are based.
Results. It is expected that an evolution of emotions and attitudes within the workshop framework will lead to a better understanding of the dilemas routinely faced by men with a bisexual orientation.
Conclusion. By promoting a better understanding of the issues involved in dealing with bisexual behaviour and orientation it is possible to provided more appropriate snesitised services to this group of men. The end result at a community level is the protection of the men themselves, their female sexual partners and the children conceived.

M.E.P.37

AIDS AND HEMOPHILIA: A COORDINATED EDUCATION, SUPPORT AND PERSONAL CARE PROGRAM. EVALUATIVE REPORT FROM A TWO-YEAR PILOT PROJECT

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Objective: To describe results of a two-year, Health and Welfare, Canada funded pilot project in education, support and personal care for persons and families having or at-risk for HIV and AIDS in the Southern Alberta Hemophilia Program.
Methods: The project purpose was to strengther the education, support and personal care network for people with hemophilia and their families in Southern Alberta. This purpose was addressed through four objectives: (1) an education, support and personal care network, (2) cooperation with Regional Hemophilia Society and the Comprehensive Hemophilia Clinic in establishing resource and information services, (3) scheduling regular update and specific topic meetings conferences, social and information sessions, (4) conducting hospital staff and public education sessions, and (5) providing limited financial assistance in unmet need areas.
Results: In all fifteen program events held, information base established, support and financial assistance provided. A visible strengthening of the hemophilia community resulted, as well as a regular mechanism for education, support, and networking occurred.
Conculsion: Evaluation indicates program with modifications is viable and important. First year provincial funding granted for program continuance.

M.E.P.38

THE HIV-ENDANGERED/INFECTED CHILD IN THE FOSTER-FAMILY

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Beside medical specifics of HIV-infection with children as there are - problems in diagnosis of HIV-infection, - course of desease, - mortality rate, - infection of mother in case of pre-/perinatal endangered/infected children, there are also a large number of expectional psychological and judical problems.

Psychological aspects of HIV-infection with children resulting for example from : - HIV-infection of members of the family, - preliminary uncertanity about HIV-status of the child, - death of the mother, - sickness of the mother, resulting in temporary or permanent living of the child outside mother's home, - change in the person who is in charge of the child, - difficulties between own- and foster-family, - problems with social neighbourhood, - problems with institutions.

Judical aspects to be considered are: Liability of the foster-family, - law regarding electronic data processing figures, - HIV-testing of applicants for foster and adoption of the child, - duty of revelation for example, when the child is attending the kindergarten. The poster shows the subjects concerned as well as their combined effects on each another.

M.E.P.39

WHO SPEAKS FOR THE ABANDONED CHILD BORN WITH HIV? A FOSTER PARENT AND ADOPTIVE PARENT RESPOND.

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*Childkind, Inc., Atlanta, Georgia, USA, **Starcross, Annapolis, Calif., USA.

Objective: To provide for and address the needs of homeless children born with HIV, from the perspective of the child.
Method: Childkind and Starcross Community are actively involved in the placement and protection of HIV children. Our position is that each child should have maximum human continuity. We have adopted or are in the process of adopting 7 homeless children with HIV. We offer nationwide support and educational services for prospective foster and adoptive parents. The health and dignity of these children are the primary focus in all our lobbying and advocacy efforts.
Results: By cooperating with existing religious outreach programs as well as governmental and social service agencies foster and adoptive parents have been recruited. Foster care homes have been purchased with private monies and parents provided with the appropriate support to care for infants and children born with HIV. These agencies and parents support spiritually, economically and mentally the day-to-day stable home environment so desperately needed by these children.
Conclusion: Children with HIV should be mainstreamed and given the opportunity for early bonding with an individual or family. Our responsibility as caring human beings is to do everything possible to give these children the opportunity to equip themselves with the mental and emotional resources to fight off this disease. Personal involvement with our adoptive and foster children are proving the validity of this approach.

M.E.P.40

AIDS ORPHANS IN NEW YORK CITY: PROJECTED NUMBERS AND POLICY DEMANDS

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Objective. In the focus on Aids and pregnancy, it has been widely overlooked that HIV positive women have many more non-HIV-infected (HIV-) than HIV-infected (HIV+) children. Nearly all HIV- children will be orphaned at a mother's death. Estimates of orphans to be expected in NYC are projected and implications for social policy and prevention discussed.
Methods. Assessment was made of the relative numbers of HIV- and HIV+ children under age 18 residing with HIV+ mothers in 3 NYC boroughs with high levels of women's infection:

Mothers	#	Total HIV-Children	HIV+Children	Ratio-to+Children	Avg.#HIV-Chil.
Heterosexually-infected	30	59	8	7.3:1	2
IV Drug-Infected	34	71	23	3:1	2

Results. Mothers infected by drug abuse had more HIV+ children than those infected heterosexually but, on average, there were 2 HIV- children per mother in both groups. The NYC Dept. of Health estimates there are between 33,000 and 50,000 total infected women in the city, with large numbers approaching illness. Reducing the women's estimates by 10% to allow for older women unlikely to have dependent children, if even 80% of the remaining women develop Aids, it is estimated they will leave behind between 52,272 and 72,000 living, orphaned children, given an average of two HIV- children per woman.
Discussion. While these results are necessarily based on estimates, they have important implications: 1.) In New York and many U.S. localities, efforts to directly counsel women about prevention are focused on women in prenatal care. However, with many women clearly having had their children by the time they become infected, much more preventive effort, including partner notification, must be focused on women who are already mothers. 2.) National policy and attention to care for orphans is urgent in nations with high levels of female infection. Aids-impacted areas simply will not have the resources to care for orphans by themselves.

M.E.P.41

EXPERIENCE QUEBECOISE D'INTERVENTION AUPRES DE FAMILLES A L'OCCASION DE L'HOSPITALISATION DE LEUR PROCHE HOMOSEXUEL ATTEINT DE SIDA

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Objectif. Présentation d'une expérience québécoise d'intervention auprès de familles à l'occasion de l'hospitalisation de leur proche homosexuel atteint de SIDA.
Méthodes. Présentation:

- du processus d'intervention: utiliser la crise vécue au moment de l'hospitalisation comme moment stratégique d'intervention auprès de la famille; accompagner et normaliser le vécu des membres impliqués de la famille; précéder le non-dit pour rendre explicite l'indicible, pour le normaliser et pour supporter la famille.
- des difficultés rencontrées dont, entre autres: crainte par la famille du jugement de l'intervenant; difficulté de communication de la famille avec la personne atteinte; lourdeur du secret, ...
- les questions qui se posent: le deuil pour la famille et chacun de ses membres? l'utilité de l'accompagnement à cette étape?...

M.E.P.42

PROVIDING COMPREHENSIVE SERVICES FOR DEVELOPMENTALLY DISABLED CHILDREN WITH AIDS: SERVICES AND ISSUES

Authors: Phyllis Susser & Anthony Trunfio
THE CHILDRENS' CENTER - 594 East 53rd Street, Brooklyn, New York 11203, U.S.A.

The Herbert G. Birch Services, with NYS Office of Mental Retardation and Developmental Disabilities and the State University Medical Center in Brooklyn, New York operates the first community residence providing comprehensive residential, educational, habilitative and medical services for ten developmentally disabled "boarder babies" with AIDS, aged birth to six years.

One out of sixty babies in NYC are born with the virus. On any day, there are 20-30 boarder babies left abandoned in City hospitals.

Over 95% of children with AIDS incur measurable Central Nervous System dysfunction such as: impaired motor skills, severe language disorders, significant cognitive deficits and loss of acquired developmental milestones. A variety of residential alternatives and specialized diagnostic and therapeutic interventions must be established to address the special needs of infected children. These services are offered:1) community residence and respite care, 2) special education day care, 3) daily medical surveillance 4) foster care placement offering case management, training and supervision of families.

The following significant issues will be discussed: foster care vs. congregate care for children with AIDS, (Is it possible for children to bond to more than 2 people, or, good care vs. bad care whether congregate or foster?) discrimination toward children with AIDS and their caretakers (what should staff do when they are refused entry into a local supermarket with one of the children?); Helping staff cope with the inevitable loss of children with whom they have established loving ties.

La communauté (partie 1)
Community (Part 1)

M.E.P.43

ACCESSING, EDUCATING AND RESEARCHING MARRIED HOMOSEXUAL AND BISEXUAL MEN

Palmer, William, Research Officer
Gay and Married Men's Association, Melbourne, Victoria, Australia

Objective. To establish a model method to contact, educate and research married homosexual and bisexual men in the general community.
Methods. Contact was established, and where possible maintained, using a telephone counselling service in combination with an established peer support group. A wide range of additional services were incorporated into this structure to provide suitable medical and legal assistance as well as additional counselling services to the group. Research information was recorded for all participants in anonymous format.
Results. Over one thousand calls have been processed to date and a number of these callers have been followed up as case studies. A wide range of sexual and social behaviour patterns have been noted and an assessment of safe sex knowledge levels have been noted and an assessment of safe sex knowledge levels made within this group. Knowledge levels for safe sex and general information on AIDS were at significantly lower levels than those generally found within the gay community. Data on factors which influence behaviour modification for this group of men was collected. Factors which contribute towards safe sex behaviour for this group of men were also noted.
Conclusion. Married homosexual and bisexual men are difficult to access in the general community, as a result, little is known about their general sexual behaviour patterns. This method of achieving and maintaining contact has been successful. Research results obtained indicate the need for comprehensive campaigns aimed toward educating this particular target group and their female partners.

M.E.P.44

THE GENESIS AND RAPID DEVELOPMENT OF THE AIDS ACTIVIST MOVVEMENT

The Dwight Foundation, New York, U.S.A.

Objective: To describe the rise of AIDS activism, including civil disobedience and direct confrontation as a response to the perceived indifference on the part of medical and government officials resulting in a laggard response to the pandemic.
Methods: The presentation will use video clips, still photos, and excerpts from the popular press to trace the history of the AIDS activist movement from its inception in the fall-winter of 1986-87 through June 4, 1989.
Results: The confluence of 3 separate currents: the visual arts community of artists and graphic designers, e.g. the Silence = Death Project; advocates of civil disobedience and direct confrontation, e.g. the Lavender Hill Mob; and documentarians and educators, e.g. the Testing the Limits Collective, resulted in the founding of ACT UP (the AIDS Coalition To Unleash Power) and similar organizations. These groups not only produce highly successful demonstrations and confrontations, but museum exhibits, speakers bureaus, community outreach, and participation at conferences and conventions at which the medical, economic, or social aspects of the AIDS pandemic are discussed.
Conclusion: A new, medical/social phenomenon has arisen. An afflicted community refusing to accept a passive role in its treatment is challenging medical and governmental authority to demand an equal voice in deciding its fate.

M.E.P.45

DES PROFESSIONNELS DE LA SANTÉ ET LA CRÉATION D'UN GROUPE D'ENTRAIDE À QUÉBEC: réalisation probante de la complémentarité des ressources.

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RAYMOND René, président du Conseil d'administration de MIELS-Québec.
OBJECTIF: Présenter un modèle de collaboration entre des bénévoles et des professionnels de la santé dans la formation d'un mouvement d'information et d'entraide dans la lutte contre le SIDA à Québec (MIELS-Québec).
MÉTHODE: Présentation du processus d'implantation, de définition et d'ajustement des mandats et des actions qui en découlent. Quelques données sur les résultats d'évaluation après 2 ans de fonctionnement seront également transmises et discutées.
RÉSULTATS: Dès juin 1986, spontanément, des personnes se regroupent dans un contexte d'urgence pour échanger sur les problèmes vécus par les personnes atteintes de la maladie et les difficultés rencontrées par les professionnels de la santé, par exemple, pour avoir accès à certaines clientèles particulièrement touchées. Après quelques rencontres, le comité convient de la nécessité de former un groupe d'entraide bénévole. Les objectifs visent l'information, l'éducation à la prévention et le support aux personnes confrontées au SIDA.
CONCLUSION: La collaboration entre bénévoles et professionnels de la santé est possible, sinon essentielle et MIELS-Québec en fait la démonstration tout en insistant sur la spécificité des rôles de chacun.

M.E.P.46

A COMPARATIVE STUDY OF LOCAL AIDS PROGRAMMES IN THE UNITED KINGDOM

Pye, M*; Kapila, Mukesh*; Buckley, G**; Cunningham, D***
*Health Education Authority, London; **Royal College of General Practitioners, London; ***Faculty of Community Medicine, London,UNITED KINGDOM

Objective. To critically appraise the diversity of responses made by locally based AIDS programmes to supplement the National UK AIDS Prevention Programme.
Methods. Nine areas (urban/rural, high/low HIV prevalence) were selected. In workshop discussion, guidelines were developed for the construction of case studies and their critical analysis.
Results. Nine case studies illustrating good practice and diverse responses were analysed with respect, to various dimensions including:

a) organisational arrangements for local AIDS programmes;
b) general and specific preventive initiatives (eg. needle exchange schemes for drug users);
c) models of care in the community (eg. multi-disciplinary specialist teams);
d) training and education (eg. schools programmes).

Conclusion. In tackling similar issues, local initiatives have used varied, but successful approaches, dependent on prevailing socio-political contexts and opportunities. In many instances, AIDS initiatives have provided the opportunity to tackle other health concerns. Dissemination of the study's findings is aimed at influencing the development of good AIDS related practices nationwide in the UK.

M.E.P.47

THE ESTABLISHMENT AND ADMINISTRATION OF CASEY HOUSE HOSPICE, TORONTO

MIRIAM MAYHEW, Executive Director, Casey House Hospice. Canada.
DOROTHY LEY, Board Member, Casey House Hospice.

Objective:	To describe the process of the establishment of Casey House Hospice, and the administrative challenge of AIDS hospice management in the health service environment of Ontario, and the political environment surrounding AIDS, and the psychosocial issues of AIDS.
Method:	Oral presentation with slides and overheads.
Results:	Overview of success and challenge of a free-standing AIDS hospice.
Conclusion:	The need for standards and funding mechanisms tailored to the model of the free-standing hospice within the context of the Canadian health care system.

M.E.P.48

HOMELESSNESS AND AIDS

Blakeney, Barbara, McMahon, Joan.
Long Island Shelter, Boston,Massachusetts, U.S.A.

Objective: to identify and present in an educational format, the dual issues of AIDS and Homelessness from the perspectives of the Homeless individual with the diagnosis of HIV infection and the clinicians involved in providing care.

Method: A video, produced by the Nurse's clinic at Long Island Shelter. This video focuses specifically on the special problems associated with being homeless and having HIV infection.

Results: At the present time the majority of homeless people with HIV infection at the shelter share the primary risk factor of intravenous drug abuse. Many of these individuals have been homeless prior to their diagnosis. The video explores the experiences, feelings and responses of four homeless men in various stages of their illness, as well as a series of short discussions from the clinicians involved in their care.
Approx length is 30 minutes

M.E.P.49 COMMUNITY COALITION BUILDING AS A MEANS OF IMPROVING SERVICE SYSTEMS FOR PEOPLE WITH HIV INFECTION

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Objective AIDS Service Demonstration Projects have been funded to demonstrate the impact of a collaborative coalition of service organizations, coordinated through a case management system, on the continuum of care, comprehensiveness of services, and cost.
Method To demonstrate that community coalitions of service organizations and the elimination of unnecessary redundancy can improve patient care for PWAs, 21 high AIDS prevalence communities received funds to establish and maintain such coalitions. The cities vary significantly in the demographics of the epidemic, the political control and organization of their health care delivery systems, and the entity receiving funding. After nearly 2 years in operation, data and experience are available on the relative degrees of success of these coalition building efforts.
Results Factors contributing to the success of coalition efforts include: organizational location of health care and drug abuse services, cohesiveness of groups targeted for services, definition of the historical patterns of health care, cohesiveness of the community, the need for funding resources outside the local community, and the organization formed to receive funding.
Conclusion While community coalitions can have a positive impact on the quality and cost of services, and innovative stategies can be replicated in other areas, an effective health care delivery system must be tailored to the unioue characteristics of a communitv to insure optimal success.

M.E.P.50 A COMMUNITY-BASED AIDS EDUCATION,COUNSELLING AND INFORMATION SERVICE IN ZIMBABWE - A MODEL FOR AFRICA ?

Foster,Geoff. Mutare Provincial Hospital,Mutare,Zimbabwe

Objective. To establish the Family AIDS Care Trust (FACT),a non-governmental organisation with activities carried out by volunteers.
Method. FACT's 100-strong membership was recruited in late 1987 from Mutare churches. Most volunteers were non-medical. In 1988, 40 people completed one of the six 10-hour training courses in AIDS education or counselling which included role-plays and community assignments. Funding of $6000 was raised from many individuals in the community. FACT activities were co-ordinated by a paid secretary.
Results. An information centre,telephone service and window display were set up. Volunteers produced literature,posters and visual aids. Local doctors were consulted.Many patients were referred to FACT for counselling but only 15 attended. Educators used story-telling with appropriate illustrations on flash cards; 70 educational meetings in schools,factories etc. were conducted by 25 members with 8000 people. FACT gave support to official agencies responsible for AIDS activities.
Conclusion. Culture and traditional beliefs influence the effectiveness of AIDS programs.Psychosocial counselling may be inapprpriate in African settings. Preventive education using committed individuals may be more acceptable and persuasive than mass media campaigns. AIDS support and prevention programs are inadequate in third world countries. FACT's model includes the involvement and training of non-medical volunteers committed to counselling and education,production of appropriate materials and the involvement of other agencies in FACT-led activities. The program was implemented rapidly with a limited budget and is being extended to other centres. It may be an appropriate model for other African settings.

Services sociaux
Social Services

M.E.P.51 AN ASSESSMENT OF THE PSYCHOSOCIAL NEEDS OF THE HIV ANTIBODY POSITIVE POPULATION USING THE MONTREAL HEALTH AND SOCIAL SERVICE NETWORK.

Clark, Elisabeth*; Atkinson, V.**; Grayson, N.***.
*Comité sida aide Montréal, Montreal, Quebec,Canada; **Royal Victoria Hospital, Montreal, Quebec, Canada; ***McGill University, Montreal, Quebec, Canada.

Objective: To describe a research project designed to assess the psychosocial support needs of the HIV antibody positive population of Montreal. Since it is evident to professionals within the health and social service network that the demand for psychosocial services far outstrips the available resources, there is a need for concrete data as to the psychosocial service needs of the HIV antibody positive population. There is presently no concrete data available from the point of view of the affected group. It is hoped that results of the data collection and analysis will enable us to make recommendation to the government with respect to the adequacy or inadequacy of services provided in Montreal.
Method: A questionnaire will be administered to a sample of 300 HIV positive persons attending hospitals and community clinics. The questionnaire will be presented by the physician and trained personnel will be available to answer questions should the patient wish assistance.
Results: Some preliminary results of data collected will be presented and discussed.

M.E.P.52 HOSPITALIZED AIDS/ARC PATIENTS PRESENTING DISPOSITION PROBLEMS: NO SIMPLE SOLUTIONS

Pousson, Rachel: King's County Hospital AIDS Team, Brooklyn, New York, USA.

Objective. To identify demographic/social factors predictive of disposition problems (ALOC) in a large urban hospital serving a poor minority community.
Methods. Reviewed social work charts for 131 AIDS/ARC patients to identify which demographic/social factors correlated with becoming ALOC. Data for the total group regarding sex, ethnicity, age, risk factor, and degree of family involvement were compared with data for the 24 ALOC patients.
Results.

Demographic Factor	Total Group N = 131	%	ALOC Group N = 24	%
Male	97	74	12	50
Female	34	26	12	50
Black	106	81	22	93
Hispanic	22	17	2	7
Other	3	2	-	-

Of greatest interest is that fully 12 of 31 black females became ALOC. IV-drug-using and heterosexually-infected patients, but not gay males, often became ALOC as well. Age and degree of family involvement had no significant bearing on ALOC status.
Conclusion. The social milieu in which black females acquire HIV disease is a principal factor in their inability to secure proper post-hospital placement. Solutions cannot be simply hospital-based, but must also address broader environmental factors (poverty, racial discrimination, drug abuse, educational parity, and reproductive rights/child placement).

M.E.P.53 DEVELOPING THE SKILLS OF HOME CARE STAFF IN CARING FOR PEOPLE LIVING WITH AIDS

Cotton Terry, Platt D., London Borough of Hammersmith and Fulham, London W6, U.K.

Objective To provide a comprehensive package of training and support for staff in order to respond to increased demand for services and to overcome staff reluctance to work in this area.
Method After consultation with service managers and Trade Unions to identify key objectives and principal concerns, 1, 2 and 3 day workshops were established employing a range of teaching techniques. Practical issues have been explored alongside and experimental focus on counselling approaches and personal attitudes. People living with AIDS have provided a major part of the teaching input into the courses.
Results Course evaluations have shown considerable change in attitudes towards HIV and AIDS. The proportion of staff refusing to work in this area has dropped and staff confidence has improved.
Conclusions Staff training embodying a broad approach to both practical and emotional issues, addressing a broad approach to both practical and emotional issues, addressing locally identified staff concerns and incorporating the experiences of people living with AIDS can be beneficial in overcoming staff fears and encouraging empathy with service recipients.

M.E.P.54 ESTIMATING NUMBERS OF PEOPLE LIVING WITH AIDS/HIV INFECTION IN A SMALL URBAN AREA FOR SOCIAL SERVICES PLANNING PURPOSES

Manning, Nicholas
Social Services Department, London Borough of Hammersmith and Fulham, W6,U.K.

Objectives To develop some planning assumptions about the numbers of people who may be requiring services in a densely populated urban area (population 150,000) with a perceived high incidence of HIV infection. UK National Health Service figures are not available at this level.
Methods Research was undertaken to ascertain an estimate of the numbers of people living with AIDS, and the numbers unwell with HIV infection, based on the current knowledge of all relevant health and social services agencies operating within the local administrative area. Networking within the voluntary and statutory agencies produced a comprehensive list of all relevant formal and informal agencies and their services. The numbers of people in receipt of each of those services during a three month period was determined. Through extensive liaison, the degree of overlap between groups of services was determined and total estimates of the numbers of residents living with AIDS, and of those unwell with HIV infection, were calculated.
Results The method produced very considerable co-operation from all participating agencies, and reasonable quantitative estimates were calculated.
Conclusion A survey of local agencies can produce valuable information about the numbers of people living with AIDS which reflects both the perspective of the larger agencies and the detailed local knowledge of informal groups and organisations, within a clearly delineated urban area.

Session d'affichage
Poster Session

Le SIDA, la société et le comportement
AIDS, Society and Behaviour

M.E.P.55 ESTABLISHING QUALITY CONTROL TARGETS FOR THE PROVISION OF PERSONAL SOCIAL SERVICES TO PEOPLE LIVING WITH AIDS AND HIV INFECTION

Manning, Nicholas
Social Services Department, London Borough of Hammersmith and Fulham, London W6, UK

Objective To develop measures of the outcome of an agency's increasing range of personal social service provision as perceived by key groups of service users.

Methods A consensus approach was employed within a group of practioners, managers, local agencies, and local residents to identify a series of realistic targets for service delivery by systematically considering the key groups of consumers for whom the agency was providing a service, and the key services which the agency could be expected to provide for them. By employing broad definitions of the terms consumers and services the Group was able to identify dimensions of the Agency's activities ranging from the provision of information about the agency's services in relation to HIV to Black and Asian residents of its catchment area, to the provision of a casework service to people living with HIV infection.

Results Steps have been taken towards developing a series of realistic targets for the Agency's services along a series of intersecting dimensions. The targets will be publicised, along with details of its services, by the Agency in order that monitoring of the enhanced services can be made public.

Conclusions Establishing service targets at a time of increasing demand from people living with HIV infection is a feasible exercise, and can successfully incorporate the perspectives of a range of disadvantaged and other interested groups.

M.E.P.57 POLITICAL ATTACK, MEDICAL COMFORT, PSYCHOSOCIAL DEFICIENCIES: FACETS AND EFFECTS OF AIDS POLICIES IN BAVARIA, WEST GERMANY

Setzinger Walter*; Jäger, H.**; Hammel, G.**; Weber, U.*
*Institute for Medical Informatics and Health Services Research/GSF, Munich-Neuherberg, FRG
** AIDS Study Group, Schwabinger Krankenhaus, Munich, FRG

Background. For PWA in Bavaria, the government's tough position in relation to AIDS is contrasted by the high standards of a number of medical institutions providing AIDS care.

Objective. Description of the psychosocial situation and behavioral patterns of persons with AIDS under Bavarian conditions.

Methods. Survey of out-patients assessing medical care and psychosocial support systems; multi-stage empirical evaluation of AIDS-counselling agencies.

Results. 197 HIV-infected patients (66% homo/bisexual men, 28% IVDA; 14% female; 31% in stage 6 of the WR classification) were asked about their attitudes towards AIDS-related care. 30% of them used more than one medical institution parallel. Contrary to their needs expressed, a majority of the respondents tended to underutilize psychosocial support services. Homosexual men and severely ill patients described the care system in a rather positive way whereas IVDA, younger patients and those in earlier stages of disease were more critical of it. - Community-based organizations are increasingly forced to perform a tightrope act between the concerns of their (potential) clients and the demands of authorities, between voluntary self-help work and the need to professionalize.

Conclusion. The ambivalence of the Bavarian AIDS situation (politically deterrent, medically attractive) puts psychosocial support for PWA into an important as well as ambiguous position. Fear of political discrimination increases the need for psychological assistance but also acts as a barrier against using the relevant facilities.

M.E.P.59 "WE HAVEN'T DEALT WITH MUCH OF THAT HERE": HELPING MENTAL HEALTH PROVIDERS PREPARE TO WORK WITH HIV RELATED CLIENTS

Deitch, D.*; Quackenbush, Marcia*; Martin, R.*; Schuyler, M.**

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Objective. To address the problems in low HIV incidence areas when mental health and social service providers (MH/SSP) are not prepared to work with clients with HIV related concerns.

Methods. In many regional areas of California, MH/SSP have not seen HIV related clients so far, are not familiar with the relevant issues, and may be apprehensive about providing services (or unwilling to do so). Individuals in these areas receiving positive HIV antibody results or dealing with other HIV related issues often have few resources for counseling support. A train-the-trainers program will be described which offers in-depth training to selected providers in regional areas; these providers then go on to train their colleagues on issues related to HIV and mental health.

Results. By May 30, 1989, four three-day trainings will have been provided throughout the state of California; and participants in those trainings will have gone on to train an additional 900 individuals by June 30. Preliminary evaluation of the program's success will be presented. The complete training manual will be available for review.

Conclusions. A program of this type can expand expertise and comfort among MH/SSP, thereby improving the quality of resources for the client with HIV concerns.

Supported in part by a grant from the California State Office of AIDS, contract # 88-94560.

M.E.P.56 LOCAL GOVERNMENT PROVISION OF SOCIAL CARE TO PEOPLE LIVING WITH AIDS/HIV INFECTION

Denise Platt, Cotton T., London Borough of Hammersmith and Fulham, London W6, U.K.

Objective To develop a consultative model of social care provision for residents of an urban local government area with a disproportionately large number of residents living with AIDS.

Methods Detailed planning systems involving staff at all levels have been employed within an urban Borough to develop a wide range of both practical and emotionally supportive domiciliary and day care services, in co-operation with all other relevant formal and informal organisations. A comprehensive training programme has been established to support the service initiatives.

results The London Borough of Hammersmith and Fulham has been able to provide services to over 200 people living with AIDS or otherwise unwell with HIV infection. It has gained extensive co-operation from staff and from other agencies working in the field and is recognised as having pioneered many service developments. In particular it is gaining the confidence of many people living with HIV infection from groups with a traditional antipathy towards statutory welfare services.

Conclusion An openly participative approach to the planning and development of services enhances co-operation in a sensitive area of provision, and can facilitate access to services for a wide range of individuals and groups.

M.E.P.58 HIV INFECTION, AIDS AND MENTAL HEALTH: THE CANADIAN NATIONAL WORKING GROUP'S EXPERIENCE

Woo, Stephen* (in English); deMontigny, Johanne** (in French) and Members of The National Working Group on HIV Infection, AIDS and Mental Health, Federal Centre for AIDS, Ottawa.
*Mount Sinai Hospital/University of Toronto, Toronto, Ontario, Canada.
**Psychologist, Private Practice, Montreal, Quebec, Canada

Objectives. (1) To provide an evaluation of the state of mental health service delivery in Canada, as it responds to those affected by HIV; (2) to make program recommendations.

The National Working Group on HIV Infection, AIDS and Mental Health convened in December 1988. The 14 members include representatives from across Canada. They encompass social work, nursing, theology, behavioral science, research, psychology, psychiatry. The group identified 4 main areas of concern: (1) need for a clear definition of mental health as it applies to persons affected by HIV; (2) identification of "special" groups and the implications for services, education and research; (3) the mental health of health care providers serving people affected by HIV; (4) need for a suitable model of care. The group recommends: a needs assessment be done to determine existing mental health services, models and gaps; mental health care needs of health care providers be determined and programs/services developed; centres of excellence to which mental health care workers can go to train be developed; current or proposed legislation regarding HIV infection, that affects the mental health of Canadians be addressed by this working group; methods to encourage research and education into the mental health aspects of HIV infection be developed.

M.E.P.60 SOURCES OF DELAYED HOSPITAL DISCHARGE FOR AIDS PATIENTS

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Objective: Determine the social/environmental factors contributing to delays in hospital discharge for AIDS patients, rank them in order of importance, and determine if differences exist based on mode of transmission or location.

Methods: Interviews were conducted at 13 agencies in 5 cities (Baltimore, Boston, New York, San Francisco, Washington, D.C.). Respondents (N=17) were asked to list factors delaying discharge. The Delphi technique, in which respondents individually and without consultation rank the listed barriers, was used to gain consensus over 3 consequent Delphi rounds. Deviation scores were used to rank all items after each round.

Results: An absence of supportive housing and all levels of nursing home beds exacerbated by inappropriate/inadequate insurance were ranked highest overall. There was, however, variability for IV drug users (IVDUs) where the lack of caretakers or caretaker skills was found most important. Great variations in barriers to discharge were also found among the cities.

Conclusion: As treatments for AIDS improve and patients live longer, more attention will have to be paid to their chronic care needs. Understanding the services required by different populations or in specific regions is necessary for effective allocation of resources. For example, hospital discharges for IVDUs appear to be blocked after less serious episodes of illness by the absence of a skilled support network, whereas nonusers are more likely to remain hospitalized later in the syndrome's progression due to an absence of supportive housing or nursing home beds. Each of these requires that different financial and personnel commitments be made.

M.E.P.61 POST-DISCHARGE HOUSING OF HIV INFECTED PATIENTS IN ROME

Ippolito, Giuseppe; Armignacco,O.;Antonucci,G.;Bove,G.
"L.Spallanzani" Hospital for Infectious Diseases, Rome,Italy.

Objective.To determine if homelessness in HIV infected patients is determinant for pressure on infectious diseases wards and to assess social needs for such patients in term of suitable post-discharge housing.
Methods.In Italy, departments of infectious diseases manage more than 85% of AIDS patients.It has been suggested that the lack of suitable post-discharge housing is a major factor in determining the long stay in hospital after acute care. Presently chronic long term facilities are limited in Rome and extensive home health care is not available. Epidemiological, demographic and social data of 101 AIDS patients and 345 HIV symptomatic subjects hospitalised from 1984 to 1988 were reviewed.
Results. The distribution by risk group of the 446 HIV infected patients (348 males and 98 females) was: intravenous drug addicts (IVDA) 72.4%, homosexual males 14.1 %, heterosexual contacts 5.4%, IVDA + prostitute 3.4%, homosexual males + IVDA 3.1 %, transfused 1.6%.
Out of 101 AIDS cases, 3 patients were forsaken by the family and died in hospital because the lack of social support, 1 went to hospice,3 were accepted home by parents. Out of 345 subjects with HIV symptomatic infection, 25 were accepted in therapeutic communities for resocialisation program, 9 went to hospice without medical assistance and 8 were accepted by parents.
Conclusion. System of comprehensive services for people with AIDS and HIV infection must be encouraged through public sector and non professional caregivers. Presented data are relevent for planning size of services and allocate resources.

M.E.P.62 DEVELOPING COMPREHENSIVE SERVICES FOR HIV INFECTED INTRAVENOUS DRUG USERS: A GUIDE FOR CASE MANAGERS

Diane Pincus Strom, C.S.W.
Bronx-Lebanon Hospital, Bronx, New York,U.S.A.

Objective. To develop a system of comprehensive case management that addresses the multiple needs of HIV infected drug users.
Methods. I.V. drug users have numerous problems that complicate medical treatment. These include personality disorders and social problems that lead to noncompliance, failed appointments and physical/emotional suffering. Comprehensive case management requires addressing of concrete needs, system negotiation, counseling, drug treatment, etc. Most important is the development of resources for individuals at all points of the HIV continuum (asymptomatic, ARC, AIDS) via networking, outreach and informal contacts.
Results. Needs of the IV drug user are identified and discussed in terms of treatment implications, solutions and impact on the patient, significant others, professionals and society. A framework for developing an individualized, comprehensive case management system, including resource development, is offered.
Conclusion. Case management that considers all aspects of the patient's treatment while developing additional resources is crucial for the care of HIV infected drug users. A systematic approach insures inclusion of all factors while simplifying this formidable task for the case manager.

M.E.P.63 NEEDS ASSESSMENT OF PERSONS WITH AIDS AND HIV ILLNESS: IMPLICATIONS FOR COMMUNITY-BASED SERVICE PLANNING IN A LOW INCIDENCE COMMUNITY

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Objective: To measure the perceptions of local PWA's and HIV positive individuals regarding unmet needs, awareness of existing community services, and the importance of these services to plan community response.
Method: A written survey instrument was designed to collect this information as part of a comprehensive, community AIDS-planning effort. The survey was developed with the input and support of local PWA's and AIDS service agencies. The instrument was 25 pages, over 125 questions and took 45 minutes to complete. Over 600 surveys were distributed through physicians and direct service agencies; 110 were returned and analyzed. While not a random sample, the results closely resembled the current known incidence of AIDS, ARC, and HIV seropositivity. Responses were both anonymous and confidential. Survey results were compared with a similar survey of service providers.
Results: Respite care, mental health care, income subsidy, dental care, legal assistance, and patient information were ranked as the greatest unmet needs. Responders were generally uninformed about the availability of existing human services. Most needs (50-75%) were being met by friends and family.
Conclusions: Community planning efforts need to focus on 1) strengthening PWA's existing networks of informal support systems; 2) ensuring that PWA's can access existing human services.

M.E.P.64 COMPREHENSIVE VOLUNTEER PROGRAM FOR PEOPLE WITH AIDS

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Objective. To provide emotional support, practical assistance and an ongoing link with professional staff for hospitalized and ambulatory people with AIDS. Through bi-weekly phone contact, to reduce the numbers of unnecessary emergency room visits and to increase staff awareness of patient's home situation. To provide formalized support to volunteers to maximize their effectiveness.
Methods. Recruitment and training program which provides volunteers with an intensive, interdisciplinary program taught by professional staff. A volunteer in-patient visiting program in which 25 patients are visited per week by 10 volunteer visitors. An on-going monthly support group led by social worker to assist volunteers with their own coping. A telephone reassurance program in which 184 calls were made on a bi-weekly basis over a three month period to 30 patients by 5 volunteers. Volunteers provided practical and emotional support to 77 outpatients and their families during clinic hours. Supervision of the program provided by two clinical social workers. Results. Study of 15 hospitalized patients reported they felt less isolated, fearful and anxious after visits from volunteers as compared to 15 patients not seen by volunteers. Percentage of discharged patients who knew volunteers from their in-patient stay kept their first appointments at a higher rate than those who didn't know volunteers. Their behavior on first visits was more relaxed and patients were able to more effectively negotiate hospital system. Less frequent visits to the clinic and emergency room by those patients called on a regular basis for non-medical concerns. Conclusion. This program has contributed to the enhancement of self-esteem of patients with AIDS. It has provided patients and families with a consistent group of experienced and caring individuals linking them to the professional team. It provides the staff with ongoing reports on vital information on ambulatory patients between visits. The mutual respect and support between volunteers and staff has contributed to the success of this program.

M.E.P.65 HOSPITAL LIAISON AND VISITATION PROGRAMS PROVIDE EMOTIONAL SUPPORT, ADVOCACY AND LINKAGE TO COMMUNITY BASED ORGANIZATIONS FOR HOSPITALIZED PWA/PWARCs.

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AIDS Project Los Angeles, CA, U.S.A.

Objective. To provide emotional support, advocacy and information regarding community services to PWA/ARCs hospitalized in Los Angeles County. To provide greater linkage among hospitals serving these clients.
Methods. APLA recruited 87 full time employees from 60 hospitals who, by virtue of their position, have access to and are supportive of PWA/ARCs. Once the liaisons were identified, APLA recruited and trained 42 volunteers for 13 hospitals to visit inpatients with AIDS/ARC. Volunteer training includes active listening, hospital protocol and AIDS specific medical and psychosocial information. The hospital liaisons act as resource persons for the volunteers. Hospital liaisons meet quarterly as a group for networking and support. Visitation volunteers meet as a group for supervision and support monthly.
Results. Volunteers provide emotional support, advocacy and information about community and APLA services. Hospital staff report the volunteers to be an asset to patients and staff, particularly in that they are able to spend more time with needier patients. Information regarding CBO's leads to more timely linkage to these services. Also, the liaison and visitation programs provide opportunities for networking and mutual support for the staff from participating hospitals.
Conclusion. These programs are a cost effective model for providing emotional support, advocacy and information regarding community resources to AIDS/ARC patients when they are very vulnerable, i.e., during hospitalization. These programs help these participants alleviate stress/burnout and enable them to maximize scarce resources.

M.E.P.66 THE IMPORTANCE OF THE SOCIAL SERVICE EXPERIENCE AT A UNIVERSITY HOSPITAL IN RIO DE JANEIRO, BRAZIL.

Hanan, Janete Luzia Leite; Moura, E.M.M.; Oliveira, E.R. and Morais de Sá, C.A., U.S.A.
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Objectives:
1) To identify "the meaning of AIDS" to HIV infected patients, their family members,friends and health care workers.
2) To assess the reasons for discrimination of HIV infected individuals.
Methods: The study comprised 170 infected individuals, 73 family members and friends of these patients and 35 health care workers, from February to December 1988. They were assessed and interviewed by two social workers who used a phenomenological approach and follow-up.
Results: The meaning of "AIDS" and the reasons for discrimination were related to:

	PATIENTS		FAMILY		HEALTH CARE WORKERS	
	N	%	N	%	N	%
Lack of information	150	88	50	68	-	-
Insuficient information	133	78	21	28	-	-
Lack of confidence on information obtained	150	88	34	46	28	80
Difficulty related to sexuallity/ homosexuallity	96	56	47	64	29	82
Difficulty to face death	170	100	73	100	35	100
Lack of material and human resources	-	-	44	60	32	91
Lack of technical training	-	-	-	-	8	22
Lack of emotional support	170	100	73	100	35	100
Press notes causing panic	142	83	61	83	15	42
Social Stigma	142	83	61	83	15	42

Conclusions: Whenever the personal meaning of AIDS is grasped, people start changing their discrimination attitude toward the patient and the disease. We believe in the need of implementation/systematization of this work, in order to, reduce the discrimination and promote multipliers of the process.

M.E.P.67 NORTHERN MANHATTAN WOMEN AND CHILDREN HIV DEMONSTRATION PROJECT: SOCIAL SERVICE ISSUES

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Objectives. To increase regional communication and coordination of resources for HIV infected or at risk women and children, and to augment the provision of health education, social services and clinical care in an area where service delivery and health education efforts are fragmented and there is a documented rise in HIV infection. To identify the service needs experienced and the ethical questions faced by participating members.
Methods.The establishment of a consortium model, funded by Health Resources and Services Administration, Bureau of Maternal and Child Health, includes five voluntary and public hospitals, three branches of city government, a school of public health, a community based task force of providers and a major clinical research center. The consortium incorporates a social services committee which captures the collective experience of providers with similar populations in varied settings.
Results.Participating institutions have developed a shared set of goals and objectives, a uniform evaluation instrument and a forum in which problem-solving is enhanced.
Conclusion.The model effectively strengthens the group's ability to advocate for increased and augmented services for women and children and to identify helpful approaches to ethical decision-making.

M.E.P.68 GROUP RESIDENCE AND SCATTERED SITE APARTMENTS AS HOUSING FOR HOMELESS PERSONS WITH AIDS

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*Bailey House, New York, NY, USA.

Objective. To provide supportive housing for homeless persons with AIDS.
Methods. A 44 persons group residence was established in N.Y.C., supported by government funds and private donations. In addition, 20 scattered site apartments were leased by the sponsoring agency. The 2 programs were separately staffed but compared needs and problems.
Results. Staffing included social services, nursing, pastoral care and support services; medical care was provided by referral to hospitals and clinics. In the group residence, 160 persons were served in two years; in the apartment 90 persons were served in three years. Average length of stay in the group residence was seven months, and eight months in the apartments. About one-third of residents in the group residence passes away in their rooms;the others died in hospital following admission for acute medical problems. In the group residence, residents found the frequency of their neighbors' death very difficult, and 13 persons left the residence as a consequence. The community supported the group residence from the inception. Problems of discrimination arose in connection with obtaining building services. Both programs encountered difficulties in providing appropriate support and structure for residents with pre-AIDS psychiatric and/or behavioral problems and for residents who suffered from HIV neurological problems. A combination of homecare and individual service plans was effective in most cases, but residents who were physically destructive or who threatened the safety of others were referred to various other settings.
Conclusion. Scattered site apartments and group residences both provide appropriate housing for persons with AIDs who do not need medically oriented care.

M.E.P.69 SOCIAL SERVICE NEEDS OF PEOPLE WITH AIDS: PERCEPTIONS OF NEED AND UNMET NEED

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Objective. To describe needs for social services as reported by people with AIDS.
Methods. In-person interviews were conducted with 257 clients of the Robert Wood Johnson Foundation's AIDS Health Services Program. Clients were interviewed at nine site across the US. For each of 12 social service needs (e.g., medicaid, home nursing, support groups, transportation, housing placement, dental care), respondents were asked (1) if they needed that service, (2) how much they needed it, (3) if they received it, and (4) whether services received met their needs.
Results. The highest proportion of respondents (49%) expressed a need for dental care, followed by needs for support groups (44%), counseling (41%), and legal advice (40%). Lowest reported needs were for homemakers (15%), meals at home (13%), housing placement (13%), and drug rehabilitation (11%). The most intensely felt needs were for housing placement, medicaid, and drug rehabilitation. Only 21% of those who needed it received dental care; only 38% who needed it got housing placement. Of those receiving services, at least 70% said that their needs were met for each service, with the exception of money for housing (50%). Those who were employed had fewer needs. Compared to gay men, drug users perceived greater need for home nursing and for medicaid.
Conclusion. Dental care is an often overlooked and unmet need. Needs for housing, although not prevalent, are intense and hard to meet.

M.E.P.70 STEP DOWN CARE ACCEPTABILITY IN HOSPITALIZED AIDS PATIENTS

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**AIDS Prevention Project, Seattle, Washington, USA.

Objective.To determine the acceptability of special AIDS residences with skilled nursing ("step down care") among hospitalised persons with AIDS.
Methods.We obtained demographic, medical, and social profiles of 100 persons with AIDS during their hospitalisations, and interviewed them regarding the acceptability of step down care as an alternative to a lengthier hospital stay or to home care. We also interviewed their doctors, nurses, and social workers regarding appropriateness of such a care setting for each patient.
Results.Of the 100 AIDS patients(all males, mean age 35 yrs), 56 found step down care to be acceptable in concept during their hospital stays (although 21 of these felt home care would be equally as acceptable). Of these 56, 20 were felt to be appropriate for step down care by their doctor and nurse or social worker(or all 3); 9 were discharged to such settings (nursing homes and hospices), 6 expired in the hospital,and 5 went home(3 with home care). Of the 44 patients who felt step down care was an unacceptable option, the majority(42 or 95%) wished to receive their care at home(2 wished to stay in the hospital). Of these 44, 11 were considered appropriate for step down care by their caregivers; 9 went home(5 with home care), 1 went to a hospice and 1 expired. Of the patients who found step down care acceptable, more went to such settings at discharge or expired in the hospital(15 of 56) than those who did not find step down care acceptable(2 of 44)(27% vs 5%, p<.01).
Conclusion. Hospitalised persons with AIDS willingly express their desires for various care settings following hospitalization. A majority feel step down care would be acceptable, but many patients prefer home care.

M.E.P.71 A MULTI-DISCIPLINARY MODEL FOR DECISION-MAKING AND CASE PLANNING FOR HIV-INFECTED CHILDREN & YOUTH IN CHILD WELFARE AND CHILD PROTECTIVE SERVICES SYSTEMS.

Annin, J. Burt*; Emery, L.J*; Ponte, K.** *Child Welfare League of America **Massachusetts Department of Social Services, MA, U.S.A.

Objective: To provide service providers in the public and volunteer sectors with an expert review panel model to approve or recommend case decisions in order to establish a standard of practice and support the willingness of agencies to serve HIV-infected children in the face of myriad fears, e.g. liability.
Methods: CWLA convened administrators from 17 public child welfare agencies to identify problems in mobilizing their bureaucracies to serve HIV-infected children and youth. They identified supporting decisions made as a significant barrier. The Massachusetts Department of Social Services and CWLA proposed and described a multi-disciplinary review team model; CWLA received 289 responses from 250 agencies surveyed re: challenges faced; decisions made; methods used; and conclusions reached; Massachusetts DSS tested and operationalised the model.
Results: Among obstacles agencies face making case planning decisions for infected children are: 1) resistance to serve without assurances on managing contagion; 2) conflicting confidentiality and testing policies and beliefs; and 3) liability and risk management concerns.
Conclusion: A multi-disciplinary review team's validation of case-planning decisions speeds agencies' response.

M.E.P.72 COMMUNITY-BASED CARE FOR PEOPLE WITH HIV DISEASE

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Objective. To develop models for comprehensive community-based care for people with HIV disease (PWH).
Methods. We interviewed representatives from AIDS service organizations (ASOs) in New York, San Francisco and Chicago and observed their operation. We culled promotional material from ASOs across the USA and examined how they incorporate the needs of their local communities and of their clientele into viable systems of care.
Results.We describe basic elements of care which may be necessary for ASOs to develop adequate services for PWH: 1.The existence of community clinics which can provide primary health care to PWH and which offer anonymous HIV antibody testing and counseling. 2. A mechanism for recruiting and training volunteers to serve the emotional and practical needs of PWH, their friends and families. 3. Advice for PWH concerning their legal rights, appropriate medical care, access to government aid, and experimental protocols. 4.Assistance with housing and food. 5.An AIDS hotline and other educational services. 6.Outreach for intravenous drug users. 7.Coordination of services with local hospitals.
Conclusion. An appreciation of the basic services that ASOs provide may help local communities develop services which offer competent, humane, and comprehensive care for PWH.

M.E.P.73 THE CHALLENGE OF AIDS IN AN AREA OF SCATTERED POPULATION AND LOW PREVALENCE

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Our AIDS and HIV figures are "normal" for the U.K. and very much lower than London - 28 AIDS cases and 254 diagnosed as HIV positive. We have encountered serious obstacles in pursuing our aim of developing non-hospital based care. Among the issues I would like to discuss are:

1. Medicalisation of care of people with AIDS.
2. Protectiveness/possessiveness of established carers - largely medical.
3. Lack of confidence of people with AIDS and medical providers in social workers.
4. Non-reality of AIDS as an issue in areas of normal (low) prevalence.
5. Social workers' perception of being de-skilled by HIV and its implications - is this an appropriate or inappropriate response?
6. Training - who and how to target training to social workers when AIDS is seen only in theory as a priority area, and in practice is seen not to be relevant to most social workers in a local authority.
7. Non-availability of substantial, vocal and cohesive groups of people with AIDS.

M.E.P.74 COMPREHENSIVE SOCIAL SERVICE HIV RETROVIRUS PROGRAM AT WALTER REED ARMY MEDICAL CENTER, WASHINGTON, D.C.

Gemmill, Robert H., Social Work Service and the Walter Reed Retrovirus Research Group, Washington, D.C., United States of America.

Objective. To identify and describe 20 clinical psychosocial treatment and health care management components utilized in the development and implementation of a comprehensive social service program for HIV infected individuals, family members and health care service providers.
Methods. Twenty psychosocial treatment/intervention procedures and health care management components were developed based upon policy review, problem identification, needs assessment, literature review, patient surveys and research findings. The resulting components were utilised in developing, implementation and providing a comprehensive social service program for HIV infected individuals, family members and a supportive program for the staff.
Results. The table below summarises the 20 components:

Twenty HIV Psychosocial and Management Program Components

1.	Pride and prejudice	8.	State-process	15.	Substance-style
2.	Services and treatment	9.	Self-determination	16.	Model development
3.	Process and content	10.	Cognition-affect	17.	Management formula
4.	Rehabilitation	11.	Technology-compassion	18.	Integration
5.	Practice and research	12.	Content-context	19.	Uneasy truce: LB/RB
6.	Treatment and cure	13.	Evolutionary process	20.	Predictions
7.	Multidisciplinary	14.	Threshold level		

Conclusion. A comprehensive HIV retrovirus social service program was developed and implemented based upon 20 psychosocial and management components.

M.E.P.75 CRÉER UN MILIEU DE VIE: UNE APPROCHE ARCHITECTURALE NOVATRICE

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La maison D'Hérelle se veut une alternative aux longs séjours en milieu hospitalier.
OBJECTIF: créer un milieu de vie pour les personnes atteintes qui soit adapté à leurs besoins.
MÉTHODE: le projet a été élaboré par une équipe multidisciplinaire composée de médecins, travailleurs sociaux, architectes, administrateurs, personnes atteintes. Le projet a fait l'objet de consultations auprès d'autres groupes ou individus impliqués dans l'intervention auprès des personnes atteintes ou ayant développé un projet similaire en fonction de d'autres pathologies. Les différentes étapes de la maladie et les besoins spécifiques y étant reliés ont été cernés. Le type et la qualité de l'intervention ainsi que les besoins des intervenants ont été clairement établis.
RÉSULTAT: le choix du site et le concept architectural qui réunit une rénovation sur un bâtiment ancien à une construction neuve témoignent d'une préoccupation majeure de créer un milieu de vie répondant aux différents besoins des personnes atteintes:

> cadre de vie familial; enracinement dans la communauté; vie communautaire en même temps qu'intimité; autonomie - semi-autonomie - convalescence; besoin de sécurité et besoin de liberté; silence - recueillement et communication - expression; présence continuelle; soins et support à la vie quotidienne; encadrement médical léger; activités récréatives et artistiques.

CONCLUSION: Un concept architectural polyvalent pour recevoir 11 personnes atteintes. L'espace organisé par modules en fonction des besoins et des activités permet de répondre à une mixité de clientèle à différentes étapes de la maladie.

M.E.P.76 DESCRIPTION ET ÉVALUATION DU SERVICE TÉLÉPHONIQUE INTÉGRÉ DE LA PROVINCE DE QUÉBEC POUR LE SIDA ET LES AUTRES MTS.

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Objectif. Analyser le fonctionnement d'un système téléphonique provincial pour les MTS-SIDA intégré à un service général d'informations sur la santé.

On a mis sur pied en septembre 1987, un service téléphonique de renseignements sur les maladies transmissibles sexuellement (MTS) qui fonctionne 24 heures par jour et 7 jours par semaine. Le service est bilingue et accessible gratuitement pour les 6 millions d'habitants de la province. Appelé INFO-MTS, il est greffé à un système d'information générale sur la santé, INFO-SANTÉ, qui est basé au CRSSS 03 et sert la région immédiate de Québec.

Un échantillon aléatoire de 1153 appels a été analysé à partir des fiches remplies par les infirmières pour chaque appel. Le SIDA a fait l'objet de 31,8% des appels. Par comparaison avec les autres MTS, ceux qui appelaient pour parler du SIDA étaient plus souvent des hommes (44,5% contre 36,7%) et moins fréquemment des jeunes de moins de 20 ans (20,8% contre 26,8%).

Parmi les appels concernant le SIDA, 87,5% demandaient de l'information, 18,3% des conseils thérapeutiques et 28,6% une référence à un service clinique. Pour les autres MTS, on observe respectivement 70,7%, 26,2% et 35,4%.
Conclusion. On constate la pertinence d'un service téléphonique de renseignements sur le SIDA. Le jumelage avec un service d'informations sur la santé permet d'améliorer beaucoup l'accessibilité car le volume d'appels autorise une permanence continuelle qui serait trop onéreuse autrement.

Éducation (partie 1)
Education (Part 1)

T.E.P.1

REPORTED LIKELIHOOD OF SEXUAL ACTIVITIES WITH A NEW PARTNER IN A SURVEY OF BAR PATRONS IN A LOCAL GAY COMMUNITY.

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**AIDS Intervention Project, Long Beach, California, USA.

Objective. To survey current sexual activities to determine current and future risk-reduction education needs of the local gay community.
Methods. An exit survey was administered to local gay bar patrons, requesting demographic information, information on participation in local AIDS-education programs, whether or not respondents had been tested for HIV antibodies, test results (if applicable), changes in sexual behavior, number of partners, location(s) where respondents meet new partners, and likelihood of various sexual behaviors with and without condoms with a new partner.
Results. Most respondents reported meeting new sexual partners at bars. The following behaviors were rated relatively unlikely with condoms and likely without condoms: mutual masturbation, receptive oral sex, and insertive oral sex. The following behaviors were rated relatively likely with condoms and unlikely without condoms: insertive anal sex, receptive anal sex, ejaculation inside partner, and receptive anal sex with ejaculation. HIV antibody testing exerted no effect on reported likelihood of any behavior, but seropositive men reported that they were less likely to engage in receptive or insertive anal sex than seronegative respondents (regardless of condom use).
Conclusion. Gay men report significant changes in their sexual behavior that appear to substantially reduce the risk for HIV transmission. The relative likelihood of unprotected oral sex in the absence of definitive information regarding its risk suggests that research on the associated reasons for and the risks of this behavior is needed

T.E.P.2

AIDS-PREVENTION ACTIVITIES TARGETING HOMO-AND BISEXUAL MEN

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Objective: The main objective is the fight against the spread of HIV-infections. Methods: Homo- and bisexual men are extensively informed. Their collective and individual identity is strenghtened. Lifestyles and sexual behaviour are accepted and as there is little intervention a considerable prevention effect is achieved. The Safer Sex message is transmitted through existing structures within the gay sub-culture. One-way media as well as interpersonal communication are offered. Apart from an employed staff volunteers and even bartenders are prepared for counselling services. Impulses are given by give-aways. There are no prohibitions neither in words nor in pictures. We confine ourselves to give advice in regard to lifestyles and sexual behaviour. Special problems and personal fears are individually treated and anonymously discussed in public. The work is supported by public relations. Results: The study "CHANGES IN SEXUAL BEHAVIOUR OF GAY MEN UNDER THE IMPACT OF AIDS" (1987), a follow-up study made in 1988 as well as further observations (such as the decrease of rectal gonorrhoea) show that low-risk sex has proved to be accepted by an important majority of gay men in West-Germany. Conclusion: By this prevention strategy the rate of infection has been reduced considerably. It has not been proved that similar results can be achieved by means of offical measures.

T.E.P.3

ADAPTATION OF SAFER-SEX WORKSHOPS FOR GAY AND BISEXUAL MEN IN BARCELONA, SPAIN.

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Objective: To adapt, conduct and evaluate workshops, originally designed to promote behavior and norm change in U.S. gay and bisexual men, for use in Barcelona, Spain.
Methods: Gays for Health, a Barcelona community-based organization, began these workshops in December, 1988, with U.S. and Barcelona facilitators. Publicity was distributed to gay bars, bath houses, bookstores, and through the media.
Results: 31 men attended the two pilot workshops. 89% agreed that the workshop helped them feel more comfortable talking about safer-sex; 79% agreed the workshop helped them believe safer sex could be fun; 79% that the workshop helped them feel more capable of controlling AIDS. At the end of the workshop, participants were asked to list at least three safer-sex activities. 94% of the responses were correct; 26% referred to tactile (non-penetrative) sex; 26% referred to condoms; 17% referred to avoidance of unsafe behaviors. A process evaluation revealed that participants perceived role-plays (i.e., negotiating safer sex with a partner) to be less useful than brainstorming (i.e., discussing AIDS and safer sex in large groups).
Conclusion: 1) Interventions targeting gay populations in one culture may be adaptable for use in another; 2) Recording participants' responses provides an excellent source of information on knowledge, attitudes and behavior of the target population.

T.E.P.4

SOURCES OF INFORMATION ON AIDS IN ZAIRE AND IMPLICATIONS FOR PROGRAM PLANNING

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Objective. To determine sources of information on AIDS in Zaire and desired sources of communication for the future.
Methods. Two populations were surveyed during 1987-1988: 3500 health workers (HW) of all levels throughout Zaire and 2500 employees and spouses (ES) at a commercial bank in Kinshasa.
Results. HW have learned about AIDS from radio (59%), written materials (29-36%), television (TV, 28%), courses (13%) and discussions (10%). For ES, sources were radio (51%), TV (43%), written materials (11-25%) and discussions or songs (29%). For HW, mass media and written materials are preferred in urban areas, courses and discussions in rural areas. Among ES, mass media and written materials are preferred by male employees, while their female spouses prefer face to face communication. The preferred language for HW is overwhelmingly French; among ES, male employees prefer French, and female spouses prefer Lingala, the local language in Kinshasa.
Conclusions. AIDS education programs should specifically consider the setting (urban/rural) and the audience (HW, lay population), including different strategies according to sex, educational level, profession and language preference.

T.E.P.5

AIDS EDUCATION: USING COMMUNITY TELEVISION TO REACH GAY MEN AND BISEXUALS

Sobota, Michael, AIDS Committee of Thunder Bay, Thunder Bay, Ontario, Canada

Objective: To deliver education about AIDS, particularly about safer sex practices, to gay men and bisexuals.
Methods: Utilizing public, community television which included negotiations with television station management, training of volunteer technicians and support staff, designing individual programs [content, format, guests] taping and airing programs including live, on-air phone in sessions.
Results: AIDS education programs aired on public community television from October 1988 through April, 1989. Written feedback [correspondence] and direct contact from phone-in programs indicate viewer interest and positive response. Some controversy concerning language and content with resulting intervention of public officials. Conflict resolved in favour of programs continuing to be aired.
Conclusions: Community television is an important media to access difficult to reach targeted populations. Community television can be utilized at little financial cost if there is a volunteer pool available. Community television rallies volunteers from within the gay and lesbian community if they see the project to have real and specific benefit to their borthers and sisters.

T.E.P.6

LES EFFETS D'UNE CAMPAGNE GRAND PUBLIC SUR LES HOMOSEXUELS FRANÇAIS

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Objectif. Évaluer les effets de la campagne télévisée "Le SIDA, il ne passera pas par moi" (1987) sur les attitudes et comportement des homosexuels français.

Méthode. Sondage par questionnaire (n=1 550) inséré dans une revue homosexuelle.

Résultats. Bien qu'elle ait réussi à capter l'attention des gais (78% se souviennent du slogan), cette campagne est jugée peu claire, floue, peu explicite et "utile pour les autres" plutôt que pour les gais. Les moins de 25 ans sont les seuls qui, grâce à la campagne, ont accéléré leur adaptation sexuelle au risque. Les moins motivés par la campagne sont les classes populaires.

Conclusion. Pour avoir un effet incitateur important sur les homosexuels, la campagne télévisée est arrivée trop tard, avec un message trop timide. Les campagnes grand public, efficaces parmi les homosexuels dans le groupe d'âge des moins de 25 ans, n'arrivent pas à toucher les homosexuels des classes populaires. La prévention devra tenir compte de ce phénomène dans des actions de proximité spécifiques.

T.E.P.7

TRACKING SURVEY OF AIDS KNOWLEDGE, ATTITUDES AND BEHAVIORS IN SAN FRANCISCO'S BLACK COMMUNITIES

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Objective To obtain data on AIDS knowledge, attitudes, and risk behaviors in an urban Black population and to compare it to baseline data obtained in 1987
Methods A door-to-door survey was conducted with a randomly selected population based sample of 350 adult Black residents
Results The percentage of respondents with sexual partners who had been diagnosed with AIDS or ARC increased from less than 0.5% to 4.9%. The percentage reporting sexual partners who were IVDUs increased from 5.2% in the baseline survey to 7.6% and those reporting partners who had had STDs increased from 7.1% to 10.9%. The percentage of IVDU needle sharers remained stable, 4.3% in 1987 and 4.9% in late 1988. The tracking survey confirmed the baseline findingd that bisexuals have a higher number of sexual partners than homosexuals. Heterosexuals reported the lowest number of partners. Homosexual men reporting recent participation in both protected and unprotected anal intercourse (15%) was disproportionately larger than their representation in the sample (3.5%). However, 11% of male and 10% of female heterosexuals also had unprotected anal sex during the prior month. Bisexuals were more likely than heterosexuals to engage in unprotected vaginal intercourse.
Conclusions AIDS and ARC may be increasingly visible in the Black community. Risk levels remain high with bisexuals a potentially potent vector for dissemination of HIV as a result of their high number of partners, use of crack and other drugs during sex, and extensive participation in risky sexual behaviors

T.E.P.8

Effective Safe Sex Discussion Groups

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Clarence Crossman, M.A. — *Aids Committee of London, Ontario*
William Fisher, Ph.D — *Department of Psychology, University of Western Ontario*
CANADA

Objective: To develop a safe sex discussion group for gay men that increases their skill in negotiating safe sex encounters and exiting unsafe situations.

Method: Participants were pre and post tested in videotaped role plays where they were presented with the task of negotiating a safe sex encounter and exiting an unsafe sex situation. The excerpts were rated for evidence of skill.

Results: The results along with other measures indicated that the participants level of skill increased after the group intervention. The group format and program are described in detail.

T.E.P.9

T.E.P.10

COMMUNITY BASED AIDS PREVENTION AND EDUCATION: LINKING RESEARCH, RESOURCES AND COMMUNITY *

Indyk, Debbie, Lefkowitz, P., Rose, D., Barrett, E., and Belville, R. Mount Sinai School of Medicine, NYC, NY, USA.

Objective: This paper presents the results of an assessment of the state of community based AIDS prevention programs. A blueprint is drawn for the development of an infrastructure to link these grass-roots programs to a strategically located center.
Methods: The assessment focused on the local community which Mount Sinai serves and the broader cosmopolitan research community to which it is strongly linked. The data gathered were drawn from extensive interviews, literature reviews, and the identification and annotation of key programs, resources and networks.
Results: Multitudes of diffuse grass-roots programs and agencies have developed around AIDS prevention. Most have done so in isolation, and without building into the program a meaningful evaluation component. Most lack the flexibility required to allow for the assessment and incorporation of new prevention knowledge into existing programs.
Conclusion: Each of these anecdotal programs provides discrete population-based case experiences whose results must be aggregated and assessed. This blueprint acknowledges the crucial role of the gatekeeper and builds it into the structure. The organizational apparatus developed would additionally facilitate local network building, a forum for case reviews, consensus formation and goal sharing. This model replicates, in miniature, the strategy suggested by the AIDS Network which led to the formation of the National AIDS Information Clearinghouse. Participation in this effort would be encouraged by the reduction of duplicative efforts and the expanded pooled resources this collaboration would yield. It is strongly urged as a necessary next step in the development of a meaningful approach to AIDS prevention.

*Funded by the Aaron Diamond Foundation.

T.E.P.11

DEVELOPMENT OF A UNIQUE AIDS CONSORTIUM CENTER TO ADDRESS HIV/AIDS IN THE MINORITY COMMUNITY IN THE U.S.

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Minorities constitute 42% of the total 82,764 cumulative AIDS cases reported by the U.S. Centers for Disease Control in early January 1989. This disproportionate involvement of HIV/AIDS in minorities has resulted in the need for more culturally appropriate and unique approaches in AIDS prevention, research and patient care. Because of lack of adequate resources and research infrastructure, no single minority institution is presently equipped to properly address all of these needs.
Objective. To develop an AIDS Consortium Center consisting of a group of minority schools which will together form an AIDS Center to especially address and coordinate intensive prevention and research activities aimed at reducing the incidence, morbidity and mortality of HIV/AIDS in Blacks and other minorities.
Methods. A consortium of seven (7) predominantly black schools including schools of medicine, pharmacy and veterinary medicine joined to plan and pool expertise necessary for an AIDS center.
Results. Each school brought to the consortium its expertise in the areas of prevention, basic and clinical research, and case management. An agreed upon structure and plan were developed to carry out these activities.
Conclusion. An AIDS Consortium Center has been planned with a program developed to address four AIDS areas: 1) Prevention research, 2) Drug development, 3) Clinical trials, and 4) Animal modeling. Support for this unique AIDS Center has been requested from the National Institutes of Health, thereby providing the Public Health Service with a vehicle which will allow for increased participation in and acceptance by the minority community.

T.E.P.12

Title: Local Action & Research

Madsen, Poul*; Bentsen, Ingeo**;
* AIDS-INFO, Odense, Denmark; ** The County of Funen, Denmark

The effort of this poster, is to show examples on how the wellknown Danish National Strategy, can be converted, father developed, planned and evaluated into action in a small Island, with 500.000 inhabitans. How a Non Govermental Organisation and the Island County, can work together in order to change sex habbits and increase the populations accept of the problems with AIDS and how it can be prevented.

In august of 1985, the formation of AIDS-INFO Funen was started by a small group of volunteers from the local chapter of the National Organization for Gays and Lesbians. The first project was to organize a twentyfour hour open hotline. Later this was supported by a special equipped bus which drives to all places where people, special young people meet in great numbers: Marketplaces, open air concerts, festivals etc. A unique shop, is opened, where face to face councelling is taking place, where you can get supervision, information and buy campaimaterial, such as posters, T-shirts, joggingsuits and of course condoms. Pamphlets and brochures are given out free in large numbers.

Two research studies will be shown, one called "Even safer sex", where in a period of 12 month app. 1/2 mill. condoms were given out free, followed by promoting the use of condoms with an intensive use of PR-material, to se if there was any change in the condomhabbits among riskgroups.
The other study, "Condomcomfort" is about the technical standards of condoms, and the users experience, showing the most detailed knowledge about condoms in the world so far.

The County of Funen has established an AIDS-secretariat, who has implemented an educational programme of AIDS instructors. The responsibility of these instructors is to educate young people, in the age group of 14 - 25 years. Within the county, the willingness to supply free syringes to drug addicts, and taxidrives willingness to hand out condoms to anybody wanting them.

The conclusion is that the project must be an ongoing one, which only will succeed if the NGO's and the county continues collaborating; - remains updated; - uses humor and suprise, in the process of getting knowledge trough to people and change their behaviour.

T.E.P.13

FIGHTING AIDS - AN EDUCATIONAL MODULE FOR ARMY UNITS

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Young men and women who serve in the armed forces of their countries are an important target group for AIDS prevention campaigns. Data collected by WHO and the CDC demonstrates clearly that prevalence and incidence of HIV infection are higher in the young adults populations. This data shows,as well,that AIDS cases in their late 20s or in their 30s, have contracted HIV 5 or 8 years befor- while in university,highschool or the army.

In some cultures army life is a catalizator for sexual and drug adventures that coincide with sexual development and maturity at that age.

As a totalitarian institute (sociology) every army is in the position to control HIV infection by obligatory education campaigns in its units.In collaboration with the Israeli Defence Forces Medical Corps, a special educational program for AIDS prevention was developed. It was named "Fighting AIDS".

The module is a 100 minutes session whichis based on direct communication between a medical officer stationed in an army unit and the soldiers of that unit. Fighting AIDS comes in a kit which includes:manual for the army doctor 2 sets of cartoon slides,stories,a leaflet for each army personnel.

Since July 1987 this module, officially accepted as the unified program for the IDF,is implemented in all commands. Special training workshops were developed and conducted for army phycisions in the various units.

The module was pre-tested in a sample of units among which were the army jail for women and for men.Barriers of implementation will be discussed as well.

T.E.P.14

AN ASSESSMENT OF KNOWLEDGE, PERCEIVED RISK AND BELIEFS ABOUT PREVENTION STATEGIES AMONG NEW YORK STATE RESIDENTS

Beeker, Carolyn *; Zielinski, M.*; and Holmes, J.*

Objective. To assess knowledge, attitudes and beliefs about AIDS in the general population of New York State, U.S.A.

Methods. As part of a CDC-sponsored AIDS prevention project, a random digit dial telephone survey of New York State adults (N=1117) was conducted between May and September 1988. Survey items were adopted from the 1987 National Survey, from Ostrow (1987) or developed by the authors.

Results. The representative sample included 10% Hispanics and 14% blacks and was evenly divided between males and females, single and married, with a mean age of 43. At least 90% of the sample correctly responded to "basic" questions on AIDS, e.g., major modes of transmission; and over 85% discounted the possibility of HIV transmission through very casual contact, such as shaking hands. A larger proportion of the sample, however, still believe that HIV transmission is possible through donating or receiving blood, insects, public toilets and being coughed on. While condom use is correctly regarded by 90% of the sample as an effective risk reduction strategy, more than one-third are uninformed or misinformed about diaphragms and spermicides. Educational attainment, race/ethnicity and age are consistently related to accuracy of knowledge on a number of casual transmission and risk reduction effectiveness items. Knowledge of casual transmission and risk reduction effectiveness also appears to be related to the perceived risk of personal exposure and reported behavior change.

Conclusion. Educational campaigns in New York State must address misinformation about casual contact transmission and provide clear messages about the ineffectiveness of diaphragms and spermicides without condoms as barriers to HIV.

T.E.P.15

EFFECTIVENESS OF FEAR APPEALS IN AIDS-EDUCATION POSTERS: COMPARISON BY RACE/ETHNICITY, AGE, AND GENDER IN THREE POPULATIONS

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Objective. To investigate the effectiveness of fear appeals in AIDS-education posters.

Methods. Twenty experimental posters with high-fear pictures portraying severe consequences of AIDS and 20 posters having pictures that were neutral with respect to disease severity were evaluated in terms of their attention value and their perceived effectiveness in motivating people to use condoms. Poster messages were also manipulated experimentally to achieve high and low levels of communicated personal vulnerability and behavioral response efficacy. Subjects were 310 Black, White, Hispanic, and Asian community residents, college students, and intravenous-drug users (IVDUs).

Results. Fear level of experimental posters was positively related to their perceived effectiveness in motivating people to use condoms and to their value in attracting attention (p = .0001). This effect was consistent across the three populations studied, i.e., general community residents, college students, and IVDUs. Response efficacy and personal vulnerability of poster messages, and their interactions with fear, were also significant ($p < .05$) but accounted for relatively little treatment variance in comparison with the fear main effect. Age, gender, race/ethnicity, and population membership were found to mediate reactions to high- versus low-fear posters to only a small degree.

Conclusion. Findings confirm previous research supporting the effectiveness of fear appeals in persuasive health communications and suggest that fear-oriented posters may be more effective than positive, non-threatening appeals in motivating a broad range of individuals to adopt AIDS risk-reduction practices.

T.E.P.16

COMPUTER-ASSISTED HIV EDUCATION FOR IVDUs

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Objectives: To develop and evaluate a modular pilot program for IVDUs using computer-aided-instruction (CAI) techniques. Course modules are built using TSSS (Teacher Student Support System), a Macintosh/Hypercard-based software system developed at Trinity College. TSSS facilitates development and use of mixed-media courseware without requiring special computing expertise.

Methods: An experimental bi-lingual CAI program was developed and introduced to a sample of methadone maintenance patients in an urban clinic. Program modules include 1) a simple instructional module; 2) a module describing HIV, HIV transmission, and IVDUs; 3) a module describing protective behaviors (needle cleaning and safe sex). TSSS provides quantitative utilization information for evaluation purposes.

Results: A Macintosh computer has been dedicated to this CAI application. Staff have been trained in using the modules. Modules on protective behaviors have been completed, piloted, and evaluated by 57 IVDUs. As reported in client satisfaction surveys, interest in HIV education employing this technology is substantially higher than in HIV education based on forced compliance.

Conclusions: This interdisciplinary merger of computing technology with HIV education objectives shows great promise. For the first time it is possible to develop multi-media computer-based instructional approaches which place control of learning in the hands of the learner.

T.E.P.17

PROMOTION OF HIV PREVENTION OUTREACH ACTIVITIES TARGETING INTRAVENOUS DRUG USERS IN THE UNITED STATES

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Objective: To implement outreach activities targeting intravenous drug users (IVDU) to curtail the spread of HIV infection through contaminated injection paraphernalia and sexual transmission to partners.

Methods: IVDUs are among the hardest to reach persons at risk for HIV infection due to their lifestyle, and environmental and societal factors. One method of educating IVDUs and their partners is the use of former IVDUs who conduct street outreach in their neighborhoods. While no empirical data exists concerning the effectiveness of outreach programs to IVDUs, as measured by documented changes in risk behaviors, these programs are considered by many communities to be essential in reaching this hard-to-reach population.

Results: CDC has awarded approximately $17.5 million to States and municipalities for prevention programs targeting IVDUS. These programs include activities within drug treatment centers and by community-based organizations (CBO), such as counseling, testing and partner notification, and outreach programs. Other outreach activities funded by CDC include community demonstration projects and the U.S. Conference of Mayors' funding of CBOs. In addition, in FY 1989 the CDC will provide direct funding to minority and other CBOs to conduct health education and risk reduction activities. CDC has systematically reviewed outreach activities to IVDUs in order to design an outreach prototype that can be used by other programs to enhance overall effectiveness. The authors will present the prototype and findings from the review.

Conclusion: Through funding and provision of technical assistance, CDC - in collaboration with State and local health departments, national and community-based organizations - has promoted the implementation of HIV prevention outreach activities targeting IVDUs and their sexual partners. The results of CDC's efforts have been an increase in the number of outreach programs targeting IVDUs and an increase therefore in the numbers of IVDUs receiving HIV prevention education.

T.E.P.18

MARRIED HOMOSEXUAL AND BISEXUAL MEN - THE DEVELOPMENT OF AIDS EDUCATION STRATEGIES AND RESOURCES FOR HEALTHCARE PROFESSIONALS.

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Objective. To present the range of strategies employed and resources developed to assist Healthcare Professionals and Workers to make contact with and educate married homosexual and bisexual men.

Methods. Over one thousand married have counselled and their needs, concerns and information levels documented. Specific counselling and education strategies have been developed as a result of this information and has been presented in a number of formats to assist Healthcare Professionals and Workers.

Results. The development of a resource kits entitled - Married Homosexual and Bisexual Men and their Partners:'Resource Kit for Healthcare Workers','Workshop Kit for Facilitators,' a poster - 'AIDS Special Information for Married Couples and Bisexual Men,' and pamphlets - 'AIDS Special Information for Married Couples' and 'AIDS Special Information for Bisexual Men'. These materials are distributed on request.

Discussion. These materials have trialled and reviewed by Healthcare Professionals. Requests for the materials come form all over Australia including the Australian College of Nursing and District Nursing Society.

Conclusion. Application of current research assists in the development of relevant resources for specific target groups and their support providers.

T.E.P.19

DIRECT APPROACH WITH INFORMATION TO BLOOD DONORS AT RISK OF AIDS INCREASES THE SAFETY OF THE BLOOD SUPPLY

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Objective. To study the effects of more direct approach with information to high-risk blood donors, in order to increase the safety of the blood supply.
Methods. In January 1988 the risk groups of AIDS in the national information leaflet for blood donors, were defined more strictly. Since July 1988 informed consent, indicating non-involvement in high-risk activities, was required. Rates of withdrawal of high-risk blood donors, related to donation history, risk factors and gender were compared, before and after introduction of the new approaches in information.
Results.

period	# donors tested n	withdrawals for HIV risk n	(%)	p value	proportion repeat donors n	(%)	p value
1987	80,498	161	(0.2)		83	(52)	
Introduction new information leaflet							
1988 (Jan,Feb,Mar)	19,663	96	(0.5)	<0.001	54	(56)	
1988 (Apr,May,Jun)	19,811	30	(0.2)		11	(37)	
Introduction informed consent							
1988 (Jul-Dec)	27,310	102	(0.4)	<0.001	85	(83)	<0.001

Conclusions. After the new approaches, a significant increase of withdrawal of high-risk donors was observed, the relative proportion of repeat donors being significantly higher after implemetation of informed consent.

T.E.P.20

EVALUATION OF THE AIDS EDUCATION PROGRAMME IN N.S.W. PRISONS, AUSTRALIA.

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Objective. To evaluate the AIDS education programme in N.S.W. prisons which aims to disseminate AIDS information, teach prevention strategies and prepare prisoners and staff for the implementation of policy changes (such as the integration of HIV positive inmates).
Methods. Interviews were conducted with random samples of prisoners from six N.S.W. prisons. Their knowledge about AIDS, attitudes to AIDS and drug use and sexual behaviour were assessed using standardised semi-structured interviews. The knowledge and attitudes of custodial staff were also assessed from questionnaire data and from interviews with a random sample of staff from one N.S.W. gaol.
Results. Overall prisoners and staff level of knowledge about AIDS was poor, but educated prisoners had a significantly higher level of knowledge about AIDS. More prisoners were optimistic that the spread of AIDS could be stopped in N.S.W. prisons than staff. Variety of arguments for and against prison AIDS prevention strategies (compulsory testing, segregation or integration of HIV positive inmates, condoms in prison and clean needles in gaol) were put forward by both staff and prisoners. Some prisoners said they had abandoned drug use or sexual behaviour or had adapted their behaviour to reduce the risk of catching AIDS. However, other prisoners said they continued to engage in behaviour that they knew would put them at risk for AIDS.
Conclusion. AIDS education programmes can help prisoners and staff to increase their knowledge about AIDS. To achieve this,AIDS education must involve staff and prisoners in the organisation of AIDS education programmes which provide a variety of materials relevant to the needs of different subpopulations within the prison system. From the results,hypotheses have been generated about the relationship between prisoners' knowledge, attitudes and behaviour which will need testing in future research.

T.E.P.21

KNOWLEDGE, ATTITUDE & PRACTICE (KAP) OF SELECTED POPULATION GROUPS TOWARDS THE DISEASE AIDS

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OBJECTIVE: Following a large scale programme of information dissemination on AIDS, a KAP survey was conducted to assess and compare perceptions and attitude formation of different population groups in a road side town in Ethiopia.

METHOD: On the basis of various roles in the community, teachers, students, health workers and prostitutes were randomly selected and interviewed using structured and pre-tested questionnarie.

RESULTS: Information on AIDS reached 94-100% of the population studied. Access to information was from a combination of Radio, Television and Newspapers and there was no one best media identified. Knowledge on modes of transmission and preventive measures was correctly stated in 77.3 and 86.3% of the informed subjects respectively. Attitude towards collaboration and participation in control programmes including voluntary laboratory test was very high and encouraging (95.1%). Behavioral changes (modified sexual acitvity after being informed on AIDS was reported in all groups studied, but high (46.8%) among teachers and low (19.2%) among prostitutes. Minimizing sexual partners was the method of choice (83.7%) by those who claimed behavioral change. Use of Condom was surprisingly indicated in only 3.5% of them, and all condom users were students.

CONCLUSION: Combined usage of available media is superior than anyone alone. Teachers are potential agents of behavioral change no less than health workers. Careful assessment of people's preference on preventive measures should be considered and be emphasized selectively rather than indiscriminate health education. Behavioral change (sexual) among prostitutes is unlikely with health education alone, but may require additional effort to change their way of life.

T.E.P.22

CIS-AIDS ZAGREB: TELEPHONE ENQUIRY SERVICE - TWO YEARS' EXPERIENCE

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Objective. Yugoslavia belongs to a group of countries with the lowest cumulative number of AIDS cases (65 AIDS cases as of 23rd Dec. 1988). The AIDS help-line in Zagreb was established with the aim of enabling the general population and health workers to receive information and advice on AIDS on an equal basis. Apart from the telephone line educational activities are also conducted within the CIS-AIDS (Center for Information and Education on AIDS).
Methods. The Center has developed horizontal and vertical communication with related institutions and offers a comprehensive and updated knowledge about AIDS. Public health workers daily answer telephone calls in scheduled time.
Results. Initial frequency of calls, in 1987, was between 50 and 100 per day, gradually decreasing to less than 10 calls/day. An estimated 10% of calls are placed by persons belonging to any of the risk-behaviour groups or otherwise potentially exposed to HIV infection.
Conclusion. Through adequate information and advice HIV infection is losing the connotation of social stigma. The activity of CIS-AIDS represents a new form of health promotion in Zagreb.

T.E.P.23

LA PREVENTION DU SIDA
REALISATION ET EVALUATION DANS L'OCEAN INDIEN

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Ce travail a été effectué dans le cadre associatif de l'A.R.P.S.
Les réunions inter-îles ont mis en évidence l'urgence de la prévention dans cette zone du monde partiellement épargnée. La diffusion de l'information pouvant s'amplifier aussi rapidement que celle d'une M.S.T.

Le but est de former les relais d'information dans différents groupes afin de respecter la pluralité ethnique, socio-culturelle, la présence importante dans les îles de structures associatives de diverses communautés.
Cette formation tiendra compte des différences de moyens humains et économiques propres à chaque île. Elle étudiera la spécificité des paramètres en abordant le savoir déjà acquis, l'éthique, et le recueil de témoignages locaux de sujets séropositifs ou atteints de SIDA maladie. Elle abordera le thème des croyances et des comportements face à l'utilisation du préservatif. Ceci permettra de le promouvoir fonction des résultats obtenus (contraceptif, seul remède efficace, gadget...).

Le problème de réinsertion psycho-sociale de personnes atteintes dans une "petite île" sera soulevé.
Une évaluation de ces différentes formations de relais et de leur impact sur l'individu sera mis en place fonction des possibilités locales.

Mots clefs : Oceani, Association, personnel de Santé, formation, Evaluation.

T.E.P.24

ESSAI D'UN DIDACTICIEL EN PREVENTION DU SIDA/MTS AUPRES D'ADOLESCENTS.

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Objectif. Développer un logiciel éducatif interactif en prévention du SIDA et des MTS et l'évaluer dans une école auprès d'élèves de 15 à 17 ans.
Méthodes. Un logiciel éducatif: "Les MTS, c'est facile à éviter", a été construit et mis à l'essai auprès de 55 adolescents (29g, 26f). Le programme est composé d'un questionnaire appelé SEXOTEST portant sur les connaissances et les attitudes face aux MTS et au SIDA et évaluant le risque de contracter une MTS. Des informations sous forme de jeux et d'animation sont offertes sur le SIDA, la gonorrhée, la chlamydia et les moyens de s'en protéger. La gestion informatisée des apprentissages est possible et permet à un intervenant de créer des activités pédagogiques de groupe.
Résultats. Avec un questionnaire de type Stapel (1 à 5), il a été démontré que les élèves considéraient le logiciel très valable (4,6/5), très intéressant (4,7), très utile (4,5), assez stimulant (4,1) et assez plaisant (4,2). On voit aussi que les étudiants actifs sexuellement apprécient davantage le logiciel que ceux qui ne le sont pas. Les commentaires recueillis soulignent l'intérêt pour la facilité d'utilisation, l'aspect interactif du logiciel, l'individualisation de l'enseignement et le respect de l'anonymat.
Conclusion. La détermination d'une cote personnelle du risque de contracter une MTS et la possibilité d'analyser les données des élèves ayant utilisé le programme sont des aspects particulièrement intéressants. Ce logiciel est un outil novateur et utile pour la réalisation d'activités éducatives sur le SIDA et les MTS auprès des adolescents.

T.E.P.25

LIVE BEYOND YOUR LIMITS

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Objective. To describe how Louie Nassaney has combined medical, holistic, and attitudinal techniques to survive AIDS for over six years.
Methods. In addition to medical therapies which have included AZT and Interferon, Mr. Nassaney has also employed alternative techniqes such as vitamins, nuitrition, meditation, visualization, posative affirmation, and self-love to survive during this time.
Results. Mr. Nassaney has not been ill during this period due to an HIV-related cause. The quality of life has vastly improved since diagnosis.
Conclusion. Medical and alternative techniques combined with loving the self have affected well-being and survival.

T.E.P.26

EVALUATION OF THE ITALIAN NATIONAL AIDS INFORMATION CAMPAIGN.

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Objectives. To determine knowledge and beliefs about HIV transmission and prevention; to determine the impact of the national AIDS information campaign.
Methods. A random sample of the general population of Italy was selected using a multistage sampling procedure. The sample was selected in order to be proportional to the general population for: sex, age groups, population size, and geographical area. The sampling unit was the local authority and within each of it, subjects were randomly selected from telephone directories. Interviews were carried out by phone in the evening, using a structered questionnaire. The key questions were about transmission, prevention, risk categories and information. The inteviews were carried-out in two stages, early in July 1988 before the starting of the campaign and in October just before the ending.
Results. 2,385 numbers were selected in stage I, there was no reply in 1,050 and refusal in 326. A complete interview was obtained in 1,009 (75.6% of attempts) with a response rate of 42.3. The figures for stage II were respectively 2,251 contacts, 1,012 interviews (76.4% of attempts) and 44.9% response rate. 97% ot the subjects in July and 97.8% in October knew at least the word AIDS. However in October 71% considered AIDS a disease everybody could catch, compared to 53% in July. 86% knew about the sexual transmission of HIV in October compared to 56% in July. Comparable figures for parenteral transmission were 75% and 37%. A more detailed analysis will be presented at the Conference.
Conclusion. Although the low response rate limits the value of the results it seems that in Italy there is a good general knowledge about AIDS even though more efforts should be made in the area of actual prevention of the spread of the disease.

T.E.P.27

THOSE AFFECTED BY AIDS TREATED AS OUTSIDERS; CONSEQUENCE OF MISINFORMATION.

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Ministery of Health.-Spain.

Objective. The strategy of information based on the relationship of AIDS= Death, the difusion of the concept of groups at risk... has led to the creation of a stereotype of AIDS whose extremely negative social consequences lead to social segregation of the collective social groups susceptible to becoming affected, and to the nihilism and fatalism of those who suffer it.
Conclusion. It is absolutely necessary to change this one way communication code that encourages uncertainty and fear, for a double communication code that simultaneously defines the healthy stages of the syndrome on one hand, and on the other hand the individual and collective behaviour that the individual carrier as well as the non-carrier should adopt at each stage of the illness.

T.E.P.28

NEEDS OF FAMILY CAREGIVERS OF PERSONS WITH AIDS

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Objective. To determine the social and educational needs of family members of adult male persons with AIDS (PWAs).
Methods. A detailed needs-assessment questionnaire was designed, pre-tested, and administered to 50 family members. In addition, a focus group of bereaved family members was conducted to identify needs associated with terminal stages of AIDS. Family members surveyed included mothers, fathers, sisters, brothers, and wives of adult male PWAs.
Results. Specific needs of the family were related to duration and severity of the PWA's condition. Early in the course of the disease, families wanted information on AIDS transmission and prevention, their own risk, treatments, who to tell, and homosexuality. In the middle period they were more concerned about communicating with their PWA and health-care providers, how to nurture an adult without increasing dependency, what the future held, behaviors of their PWA such as moodiness or forgetfulness, depression (theirs and their PWAs), and care resources and skills. Some bereaved caregivers wanted more concrete information about legal issues, preparing for death, funerals, management of religious issues and conflicts, emotional changes to expect, survivor guilt, managing grief, and determining how much information to disclose to whom. After death, a major concern of a significant portion of families was how to most effectively fight AIDS; others wished to retreat from involvement in AIDS. Need for family and social support occurred throughout the process.
Conclusions. In order to most effectively serve their needs, programs targeting family caregivers should be tailored to the stage of HIV infection in which their relative with AIDS currently finds himself.

T.E.P.29

THE MALE COUPLE: A CASE STUDY

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Reliable social science research indicates that over 50% of gay men maintain committed, intimate relationships for one to five years. Other studies and clinical reports document relationships between gay male partners lasting from five through fifty years. What is surprising is the number of male couple relationships that manage to survive and endure in the face of institutionalized, social, and internalized homophobia. Gay male relationships lack legal and religious sanctions and are often unsupported by the partners' families.

This presentation will discuss the impact of a diagnosis of HIV infection/AIDS on one male couple and the stresses this created on their relationship. Some of these stressors included: addiction to prescription drugs, disclosure of the illness to others, resurgence of internalized homophobia, concern with sexual and physical intimacy, depression, financial problems, dementia and a suicide attempt.

Conflict between the couple and the PWA's mother accelerated. Excerpts from an audio tape sent by the PWA's mother graphically depicted her anger, hostility, and homophobia towards her dying son and his lover.

This case study illustrated the multi-dimensional challenges endured by the couple, and how they managed to maintain their relationship when faced with a diagnosis of AIDS.

T.E.P.30

AIDS PREVENTION AS COMMUNITY INTERVENTION

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Background: Behavioral change requiers not only information but possibilities to integrate the information through discussion with trusted peers and adults. Stockholm county has around 250.000 teenagers.

Objectives: To make adults who meet teenagers in their everyday life as professionals, privately or as volunteers prepared to discuss and give information on sex and relationships, STD and AIDS.

Method: Through using the existing infrastructure, massive outreach was possible in short time. Partnerships were formed with local authorities and organisations. The project offered training, service, support and follow up. During 2 years 3.500 people were trained: teachers, schoolnurses, youth leaders, priests, social workers, PTA-members e t c.

Results: 98% of all schools for 13-20 year olds have sex-education including info on STD and AIDS. Numerous youth clubs have developped discussiongroups on sex and relationships. New youth clinics are established. Local plans are being developped.

T.E.P.31

The hiv-epidemic: Attitudes towards public preventive measures in the Norwegian population. J. Rise & P. Kraft, National Institute of Public Health, Oslo, Norway

Several public preventive measures have been debated in Norway in order to combat the hiv-epidemic: Coercion against the so-called risk-groups and hiv-infected persons, different hiv-antibody testing designs, revelation of the identity of hiv-infected persons, and regulation of sexual behavior. Eleven statements were constructed in order to tap the attitude structure of these issues in a nationwide interview survey in March 1988 in 1100 Norwegians aged 15 and above. A factor analysis produced three attitudinal dimensions which may be denoted: "Prohibition", "Coercion", and "Testing". The "Prohibition" dimension was strongest and explained 24.6% of the variance, the "Coercion" and the "Testing" dimensions explained each 5.1% of the variance. Norwegians were most negative against use of coercive measures and most positive towards testing measures. The three dimensions subsequently served as dependent variables (Alpha=.60)in a multivariate model. Age, knowledge, political preferences, and worry about infection were the strongest predictors (R^2=.15-.22). In conclusion, the results indicate that in addition to being associated with factors related to hiv-aids and psychological factors, attitudes towards public preventive hiv-measures is a controversial issue impinging upon the religious-moralistic axis as empirically observed in Norwegian politics.

T.E.P.32

AIDS in Barbados

Prof. E. R. Walrond, Chairman, National Advisory Committee on AIDS, Barbados

Barbados is a small independent island country in the Southern Caribbean with a population of 250,000. The population is well educated and has good internal and external communications. The island has 400,000 tourist visitors a year, and this is one of the mainstays of its economy.

The first indigenous case of AIDS was reported in late 1984, and the local medical association and the Ministry of Health moved early in 1985 to establish general and health professionals education and the screening of donated blood. The epidemic has been similar in pattern to that in the Western world with predominantly male homosexuals affected at first, with increasing heterosexual transmission thereafter. The prevalence of the disease is similar to that of the United States.

Aspects of the education programme to send simple direct messages without an overwhelming message of death are described. Evidence is presented that the messages are being remembered, they may have however led high risk individuals to use the blood donation service to obtain testing free and without counselling. The limited evidence obtained is used to direct specific changes in education and practise related to AIDS education, prevention and cogtrol.

Politiques sociales
Social Policy

T.E.P.33

COMMUNITY PARTICIPATION IN THE DEVELOPMENT OF A FIVE YEAR PLAN ON AIDS;NEW YORK STATE'S PROCESS AND SIGNIFICANT FINDINGS

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Objective.To describe the process that allowed New York State to incorporate community analysis of AIDS related problems in the Governor's Five Year Plan on AIDS and to summarize significant recommendations.
Methods.A series of nine Roundtable discussions were held with health and human service providers,advocacy groups,community based organizations,and persons with HIV infection.Roundtables were charged with identifying AIDS related issues,prioritizing those issues and then developing recommendations.
Results.A total of eighty recommendations emerged from the Roundtable process.A significant outcome was that separate roundtables often developed similar recommendations,thereby strengthening these proposals.Included among these common recommendations were:to increase access to a wider variety of services(drug treatment,social services,etc)in primary care settings,provide ongoing training to professionals so they may be sensitive to the needs of different populations,provide services to families,develop and refine educational materials with the targeted community's assistance,increase access to information and clinical trials and identify sources of alternate levels of care.
Conclusion.The roundtable discussions were a useful means of identifying important issues and proposing specific recommendations,State agency planners gained valuable insight into "frontline" needs,and community representatives expressed satisfaction with the dialogue that was established.

T.E.P.35

A FEMINIST VIEW OF AIDS: POLICY IMPLICATIONS OF THE SOCIAL CONSTRUCTION OF A DISEASE

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Many policy decisions affecting HIV positive women in the US are informed by inexplicit principles and covert perceptions which obtain to women specifically and differently from men, but may not be consciously available to policy makers. These decisions result in prevention strategies with limited likelihood of success: i.e. approaches which mirror previously unsuccessful campaigns like many current efforts to decrease the rate of teen pregnancy. These policies may have widespread implications for gender definition, sexual autonomy and reproductive choice among women at risk for infection as well as women, who because of class and race (categories frequently used as proxy for risk in the absence of known behavior) disproportionately experience their impact. North American feminist analysis provides a framework to understand these underlying principles and evaluate their policy implications. Feminist experience utilizing concepts like empowerment may provide new directions in policy and prevention.

T.E.P.34

PATIENTS' PREFERENCES FOR LOCUS OF CARE AND FOR ACTIVE TREATMENT: PRELIMINARY RESULTS OF A MULTI-SITE STUDY

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Objective. To describe preferences of people with AIDS for care at home and for continuing active treatment in the face of severe symptoms.
Methods. Personal interviews were conducted with 257 clients of the Robert Wood Johnson Foundation's AIDS Health Services Program in 9 cities in the US. We assessed patients' preferences for home treatment (e.g., dying at home, being treated at home, being home with unreliable medical care access) and for active treatment in the face of severe symptoms (e.g., constant nausea, incontinence, disfigurement, life support dependence). We compared responses by risk group and by whether the patient had recently been hospitalized.
Results. Nearly 90% want to die at home; 75% prefer living at home even if dirty to living in group quarters; and 63% prefer being home even if access to medical care is more complicated than getting therapy in a hospital. Patients' willingness to endure complications of aggressive treatment had 3 clusters: common symptoms, which 55-65% would endure; functional dependence and disfigurement, which 31-41% would take; and life support dependence, which only 8-12% would put up with. Only small differences by risk group were observed, and recent hospitalization was unrelated to preferences.
Conclusion. Patients' preferences for home-based care are consistent with social norms and should be considered in program planning. Preference for aggressive treatment varies as a function of the anticipated consequences.

T.E.P.36

The Social Correlates of AIDS Bigotry, Causes for Concern

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Objective. To explore the social correlates of AIDS bigotry (negative attitudes toward persons with AIDS) among American citizens and to investigate the implications it has for the rights of persons with AIDS and policies directed at persons with AIDS.
Method. Data from the General Social Survey were examined using multiple regression analysis in an effort to determine what were types of people were most likely to display AIDS bigotry.
Results. AIDS bigotry was not easily explained by the variables traditionally used in social science research. Among the strongest indicators was the overall level of education, but this too was minimized when personal contact issues, such as whether or not AIDS testing should occur before marriage, were introduced.
Conclusion. This investigation has implication for policy makers because it demonstrates that general programs (those designed to reach the most people such as mass mailings or television shows) may not be the best method to use. It is clear that programs must be designed to address issues that are of concern to the public, but that program designers and policy makers are well advised to study just what they mean by "public."

T.E.P.37 L'INFECTION PAR LE V.I.H : ANALYSE DES AXES DE LA POLITIQUE DE SANTE DES POUVOIRS PUBLICS (PP) EN FRANCE.

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Objectif : Identifier les axes de la politique de sante des Pouvoirs Publics (PP) et en reperer ses forces et ses lacunes par une demarche systematique et quantifiee.
Methodes : Tous les textes (2 lois, 5 decrets, 7 arretes, 37 circulaires) elabores entre le 2o juin 83 et septembre 88 en reponse a l'epidemie, ont ete examines par une methode d'analyse de contenu, basee sur le schema de communication de Lasswell. Les donnees informationnelles contenues dans les textes sont analysees selon une grille de lecture, support de la classification thematique de ces informations.
Resultats : La production par les PP, des actions de sante en reponse a l'epidemie evoluent selon un modele epidemique (3eme epidemie, J.Mann) : les interventions emises par les PP ont augmente d'un facteur 10,7 entre 83 et 88, avec deux pics un en 85 en relation avec la mise sur le marche des tests de depistage des anticorps anti-VIH et un en 88 en relation avec les services mis en place pour promouvoir l'acces au test (T) et a l'information (I).
L'analyse des tendances des programmes de lutte contre le VIH en unites d'information (UI), montre que : depuis le debut de l'epidemie, 23,3% des UI (soit 220UI/944) sont consacrees aux mesures preventives(MP), 20,7% (195UI) a l'acces au T, 16,9% a l'information, 7% a la Formation des professionnels. Entre 83 & 85, les actions sont dominees par les MP sur dons de sang, en 86 par la Surveillance Epidémiologique et en 87 par l'acces au T.
Les services administratifs ayant participe a la gestion du sida appartiennent au ministere de la sante pour 84,4% et de la justice pour 5,2%.
Conclusion : Une analyse de ce type permet d'objectiver les grands axes des interventions des Pouvoirs Publics Francais, dans la lutte contre l'infection par le VIH et d'en evaluer les objectifs de sante publique. Elle reste a comparer les politiques des autres pays europeens, afin d'en reperer les manques et agir en consequence.

T.E.P.38 SEXUAL AND INJECTING RISK BEHAVIOUR AMONGST DRUG USERS IN BIRMINGHAM, ENGLAND

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Background: Birmingham is Britain's second largest city, but no authorized source of free sterile injecting equipment is yet open for drug users. Drug treatment agencies claim low levels of injecting amongst users in the city.
Project: Outreach workers initially investigated the extent of injecting amongst female prostitutes, finding 25% who had either themselves injected or had a boyfriend who injected. 190 injecting drug users (male and female, prostitute and non-prostitute) were then interviewed using the same informal networks as were used to contact prostitutes.
Results: In the month prior to interview 80% had injected and 50% had shared injecting equipment. 85% had shared in their lifetime. 32% of males had shared in prison. 75% claimed to clean their injecting equipment, but cleaning methods varied greatly. 8% had shared in Scotland since 1983 when HIV is known to have been present in Edinburgh. 34% of females and 6% of males had prostituted. 16% of males and 11% of females recorded homosexual contact. Condoms were never used with 70% of recorded partners. 45% of partners were current or previous injectors. 31% had been HIV tested, but only 8% were tested in Birmingham. Most avoided local drug services.
Conclusions: i) both sexual and injecting risk behaviour is common amongst injectors in Birmingham; ii) local testing and treatment centres have inadequate information relating to HIV and injecting because injectors do not contact local agencies.

T.E.P.39 AIDS-RELATED KNOWLEDGE, ATTITUDES AND BEHAVIOR OF HOSPITAL ADMINISTRATORS AND PHYSICIANS: A COMPARATIVE ANALYSIS

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Objective. To describe differences and similarities of AIDS-related knowledge, attitudes, and behaviors between physicians and hospital administrators located at one hospital.
Methods. In September 1987 an anonymous survey was delivered to all physicians and administrators at a 455-bed acute care teaching hospital. Included in the survey were scales measuring AIDS-related knowledge, attitudes, behaviors, homophobia, and homosexual bias.
Results. Responses were obtained from 167 of 270 MDs and 77 self-described administrators. The two groups did not differ significantly in age (mean = 38.4 yrs); race (96% caucasian); and sexual preference (97% self-described heterosexual). MDs were more often male (121/166; 73%) than administrators (24/77; 31%; p<.0001). A comparison of MDs vs. administrators revealed that MDs possessed higher AIDS-knowledge scores (p <.001) and tended to report more favorable behaviors related to AIDS patients (p = .075). The 98 males from the two groups combined possessed higher AIDS-knowledge scores (p < .001), less desirable attitudes towards AIDS patients (p = .066), were more homophobic (p < .001), and more biased against homosexuals (p = .083) than the 145 females.
Conclusion. Administrators in this study demonstrate lower AIDS transmission knowledge than MDs, as might be expected, as well as less desirable behaviors in relation to AIDS patients. The higher knowledge scores among males is likely due in part to the high percentage of MDs being male. In spite of a higher AIDS-knowledge level, men were more homophobic and possessed less desirable attitudes towards AIDS patients. Those who deliver AIDS education in health care setting should consider these findings. Since health care administrators play a key role in policy and financial decisions, they should be considered when AIDS inservice education programs are developed.

T.E.P.40 HIV COUNSELING FOR WOMEN POLICIES AND PROGRAMS

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Objective. To describe the New York State Department of Health Policies, Programs, and procedures on HIV counseling for women and the response of two types of programs providing family planning and prenatal care services.
Methods. A review of documents, protocols, suggested guidelines and policy statements emmanating from the NYS DOH planning and prenatal care services. Interviews of the Directors and selected staff members of two major providers of Community based services obtained information as to constraints and incentives to introducing HIV Counseling and testing in the programs.
Results. Constraints: staff time and attitudes, financial, concerns about confidentiality, negative impact on clientele and lack of knowledge and skills. Incentives were: realization of risk for clientele served, staff training and reimbursement for Counseling activities. A perception that state policies emerge without adequate consultation with program people was common among providers. As a result a more interactive model is being developed.
Conclusion. Interactive models incorporating providers into policy and program development processes spur greater program activity.

T.E.P.41 DEVELOPING LONG-RANGE AIDS PLANS IN NEW YORK CITY AND SAN FRANCISCO

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Objective: To compare approaches to and problems with AIDS planning in New York City (NYC) and San Francisco (SF).
Methods: We reviewed long-range AIDS plans developed in the two cities in 1987-88 and analyzed problems encountered and common approaches.
Results: NYC has developed two plans, one from an intragovernmental committee which focused on public sector service development and one from a public-private task force which emphasized service development across sectors. SF developed a single plan involving community-based organisations which combined epidemiologic projections and fiscal aspects and public and private sector service development. Common problems were projecting future health care costs, accounting for potential improvements in treatment technology, and estimating utilisation of proposed services not currently available, such as care for patients with earlier stages of disease, supported housing, and adult day health care.
Conclusion: Both cities are experiencing increased pressure on their AIDS health care delivery systems creating competition with other services. Long-range AIDS planning requires careful epidemiologic analysis, thorough community participation and review, and detailed service utilization and cost data.

T.E.P.42 FACTORS ASSOCIATED WITH WILLINGNESS TO ENTER DRUG TREATMENT

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Objective. To identify factors associated with Seattle-area intravenous drug users' willingness to enter treatment.
Methods. A street sample of 78 out-of-treatment intravenous drug users was selected from Seattle's Central Area using modified chain referral techniques. Respondents were interviewed using a revised version of a structured survey instrument that had been used previously in San Francisco, California. Preliminary analysis was conducted using cross-tabs. A multivariate analysis will be conducted using logistic regression.
Results. More than half (57%) of those sampled indicated that they would be willing to enter treatment if a place were available. An additional 9% said they would be willing to enter treatment if certain conditions were met (for example, if the form of treatment provided were methadone treatment or if childcare were made available). In a preliminary analysis, demographic characteristics, socioeconomic characteristics, and attitudes about and experience with treatment were all associated with willingness to enter a treatment program.
Conclusion. The preliminary analysis suggests that community health outreach workers can effectively target certain kinds of intravenous drug users to encourage entry into available treatment slots. Recruitment of others may require changes in the kinds of treatment and other services offered. In Seattle-King County, changes to be made may include simplification and centralization of the current treatment intake system, offering of on-site child care, and integration of vocational programs with treatment offerings.

T.E.P.43

Current Utilization of Inpatient Alcohol and Drug Treatment Services in a Cohort of IV Drug Users.

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The ALIVE Study. The Johns Hopkins University, Baltimore MD. USA.

Objective. To determine the current utilization of inpatient drug and alcohol treatment services in a cohort of high risk IV drug users (IVDUs) and to correlate current utilization with serostatus.
Methods. A cohort of IVDUs, recruited by community outreach, were enrolled in a longitudinal study of HIV infection. Participants were queried concerning their utilization of inpatient drug or alcohol treatment services within the prior six months. Utilization of services was correlated with HIV serostatus.
Results. Among the group of 305 respondents, 21% were HIV seropositive (ELISA and WB confirmed). Forty-four (15%) had been an inpatient in a drug or alcohol detoxification program within the previous six months.
Four (9%) of those in drug or alcohol treatment, versus 59 (23%) not in treatment were seropositive ($p <.08$).
Conclusion. Although based on a self-selected cohort, these data indicate that the majority of individuals currently in inpatient detoxification are seronegative and suggests that prevalence estimates derived from inpatient samples may have underestimated true prevalence. Also, of additional concern, HIV positive IVDUs may not be receiving needed drug treatment.

T.E.P.44

THE SOFT UNDERBELLY OF RESEARCH: ADMINISTRATIVE AND COST CHALLENGES IN A STUDY OF HETEROSEXUAL HIV TRANSMISSION

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Objective. To enroll up to 3000 heterosexual adult volunteers in a cross-sectional seroprevalence study of HIV transmission, and up to 1000 high risk heterosexuals in a prospective cohort study.
Methods. Recruitment, beginning in early 1988, has involved establishing multiple outreach and referral sites at hospital-based HIV clinics, community service agencies, drug and STD treatment facilities, and other agencies serving HIV+ high risk populations. Publicity efforts have included public service announcements for TV and radio, newspaper ads, brochures, bookmarks and matchbooks. Participants are offered free physicals, counseling, HIV testing which includes p24 antigen and T-helper lymphocyte screening for HIV+ persons, and medical and social service referrals, but are not paid.
Results. In the first 10 months, 215 people (109 women and 106 men) have enrolled. The effort required to reach and inform a variety of intended high risk audiences, some of whom do not speak English and many of whom are not motivated to be tested, is labor-and cost-intensive. Developing public relations has been expensive, requiring creative, low-budget approaches and reliance on limited broadcast community service initiatives.
Conclusion. Research and voluntary testing programs need extensive resources in order to reach, inform, and motivate populations at risk for HIV infection. Creative strategies are needed in order to maximize limited resources, overcome cultural barriers to research in general, and to deal with the anxieties that people have about HIV testing and research.

T.E.P.45

NEW JERSEY'S EMERGENCY RETROVIR REIMBURSEMENT PROGRAM - EVALUATION OF ITS AFFECT ON SURVIVAL TIME

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Objective: New Jersey received $1.5 million and subsequently $996,000 from Congress to provide antiviral drugs for low-income people with HIV infection lacking public assistance, enough to provide for about 175 person years of AZT (Retrovir). This study's objective is to determine the characteristics of persons receiving the drug through this program, to compare then with persons receiving the drug through other programs and to determine the effect of AZT on length of life of recipients.
Methods. Confidential records from the entitlement programs was compared to information from the State AIDS Registry. Demographic and diagnostic variables were matched between two samples: those receiving the drug through the various entitlement programs and those on the Registry who were not receiving the drug. On the basis of the Registry, length of life was studied. 544 persons receiving AZT through entitlement programs was compared to 5153 persons on the State AIDS Registry.
Conclusions. The demographic profiles of the two sample groups were fairly well-matched. However, analysis identified a need for further outreach to black males, who were under-represented in the AZT population as compared to the State AIDS Registry. This study also presents an analysis from a broad public policy perspective that complements existing medical literature.
Results. Analysis suggests an effect of AZT on persons on the various entitlement programs in terms of increased length of life, when compared to survival time of a comparable sample of individuals from the State AIDS Registry. 71% of AZT recipients were alive at the end of the study period, compared to 36% from the State AIDS Registry sample not receiving AZT through these programs.

T.E.P.46

POLITIQUE D'INTERVENTION MUNICIPALE DE LA VILLE DE MONTRÉAL RELATIVE À LA PROBLÉMATIQUE DU SIDA.

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Objectif: Présenter la politique municipale de la Ville de Montréal relative à la problématique du SIDA.

Contenu: La Ville de Montréal a décidé d'intervenir à l'intérieur des quatre rôles qui lui sont dévolus en ses qualités d'employeur, d'entreprise de services, de gouvernement municipal et d'agent de concertation afin de: 1) freiner la progression de l'épidémie; 2) réduire les conséquences sociales infligées aux personnes atteintes; 3) favoriser l'implantation des ressources susceptibles de répondre aux besoins engendrés par la maladie.

Outre l'adoption d'une politique qui identifie clairement les intentions de la Ville par rapport à ces quatre rôles, la Ville entend mettre en oeuvre les six mesures concrètes suivantes:
1- préparation et diffusion d'un programme d'information pour ses employés;
2- préparation et diffusion de programmes de formation adaptés à l'usage des employés de première ligne afin qu'ils puissent effectuer leur travail de façon sécuritaire et respectueuse des droits de la clientèle sidéenne;
3- mettre à la disposition de la population la documentation relative au SIDA et à sa prévention;
4- affichage obligatoire dans certains établissements publics de mesures de prévention contre le SIDA;
5- l'élimination des obstacles à l'établissement des ressources aptes à répondre aux besoins spécifiques issus du SIDA;
6- la participation à la concertation des différentes actions entreprises sur le territoire de la Ville en vue de contrer le SIDA.

T.E.P.47

RECENT CHANGES IN SEXUAL BEHAVIOR AMONG MEN IN LOS ANGELES

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Objective: To assess the changes in sexual behavior among homosexual and heterosexual men in Los Angeles over a 2-year period.

Methods: Random-digit dialing telephone calls were placed to residences; men ages 18-60 were eligible to be interviewed. Households in census tracts with higher than average rates of reported cases of AIDS were oversampled. Results are weighted to reflect oversampling.

Information on sexual orientation numbers of sexual partners, and other risk-related behaviors, were gathered for 2 time frames: the past 2 years and the past 3 months.

Results: Significant differences are found between homosexual and heterosexual men in terms of numbers of partners and presence of other risk-related behaviors (over half the homosexual men in the study reported having 4 or more sexual partners in the past 2 years (1986-1988), as compared with less than one quarter of heterosexual men.

Sexual activity and increased risk behavior was significantly reduced for both groups over the past 3 months (March-June 1988), although a higher percentage of homosexual men remained highly sexually active.

T.E.P.48

SCIENCE AS A POLITICAL FORCE: THE CASE OF THE AIDS EPIDEMIC

Smith, Stephen C., Human Rights Campaign Fund, Washington, D.C., USA

Objective. To draw the lessons of the AIDS crisis for the role of science and scientists in political life.
Methods. The author -- who has devised political arguments and strategies for AIDS policies based on scientific advice -- will review relevant literature in the history of science.
Results. Most modern political-economic systems claim to be "scientific," and science has greatly reduced the forces that most excite human fears -- poverty, violence, and disease -- but public understanding of science has not progressed at the same rate. Scientists are not well represented among policymakers nor in the general public. Thus, the average person, even in "developed" countries today, often responds to their basic fears from superstition or pseudoscience, not scientific thinking.
The public and political response to the AIDS crisis demonstrates the results: many people are reluctant or unwilling to accept the advice of science on scientific questions -- e.g., modes of transmission. Policies may thus be based on an unscientific response to fear, and may be counterproductive -- not only in addressing the problem at hand, but in developing a scientific outlook on the common challenges of human society.
Conclusion. Scientists must become more actively involved in political life and the formulation of policy.

T.E.P.49 THE REFERENCE AND TRAINING CENTER ON AIDS,SÃO PAULO BRAZIL.

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Objective: In February 1988 the secretariat of Health, of São Paulo, Brazil created a reference and Training Center in an 8 floor building to bring together the state Aids Prevention and Control Plans. The Center is composed of: The surveillance UNIT, the educational and Training UNIT, a day care hospital, an out pacient clinic, a laboratory UNIT, a Central for hospitals beds vacancy and a multiprofessional home care unit.
Methods: A multiprofessional TEAM with experience on Aids Since 1983 established the policy of Aids Prevention and Control in the state of São Paulo and descentralized the information on Surveillance, Education, Pacient care to the 62 health regions. Consultant is being done to all 62 health regions.
Results: 3.000 patients are followed in average/per month in the out patient clinic.
. HIV patients from all state are being followed in 75 different health care units after training.
. 2110 health care providers and community leaders were trained in 1988.
Conclusion: The reference and Training Unit Permitted the implementation of the policy Aids Prevention and Control in the State of São Paulo.

T.E.P.50 A STUDY OF NATIONAL AIDS/HIV POLICIES AND PROGRAMMES IN THE 32 COUNTRIES FOR THE EUROPEAN REGION

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Objective. To describe and evaluate national AIDS/HIV policies and programmes in the European Region and identify strategic lessons for national AIDS/HIV prevention, control and care policies.
Methods. An analytical review, using guidelines of good practice developed by the Global Programme on AIDS, of material from representatives of national governments. Preliminary results substantiated through formal and informal contacts with persons in and outside of government.
Results. National AIDS Committees and other national coordinating mechanisms that are multi-disciplinary and include participation of Non-Governmental Organizations initiate AIDS/HIV policies that appear to achieve a greater degree of effectiveness in HIV prevention and ensuring a continuum of care.
Conclusion. The presence or absence of explicit policy is not necessarily the measure of the effectiveness national AIDS/HIV programmes. Effective policy and programmes appear to be strongly influenced by the mechanism by which they are formulated and implemented. As such, and lacking comprehensive measures of HIV-seroprevalence, the policy process and application in practice must be evaluated to estimate impact.

T.E.P.51 PROVIDING ACCESS TO PROMISING INVESTIGATIONAL DRUGS FOR AIDS: A MANAGEMENT MODEL FOR "TREATMENT INDS"

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One of the primary goals of the AIDS Program, NIAID, is the rapid transfer of new therapeutic advances from the clinical research setting to the community of treating physicians. New federal regulations (6/22/87) defined a mechanism for access by any licensed U.S. physician to promising investigational new drugs (INDs) that have evidence of safety and provisional evidence of efficacy in serious of and life-threatening diseases. These "treatment IND" protocols provide access by any licensed U.S. physician to such therapies.

We have employed "treatment INDs" as part of our overall strategy for rational drug development, and have created a successful management model for their design and implementation. The key components of this model, to be discussed in detail, are: (1) establishment of a telephone information capability (hotline), (2) protocol design, (3) physician education, (4) triage and enrollment process, (5) drug distribution system, (6) data capture and retrieval, and (7) analysis of results.

The AIDS Program has sponsored the only 2 such "treatment INDs" for AIDS indications. While each novel therapy for AIDS patients presents unique medical and logistical problems, we have successfully developed a strategy for "treatment INDs" which allow access to new agents and collects data on their use while meeting U.S. regulatory requirements.

T.E.P.52 DISCRIMINATION AGAINST HIV POSITIVE WOMEN BY ABORTION CLINICS IN NEW YORK CITY.

Franke, Katherine M. New York City Commision on Human Rights, AIDS Discrimination Division, New York, N.Y. USA.

Objective. To document discrimination against HIV positive women in access to abortions in New York City.
Methods. Test calls were placed to 25 abortion clinics. After an appointment was made for an abortion, the caller revealed that she was HIV positive.
Result. Of 25 clinics surveyed, 16 (64%) would not schedule an abortion for a woman who reveals she is HIV positive.
Conclusion. Many health care professionals who perform abortions in New York City manifest open hostility toward HIV positive female patients and remain poorly educated on the need to use universal infection control precautions, thereby violating various public health and anti-discrimination laws.

T.E.P.53 PSYCHOSOCIAL ADAPTATION AND ECONOMIC CIRCUMSTANCES OF PERSONS WITH AIDS OR ARC

Crystal, Stephen*; Jackson, Marguerite**
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**School of Medicine, University of California, San Diego, CA, USA

Objective: To evaluate how persons with AIDS (PWA) and persons with ARC (PWARC) meet their economic, social and medical needs
Methods: 50 PWA and 54 PWARC were surveyed in San Diego County, California, between October 1986 and February 1987.
Results: Social and economic impacts of the disease had been profound for both groups. PWARC reported more unmet needs than did PWA. Both groups reported their greatest unmet needs as financial. A majority were no longer employed; 84% of nonemployed PWA but only 41% of nonemployed PWARC were receiving Social Security disability or SSI, and many nonemployed PWARC had little or no income. Most PWARC lacked Medicaid or other health insurance coverage.
Conclusion: Health care and social services systems will be increasingly challenged not only by needs of PWA but by severe unmet economic and medical needs of an even larger population of PWARC.

Rôle des organismes non-gouvernementaux
The Role of Non-Governmental Organizations

T.E.P.54 CANADIAN HEMOPHILIA SOCIETY: A PLANNED RESPONSE TO HIV AND AIDS

Robert O'Niell, Nena Nera, M.Sc.S.W., C.S.W., Canadian Hemophilia Society; Social Services Advisor, Federal Centre for AIDS, Health and Welfare Canada, Ottawa, Canada

This presentation will describe how a consultative planning process model used by the Canadian Hemophilia Society (CHS) to deal with HIV and AIDS has resulted in an effective response to the crisis.

CHS created a "Task Force on HIV and AIDS" in 1987, comprising of a non-medical and medical group. The four-step planning process followed by these two groups to develop a comprehensive response to the HIV/AIDS catastrophe will be presented and discussed.

The numerous positive effects and substantial results of this well coordinated planning process will be shared at this conference.

T.E.P.55 CANADIAN HEMOPHILIA SOCIETY: A COLLABORATIVE MODEL APPROACH WITH A NON-GOVERNMENTAL ORGANIZATION (NGO)

Nera, Nena M., Shearer, R. J. Federal Centre for AIDS, Health and Welfare Canada, Ottawa, ON, Canada

The devastating impact of HIV/AIDS did not make its mark only to the consumer group but had as much if not stronger impact on the Canadian Hemophilia Society as an organization.

In early 1986, shortly after the Minister of Health and Welfare, Canada, announced its five-year national program, the then National AIDS Centre met with the Canadian Hemophilia Society to analyse the impact of HIV/AIDS on the hemophilia community. The effects of blood products, HIV testing and psycho-social needs of individuals/families with hemophilia became of paramount concern.

With the establishment of the Federal Centre for AIDS in July, 1987 both the Canadian Hemophilia Society and the Federal Centre for AIDS looked at various approaches to meet identified needs of the hemophilia community.

This presentation will not only describe the step-by-step process which evolved in this collaboration with a non-governmental organization, but will also present the achievements derived from such a partnership. The benefits derived by the Society as an organization; the community members as individuals, families and support groups, as well as a general community; and the benefits derived by a governmental agency in the response to the AIDS crisis will be described.

T.E.P.56 ROLE OF THE UNIVERSITY: EDUCATION, RESEARCH, POLICY AND SERVICE

Berman, Caryn*; Cooksey, J.A.*
*University of Illinois at Chicago, Chicago, Illinois, U.S.A.

Objective: To describe a role for an urban university in AIDS education, research, policy and service.
Methods: The University of Illinois at Chicago appointed an AIDS Advisory Council in 1987 with the charge: encourage AIDS-related instruction and prevention programs; promote research; advise on policy; and develop community outreach. Faculty, students, employees and administrative members developed an organizational plan, identified priorities and carried out the charge through several working groups.
Results: Education - highest priority; distribution of printed AIDS awareness materials; peer education programs for students. Research - information and interest sharing; quarterly research forums combine biologic and social scientists; newsletter listing all AIDS grant programs. Policy - campus level policy; addressing nondiscrimination, no mandatory testing, educational programs, and currency with legislation and scientific guidelines. Service - community outreach and empowerment; forum on AIDS awareness and resources for community groups in the neighboring area.
Conclusion: A university has many technical, leadership and service resources to utilize in developing an institutional response to the AIDS epidemic. These resources may be productively shared with the community.

T.E.P.57 PRIMARY CARE AT A RESIDENCE FOR PERSONS WITH AIDS (PWAs): BAILEY HOUSE, NEW YORK CITY, NEW YORK

Ramon A. Torres*, Staats J**.
*St. Vincent's Hospital (SVH) and Medical Center, New York, NY, USA.
**Bailey House (BH), New York, NY, USA.

Objective: To describe a pilot program of onsite primary care at Bailey House (BH), a 44 room residence for homeless persons with AIDS in NYC, that emphasized assessment, advocacy, and timely referrals that led to appropriate interventions.
Methods: A 6 month pilot program was instituted at Bailey House in 7/88 to provide onsite medical consultation to supplement the existing team of nurse practitioner, social workers, substance abuse counsellor, and personal care workers. Close association with a local community hospital, SVH, facilitated referrals for diagnostic procedures, hospitalization and/or specialty clinics.
Results: During the six month period 337 resident contacts by the medical/nursing team led to referrals for outpatient therapy for opportunistic infections, including oral candidiasis, PCP, bronchitis/pneumonia, and soft tissue infections. Many were seen in the SVH clinic of the BH medical consultant. Familiarity with the physician appeared to encourage compliance with clinic visits and treatment plan. Other referrals were to emergency rooms, psychiatric clinics, specialty clinics, private MDs, or for transfusions, diagnostic tests, direct admission, or experimental protocols. Inclusion of a physician in the BH team also allowed for administration of intravenous hydration and infusion therapies (in conjunction with and supervised by the Visiting Nurse Service of New York), administration of aerosol Pentamidine, laboratory monitoring, supportive care to terminally ill patients, counselling, and crisis intervention.
Conclusion: Onsite primary care in a residential setting, utilizing the team approach, provides for more comprehensive outpatient management of PWAs.

T.E.P.58 AIDS COALITION FOR EDUCATION (ACE): A BROAD-BASED ORGANIZATION FOR THE COORDINATION OF AIDS EDUCATION, INFORMATION AND PREVENTION EFFORTS.

Balin, Peter L*; Holbrook, D**; Peterson, M***. *Denver Disease Control Service, **Colorado Department of Health, ***Mile High Chapter, American Red Cross, Denver, Colorado, USA.

Objective. To coordinate and avoid the duplication of efforts by agencies in the state of Colorado involved in AIDS education, information and prevention.
Methods. Beginning in July 1986 with 6 members, ACE had grown to 42 members by December 1988. Members include individuals and organizations, public and private, involved or concerned with AIDS educational activities. They include state and local health departments, community-based service organizations, hospices, insurance carriers, state and local school districts, blood banks, minority organizations, and family planning groups. ACE collectively sponsors educational events and maintains a coordinated speaker's bureau data base. In July 1988, ACE incorporated as a nonprofit educational organization.
Results. Members meet once a month to share resources and present work completed and planned. ACE has a 13-member working Board of Directors. ACE has coordinated three annual statewide education campaigns. In 1987, ACE received national recognition for its print media for the theme "EXPLORE THE FACTS". The coordinated speaker's bureau has documented 2078 presentations to a cumulative audience of 110,000 people from October 1986 to November 1988. The data base collects information in 18 fields including topic, type of audience, and educational media used. Smaller, local coalitions have developed as a result of ACE's example, allowing for ongoing regional cooperation and statewide referral.
Conclusions. Given the limited resources available, and the current proliferation of entities involved in AIDS education, ACE has insured the effective utilization of resources, communication among participants, and an effective method for coordination of regional and state activities.

T.E.P.59 UN EXEMPLE DE COLLABORATION ENTRE UNE ONG ET LE PROGRAMME MONDIAL DE LUTTE CONTRE LE SIDA DE L'OMS : LA FORMATION CLINIQUE DANS LES PAYS AFRICAINS.

Malkin Jean E.*; Lebas J.**; Tarantola D.*; Landi A.*.
* Organisation Mondiale de la Santé (OMS), Programme mondial de lutte contre le SIDA (GPA), Genève, Suisse; ** Médecins du Monde (MDM), Paris, France.

Objectif : dans le cadre d'une action spécifique de formation, développer une collaboration entre une ONG et l'OMS s'inscrivant dans les plans nationaux de lutte contre le SIDA dans les pays africains.
Méthodes : à la suite de la signature d'un protocole d'accord entre l'OMS/GPA et Médecins du Monde, six séminaires d'une semaine ont eu lieu,de décembre 87 à novembre 88, dans les pays suivants : Guinée, Bénin, Togo, Cameroun, Gabon, Côte d'Ivoire. Organisés par Médecins du Monde, ces séminaires avaient pour but d'assurer une formation clinique de haut niveau sur le SIDA pour environ 30 à 40 praticiens dans chaque pays, de sensibiliser le corps médical de ces pays aux stratégies élaborées par l'OMS et les Comités nationaux de lutte contre le SIDA (CNLS), d'initier ces praticiens à la prise en charge des malades et des séropositifs.
Résultats : a. Dans les six pays un total de 235 praticiens à haut niveau de responsabilité ont reçu une formation sur le SIDA. b. La collaboration triangulaire entre l'OMS Genève, Médecins du Monde Paris, et les CNLS dans les pays a parfaitement fonctionné. c. Les séminaires ont permis aux intervenants de Médecins du Monde d'établir des contacts étroits avec d'une part les responsables du GPA et d'autre part les responsables de la lutte contre le SIDA dans les pays concernés.
Conclusions : - les ONG peuvent et doivent s'intégrer dans les programmes de lutte contre le SIDA élaborés par l'OMS et les CNLS.
- Cette collaboration dans le domaine de la formation doit continuer et s'étendre à d'autres aspects de la lutte contre le SIDA.

T.E.P.60 A PROPOSAL FOR A PERMANENT INTERNATIONAL FORUM OF NGOs WORKING WITH AIDS

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* Brazilian Interdisciplinary AIDS Association (ABIA), BRAZIL

Objective. To propose the creation of a permanent international forum (PIF) of NGOs related to the AIDS epidemic in order to exchange experiences, articulate activities and programs and increase the effectiveness of each organization.
Method. A list of all NGOs related to the AIDS issue was drawn up and approx. 300 circular letters were sent out by ABIA explaining this proposal to NGOs in Latin America, Central America, Caribe, Europe and USA. It was also suggested that the initial site for this encounter be at the V AIDS CONF. contacts with key persons in various countries were made to compose a steering group to link the proposed forum with Programme Committee and secretariat of the Conference, so that a date and place be set during the event for a first session.
Results. The response to the letters was highly positive, and suggestions were made for a round-table rap session during the Conference.
Conclusions. Many NGOs face insurmountable difficulties establishing network exchange programs within their respective countries as well as across national boundaries. Although they touch the reality of AIDS at grassroot level and can directly mobilize available resources and community support, little has been done to tap this potential in fight against AIDS, mostly in the Third World context. The V International AIDS Conference on AIDS offers a unique opportunity in this direction.

T.E.P.61

SOCIAL MARKETING OF CONDOMS AND SPERMICIDES IN KINSHASA, ZAIRE

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*Population Services International, Kinshasa, Zaire, **Projet De Marketing Social, Kinshasa, Zaire

OBJECTIVE: To increase the availability and awareness of condoms and spermicides. Until 1987 condoms and spermicides were expensive and marginally available in pharmacies, and underutilized in clinics. They were not promoted. Creation of customer demand, affordable pricing, and efficient distribution to wholesale depots, pharmacies and clinics was thought crucial to better utilization.
METHODS: Cooperating with the PSND, Dept of Health, Govt. of Zaire; and USAID, PSI, a not-for-profit organization, set up the Projet De Marketing Social to promote and sell condoms and spermicides at subsidized prices using the commercial infrastructure. The condom,"Prudence", was named, packaging designed; and auto decals and point of sale adverts distributed.
RESULTS:

MKT SURVEY	No. Zones	No. Pharmacies	% CDM,	Sperm on Sale
BEFOR SALES	3	110	54.5	31.8
AFTER 11 MOS	3	110	94.8	100.0

Condom sales increased dramatically from 19,000 1st month to 300,000 units 10th month. Spermicides experienced slower growth.
CONCLUSION: By rapidly increasing sales growth in the private sector social marketing may cause the adoption of more condom use, and consequently have a positive impact on prevention.

T.E.P.62

OBTAINING MULTI-SECTORAL COMMITMENTS TO AIDS PREVENTION THROUGH LEADERSHIP WORKSHOPS IN DEVELOPING COUNTRIES

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Objective. To demonstrate the use of an information and planning workshop for obtaining multi-sectoral commitments to implement Medium-Term Plans for AIDS prevention in developing countries.

Methods. The authors describe developing the idea for engaging all sectors of society in the AIDS prevention effort through a week-long leadership workshop conducted in Bujumbura, Burundi. Representatives of 16 governmental and non-governmental organizations met to discuss and make commitments to the implementation of Burundi's Medium-Term Plan for AIDS Prevention. The participants represented Ministries of Health, Education, Labor, Social Services, Women and Family, Youth/Sport/Culture, Information, three religious denominations, and labor unions.

Results. Pre- and post-tests were administered in conjunction with the workshop, as well as participant evaluations and subsequent follow-up evaluations. Short-term results indicate that mobilizing many sectors of society as possible helps ease some of the burden of Ministry of Health personnel. In addition, it contributes to a coordinated effort and sense of purpose if more people are part of the planning process.
Conclusion. Conducting a joint workshop for leaders from public and private sectors can be one effective way of mobilizing multi-sectoral commitment in a country's AIDS prevention efforts.

T.E.P.63

TITLE. ROLE OF VOLUNTARY ORGANIZATIONS IN DEVELOPING COUNTRIES IN THE BATTLE AGAINST AIDS.

Courtneay, Audrey V. Belize Red Cross, Belize

Objective. i) *Effective dissemination of Facts about AIDS targetting sexually active sector of Community.*
Constraints - a) Restricted human and financial resources
b) Scattered, isolated communities
ii) *Alteration of lifestyles, sexual attitudes, practices and behaviour.*
iii) *Prevention of Public hysteria from Fear of AIDS.*
Method. Involvement of Voluntary Organizations e.g. Red Cross Society/Child Alive Volunteers. Already structured and mobilized to reach target sector quickly and effectively. Familiar with community - enjoys confidence of people.
Results. In (8) eight months, whilst National AIDS Committees deliberated with inevitable bureaucratic restraints the Red Cross trained, promoted messages, and/or distributed leaflets to:

90 - Red Cross Volunteers
37 - Traditional Birth Attendants
964 - Primary and Secondary Students
60 - Members of Community groups also
Distributed 500 Manuals.

Conclusion. Belize's experience proves that without direct involvement of Voluntary Organizations, Governments of developing Countries will not successfully achieve their stated objectives.

T.E.P.64

ABIA: A BRAZILIAN STRATEGY FOR AIDS PREVENTION BASED ON ACTION AND SOLIDARITY

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*The Brazilian Interdisciplinary Aids Association-ABIA, Rio de Janeiro, Brazil.

Objective. To describe the characteristics of ABIA and discuss its strategy and methods in response to Aids prevention and control in Rio de Janeiro.
Method. This report presents an anthropological perspective of ABIA's organization, activities and methods since 1986. Emphasis will be given to the ways in which services are provided, and to the projects designed in antecipation of the future social consequences of the epidemic.
Results. ABIA is a multidisciplinary, non-governmental organization created in response to the problems Aids imposes on the population. Funded by national and international agencies, its approach is action-oriented and carried out by a small professional staff and 60 voluntary members. The basic programs, developed in collaboration with specific groups, provide accurate information in culturally appropriate language to elicit discussion, awareness and action. Emphasis is given to solidarity and community support so as to humanize Aids and reduce irrational fears.
Conclusion. ABIA stands as a effective low-cost model for Aids prevention largely due to its innovative, humanistic and sociocultural approach. Follow-up data will be needed to assess retention of knowledge and behavioral changes over time.

T.E.P.65

OUT PATIENT CLINIC FOR SOCIAL OUTCASTS IN RIO DE JANEIRO, BRAZIL.

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* BANCO DA PROVIDÊNCIA, **BANCO DO BRASIL STAFF, RIO DE JANEIRO.

Objective: In Brazil, male and female prostitutes, beggars, transvestites, drug addicts and street kids are often illiterate and not reached by government AIDS prevention campaigns. Only 40% of them receive any medical care. They are very important vectors for spreading AIDS. Prostitutes and transvestites average 600 different sexual partners per year. A free out-patient clinic located in a "red light" district and specializing in these social outcasts was started in 1985, by the Catholic Church. Routine medical care was dispensed, weekly AIDS prevention lectures were given and all volunteers had their blood tested for AIDS and other diseases, providing data for a study HIV antibody occurrence in these patients. Patients are counselled, with proper follow-up of those who are HIV infected. Current data suggest a gradual decline in number of partners per year and increasing use of condoms.
Conclusion: Other out-patient clinics specializing in care of social outcasts should be started. Besides medical care, social help of multiple aspects should be dispensed by a multidisciplinary staff. Not only the infected but also their relatives should be looked for, in an effort to re-socialize the group. Only through this type of clinic has it been possible to reach and counsel the outcasts who are instrumental in spreading AIDS.

T.E.P.66

PRISE EN CHARGE DES PATIENTS INFECTES PAR LE V.I.H. AU SEIN D'UNE CONSULTATION HOSPITALIERE SPECIALISEE : ROLE DES ASSOCIATIONS DE VOLONTAIRES.

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** Association AIDES. PARIS. FRANCE

Objectif. Favoriser l'insertion des patients infectés par le V.I.H. dans les structures hospitalières et promouvoir, à ce niveau, le counselling et une prise en charge globale.
Méthodes. Au sein de la consultation pluridisciplinaire de l'hôpital Saint Antoine spécialisée dans l'infection à V.I.H., une permanence est assurée par des volontaires d'une association d'aide aux patients (AIDES). Un réseau intra et extra hospitalier comprend des services : d'aide sociale, de conseil juridique, d'appui psychologique et d'information sur l'épidémie. Les volontaires peuvent être contactés par le patient lui même ou par l'équipe soignante. Ils peuvent suivre le malade en hospitalisation ou à domicile. Une évaluation régulière du suivi des patients est assurée avec des services psycho-sociaux de l'hôpital.
Résultats. En 18 mois, 101 patients ont été pris en charge à la permanence d'accueil : 78 hommes dont 14 toxicomanes. 17 femmes dont 9 toxicomanes. La moyenne d'âge est de 30 ans. 67 patients vivent en situation de précarité. Les services suivants ont été assurés : aide économique : 37 cas ; conseil juridique : 17 ; démarches sociales et administratives : 43 ; counselling : 97.
Conclusion. Ces permanences assurées par des volontaires associatifs permettent un véritable accompagnement des patients dans et hors de l'hôpital.

T.E.P.67

SURVEY OF THE CLIENT STRUCTURE OF THE AUSTRIAN AIDS FOUNDATION'S COUNSELLING CENTRE IN VIENNA, JULY 1987-DECEMBER 1988

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Österreichische AIDS-Hilfe (Austrian AIDS Foundation) - ÖAH, Vienna, Austria.

Objective: To give a survey of the composition of the clientele of Austria's most frequented HIV/AIDS counselling centre.
Methods: Evaluation of the 3,600 clients who frequented the Vienna counselling centre of the Österreichische AIDS-Hilfe (ÖAH) between 1 July 1987 and 31 December 1988. This centre is one of seven in a nation-wide network of anonymous and free HIV/AIDS counselling centres operated by the Austrian AIDS Foundation in which teams of psychologists, physicians and social workers offer information and educational work, anonymous personal and telephone counselling, psychosocial help, care and support, and anonymous and free HIV antibody testing.
Results: 64% of these 3,600 clients were men, 36% women; 80% stated that they were heterosexual, 14% homosexual or bisexual; the sexual orientation of 6% was not stated; 87% of the clients decided to have an HIV antibody test, 94% of them tested negative, 6% tested positive. A more detailed presentation concerning factors such as risk behaviour, frequency of visits to the counselling centre, age, etc., will be given at the poster session.
Conclusion: The information and counselling offered by the ÖAH are, to a large extent, accepted both by the general population and by the so-called risk-groups. The ÖAH, however, focusses on the care and support of HIV positive people and PWAs.

T.E.P.68

RECHERCHE D'UNE STRATEGIE DE COMMUNICATION EFFICACE CONTRE LE SIDA

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Objectif. Déterminer pourquoi les reportages et les campagnes de communication n'ont pas réussi à changer les comportements des individus dans les pays occidentaux.
Méthode. Comparaison des études sur la mémorisation des messages et les changements de comportement des individus.
Resultats. Un sondage gallup mondial de janvier 1988 estime que 80% de la population des 40 pays interrogés sont au courant du SIDA. Le taux de mémorisation des campagnes anti-sida en 1988 s'élève à plus de 80%. Mais la crainte d'être contaminée par le virus est de 10% en moyenne. Pourquoi?
1. Le SIDA est la maladie des autres. Les campagnes sont faites pour nous dire comment nous prémunir contre le SIDA mais ne nous disent pas que le SIDA est dangereux pour nous.
2. Les campagnes anti-sida sont confrontees aux valeurs religieuses et sociales de chaque société.
3. Toutes les campagnes qui ont été orientees vers les changements de comportement ont mis de nombreuses années à se réaliser (la cigarette).
4. La résistance des pouvoirs publics à parler de sexe.
Conclusion. Les stratégies média contre le SIDA ne sont pas efficaces car on a sauté l'étape de l'information sur le SIDA pour parler des moyens de s'en prévenir.

T.E.P.69

A 40-HOUR TRAINING PROGRAM ON AIDS FOR PUBLIC HIGH SCHOOL TEACHERS

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Objectives. To train teachers from the public school network on AIDS.
Methods. A 40-hour training program on human sexuality and AIDS was developed by the Education and Training Unit of the Center of Reference and Training in AIDS as a complement to a booklet that would be distributed by the Secretariat of Education of the State of Sao Paulo to public high schools. The program consisted in 16 hours of human sexuality (gender identity, gender role behavior, sexual orientation, childhood sexuality, adolescent sexuality, anatomy and physiology, condom use), 16 hours of AIDS (biological, psychological and social aspects), and 8 hours of teaching methodology and AIDS. The format included lectures, discussion and A-V presentations. A pre and post-test was applied and a subjective evaluation was required from each participant.
Results. 150 teachers were trained in 2 groups. Despite the fact that there was a significant increase in the knowledge about AIDS as seen in the post-test, the majority of the participants did not feel ready to pass the information to colleagues and students.
Coclusion. Training must be followed by a support program.

T.E.P.70

AIDS - NEW TYPES OF PUBLIC HEALTH PROGRAMS IN WEST-BERLIN

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Objective. Most experts agree that in the combat of AIDS only those measures can be effective which consider and accept individual needs and conditions of the different target groups. Public health institutions therefore have to develop new types of programs based on this principle.
Methods. In West-Berlin 3 programs have been implemented in this sense by support of the Working Group AIDS of the Department for Health and Social Affairs at the Institute for Tropical Diseases:
1. Since May 1987 an AIDS Education Program for Schools, carried out by especially trained external doctors and teachers ('schoolworkers'),
2. since May 1987 a 'Prostitution Abandonment Program' for prostitutes in danger of infection from clients; it has been realized in close cooperation with a self-help group for prostitutes,
3. since Oct. 1987 a Mobile Information and Counselling Team (1 doctor, 1 psychologist, 1 nurse and 1 social worker) for the staff of local outpatient services.

Results until Dec. 31, 1988: 1.)About 60 000 students aged from 13 to 22 were given instructions on sexuality and AIDS during normal lessons. Their level of information has considerably increased. 2.)About 100 women could be offered employments which enabled them to refrain from prostitution voluntarily. The drop-out rate amounts to only 7%. 3.)About 1700 staff members of local outpatient services could be motivated and encouraged to incorporate patients with HIV and AIDS into their routine of daily practice.
Conclusion. The obvious success of these new types of measures - all of them are accompanied by scientific evaluation studies - indicates the possibility of developing similar target group-linked programs in other big city areas with large numbers of people with HIV and AIDS. Such programs can possibly serve as prototypes for further public health strategies.

T.E.P.71

AIDS SERVICE ORGANIZATION: LESSONS FOR STRATEGIC PLANNING AND ORGANIZATIONAL DESIGN

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Objective. To identify strategies to deal with the evolving organizational and management issues identified by AIDS Service Organizations as priorities.
Methods. Outcome of a global meeting of AIDS service organization in Vienna, Austria, 28 February - 3 March 1989. Forty organizations from 25 countries were represented.
Results. The capacity of AIDS service organizations to initiate, fund and manage programmes is being reached. Strategic planning and organization design are prerequisites to overcome organizational and management challenges.
Conclusions. AIDS Service Organizations have the.. technical expertise to provide client services. However, their organizational objectives must be clarified, administrative frameworks delimeated and resources better allocated.

T.E.P.72

PLACING EDUCATIONAL INTERVENTIONS WITHIN THE CONTEXT OF COMPREHENSIVE SOCIAL POLICIES TO REDUCE THE SPREAD OF HIV INFECTION.

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Although there are no bio-medical means to either prevent HIV infection or cure AIDS, it is a mistake to assume that the only, or even dominant means available to reduce the risk of HIV infection are educational. Other means which could form the basis for a comprehensive social policy are available. These are both of a "Health Promotion" and a "Health Protection" nature, sometimes combining elements of both in one measure. I propose to consider the following measures as examples of the elemets that can compose such a policy and to consider their implications and ramifications: 1. the direct and indirect use of medico-economic and socio-economic incentives, among vulnareable groups, to promote early testing and recruitment into preventive programs; 2. lowering economic and social barriers to the use of risk-reducing measures; 3. Redeining drug addiction socially as a disease and addicts as ill people, rather than criminals, while keeping un-authorized drug productionn and distribution illegal; and,
4. considering and studying different strategies fo free or at-cost distribution of injectable drugs under medical supervision, within comprehensive programs, as part of the effort to stem the spread of HIV infection among IV drug users.
Among the implications which I intend to discuss are: possible objections from established societal power and professional groups; reactions of organized crime; influence onn drug addiction and on drug-related crimes; and, the influence on disadvantaged groups.

T.E.P.73

AIDS AND THE ROLE OF CIVIC MOVEMENTS. - A COMMUNICATION BRIDGE IN BOTH DIRECTIONS.

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Objective. To the uncertainty which was provoked by the appearance of AIDS,we have to add the prejudging attitude faced with the same,preoccupying more the AIDS-infected than the retrovirus.The affected people were blamed,insisting that they were victims of a "dammned"plague due to their habits.The appearance of AIDS encouraged a serie of already existing prejudices which have been weakened some decades ago,specially in the democratic and pluralistic societies.Methods. AIDS arrived to show us that including in the most liberal and democratic countries,there still were existing population groups who were living marginated and a significant part of their daily existence passes in secrecy.This fact implants the urgent necessity to avoid the spreading of the virus and at the same time we have to integrate socially important human groups in a plan of equality in relation to the whole population,thinking from new estimates about the individual rights and the social obligations.Results. From there we think we should potenciate the civic anti-AIDS movement,because they play an important role as a communicating bridge between the diverse state administrations,the affected and the persons with practices of risk,and this communication.as we understand it,must be fluent,not schematic and the less hierarchic possible,and in both directions.Conclusions. The administrations have to know how to talk to the groups with practices of risk with efficacy in order to infiltrate solidly healthy habits through the information and education.At the same time,AIDS-infected or possibly inf.,need to canalise proposals and claims and this is practical,accesible if one could count on an organizing and independent instrument.

T.E.P.74

SUCCESSFUL COMMUNITY-BASED HIV/AIDS EDUCATION AND INFORMATION PROGRAMS TARGETING RACIAL AND ETHNIC MINORITY COMMUNITIES IN THE UNITED STATES

~~Schindler, Stephen~~*, Murguia, M.**, Gambrell, A.E.**, Nowicki, C.*, Johnson, E.D.**, Bowen, G.S.*, et al. *Centers for Disease Control, Atlanta, GA, U.S.A. ** United States Conference of Mayors, United States Conference of Local Health Officers, District of Columbia, U.S.A.

Objective: To elicit behavior change in people who are at risk of HIV infection by providing financial, programmatic, and technical assistance to community-based organizations (CBO) to enable them to provide HIV/AIDS education/information targeting racial and ethnic minority communities in the U.S.

Methods: Since 1985, The U.S. Conference of Mayors/U.S. Conference of Local Health Officers (USCM/USCLHO), using funds from the Centers for Disease Control, has been providing assistance to CBOs. Since 1987, this assistance has focused on organizations that target racial and ethnic minority communities for HIV education and information. With this assistance, CBOs provide information to targeted groups of individuals (e.g. blacks, hispanics, intravenous drug users, gays, and others at risk of HIV infection), conduct outreach, and perform evaluation of methods and outcomes.

Results: Since 1985, USCM has provided funding and technical assistance to 86 CBOs. Many of these organizations have now become leaders in providing HIV/AIDS education/information at the local level. These organizations serve as models for other organizations in program and materials development, information on methods used in targeting specific populations, information on how to conduct specific activities, and information on collaboration with other CBOs and governmental agencies.

Conclusions: The authors will provide information on programs of specific organizations that developed and implemented "model" programs for HIV/AIDS education/information at the community level, and will describe how these programs were designed and implemented, and how the programs are being evaluated.

T.E.P.75

T.E.P.76

THE STOCKHOLM MODEL- COMMUNITY INTERVENION AS A MEANS TO REACH 1.6 MILLION PEOPLE WITH AIDS PREVENTION

Asp, Anna-Karin, Gustafsson, B., Abascal, L., Urwitz, V.
Stockholm County Council Aids Prevention Project, Sweden.

Objectives: To reach inhabitants of the Stockholm County with health education on HIV/AIDS and support them to change behavior.

Method: To get a quick start we chosed four target groups which we mainly work with; young people, health and medical staff, immigrants/refugees and homo- and bisexual men. We use the existing infrastructure and educate and support people who daily come into contact with our target groups. We work to promote a positive attitude towards sexuality and personal relationships and our aim is to get people to talk to each other on sexuality and feelings. Our method combines community intervention with information strategies and production. We have an information centre to support the about 5.000 people that we have educated within the project e.g. teachers, youth leaders, social workers, school nurses, representatives from the immigrant organisations, home-language teachers, interpreters, health and medical staff, voluntary organisations. We provide them with all kind of information material, seminars, further training, video sessions etc just to keep their interest on top.

Results: We have reached about 5.000 people who work with our target groups. They have started activities among the target groups. For example among the young people 98 per cent of all schoolsfor 13-20 year olds have sex education including information on STD and aids. Our education and information support has started great activitis on the local plan among our target groups. There is also a great interest in getting more help and support from the project and the information centre.

Éducation (partie 2)
Education (Part 2)

W.E.P.1

STRUCTURE OF AMERICANS' KNOWLEDGE REGARDING TRANSMISSION OF HIV INFECTION: IMPLICATIONS FOR TARGETED EDUCATION

Soskolne, Varda, Schnell, DJ., Aral, SO., and Bowen, GS.
Centers for Disease Control, Atlanta, GA USA

Objective: To identify racial and ethnic differences in underlying basic conceptual components of knowledge regarding modes of HIV transmission.
Method: We analyzed responses of 17,696 adults to the AIDS Knowledge and Attitudes Supplement of the 1987 National Health Interview Survey, drawn from a nationally representative sample of households. Underlying components of knowledge about HIV transmission were identified separately for Blacks, Hispanics, and Whites, using principal components analysis.
Results: a) The proportion of correct responses was significantly higher for Whites than Hispanics and Blacks on some items, such as working near someone with AIDS (61%, 55%, 50%, respectively, $p<0.05$), and transmission via mosquitoes (36%, 26%, 24%, respectively, $p<0.05$) b) Despite differences in level of knowledge, similar underlying components, which accounted for the same proportion of total variability, were identified in all three groups. They were: general misconceptions of HIV transmission (explaining 31% of the variability), followed by very risky behaviors (13%), transmission via body fluids (9%), transmission via pets and mosquitoes (7%), and transmission without physical contact with a person with AIDS (7%).
Conclusions: 1) Areas in which Blacks and Hispanics have less knowledge than Whites should be addressed through content specific educational interventions targeted to these groups. 2) Future educational messages should be prepared in accordance with the basic conceptual structure underlying cognition of transmission.

W.E.P.2

AIDS ACTIVISM: A MEANS FOR PRODUCTIVE CHANGE TO PROMOTE CLINICAL RESEARCH AND DRUG DEVELOPMENT

William R. Bahlman, Veteran Gay and AIDS Activist, a founding member of the Lavender Hill Mob, the Lavender Hill Education Project and the AIDS Coalition To Unleash Power (ACT UP), U.S.A.

Objective. To explain the positive role individuals can play in defining issues and setting national research agendas to promote a speedier and more humane process to develop drug for the marketplace.
Methods. Through practical experience the presenter will explain the importance of careful development of positions, organizational teach-ins, informative leaflets and the carrying out of sensitive and creative actions. Sample copies of leaflets and press clippings will be made available to those attending this session.
Results. A number of specific victories and failures of AIDS Activists efforts will be discussed.

W.E.P.3

SIDA, SEXOLOGIE ET CULTURE EN AFRIQUE CENTRALE

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* Projet CONNAISSIDA, Kinshasa, Zaire; ** Harvard School of Public Health, Boston, USA; *** Institut Pédagogique National, Kinshasa, Zaire.

Objectifs. Comprendre la construction culturelle du SIDA et ses rapports avec les pratiques sexuelles, la procréation, le mariage et croyances connexes afin de faire face aux contraintes de la prévention.
Méthodes. Observation-participante, entrevues en profondeur, histoires de vie, lectures bibliographiques, analyse de documents, recherche-action psychosociale.
Résultats. Des valeurs anciennes telle le désir de produire beaucoup d'enfants, des croyances telles les liens entre la sexualité, la santé et la procréation et le caractère des relations sociales entre hommes et femmes, rendent difficile l'emploi du condom parmi les couples stables dont une proportion significative est déjà séropositive.
Conclusion. L'ethnographie et la recherche-action qui associent les interessés à la résolution pratique des problèmes sont indispensables pour comprendre la portée du SIDA et limiter son extension dans la région. Elles démontrent la limitation des méthodes de prévention actuellement préconisées et suggèrent de nouvelles approches.
Mots clefs: sexologie, couples stables, prévention, méthodologie

W.E.P.4

LA SOCIETE SENEGALAISE FACE AU SIDA.

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*Unité de recherches épidémiologiques et statistiques. DAST/ Ministère du Plan et de la Coopération. Sénégal.

Objectif. Evaluer la compréhension du SIDA pour une prévention efficiente.
Méthodes. Enquête à Dakar et sa proche banlieue auprès d'un échantillon de 5000 US(15ans et plus)**. Les méthodes statistiques de traitement(SPSS) et d'analyse factorielle des correspondances ont été utilisées.
Extraits des résultats. *** 12,6 % de la population ont une bonne connaissance de la transmission du virus. Les mieux informés l'ont été par les journaux(32,2 % contre 7,2 % par la rumeur publique). Une bonne connaissance semble induire des comportements d'évitement du risque. Dans le groupe bien informé, 62,2 % ne s'exposent pas au danger contre 37,8 %, alors que pour les mal informés, les proportions sont de 56,3 % contre 43,7 %. Ces personnes, mal informés, sont peu disponibles au préservatif(84,9 %) et aux mesures préventives générales(51,7 %). Une bonne connaissance de la transmission est corrélée avec les catégories socio-professionnelles : 76,5 % des cadres moyens sont bien ou assez bien informés contre 32,5 % des sans profession.
Conclusion. L'enquête réalisée avant le lancement de la campagne nationale d'information montre que la population de la capitale est globalement mal informée. Les résultats de cette étude devraient permettre la mise en oeuvre d'une politique de prévention plus adaptée tenant compte des contraintes identifiées dans cette étude.
** erreur type réelle inférieure à 1 %. *** Niveau de signification = 5 %

W.E.P.5

TITRE : L'INFORMATION ET LA PREVENTION DU SIDA : ANALYSE COMPARATIVE DE DEUX PROGRAMMES NATIONAUX D'EDUCATION POUR LA SANTE EN AFRIQUE CENTRALE ET DE L'OUEST.

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** Directeur de l'Education Pour la Santé - SENGAL
*** Coordinateur Programme SIDA République Centrafricaine.

OBJECTIF. Comparer les programmes nationaux en identifiant les similitudes et différentes d'approche éducative et les résultats obtenus à la phase initiale, afin de proposer les principes directeurs méthodologiques par une action de mobilisation sociale en vue d'un changement de comportement.
METHODE. Analyse des choix de politique éducative en fonction des contextes socio-culturels, économiques et organisationnels de ces pays. Analyse des moyens globaux (par 1000 habitants adultes) et distribution par groupe cible et par structure organisatrice.
RESULTATS Avec des objectifs généraux similaires, on constate une grande différence d'approche entre les programmes d'information. La participation de tous les secteurs de planification explique ces différences et facilite la mise en oeuvre des programmes. L'information médiatique est toujours limitée par des résistances culturelles religieuses et institutionnelles. Elle ne permet la conscientisation et l'intégration, que renforcée par une stratégie de promotion de santé.
CONCLUSION C'est à partir de la mobilisation participative que, progressivement les activités I.E.C. s'intègrent dans les réseaux et services existants dans le secteur santé et, au delà dans les secteurs de développement et les réseaux actifs de la société

W.E.P.6

Computer Simulation as an Aid to Rational Problem Awareness.

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AIDS has given rise to unfamiliar problems. Knowledge of epidemiological facts and interrelations had become less important, for epidemics were supposed to have become a thing of the past, and have lost any importance they may once have had for modern society. The appearance of a sexually transmissible disease for which it is hardly likely there will be a cure or a vaccine in the near future came unexpectedly.

Using novel methods we address the crucial problem of educating the public in order to reduce the spread of HIV through behavior change and appropiated measures. It is now possible for any school to have a personal computer (PC). One has in this way access to data processing equipment which only 15 years ago would have served a whole university. The advantage of such computers is that they can rapidly process huge amounts of data and, if the user so decides, carry out simulations of complex situations. Our program, AIDS Information, Modification and Simulation (AIMS), is a user-friendly program for schools and (in an advanced version) for doctors and medical personnel. It offers geographical, demographic and epidemiological facts; the freedom to focus these facts in any way the user chooses; the means of representing them in plastic form; the chance to understand and explain to others their interrelations, and to represent concretely their abstract significance for individual behavior.

W.E.P.7 AIDS PREVENTION THROUGH OUTREACH EDUCATION IN PUBLIC SEX ENVIRONMENTS

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Santa Cruz AIDS Project, Santa Cruz, California, U.S.A

Objective. To prevent the spread of HIV infection among gay and bisexual men who engage in high risk sexual activity in public sex environments through a program of face-to-face education and condom distribution.

Methods. Volunteer field educators are recruited from the the cultural and social peer groups most at risk for HIV infection: previously married or nonidentified gay or bisexual men, gay men in alcoholic or other substance abuse recovery, ethnic minority gay men such as Latinos and blacks and college students familiar with bisexual communities. Trained extensively in AIDS prevention, outreach communication skills, and the sociological culture of clandestine male sex activity; these peer educators visit public sex environments on a regular basis and engage in individual education and distribute condoms. They gradually became accepted in this social milieu and serve both as resource people and role models. Educators document the number of contacts and evaluate effectiveness through self report of prevention techniques.

Results. Eight active peer educators have demonstrated a high degree of effectiveness by making 215 contacts during a six month period with high risk men, 93 % agreed to use condoms.

Table of Outreach Contacts	July- December, 1988
Total Contacts	215
Anglo	188
Black	8
Latino	24
Asian	5
Accepted Condoms	155
Named Safe Sex Methods	201
Percentage Demonstated Competency	0.93

Conclusion. Direct and face-to-face education among high risk groups in public sex environments proved to be an effective method for influencing behavioral change.

W.E.P.8 A MULTIDIMENSIONAL APPROACH TO PROMOTE AWARENESS OF AIDS IN THE GAMBIA.

Dibba Sekou , Ceesay Saihou of Medical and Health department, Cole Amie of Radio Gambia, George Theophilus of Book Production Unit, etl all of Banjul, The Gambia.

Objective : To promote individual and popular awareness of AIDS and the national AIDS situation as a prerequisite for the development of positive attitudes and responsible lifestyle. Also to create and enhance a climate favourable to enabling individuals and groups to gain access to factual information about the disease.

Method : The national health services programme, in collaboration with other organizations, undertakes arrangements to achieve the objectives reiterated above. A multidimensional approach has been employed. Some 40,000 leaflets have been printed and distributed to the public. About 200 health and extension agents have been orientated for specific tasks in the area of information and education. Radio programmes have been produced and transmitted in local languages. Other media and approaches developed and utilized include group contacts, films, schools, billboards, voluntary organizations, community leaders, nongovernmental organizations, and the local government system.

Since the information and education process was set in motion in 1986 public awareness of and interest in the AIDS situation has been gaining momentum. Uptake of condoms has increased, dialogue on the disease has bocome more noticeable at family level, work places, and other social settings.

W.E.P.9 TAKIN' IT TO THE STREETS: THE DYNAMICS OF COMMUNITY OUTREACH TO COMBAT AIDS

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**University of Connecticut, CT, USA.

Objectives. The central methodological problems are analyzed that street-based outreach workers face in accessing and working with IV drug users, their sexual partners, and prostitutes in combating the spread of AIDS. Outreach workers personally enter communities to work with persons on their own terms. To do so, outreach workers must come to recognize and understand what those terms are; they must be skilled in the methodology of ethnography. Central methodological problems include: (1) analyzing and mapping targeted client communities; (2) establishing a credible identity in situations that exhibit extreme distrust and suspicion of outsiders; (3) developing skills in directly approaching IV drug users and others; (4) learning to work in a nonjudgmental manner; (5) controlling the spread of information that can stigmatize clients and put them at great personal risk.

Methods. The analysis is based on one year's participant observation of several outreach teams as they interacted with clients, plus indepth interviews with outreach workers and their supervisors.

Results/Conclusions. Accumulating data strongly indicate that outreach workers are having tremendous success in contacting and working with clients in the community; they are exploding the pervasive myth that IV drug users per se are an extremely unreachable and uncooperative population. Data are also indicating that the most uncooperative and unreachable groups to work with in combating the epidemic are the competing professional and social/health agencies that make up the city's health care "system."

W.E.P.10 AIDS EDUCATION AND OUTREACH IN TORONTO BATH HOUSES

Bob Tivey - Community Health Officer, Department of Health, City of Toronto, ON, Canada

Objective: Many men at the Baths are considered hard to reach because they do not patronize Gay Bars and have no links to the Gay Community. This project involves educating these men who are Homosexual and Bisexual. Workshops include information on HIV, 'Safer Sex' practices, testing and counselling and assisting persons already infected with HIV to maintain a healthy lifestyle.

Method: A team consisting of staff from the Department of Public Health and Community Based Agencies enter each Bath House in the City and facilitate workshops for patrons. Presentation is followed by discussion and counselling. A questionnaire was filled out by patrons to assess their risk, sexual practices, knowledge level and seminar evaluation.

Results: Facilitators found that although 100% of participants were considered by facilitators at high risk for HIV infection, many were not well informed about AIDS and HIV transmission. A sizable portion of these men consider themselves bisexual and some are married and still living with their wives. Patrons said they felt more comfortable about talking about AIDS and negotiating 'Safer Sex' after sessions.

Conclusions: This type of program is very much needed on an ongoing basis. People need to hear messages repeatedly before they will consider to change behaviour. Men are more likely to change behaviour if they feel that 'Low Risk' sex is the norm. Being part of a discussion group helps with this process. There is no other way to reach this group of men. Although some of the men responded well to having a nurse (female) participate in these discussions, other men did not and avoided the presentation.

W.E.P.11

AUTEURS: *LAGUË, J., *THOMAS, R., *BASTIEN, R.,**DENIS, J.L.

" MTS BUSTERS" Réactions et pénétration de la population-cible à une intervention novatrice dans les bars.

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DESCRIPTION DE L'INTERVENTION

Dans le cadre d'une campagne provinciale de sensibilisation sur les M.T.S. en novembre 1988, le DSC Charles LeMoyne a contacté 10 bars de son territoire pour leur proposer une intervention visant à sensibiliser leur clientèle au problème des M.T.S. et du SIDA. De courte durée, l'intervention avait comme caractéristique: 1. Analogie avec le film " Ghost Buster", 2. Intervention directe de 2 comédiens costumés, 3. Dramatique de 5 - 8 minutes, 4. Distribution d'information et d'un auto-test.

OBJECTIFS

Dans un but d'appréciation formative de l'intervention, nous voulons:
- apprécier l'impact médiatique de l'intervention,
- déterminer les canaux de diffusion de l'intervention (bars, médias, réseau social),
- apprécier le degré de rétention du message en fonction des différents canaux de diffusion,
- identifier les réactions de la population-cible à l'intervention.

MÉTHODE

Une échantillon représentatif de 300 répondants agés de 18 à 30 ans, résidant sur le territoire du DSC Charles LeMoyne, est sélectionné et les données sont obtenues par sondage téléphonique.

RÉSULTATS

Les résultats seront disponibles en avril 1989.

CONCLUSION

L'intérêt de cette démarche est d'évaluer jusqu'à quel point une intervention peu conventionnelle permet de rejoindre, de part son impact médiatique, une proportion importante de la population cible.

AUTEURS: LAGUË, J., THOMAS, R., BASTIEN, R., DENIS, J.L.

W.E.P.12 INTEGRATING AIDS EDUCATION RESEARCH INTO A DRUG TREATMENT PROGRAM

Phalen, Judith*, Lewis, B.*, McCusker, J.**, Morrison, C.**, Cameron, G.*
*Spectrum , Inc., Westboro, MA 01581, ** University of Massachusetts, Amherst, MA, U.S.A.

Objective: To assess the impact of implementing an HIV education research project in a drug treatment setting.

Methods: Clients entering inpatient detoxification are assigned to one of three randomly rotating educational interventions: 1) a two hour informational format while on Methadone, 2) a two hour informational format after withdrawal from Methadone, or 3)a 6 hour enhanced/skill building format. Data regarding AIDS knowledge, beliefs, attitudes and preventive behaviors are collected during treatment and at 3 and 6 month follow-up.

Results: Of eligibles, 62% enrolled in the study, 11% refused to participate; 85% report high-risk drug use practices and 90% report unprotected sexual practices. To date, 51% of participants completed the inpatient research protocol, 64% report using bleach in the previous 3 months, 70% report previous drug treatment. Issues related to implementation and coordination of research and clinical activities are: health educator/clinician dichotomy, hands-on-needle cleaning, focus on HIV antibody testing and informed consent and differing priorities of research and clinical teams.

Conclusion: The resolution of staff attitudes towards these issues has a major impact upon effective data collection and creating an enviornment which positively influences client attitudes about research with minimal disruption to the existing treatment program.

W.E.P.13

THE USE OF INDIGENOUS WORKERS FOR AIDS OUTREACH EDUCATION/PREVENTION

Ashery, Rebecca S.
National Institute on Drug Abuse, Rockville, Maryland USA

Objective. To present issues and solutions for hiring and training indigenous outreach workers.
Methods. By anecdotal information gathered by informal survey with 58 sites around the USA in NIDA funded programs who have hired ex-addict indigenous outreach workers.
Results. The foundation of 58 NIDA funded outreach research demonstration projects rests on indigenous (ex-addicts) outreach workers to educate and motivate addicts who are not in treatment and their sexual partners to change at-risk AIDS behaviors. Because of their ex-addict backgrounds, these outreach workers present a unique challenge to program management in terms of (1) hiring; (2) supervision; and (3) training. In addition, program management must confront ethical issues because of exposure to workers of dangerous street situations, exposure to an atmosphere where the workers are vulnerable to relapse, and helping workers who contract AIDS because of past risky behaviors.
Conclusion. All programs hiring outreach workers need to be aware of these issues and develop policies and strategies which are specific to this population of employees. Suggestions include special attention to job descriptions, the interview and hiring process, time management, development of career ladders and management of staff confrontation and anger. Management should also be prepared to help staff develop writing and communication skills.

W.E.P.14

AN INFORMATION, EDUCATION WORKSHOP TO INCREASE CONDOM USE AMONG MALE BAR WORKERS IN BANGKOK

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Objective- To evaluate a workshop for increasing condom use among men who work in bars and who are at risk for HIV infection.
Method- We conducted workshops in 3 bars and 2 bars served as controls. The workshop consisted of a play, a video of an interview with a Thai person with AIDS and an informal question and answer period. Free condoms and lubricants were provided in all study bars during the study. We compared knowledge about HIV infection, attitudes about condom use, reported condom use and sexual practices.
Results-

	Pre-workshop Survey		Post-workshop Survey	
	Exper.	Control	Exper.	Control
Knowledge Score, Mean(Range)	8.9(3-14)	8.6(3-14)	9.6(5-14)*	8.6(3-12)
Attitude Score, Mean(Range)	4.6(1-6)	4.1(0-6)	4.6(1-6)	4.4(1-6)
Customer used condoms	31%	37%	46%	57%
Bar worker asked customer to use a condom	55%	44%	67%	58%
Bar worker used condom	42%	37%	47%	62%**

*p=.03 pre- vs post-workshop in exper. group,p=.01 exper. vs control group post-workshop. **p=.02 pre- vs post- survey in control group.
Conclusion- The workshop was able to increase the knowledge about HIV infection but changed attitudes about condom use little. Unexpectedly, condom use increased more in the control than in the experimental group.

W.E.P.15

EDUCATION STRATEGIES FOR HEALTH CARE WORKERS AND PRISONERS IN WALES.

GEORGE, A M, WELSH OFFICE, CARDIFF, WALES AND GRIFFITHS C, WEST GLAMORGAN HEALTH AUTHORITY, SWANSEA, WALES UNITED KINGDOM

OBJECTIVE: To describe methods of providing regular updates of information on AIDS to two specifically targeted groups.

METHODS: (i) Health Professionals: a core team with expertise in epidemiology research, health promotion and nursing was established by professional organisations and a Government Department. The team visits each Health Authority on a regular basis at approximately six monthly intervals as a "road show". Health care workers from many disciplines attend.

(ii) The programme for prisoners is targeted at short-stay young offenders and long-stay adult prisoners. Issues covered are drug abuse, other sexually transmitted diseases and AIDS. The approach has recently been changed to target prisoners just prior to release so as to maximise the impact. This programme is run by a health promotion officer not a multi-disciplinary team.

RESULTS: Several thousand Health care workers have participated and demand continues to increase. This programme has run for 2 years, as has that for prisoners.

CONCLUSIONS: A small multi-disciplinary core team is an effective way of regularly updating health care workers. Prisoners require a more intimate approach and the use of a dedicated health promotion officer has been found effective.

W.E.P.16

LES SERVICES À DOMICILE: LA PERSONNE D'ABORD.

Bureau.Céline: Duranceau.A: Fortier.R:Gagnon.C:Lachance.J.
CLSC Métro (Centre local de services communautaires) Montréal. Québec. Canada

Les services à domicile. Le CLSC Métro est un organisme para-public qui offre des services de santé et des services sociaux courants à sa population. Le CLSC dispense un programme de services à domicile dans lequel les membres d'une équipe multidisciplinaire (auxiliaires familiales.ergothérapeute.infirmières.médecins.physiothérapeute et travailleurs sociaux) visitent des personnes ayant besoin d'aide dans leur milieu de vie. Actuellement. une vingtaine de sidéens requièrent ces services. Cette situation représente un défi à la fois personnel. professionnel et organisationnel.
Problèmes identifiés. Les personnes atteintes du SIDA font face à des problèmes d'ordre physique et psychosocial tandis que les intervenants pour leur part. vivent des situations nouvelles. parfois difficiles et stressantes. Cet état de fait demande des ajustements et réorganisations fonctionnels pour les équipes d'intervenants habitués à travailler à domicile avec une clientèle âgée ou handicapée.
Eléments du modèle d'intervention. Le modèle préconisé fait appel à divers éléments et ressources qui ensemble. contribuent à l'amélioration des conditions de vie des sidéens à domicile et à la qualité des services. Ces éléments sont:l'approche globale. les liens avec les ressources médicales et communautaires. la concertation de l'équipe. la formation et le financement.
Conclusion. C'est la personne d'abord. en tant qu'individu. qui est considérée dans l'approche et c'est la vie et non seulement la maladie qui détermine les interventions. Les six éléments du modèle d'intervention ne doivent pas être examinés séparément mais faisant partie d'un tout. Ils sont indispensables afin de relever le défi de façon optimale et afin de s'assurer d'une plus grande qualité de services auprès de la clientèle sidéenne.

W.E.P.17

EVALUATION OF AN EDUCATIONAL PROGRAM. KNOWLEDGE, BELIEFS, ATTITUDES AND BEHAVIOUR ABOUT AIDS IN THE 14TO20 AGE GROUP.

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spi.*WHO- Centre Paris, FRANCE

Objective:To assess the KNOWLEDGE, BELIEFS, ATTITUDES AND BEHAVIOUR of N=770 Students from a vocational schoolcenter in Berlin-W. They are involved in a special schoolprogram to inform on AIDS by special trained physicians or biology teachers.
Methods: Knowledge about transmission, risk factors, use of condoms, attitudes, beliefs and former sexual education were collected by a questionaire with standardised and open questions before(n=770), four weeks(n=572) and six month(Sept.88) after(n=431) the lessons.
Results: After six month there was a higher acceptance of using condoms, and still very high level of information about ways of transmission and risk factors. Coping with fear, confidence, stable partnership, communication and the competence of using condoms are most important factors to prevent HIV-Infection. Only 11% proposed instead of enlightenment, measures of repressive control. Although >90% of the students had sexual education <2% had learned to speak about feelings and emotions related to sexuality. Students would not isolate HIV+persons.
Conclusions: Six months after the AIDS information lesson students still have a high level of AIDS related information and competence. They are interested in more lessons about sexuality and partnership, and about AIDS as a social problem. The approach of 'personal prevention' is a necessary measure, which is closing the gap between the preventive information given by the mass media('medial prevention') and the necessary preventive acting of adolescents.

W.E.P.18

SCHOOL AND COMMUNITY PARTNERSHIP IN AIDS EDUCATION

MARK J. ASKEW, Chairman, AIDS Education Task Force, Sydney Catholic Education Office, Sydney, Australia.

OBJECTIVE: To develop and implement a comprehensive education program, teaching knowledge, skills and values about AIDS for students aged 5 to 18 years in a large school system, and through teacher education and school-based parent meetings, to reach out to the wider community with AIDS education.
METHODS: During 1987 a comprehensive teaching kit consisting of print and audio visual materials was produced to teach,both about HIV infection, and love and care for people with AIDS.It is an across-the-curriculum approach which not only provides knowledge about AIDS, but also teaches skills (eg communication, decision-making, assertiveness) and values (eg love, respect for human dignity, compassion,hope) in response to the AIDS crisis. In early 1988 implementation of the program began,after a series of intensive 4 hour teacher education sessions ensured that every school had at least one member of staff trained to use the kit to educate other staff, parents, community members and students.
RESULTS: Over 90% of the 200 Sydney Catholic schools began AIDS education using the kit in 1988 for activities including teacher education, community meetings and intergrating AIDS education for students into all relevent areas of the curriculum. The success of elementary schools was particularly impressive. There is continuing widespread interest from other school systems and health educators in the teaching kit.
CONCLUSION: Successful knowledge, skills and values education programs about AIDS are essential.Schools can provide AIDS education for the community.

W.E.P.19 KNOWLEDGE AND ATTITUDES OF ITALIAN YOUTH ABOUT AIDS

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Objective. To evaluate the effects of educational campaigns about AIDS on the awareness and the perception of the problem by the youth.
Methods. A self compiled anonymous questionnaire was administered to 3300 Navy recruits and to 2437 high school students from the city of Pisa.
Results. Fifty percent indicated newspapers and 56% television as major sources of information, only 16% the school. The information provided was judged sufficient and mostly true, useful and clear; nevertheless most people (90%) requested further information mainly from doctors. On the whole, knowledge about the etiological agent, mode of transmission and risk-taking behaviours was satisfactory, while clinical symptoms, vehicles of infection and preventive measures appeared less well known. There were, however, marked differences depending on education level and area of residence: youth from Northern and Central Italy with upper instruction showed a more precise perception of the AIDS problem. Concerning psychological reactions, 40% declared some impact on their social life, but there were again considerable differences among different groups.
Conclusions. The study has pointed out gaps in knowledge about AIDS, mainly in less cultured subjects, as well as some negative psychological reactions. Moreover, it has indicated the need of systematically evaluating the results of educational campaigns in order to correct possible errors in information strategies.

W.E.P.21 PEDIATRIC AIDS SOURCEBOOK

Allbritten, Dorothy J.
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Objective To assist hospital and community-based agencies in planning programs of care for children with AIDS and HIV infections.
Methods Nineteen programs in areas of high incidence of HIV infection providing pediatric care were identified and surveyed. A review of literature and interviews were conducted. Information was then assembled, documented and disseminated.
Results The sourcebook is a compendium of current principles, plans and interdisciplinary programs that may be used as models of comprehensive care for children in primary, secondary and tertiary health care settings.
Conclusion Many programs provide care in a variety of ways to HIV infected children. Common factors found include an interdisciplinary team working in a coordinated effort to provide comprehensive, child-centered, family-focused intervention to meet the complex needs of these special children and their families.

W.E.P.23 AIDS INFORMATION IN FRENCH SCHOOLS : AN EXPERIENCE AND A SOCIOLOGICAL VIEW

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*** Santé scolaire du Rectorat de Créteil, France.

Objective. To evaluate an AIDS information model for youth at school.
Methods. During the school year 1987-88, 6500 students from Paris and suburbs, from 13 to 25 years old received a pilot information. This model was personalized, supported visually by video & slides and thematic but non-formal, e.g. suggesting questions and dialogues among the classes. 1707 open questionnaires have been answered : 1512 by students who followed the information [mean age = 18 ; sex ratio M/F = 1/3], 195 by "control" students [mean age = 18 ; sex ratio = 3/5].
Results. 1/ The information model improved the students recognition of risks related to the frequent change of sex partners. 2/ It convinced them that condoms are efficient if of good quality and used correctly. 3/ However, the model did not change their intention (74% in both groups) of using one in a "one-night stand with an unknown partner", as described in the questionnaire. 4/ A new meaning to condom use is evolving : altruism and mutual respect of each partner.
Conclusion. This information model improves the global understanding of AIDS among the students. Without knowing if they will lead to a new behavior, some intentions expressed are encouraging : to refrain from one-night stands ; to use a condom also for contraception and to protect the partner whenever there is a doubt about one's own sexual history.

W.E.P.20 PREPARING TEACHERS FOR ADOLESCENT AIDS PREVENTION EDUCATION: YEAR TWO OF THE MASSACHUSETTS TEAM TRAINING DESIGN

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** Massachusetts Department of Public Health, United States

Objective: To describe the effectiveness of a split three day teacher training on 1) their knowledge and attitudes related to AIDS, 2) their confidence for doing AIDS education, and 3) the impact of utilizing a Person With AIDS (PWA) in the team training design.
Methods: Fifty-three school districts participated. Changes in knowledge, attitude and confidence levels were measured by pre- post-testing. Subjective feedback forms measured the effectiveness and utility of the training activities. The initial two day training included basic AIDS information, health behavior change strategies, affective education techniques, human sexuality, and interaction with a PWA. The third day, held 6-8 weeks later, covered grades K-12 learning activities, parent education strategies, and an opportunity to report on the process and progress of their AIDS education efforts within their respective schools and districts.
Results: A total of 220 faculty were trained. Statistically significant gains were found regarding teacher comfort levels for working with HIV+ and AIDS diagnosed students and co-workers, answering questions about HIV transmission, and teaching about AIDS. Regarding the training activities, interacting with a PWA received the highest ranking for personal impact.
Conclusions: The split three day training design, and interacting with a PWA, has proven an effective methodology for increasing AIDS related knowledge and confidence levels for teaching about AIDS and preventing HIV infection.

W.E.P.22 KNOWLEDGE AND ATTITUDE TO AIDS SHOWN BY UGANDAN SCHOOLCHILDREN, BASED ON A NATION-WIDE POSTER COMPETITION

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**League of Red Cross and Red Crescent Societies, Geneva, Switzerland; *Uganda Red Cross Society, Kampala, Uganda.

Objective. To determine the knowledge and attitudes of youth in Uganda concerning AIDS-prevention and -patient care after one years education campaign in the country.
Methods. On I. I2. I988, World AIDS Day, Uganda Red Cross carried out a nationwide AIDS poster competition on the themes of AIDS-prevention and -patient care. The contents of the posters have been evaluated.
Results. Out of 6 major cities in Uganda, I8 schools contributed 97 posters. The median age of participants was I4 ys. 85% mainly described AIDS-prevention as keeping to one partner, whereas only 3% emphasized the use of condoms. I2% insisted mainly on the use of sterile instruments. I00% of the children promoted the importance of caring for AIDS patients, emphasizing close relation, good food and medical care. The main problem, in 6%, was that the carrierstate of HIV infection was not fully understood.
Conclusion. The poster contents reflect the current state of the AIDS education program in urban Uganda. Schoolchildren have good knowledge and a positive attitude about AIDS.

W.E.P.24 AN HIV/AIDS EDUCATION AND TRAINING PROGRAM FOR LAW ENFORCEMENT OFFICERS

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**Metropolitan Toronto Police, Toronto, Ontario, Canada.

Objective. To give police officers sufficient understanding of HIV transmission and prevention for them to operate confidently and appropriately.
Methods. A 10-minute training video and 35-minute teaching program were developed by police and public health officials for use in an established decentralized police training format. Each session was conducted jointly by a Police Training Sgt. (PTS) and a public health unit educator (PHUE).
Results. From January to June 1988 all uniformed officers (>5800) of the Metro Toronto Police underwent the HIV/AIDS training module. Each of the six municipal public health units participated in the sessions conducted within their jurisdiction of the metropolitan area covered by the police. New police procedures were developed within the context of a comprehensive Police Dept. Training Precis on Infection Control and the Metro Toronto Corporate Policy on AIDS. Procedures and policies were reviewed by the PTS while the PHUE covered the curriculum on AIDS; both could then respond to questions. Prior to the implementation of this program there were numerous complaints from officers about possible HIV exposures and some community incidents. Following implementation there have been no complaints or criticism inside the Force or from the community, and appropriate records of contact have been maintained when blood-related incidents involving officers have occurred.
Conclusion. A highly organized and cooperative effort between local law enforcement and public health authorities has resulted in a decentralized HIV/AIDS training program that is concise and effective.

Session d'affichage
Poster Session

Le SIDA, la société et le comportement
AIDS, Society and Behaviour

W.E.P.25

IMPLEMENTING A MANDATED CURRICULUM

Bacon, Marion, McConnell, Wee, Hyne, L. Craven A, TV Ontario, CANADA

Objective To provide Ontario teachers with strategies and resources to deliver a mandated curriculum in AIDS Education.

Method TVOntario in co-operation with the Ministries of Health and Education applied a trainer of trainers model to address AIDS education. Eight teachers, regionally located were released from their teaching positions and were trained to deliver television-based workshops to persons teaching the curriculum. Nine additional teachers were trained to meet the demand for workshop requests. Video materials were reviewed, acquired and distributed to every school board. Parent information nights provided a link with home. Strategies that focused on attitudes, values and behaviour were piloted, revised and refined. Costs for teaching and distribution of video and print materials were covered by a grant of 1.2 million from the provincial government.

Results In total 331 workshops were delivered from January 1988 to June 1988. 13,083 teachers, public health nurses and parents were trained. A series was produced for parents and elementary and secondary teachers. Four additional videos were acquired and distributed for class use. Three teacher guides were developed and distributed. A survey conducted by the Ministry of Education which measured success of implementation ranked TVOntario's activities first in staff development.

Conclusion The trainer of trainers model was successful in delivering the strategies, video and print support necessary to implement a mandated curriculum. The model could be adjusted to various situations or educational settings with similar results.

W.E.P.27

WORLD AIDS DAY THE LAUNCHING OF AN EXTENDED AIDS PREVENTION PROJECT

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* APS Association pour la Prevention du SIDA **MDM Medecins du Monde, Paris, FRANCE

Objectives 1) To combine the experiences in AIDS prevention among youth of 2 associations (APS AIDS Prevention Association and MDM Medecins du Monde) in order to asses their impact and the potential for extending such activities throughout the country 2) To evaluate the impact of the World AIDS day activities organized by these associations and the demand for further, similar programs

Methods For the past 2 years APS has created through AIDS education training programs a network of AIDS educators throughout France, the majority of whom are involved with youth (teachers, school nurses or doctors, youth workers) APS has been supported in part by the Mutualite Francaise, a federation of insurance companies which has financed the development of training materials as well as some training programs for AIDS educators nation-wide MDM, a large French organization which carries out worldwide public health and emergency relief actions, has run several free/anonymous HIV testing centers in France.
A partnership between the 2 associations was formed to launch a joint AIDS prevention project which would facilitate an intensification of AIDS prevention efforts for youth throughout the country. The project was designed to start on Dec 1 1988, the first international World AIDS DAY. Prior to this day, members of each association were contacted in order to solicit their interest in participating in World AIDS DAY and in continuing to be active with this coalition by expanding and modifying their AIDS prevention activities in 1989. Over 300 activities ("Points d'infotmation SIDA") were organized nation-wide. Following the activities on World AIDS Day, a questionnaire was distributed to all those participating in the organisation of the different "information points". The evaluation was designed to document 1) the sorts of actions organized, 2) the number, profile, and reactions of those persons reached by the activities, and 3) to measure the level of interest among those participating in continuing and expanding their actions in 1989.

Conclusion Treatment of the questionnaire is in process. The results will be used to assist in designing regional AIDS educator training programs which will be implemented throughout the country, starting in May 1989.

W.E.P.29

READABILITY ANALYSIS OF AIDS BROCHURES AND PAMPHLETS FROM THE UNITED STATES

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Objective: To assess the readability of a representative sample of AIDS educational materials from the United States.

Methods: The researchers selected a random sample of brochures, cards, and inserts (N = 104) and pamphlets, books, and monographs (N = 41) from the AIDS Information Resources Directory (American Foundation for AIDS Research, 1988). Raters sampled 30 sentences, counted the number of polysyllabic words (> 2 syllables), and graded readability using the method of McCaughlin (SMOG Index). Grade equivalent reading level, representing the requisite level for 100% comprehension, is calculated as 3.1291 + 1.0430[SQRT(# polysyllabic words)].

Results: Preliminary results based on 57 brochures show the following grade level distribution:

	Grade Equivalent Readability Level									
	Middle/Jr. High				High School			College		
Grade	6	7	8	9	10	11	12	13	14	15
%	2%	11%	9%	7%	18%	25%	19%	5%	4%	2%
Cum %	2%	12%	21%	28%	46%	70%	90%	95%	98%	100%

They show that 72% of brochures are at a grade equivalent of 10th grade or above and 10% are at a grade equivalent beyond high school. Mean grade levels by target group are: minorities (10.2); adolescents, students (9.0); drug users (10.0); gay, bisexual men (11.7); HIV test takers, HIV positive (13.4); sexually active adults (9.9); and other (11.4). Differences are statistically significant (F = 4.42, df = 6,50, p < .001)).

Conclusion: Reading levels of many brochures are inappropriately high. This is especially true of materials prepared for those taking the HIV antibody test. Steps should be taken to make brochures more comprehensible to a wider audience.

W.E.P.26

AIDS GRADUATE EDUCATION EIGHT SEMESTERS EXPERIENCE IN TEACHING AN ADVANCED, INTERDISCIPLINARY COURSE ON AIDS

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Objective To integrate HIV/AIDS education into the permanent, regular curriculum of a major university

Methods An interdisciplinary, advanced undergraduate/graduate course on HIV/AIDS was designed and approved as an experimental course in January 1985 at San Francisco State University. Initially, a 700 page book of reprints was developed, since no "text" was available. From the beginning, the course was designed to allow a student, even without a science background, to understand the epidemiology, etiology, pathology, molecular biology, diagnostic tests, laboratory, and clinical manifestations of AIDS-associated diseases vis-a-vis normal immune function. The course also includes treatment, prevention, education (with emphasis on the community), ethical, legal, psychosocial, blood transfusion and public health issues. Students write AIDS research papers.

Results Eight AIDS courses have been taught. The SFSU course is thought to be the first AIDS course in the United States offered for credit (letter grade) in the regular curriculum of a major university. Many course participants have become full- or part-time AIDS educators. Pre-health professions students are educated and sensitized to AIDS issues prior to attending one of the 70 medical schools accepting our students each year. Students also educate their peers.

Conclusion It is recommended that AIDS education be integrated into the regular, "for-credit" curriculum of colleges and universities. Such courses allow students to develop an interdisciplinary approach to the understanding of the AIDS epidemic which can be applied as a paradigm to any disease state.

W.E.P.28

WORLD AIDS DAY - SOUTH AFRICA

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OBJECTIVE. To design and execute World AIDS Day in a country with varying population groups, cultures and levels of education.

METHOD. Careful consideration was taken of cultural variables, channels of communication, existing awareness of AIDS, political, religious and social ideologies. The following activities formed part of World AIDS Day: 1) Media coverage (television, radio, newspapers, magazines), 2) Posters and pamphlets 3) AIDS slogans on taxis, buses and private vehicles, 4) awareness programmes using audio-visual material were held at corporations and schools, 5) promotion of songs, 6) taped music in black taxis carrying educational messages about AIDS, 7) puppet shows, 8) a symposium, 9) a music concert, and 10) mobile units set up in the streets as a source of information.

RESULTS. The use of multiple and novel means of educating the general public resulted in a greater awareness in the lay public in both urban and rural areas. It also motivated many volunteers to come forward to be trained as educators. Numerous phone calls and requests for more literature and information on AIDS was experienced.

CONCLUSION. The success of the World AIDS Day programme revealed that cross-cultural knowledge and understanding is essential for AIDS education. Although there has been greater demand for condoms it is difficult to assess whether a change in sexual behaviour has occurred.

W.E.P.30

TRENDS IN CONDOM PROMOTION STRATEGIES FOR HIV PREVENTION: PRACTICAL CONCEPTS FOR CONSIDERATION

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Objective. To explore new venues for condom promotion not used by family planners and health educators. For example, when is being provactive helpful? What is the role of fear in appeals? What are strategies for managing the explicit nature of the subject matter without alienating policy makers, target audiences, and the general public.

Methods. Systematic review of condom promotion concepts and messages media by type of audience and media channel being conducted. Delineation of the basic concepts in condom promotion are highlighted with examples from around the world. Creative strategies to reach audiences and overcome communication obstacles receive special attention.

Results. Condom promotion strategies have changed in the past four years with an increasing number of appeals to more distinct target audiences. Regional variations in socio-cultures contexts and the level of HIV infection have a direct impact on type of promotion strategies used.

Conclusion. Two types of condom campaigns may be called for. The first one will set the stage and the second to communicate the real message.

W.E.P.31

AIDS INFORMATION AT THE NATIONAL CENTER FOR HEALTH STATISTICS

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Objective. To provide information on AIDS data available from the data collection systems of the National Center for Health Statistics (NCHS)
Methods. Data sets were reviewed and summarized.
Results. The following is a preliminary summary of available data:

Data Set/Survey	Type of Data	Time Period
1. Health Interview Survey (HIS)	Knowledge, attitudes	1987-88
2. Health and Nutrition Examination Survey (HANES)	HIV seroprevalence	1988-93
3. Household HIV Serosurvey	HIV seroprevalence	1988-1989
4. Hospital Discharge Survey	Hospital utilization	since 1965
5. Mortality Data	AIDS, HIV-related deaths	HIV ICD-9 codes (1987)
6. Mortality Follow-back Survey	Health care utilization in last year of life	1986
7. Survey of Family Growth	Female sexual behavior	1988
8. Maternal and Infant Health Survey	HIV antibody status during pregnancy	1988

NCHS publications and survey instruments/data forms will be displayed.
Conclusion. Making others aware of AIDS data available from NCHS will prevent duplication of effort and will allow analyses by a variety of researchers and techniques. Sharing data forms will promote consistency in data collection and allow for direct comparisons between studies.

W.E.P.32

DOCAIDS : UN SYSTEME DOCUMENTAIRE VIH-SIDA

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Objectif. Créer des outils documentaires spécialement conçus pour le traitement de l'information couvrant l'ensemble des domaines des infections à VIH.
Méthodes. Pour combler la lacune existante au niveau international, un thésaurus VIH-SIDA, défini par la norme ISO 2788, a été conçu en tenant compte des langages documentaires existants dans les institutions participantes et des expériences développées dans le traitement des informations, l'analyse des questions et le service des réponses aux usagers. Il est complété par un classement thématique afin d'organiser la documentation tant pour le rangement en bibliothèque que pour la publication d'un bulletin signalétique. La traduction anglaise et espagnole est en cours.
Résultats. Le thésaurus d'environ 480 descripteurs et 120 non-descripteurs, associés par des relations d'équivalence, de hiérarchie ou d'association, est destiné aux services de documentation, aux producteurs de base de données documentaires, aux chercheurs, gestionnaires, planificateurs et au public intéressé. Le classement thématique est divisé en 12 grandes rubriques :

00. Ouvrages généraux
01. Géographie et Politique
02. Organismes
03. Réglementations
04. Ethique
05. Economie
06. Psycho-social
07. Santé publique
08. Information
09. Virologie
10. Immunologie
11. Clinique

Conclusion. Le système DOCAIDS permet l'indexation et la recherche des documents VIH-SIDA, en facilite la diffusion locale et internationale et couvre largement les aspects non-médicaux des infections à VIH et du SIDA.

W.E.P.33

EVALUATION OF THE PREVENTION COMPONENTS IN THE MTP'S OF COSTA RICA, PANAMA, TRINIDAD AND TOBAGO AND URUGUAY.

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Objective. The purpose of this study is to assess the extent to which the prevention strategies outlined in four countries' medium-term programs have been implemented to minimize transmission of the human immunodeficiency virus. These strategies encompass the prevention of sexual transmission, the prevention of transmission through blood, and the prevention of perinatal transmission.
Methodology: The approach selected will be a combined quantitative-qualitative methodology, using the same evaluation indicators for each country studied.
Results: In the study period, preventive educational activities were carried out in health centers, hospitals, STD clinics, maternity clinics, schools, and community organizations. Various AIDS education materials were printed, distributed, and used; blood and blood product supplies were secured, adequate production standards and accessibility of condoms were ensured, and sterile injecting equipment was distributed. In addition, counseling training programs were established and implemented in conjunction with blood testing and several types of personnel were trained in health promotion.
Conclusion: Prevention efforts in the countries studied were implemented with varying degrees of efficiency. Monitoring evaluation was useful because it permitted the improvement of existing prevention programs.

W.E.P.34

EFFECTING ATTITUDE AND BEHAVIOR CHANGES IN REGARD TO HIV INFECTION

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Objective. To examine the effectiveness of the use of personal contact with a peer infected by HIV in conjunction with the use of personal history films of HIV infected individuals in effecting attitude and behavior changes in regard to HIV transmission.
Methods: Students in two university level human sexuality classes were introduced to a fellow student as a speaker on sexual orientation. His HIV positive antibody status was not disclosed until two weeks later when a film about him was presented in class and he returned to speak about his experiences. A second film, about a young mother with AIDS was then shown. Three additional lectures were given on AIDS. Students were asked to write reactions to each of 20 films shown during the semester and to write about the one that had the most impact on their lives.
Results: Students voluntarily disclosed the following:
Increase in AIDS knowledge: 5% ; Increase in knowledge about HIV transmission prevention: 18%; Increase in concern for individuals with HIV infection: 71%; Realization that they now know someone with HIV infection: 43%; Increased perception of personal vulnerability: 51%; Current risk reduced behavior reinforced: 6%; Decided to change behavior: 38%; Implementation of risk reduction behavior: 30%
Discussion: Previous research at San Francisco State University showed a high degree of student knowledge about AIDS and HIV transmission, but few felt personally vulnerable or were using condoms consistently. It is believed that behavior change requires a perception of vulnerability, the decision/change and implemetation of change. Use of methods that evoke an empathetic response can be effective in modifying attitudes and behavior.

W.E.P.35

AVOIDING AIDS: PREVENTING AIDS WHILE PRESERVING SEX.

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The principles and implementation of a program to reduce the risk of HIV infection among a general population of adolescents, within sex education (SE) is presented, together with a demonstration of training educators to carry it out. The program is aimed at the adolescent population of a country with a medium prevalence of HIV infection and a "North American" mode of transmissinn.
The integration of HIV risk reduction into SE is based on three assumptions: 1. Adolescents are a vulnerable population; 2. for the large majority of adolescents the relevant issues are those concerning sexual transmission; and, 3. in most cases, the risk of HIV infection is mostly under the control of individuals.
The educational intervention is based on the principles of experiential learning, empowering, and the joining of the rational and the emotional in determining one's lifestyle and behavior.
The objectives of the program are four: 1. To reduce risky behaviors and to promote healthy ones among adolescents; 2. to reduce irrational fears of AIDS that may damage the development of sexual behavior, while not contributing to the reduction of HIV infection; 3. to confront persecutory attitudes toward people who are either seropositive for HIV or people with AIDS; and 4. to help people deal with their emotions when confronted with AIDS in their environmet. The main sections of the program are: 1. Knowledge Is Power: Learning through action the facts about AIDS, 2. The Power of Communication: Talking and deciding instead of doing and regretting; 3. Take Your Life In Your Own Hands: Decisions and their Implications; 4. AIDS in our midst; and, 5. Evaluating instruments.

W.E.P.36

AIDS EDUCATION FOR ADOLESCENTS: WHO RESPONDS?

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Objective. To determine which student variables are most closely associated with intention to behave safely following public school AIDS education.
Methods. A sample of 1800 students were studied before and after AIDS education to determine the level of knowledge, AIDS related attitudes, and prior risk-taking behavior. An ANOVA, a multiple regression analysis, and the Scheffe Test between contrasting subgroups, were used to explore the relationship between these variables and the students' intention towards future safe behaviors.
Results. The variables studied were found to account for 31% of the variance in intention toward future behavior ($F=10.5$, $p<.0001$). A subgroup particularly responsive to the education were junior high school girls with high changes in knowledge and fear of AIDS (Scheffe Test, $p<.001$).
Conclusion. Age, sex, changes is knowledge and attitudes, and prior risk-taking behavior account for much of the differential impact of AIDS education in adolescents.

W.E.P.37

STRATEGIES POUR UN PROGRAMME D EDUCATION POUR MINEURS INTERNES

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Objectif. Diminuer l'impact global du SIDA entre les mineurs internés. Le but est d'atteindre 30.000 mineurs par an, la majorité desquels venus de familles désagrégés et précocement introduits aux drogues et à la vie sexuelle.
Méthodes Entraînement et capacitation des fonctionaires et d'agents multiplicateurs ayant pour but l'orientation des mineurs. Exposition en salle de classe, vidéos, débats, compétitions.
Résultats. a) le programme a capacité 1280 fonctionaires et 68 agents multiplicateurs, lesquels sont chargés de repasser les renseignements aux mineurs. b) les fonctionaires et les mineurs ont produit des matériaux d'information (pièces de theatres, chansons et affiches). c) les tensions et les préjuges ont diminué. d) émergence de la cooperation et de la solidarité.
Conclusions. a) les méthodes doivent être créatives, pour stimuler la population envisagée. b) dûment stimulée, cette population est capable de créer les matériaux adaptés à ses pairs.

W.E.P.38

PARENTAL VIEWPOINTS ON AIDS EDUCATION IN THE PUBLIC SCHOOLS OF COPENHAGEN

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Objective. To acquire knowledge of the parents' points of view concerning the AIDS education given by the teachers in the primary and lower secondary schools in Copenhagen.
Since it is very important to continue the AIDS education in the School System, it is essential for teachers to consider the opinions of parents and to incorporate their viewpoints in the future planning.

Methods. Questionnaire investigation among the parents of 3,000 pupils in the 2nd, 5th and 9th forms.

Results and conclusions. The investigation is ongoing and the summary of results and conclusions will be presented in Montreal in June 1989.

W.E.P.39

RESEARCHING RELEVANT AIDS EDUCATION MATERIAL FOR YOUNG PEOPLE

O'Sullivan, Anna and Gillies, Pamela
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Objective. To describe a technique for researching and developing relevant, effective comic material for use with teenagers and young adults.
Method. Volunteer groups of young people from schools, youth clubs and youth training centres were selected. In-depth group interviews about HIV transmission and AIDS were conducted by a researcher and graphic artist. Ideas for content of comic were discussed; real-life stories included; language considered and characters drawn during the course of discussion. A pilot comic was then designed and presented to the groups, who were asked to write comments on the actual copy on an individual basis (N = 75).
Results. Young people involved in producing the comic felt it was interesting, used appropriate language and clarified how HIV could be caught as well as informing about precautions which could be taken. The stories engaged the emotions and the humour was appreciated. Scientific evaluation has shown that the comic has a significant impact upon knowledge.
Conclusion. Young people can be used effectively in the process of the writing and development of AIDS education materials.

W.E.P.40

AIDS EDUCATION FOR YOUTH - A RANDOMISED CONTROLLED TRIAL

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Objective. To evaluate the impact of an AIDS education comic on the knowledge, attitudes, sexual behaviour and intentions of 16-19 year olds.
Methods. Six youth training centres in Nottingham were randomly allocated to experimental and control conditions. 162 trainees were allocated to the experimental group and 161 to the control. Data were collected prior to use of the comic and 2 weeks after use via a self-completed questionnaire.
Results. There were no differences between groups pre-test and no differences by sex. The experimental group had a significantly higher level of knowledge compared with the control post-test.
Mean knowledge scores by group

	PRE-TEST					POST-TEST			
	$\bar{X}$ score (max=33)	SD	t	p	df	$\bar{X}$ score	SD	t	p
Experimental (N = 121)	23.89	5.22	-1.39	Not Sig.	238	27.40	5.11	2.98	<0.01
Control (N = 119)	24.76	4.43				25.53	4.58		

Significantly more experimental than control trainees knew at post-test that you could contract HIV from anal sex ($p<0.001$) and that HIV entered the body through broken skin ($p<0.01$). In addition, twice as many experimental (55%) as control (25%; $p<0.001$) trainees at post-test were aware that a cure for AIDS was unlikely in the near future. The comic had little effect upon attitudes and no effect upon sexual behaviour or intentions.
Conclusion. This comic can significantly improve young adults' knowledge of HIV transmission in the short-term.

W.E.P.41

W.E.P.42

AN INSTRUCTIONAL PROGRAM ON AIDS AWARENESS AND PREVENTION IN THE HIGH SCHOOL.

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Objective: *To develop a model educational program on AIDS awareness and prevention.*
Methods: 1. The target population was all secondary 3 students (ages 14-15). The instructional material was integrated into the compulsory curriculum courses of human biology and MRE (moral and religious education).
2. The AIDS education program was organized and coordinated as a co-operative effort with the school health care services and the science department to develop an instructional approach, and to review, adapt and develop educational materials. 3. Four major themes were covered in biology: (A) What AIDS is (B) What causes AIDS (C) How AIDS is transmitted (D) How AIDS can be prevented. 4. MRE classes emphasized the social, psychological, moral and ethical aspects of AIDS and addressed related issues of discrimination, civil rights, and testing.
Results: 1. The integrated curriculum approach focused on the adoption of health conducive behaviors by knowledge (biology), skills (health care services), and attitudes (MRE). 2. Evaluation of knowledge was achieved through pretest and posttest results.
Conclusion: There is a great need for a planned intensive AIDS program integrated into the context of the regular curriculum.

W.E.P.43 IMPLEMENTATION OF A MANDATED HIV/AIDS CURRICULUM IN THE PUBLIC SCHOOLS OF WASHINGTON STATE

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In the spring of 1988, the legislature of the State of Washington,USA,enacted the second Substitute Senate Bill No. 6221, the so-called "AIDS Omnibus Bill". A key part of this legislation expressly established a mandate that: 1)AIDS prevention education be taught in the public schools; 2)a model curricula be developed; 3)that an Office on AIDS, established by this legislation be responsible for a) the medical accuracy of the model curricula and b) all other materials intended for classroom use also be approved for medical accuracy.

The processes involved in developing the model curricula, the development of objective criteria against which to judge existing AIDS curricula, approval of materials for classroom use, introduction to and training for the implimentation of the model curriculum, and other aspects of the legislation specific to AIDS education will be discussed.

W.E.P.44 LES APPARTEMENTS DE RELAIS THERAPEUTIQUE ET SOCIAL : ACCUEIL POST-HOSPITALIER ET REINSERTION SOCIALE.

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Les appartements de relais thérapeutique et social (APARTS) proposent une solution provisoire d'hébergement destinée aux malades du sida (stade IV) ne nécessitant plus une hospitalisation plein temps, et présentant des difficultés d'ordre social et psychologique.

L'accueil post-hospitalier dans ce type de structure intermédiaire permet d'assurer la prévention tertiaire d'une population socialement marginalisée par l'infection du VIH.
Ce type de structure favorise la réinsertion des malades en traitement. Elle permet aux patients de recouvrir leurs droits sociaux et de retrouver une place dans la cité.
Les appartements thérapeutiques complètent le dispositif français de lutte contre le sida et d'aide aux malades en situation de précarité.

W.E.P.45 HEALTH EDUCATION FOR AIDS PREVENTION AMONG STUDENTS

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Objective. To define methods to implement an educational program for HIV infection prevention among school population.
Methods. Target population: students of Junior High Schools (JHS) and High Schools (HS) of the Latium Region, Italy (approx. 525,000 subjects); educators: a minimum of 2 school teachers every 3 (JHS) or 5 (HS) classes. Teachers are appointed by the local School District authorities. A total of about 13,000 teachers will be trained; trainers of educators: approx. 100 medical doctors and biologists, selected by a multiple choice questionnaire on AIDS; training of trainers: 5 day courses organized by the REU, for 25 subjects each, on the prevention of HIV infections. Objectives of the course: at the end of the course health professionals have to be able to: a) define educational objectives for teachers; b) talk correctly on the main issues of AIDS prevention; c) define appropriate techniques of communication to fulfill each educational objective. Methods of the course: J.J. Guilbert's (WHO) method for the education of health professionals is adapted to the objectives of the program. The main steps in the educational process are: a) definition of professional tasks and specific educational objectives; b) identification of the components of a task (practical, communication, and intellectual skills) and planning of an evaluation system; c) use of techniques of active self-learning. Each AIDS issue is introduced by a 45' lecture, and then transformed into educational objectives for teachers by the participants. Work is carried on in groups of 5, and each group illustrates the main features of its product to the others: presentations are then discussed in plenary.
Evaluation: a pre-test questionnaire is administered before the course to define baseline levels of knowledge; after the course, intellectual skills are evaluated with a multiple choice questionnaire (post-test). Observation of individual behavior during group work and presentations, and analysis of individually written material (i.e., prevention guidelines, slides for overhead projections, etc.) allow a global evaluation of practical and communication skills.

W.E.P.46 "DOES AIDS HURT?" EDUCATING YOUNG CHILDREN ABOUT AIDS

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Objective. To outline principles for discussing AIDS with young children (to age ten), particularly as they apply to parents; and to social service, mental health, medical and education professionals working with young children and their families.

Methods. All over the country, and especially in high HIV incidence areas, young children are asking questions about AIDS. Because of the sensitive nature of many AIDS related concerns, care and thought must be taken in providing age-appropriate and culturally-appropriate answers. A series of guidelines, principles and approaches to discussing AIDS/HIV disease with young children will be presented, along with case study material.

Results. These guidelines and principles will increase the comfort and willingness of parents and professionals to offer appropriate AIDS education in school, home and clinical settings, to young children; and to advocate for others to do so.

Conclusions. There is a need for professionals working with young children and their families to prepare to discuss HIV with them, and certain principles and guidelines will make this easier.

W.E.P.47 SCHOOL BASED AIDS EDUCATION IN A NATIONAL PRESPECTIVE: THE IMPLEMENTATION AND PRELIMINARY EVALUATION OF THE ISRAELI MODULE.

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Since September 1987 a national module of AIDS education in schools is implemented in Israel.The implementation was based on 4 stages: 1) preparation of an accepted curriculum 2)Training teachers,school nurses etc. in using the curriculum 3) creating an on-going flow of information to program users 4)widening the available resources.There was no planning stage.
Reacting to media reports and general public anxiety,a special committee was set in education ministry to examine a proposed curriculum on AIDS prevention prepared for teachers working in 6th-12th grades.The curriculum,based on the "Immune system approach",was approved for use in secular and religious schools on a national level. the paper will present universal barriers in the curriculum approval process. Training of health educators,teachers,nurses and councelors in using the curriculum was introduced at in-service training and special workshops. Evaluation re knowledge of teachers,nurses etc. about HIV &AIDS presentwarning signs re the "social AIDS epidemic"(eg descrimination). The special structure of the training workshops will be discussed."AIDS FACT" -a monthly newsletter for programs' users will be presented. The "keep us informed" problem of teachers will be highlighted with examples from a few of the countries which followed the Israeli module,in part.We shall discuss the establishment of "teachers' resource center on AIDS" and the widening of resources of diffrent approaches.
Preliminary evaluation indicates that this module is suitable for others too.

W.E.P.48 SEX EDUCATION MATERIALS TO PREVENT S.T.D. AND AIDS IN ADOLESCENTS.

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Objective. To describe Sex Education materials, to prevent S.T.D. and AIDS in adolescents from low resources communities in Bogotá. Colombia S.A.
Methods. This work describes the process of designing and elaborating the Sex Education materials "Body and the pleasure of Being" with the participation of adolescents. The objective of the sex education materials according to the results of the previous research carried with the adolescents was: To make possible the recognition and worth of the body, as a way to prevent S.T.D. and AIDS. The information was collected through anonimous questionnares and individual and group interviews. The contents were distributed in four units: 1. Encounter with the body. It facilitates the reflection on sexuality and body image. 2. All the bodys part's are important in the expression of sexuality. This unit makes reference to the brain, the sense organs, and the genital organs, in experiencing sexuality. 3. Clarification of miths about sexual organs and the necessity of taking care for all parts of the body. 4. Responsible sexual behavior to prevent S.T.D. The units were proved and evaluated in two Sex Education workshops. the evaluation was conducted through structured questionnaires and, focus groups interviews.
Results. The methodology described in the materials: 1. Increases the information level concerning structure, localization, functions and care of the sexual organs: prevention and treatment of S.T.D. and AIDS. 2. Facilitates the clarification of miths, and beliefs related to sexual organs, S.T.D. and AIDS. 3. Stimulates the recognition of the body image which contribute to adopt responsible sexual behavior.
Conclusions. The theme of S.T.D. and AIDS should be a part of an integral sex education program that includes the bio-psico-social aspects of sexuality. To approach prevention of S.T.D. and AIDS, it is necessary to emphasize the recognition and worth of the body image. It increases self esteem and stimulates body care-taking.

W.E.P.49 A NATIONAL STRATEGY DESIGNED TO REDUCE BARRIERS HINDERING THE IMPLEMENTATION OF EFFECTIVE HIV EDUCATION FOR YOUTH: FIRST YEAR'S ACHIEVEMENTS

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Objective. To describe the first year's achievements of a national strategy designed to overcome major barriers hindering implementation of effective HIV education for youth.
Methods. In 1987, the Centers for Disease Control (CDC) sponsored 2 national meetings to identify barriers hindering implementation of effective HIV education for youth. Participants identified as major barriers, the lack of: 1) organized support from national education organizations; 2) educational policies, guidelines, and recommendations; 3) access to educational resources for youth; 4) teacher training programs; 5) parental involvement and support; and, 6) data describing HIV-related knowledge, attitudes, and behaviors among youth and the effectiveness of educational interventions to influence these factors. CDC initiated a national strategy comprised of 6 systems to reduce the barriers. These systems are described and first year achievements are delineated.
Results. A system of organized support from 20 national education organizations was implemented. Seventy State, local, and Territorial education agencies initiated programs to provide effective HIV education for youth. A national computerized database of educational materials was established. Three education agencies provide national training for educators and 13 regional training centers were identified to provide teacher training. Nine States and 6 cities established databases describing knowledge, beliefs, and behaviors among representative samples of youth. Research is underway to evaluate the effectiveness of interventions.
Conclusion. First year's achievements rapidly reduced the first 3 barriers. Continued and expanded efforts are needed to reduce the latter three barriers. This strategy may have applicability in nations that provide national-level support for implementing HIV education for youth.

W.E.P.50 A NATIONAL STRATEGY FOR THE DIFFUSION OF PROGRAMS ON SCHOOL HEALTH EDUCATION TO PREVENT THE SPREAD OF HIV

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Objective. To describe a national model for the diffusion of programs on school health education to prevent the spread of HIV.
Methods. In 1987, the Centers for Disease Control (CDC) began providing financial and technical support to 1 local and 2 State education agencies that had the experience and capacity to help others plan, implement, and evaluate HIV education programs for youth. Each agency provides training and demonstration related to the accomplishments and problems encountered in planning, implementing, and assessing HIV education programs within its jurisdiction. Training/Demonstration Programs are offered to teams responsible for implementing HIV education programs in regions throughout the United States. Financial assistance is provided by CDC to support the travel and per diem of participants. Content of the Training/Demonstration Programs is discussed.
Results. Currently, the Training/Demonstration Programs have trained teams from 40 States and 21 cities. Over 300 persons including parents, school board members, and representatives of education and health departments, and agencies that serve out-of-school youth have participated in these programs.
Conclusion. This national model of demonstration, training, and technical assistance supports the rapid diffusion of strategies for planning, implementing, and assessing HIV education programs. This model may have applicability in nations that can provide national-level support for regional training/demonstration programs.

W.E.P.51 COMPARATIVE KAP STUDIES AND STD IN TWO DIFFERENT SOCIO-ECONOMIC GROUPS

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Objectives: To compare the level of awareness, cultural and sexual practices as well as attitude to AIDS and STD in two different Socio-economic groups with a view of formulating appropriate health education messages for HIV prevention.

Methodology: Pretested and modified questionnaires were administered to 410 randomly selected undergraduates and also to 375 (purposefully) selected individuals of lower socio-economic status. Questions were designed to cover awareness, knowledge, practice on AIDS and STD, sexual habits and preferred mode of receiving health education as well as individual assessment of existing health education material on AIDS.

Results: Undergraduates exhibited more knowledge of symptoms and prevention of AIDS than the rural dwellers. Whereas, the former indulge in higher risk practices than the latter, condoms are more acceptable and used by the former than the latter. Undergraduates prefer to learn more about AIDS through electronic media and newspapers while the rural dwellers prefer community health talks.

Conclusion: Health education against AIDS must be targeted to suit needs of different groups. For rural areas with low AIDS prevalence, health education with emphasis on safe is important. Campaign against HIV infection ought to be integrated with Primary Health Services.

W.E.P.52 UN EXEMPLE DE COLLABORATION ENTRE MEDECIN ET JOURNALISTE

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Objectifs: améliorer l'information sur le sida dans un hebdomadaire destiné aux homosexuels (Gai Pied Hebdo), notamment par le biais de la page intitulée "Info-Sida" qui paraît dans chaque numéro du journal.
Méthode: une collaboration étroite et régulière a été établie avec une association spécialisée sur l'information et la prévention du sida, l'ARCAT-SIDA, et en particulier avec les médecins de cette association. Sur la base d'études parues dans la presse scientifique internationale ou de faits établis par la pratique médicale, les articles portant sur un sujet précis sont élaborés en commun par un journaliste et un médecin au cours d'entretiens enregistrés. L'article est ensuite rédigé par le journaliste puis relu et corrigé par le médecin. L'un et l'autre signent l'article à sa parution.
Résultat: Une enquête annuelle réalisée par le journal auprès de ses lecteurs montre que ceux-ci considèrent en grande majorité la page "Sida" comme indispensable. Toutefois les lecteurs ne se manifestent pas directement par écrit ou par téléphone pour demander des informations supplémentaires ou pour que soit abordé tel ou tel sujet. En revanche, les articles de l'Info-Sida provoquent des réactions et engendrent le dialogue entre les patients et les médecins de l'association au sein de leur cabinet. D'une façon générale l'Info-Sida est reconnue pour sa qualité par le corps médical, les associations et les institutions. La collaboration entre une association spécialisée et des journalistes permet à ces derniers d'acquérir des connaissances approfondies sur le sida, mais ils sont alors enclins à utiliser une terminologie et un discours de plus en plus médical au détriment de l'accessibilité de l'information par les lecteurs.
Conclusion: l'exigence de la qualité de l'information n'est pas une fin en soi. Une constante évaluation de la perception de l'information doit être établie pour éviter qu'elle ne devienne trop hermétique pour les lecteurs mais au contraire adaptée à leurs connaissances et à leurs besoins. Ce qui présuppose une analyse précise du lectorat du journal.

W.E.P.53 COMPARISON OF AIDS KNOWLEDGE LEVELS AND BEHAVIORS IN SEXUALLY TRANSMITTED DISEASE (STD) CLINIC PATIENTS AND ALTERNATIVE TESTING SITE (ATS) CLIENTS

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Objective: To compare levels of AIDS knowledge and behaviors in persons attending selected urban STD and ATS facilities.
Methods: From 7/88 through 10/88, 1,063 (398 ATS, 665 STD) self-administered surveys of AIDS knowledge, behaviors, and demographics were completed. Knowledge scores and behaviors were compared by clinic setting, sex, and race. Demographics for STD respondents (STD) showed greater proportions of nonwhite (42% vs. 13%), female (38% vs. 29%), and adolescent patients (19% vs. 2%) compared to ATS respondents (ATS).
Results: Heterosexual preference was more common in STD than ATS (93% vs. 66%). The groups were similar with respect to number of sexual partners, history of nongonococcal STD, needle use, needle sharing, and prior antibody testing. Fewer STD indicated a desire for testing than ATS (45% vs. 97%). Based on a 10-point scale, ATS rated self-perceived knowledge levels higher than STD (mean score, 6.8 vs. 5.7), and objective evidence of knowledge was greater in ATS for all questions. Among STD, knowledge levels were higher among whites than nonwhites. ATS reported sexual behavior changes (fewer partners, increased condom use) more often than STD (53% vs. 38%, and 48% vs. 37%). Reductions by ATS in unsafe intravenous drug use (IVDU) were similar to STD (stopped IVDU, 57% vs. 62%; decreased needle sharing, 29% vs. 35%).
Conclusion: Compared to ATS (who are test seekers), STD need greater educational and behavior modification efforts to reduce AIDS risk.

W.E.P.54 WHAT KEEPS PHYSICIANS FROM TALKING ABOUT AIDS: Barriers to AIDS Prevention Education

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The specific aims of this study were:
1) To find out if primary care physicians in a large HMO setting were providing AIDS risk reduction information to their patients, and 2) to identify barriers that might prevent them from providing this information.

An anonymous survey was mailed to 650 physicians in a large Northern California Health Maintenance Organization (HMO). A usable return rate of 65% (423/650) was obtained.

Statistically significant differences in the willingness to discuss AIDS with patients were found to exist depending on the *physician's perception* of the patient's risk for AIDS. Use of Pearson correlation coefficients found that the most often reported barriers of "lack of time", "more important health issues", and "the need for more reliable information" did not correlate as a deterrent to providing health education as much as reported discomfort with initiating discussions of sexual practices or drug use . Chi-square analyses showed differences in providing AIDS prevention education were not statistically significant by age, type of practice, or location (urban or rural) of practice . There were statistically significant differences for sex of the physician, numbers of AIDS patients in their practice, and knowing someone (friend, relative or colleague) with AIDS .

These findings changed the direction and emphasis of physician education programs and were an essential part of the needs assessment used to develop clinic services to enhance AIDS risk reduction efforts.

W.E.P.55 PROPOSED MODEL OF MEDICAL WORKSHOP ON AIDS IN AFRICA

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Objective.To develop a model of medical workshop(W)as effective as possible in conveying essential messages on all main aspects of AIDS and HIV infection(clinics,epidemiology,prevention,counselling and ethical issues).
Methods.33 MDs(at least 1 from each Hospital in Zanzibar)were invited to participate in a 5-day W on AIDS and HIV infection.A blackboard,50 transparencies on different issues,50 slides,mainly on clinical subjects,an overhead projector and slide projector were used by 7 facilitators (2 clinicians,2 epidemiologists,1 public health expert,1 lab technician and 1 social scientist).To evaluate the W,a 50-items questionnaire on all main subjects was distributed to the participants both before and after the W,and a standardized evaluation form was distributed after the W,designed to register comments on the W by the participants.
Results.An average of 70.75% correct answers to the test were given at the end of the W,while the pre-test figure was 55.69%(with a significant increase of about 15%,p 0.00001).All participants felt they had greatly improved their knowledge on AIDS.
Conclusion.Updating of medical personnel is urgently needed in all developing countries in order to effectively tackle the impending epidemic. This 5-day full-time W has proven useful,as it conveyed basic ideas on all main aspects of HIV infection;active participation by the attendees was also a key element for the success of this training experience.

W.E.P.57 DIRECTIONS FOR THE FUTURE: A REVIEW OF WORLDWIDE AIDS PROGRAMS

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Objective: To survey education and information programs used to increase knowledge and reduce risk behavior related to HIV/AIDS.

Methods: The authors have identified five categories within which AIDS education programs from around the world are examined. These five categories include: Regional and National Information Campaigns, Community and Institutional Network Responses, AIDS Prevention Counseling and Behavior Support Efforts, Condom Marketing Strategies, and Media Education Programs.

Results: AIDS prevention and education programs have been implemented around the world in response to diverse needs with varying degrees of success. Through a systematic examination of programs in both industrialized and developing countries, critical program components have been identified that can serve as models for the further development of prevention programs.

Conclusion: The opportunity for partnership and exchange between regions is made apparent by the simultaneous diversity and commonality of these initiatives.

W.E.P.59 A COMMUNITY-WIDE SURVEY OF AIDS KNOWLEDGE, ATTITUDES, AND PREFERRED INFORMATION SOURCES

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Objective. To involve community residents in program planning, assesses preferred sources of AIDS information, and measure knowledge and attitudes about AIDS.
Method. In May 1988 questionnaires were mailed to a randomly selected sample of 5,000 residents in Long Beach, CA; each received one questionnaire to complete personally and another to distribute to a friend or relative. The questionnaire assessed (1) the preferences of adults regarding sources of AIDS information for adults and adolescents and (2) basic AIDS knowledge and attitudes regarding personal risk, disease severity, response efficacy, persons with AIDS, and social norms.

Results. A total of 642 questionnaires were returned—502 from mailing recipients and 140 from those distributed by residents. 85% of respondents were white; 41% were male and 59% female. Age ranged from 18 to 85 (mean = 44). Differential preferences regarding sources of AIDS information for adults and adolescents were expressed. Television (79%), newspapers (75%), and personal physicians (75%) were preferred by information sources for adults while schools (82%), television (75%), and parents (68%) were rated as the most appropriate sources for adolescents. Basic AIDS knowledge of respondents was fairly high (79% correct). Respondents tended to view AIDS a severe health threat that has caused many individuals to modify high-risk behaviors; however, few respondents viewed themselves as being personally at risk. Age and sex, with few exceptions, were not related to preferences, knowledge, or attitudes ($p > .05$).

Conclusion. Community surveys provide valuable information for AIDS program development and provide a mechanism for direct citizen involvement.

W.E.P.56 CROSS-CULTURAL OBSTACLES TO AIDS EDUCATION IN THE SOUTHERN AFRICAN CONTEXT

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OBJECTIVE. To identify and resolve various barriers to educating Africans about HIV/AIDS in Southern Africa.
METHODS. Data pertaining to education barriers was collected over a period of one year, as follows: (1) field experience, (2) interviews, (3) group discussions, and (4) surveys.
RESULTS. Some of the most common barriers to AIDS education include: (1) the traditional belief that disease is caused by ancestors or evil spirits and the ignorance of the germ theory of disease; (2) the absence of terminology for 'virus' and 'immune system' in the vernacular; (3) the fact that sex is not openly discussed between elders and the youth or males and females; (4) the practise of polygamy, urbanisation and migrant labour which has led to (the practice of) multiple sexual partners; (5) the inaccessibility of AIDS information in rural areas; (6) the view that 'witchdoctors' can cure AIDS; (7) the high rate of illiteracy and ignorance; (8) the idea that condoms are a political ploy to control population; (9) the unavailability, expense, fear and stigma associated with the use of condoms; and (10) the notion that AIDS is a 'white mans' disease.
CONCLUSION. Cross-cultural knowledge, awareness and skills must be developed to overcome obstacles to AIDS education. It is imperative to work within the world view of different people in order to educate effectively.

W.E.P.58 REPORTED BEHAVIOR CHANGE IN AIDS RISK GROUPS

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Objectives: To examine behavior change in groups at risk for AIDS/HIV.
Methods: A statewide telephone survey of 1,649 randomly selected persons in Texas was completed in 1988. Seventeen percent of the sample reported more than one sex partner, 10% reported another STD, 3% reported sex with a prostitute, and 2% reported sex with an IV drug user.
Results: For those who reported having had more than one sex partner, the following results were found: Since hearing about AIDS, 44.8% reported reducing their number of sex partners, 21.3% used condoms, and 11.3% became monogamous; women in this risk group were significantly more likely than men to become monogamous; men were more likely to report having fewer partners rather than becoming completely monogamous (50.8% of men vs. 28.1% of women), or to use condoms (23.4% of men vs. 15.3% of women, $p<.05$); television was the most frequently cited source of information prompting behavior change among this group (26.1% cited television); and men were more likely than women to cite television; women were more likely than men to say a sex partner influenced them to change. Among minorities, Blacks (19.9% of the sample) and Hispanics (30.5% of the sample), television was the most frequently cited source of information prompting behavior change; television most often prompted condom use (64.3%), monogamy (47.8%), and fewer sex partners (32.8%). Fewer than half of those reporting sex with an IV drug user had made similar changes.
Conclusions: Mediated communications may be successful in prompting behavior change among groups at risk of AIDS/HIV. In order to reach all risk groups, public health campaigns may need to incorporate interpersonal communication and televised AIDS prevention messages.

W.E.P.60 HOW TO EDUCATE 26,000 HEALTH CARE WORKERS IN 6 MONTHS

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Objective. To provide within 6 months consistent and comprehensive education about Universal Precautions (UP) for 26,000 health care workers (HCW) in a health maintenance organization.
Methods. In response to the Centers for Disease Control's recommendation for HCW to use UP to prevent transmission of blood-borne diseases, a multidisciplinary education task force developed a program integrating expertise of various regional, local and bargaining unit personnel. In 12 weeks this task force created a UP specific Train-The-Trainer package: 8 minute video, master training script, teaching outlines for facility training, transparency masters, pre- and post-tests, visual test for people with English as a second language, resource materials, posters, pocket cards, graphics, buttons. The program was marketed through existing media sources at local and regional levels. Presentations to 26 peer groups enlisted the support of key departmental managers and supervisors.
Results. During a 2 week period 300 people completed master training sessions. In the following 10 weeks, these master trainers educated 26,000 physicians and employees in appropriate regional departments (e.g., laboratory), 14 hospitals, 26 medical office buildings within the Kaiser Permanente Medical Care Program-Northern California Region.
Conclusion. Over 90% of the 26,000 HCW were educated by the deadline. In order to assess the efficacy of the project, ongoing monitoring and evaluation components were integrated into procedures at local medical centers. Key factors in the successful implementation were strong administrative support and commitment.

W.E.P.61 THE JUDICIOUS USE OF HUMOR IN A CONDOM PROMOTION CAMPAIGN

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The Northwest AIDS Foundation coordinates social services for people living with HIV/AIDS in the Pacific Northwest United States and sponsors skill-building workshops and mass media campaigns. The Be Well-Equipped media campaign (1987-8) was designed to promote consistent use of lubricants, spermacides and latex condoms. Humor became an integral part of this campaign based upon the belief that taboos about discussing condoms could most easily be abolished through humor. A community-based planning group helped the Foundation to develop guidelines for using humor in AIDS prevention messages. Artist/writer Lynda Barry created a series of condom promotion cartoons with titles such as: Fascinating Condoms of the Future, Can This Love Affair Be Saved?, and a Valentine's Day cartoon called A Dozen Red Condoms. Comment and testimony from the community was positive regarding this attempt to use humor in promoting safer sex. Guidelines for using humor in AIDS education will be discussed and the artwork for Be Well-Equipped will be displayed.

W.E.P.52 SIDAIDS: A COMPUTERIZED TELEPHONE AIDS INFORMATION & COUNSELLING SERVICE (TELEMATIC)

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Objective: To describe a personalized telematics service providing information and advice on AIDS, accessible by the general public through any telephone (residential or public). Although the computer software and structure of the communications are complex, the service to users is highly user-friendly.
Method: A user consults the computer-driven service anonymously using a personal access code. The user can choose to communicate with a counsellor or a computer. The user receives replies and advice that take into account his or her personal situation(age, sex, sexual orientation,etc.).
Results:The equipment, computer programme and data collection are now defined that provide the following service:1) SIDAIDS communicates clear and precise information on AIDS to anyone who consults the system about specific questions. This function is similar to the activity of many hotlines with respect to information on AIDS, but it allows, in addition, for personalization of the replies without overloading counsellors.2) SIDAIDS promotes self assessment by the user of his or her "risk coefficient". In many cases, this assessment involves several stages - each stage covers a specific aspect of the individual case and includes educational elements.3) SIDAIDS establishes and maintains a continuing interactive link of consultation and education, so as to foster changes in individual behaviour and thereby reduce the risks of spreading AIDS. In this regard, clients with "at risk" behaviour have priority access to the counsellors, and, as far as possible, a user in this category will have access, if he or she wishes, to the same counsellor, call after call.4) SIDAIDS permits a counsellor, at the user's discretion, to have access to all information ever entered by the user.5) SIDAIDS facilitates the collection of epidemiological and behavioural information for subsequent data analysis.
Conclusion: Prototypes are confirming the feasibility and utility of the SIDAIDS mechanism.

W.E.P.63 AIDS PREVENTION CAMPAIGN IN HEALTHY CITY PROJECT OF ŁODZ

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Objective. To describe the AIDS prevention campaign as one of very important tasks undertaken in healthy city project of Łódź- "Health for All by the year 2000".
Methods. WHO /Euro/ approach and principles for undertaking the health promotion of cities have been adopted. For the health surveillance the main AIDS risk group of about 300 nonorganized adult people has been chosen. They have been taught on AIDS, the healthy attitudes and risk behaviours by the questionnaire study.
Results. The blood service intervention and health education have caused the implementation of AIDS precautionary measures among blood donors and drug abusers. AIDS problem is connected with the improvement of the survey on other groups. The questionnaire survey among adult risk group shows that their knowledge is on the sufficient level but their risk behaviours are unrelated to their knowledge as it is shown in the below table.

Condom use gives full security			Do you use condoms?		Are condoms accessible?			Do you examine in a lab?	
Yes	No	Unknown	Yes	No	Yes	No	Unknown	Yes	No
28%	16%	56%	40%	60%	24%	60%	16%	68%	32%

Conclusion. The regular use of condoms should be practised especially by homo/bisexualists. They ought to receive them free.

W.E.P.64 EXTENDING THE ROLE OF AIDS HOTLINES IN AIDS PREVENTION PROGRAMS IN DEVELOPED AND DEVELOPING COUNTRIES

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Objective. To assess the role and function of AIDS Hotlines in developed and developing countries.
Method. Literature review and in-depth interviews with key informants and Hotline staff in community-based organizations and AIDS programs in the U.S., Mexico, Trinidad and Tobago, and Peru.
Results. AIDS Hotlines are an integral component of AIDS prevention programs in the United States, with operations at the community, state, and national level. Hotlines in the U.S. provide information dissemination, referral, and listening support to callers. Hotlines also track trends in caller concerns, misperceptions, and service needs; and monitor levels of message awareness and recall provided through national information and education initiatives. Comparable programs which provides listening services and referrals are being established in several Latin American and Caribbean countries.
Conclusion. Hotlines are an important link in the communication chain to inform and support callers concerned about AIDS and HIV infection. Hotlines are frequently the first point of intake into the AIDS service support system in the U.S. In Trinidad and Tobago the hotline serves primarily as a listening support system, and in Peru it is being used to provide information targeted to gay and bisexual men.

W.E.P.65 KNOWLEDGE AND PERCEIVED RISK OF AIDS AMONG THE ADULT POPULATION OF KINSHASA, ZAIRE

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Objective. To measure knowledge of AIDS, level of perceived risk, and factors which predict knowledge and perceived risk.
Methods. Based on probablistic sampling, 3083 men and 3661 women of reproductive age were selected for this 1988 survey.
Results. In Kinshasa, 99% men and 96% women have heard of AIDS. Among these, nine in 10 men and women know the four main modes of transmission. Knowledge of specific facts about AIDS is higher among men than women, among the more educated, and among the age groups 20-40. Forty-seven percent of men and 63% of women believe they are at no risk of contacting AIDS. Perceived risk was highest among those who had extramarital relations, were more educated, were 20-40, and had seen messages on AIDS through multiple channels. However, knowledge of the specific facts relating to AIDS was not associated with perceived risk.
Conclusions. Education efforts have succeeded in informing the public of AIDS and the modes of transmission. Future campaigns should promote greater use of condoms, stress the absence of a vaccine or cure, and focus special efforts on the young, unmarried population that seemingly deny their risk of AIDS.

W.E.P.66 SECONDARY SCHOOL STUDENTS AS AIDS HEALTH PROMOTERS FOR AN ILLITERATE RURAL WEST AFRICAN VILLAGE POPULATION

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In rural areas of Africa, where most of the population is illiterate and mass media are not available, AIDS Health Promotion is often difficult. Literate young people make up a small proportion of the population, but they traditionally bring news and information when they return to their villages. We worked with secondary school students, training them to use pretested pamphlets and a photonovella to teach villagers about AIDS. The young people also made posters, and created songs and dramatic presentations. A pilot programme showed that information about AIDS transmission and prevention was successfully conveyed by these means, but that the young people most often shared information with semi-literate people. The materials and training programme were redesigned so that the audience reached would be larger and more varied. Randomly selected villagers were interviewed before the programme, and at one week, six weeks, and six months after it. Interviews included questions about programme exposure, AIDS transmission and prevention, sexual practices, and condom use. STD incidence in sexually active age groups in the villages will also be compared with pre-programme incidence, as will registration at Planned Parenthood centres for condoms. We will discuss the design and implementation of our programme, including pretesting, preliminary evaluation, and redesign of materials as well as results.

W.E.P.67

AIDS EDUCATION IN PRISONS
A MODEL

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Objective. To present people, working in both provincial and federal prisons, with information inmates and youth need to know about AIDS and techniques they might use to teach them.
Methods. * Examples of methods of bonding with an inmate audience will be presented * Using brainstorming we will explore sexual self-definition and examine same-sex contact * Presentation of resources and materials * Preview of the video- AIDS-A BAD WAY TO DIE * Review most frequently asked questions * Using brainstorming and color coding we will outline which body fluids carry HIV * Introducing use of condoms and needle cleaning * Testing informational input using a Safer Sex Continuum * Teaching concrete learners/considerations for information passing
Results. People working with those in confined settings will become familiar with basic AIDS information needed by inmates and youth, their learning styles, and techniques for teaching.
Conclusion. The prison system is a place where there is both drug use and same-sex contact. It is critical that we give incarcerated people health and lifestyling information so they can make choices.

W.E.P.68

RISK REDUCTION AFTER OUTREACH INTERVENTION AMONG INTRAVENOUS DRUG USERS

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Objectives: To assess risk reduction by intravenous drug users (IVDUs) after ex-addict street outreach.
Methods. Ex-addict outreach workers of the AIDS Outreach and Prevention Project performed street-level educational outreach (including oral and written messages about using bleach or alcohol to decontaminate injection equipment) to IVDUs in NYC starting in early 1987. Bleach was not distributed (through early 1988). HIV antibody testing and counseling were offered. 325 subjects received an interview, which is an educational tool in itself, when they were educated; 295 were tested. 144 (44%) subjects were re-interviewed at a median of 140 days later. Subjects who were and were not followed up were similar in ethnicity, gender, drug injection frequency (total, and by specific drugs), and condom use. Older subjects and those recruited in the Bronx or Queens, rather than Brooklyn, were significantly more likely to be reinterviewed. Results are reported for subjects who were interviewed twice.
Results. Over the median 140 days between interviews, mean monthly drug injections declined from 34 to 10 ($p < .0001$ by paired comparison t-test). 50 (35%) subjects reported no injections in the month prior to the initial interview; fully 74 (51%) did not inject during the several months between interviews. Bleach use to decontaminate injection equipment was stable and low: 16 (11%) subjects initially reported regular bleach use as compared to 19 (13%) in the follow-up interview. Regular users of alcohol as a decontaminant decreased from 65 to 54. Of 128 subjects who had sex during the year before the first interview, 46 (36%) used condoms at least once; this changed to 61 of 116 (53%) during the follow-up period ($p < .05$).
Conclusions. Although AIDS risk behaviors declined after intervention, bleach or alcohol use did not increase. Since bleach use has been widely adopted by IVDUs in cities where it has been distributed by outreach workers, outreach without bleach distribution appears to be less effective in promoting decontamination of injection equipment.

W.E.P.69

NIVEAU DE CONNAISSANCE DU SIDA DANS UNE POPULATION EXPOSEE

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Il s'agit d'une enquete d'information réalisée auprès d'une population d'étudiants du centre universitaire de Sidi-Bel-Abbes en Algérie.
L'objectif de l'étude est de déterminer le niveau de connaissance des étudiants sur le problème du SIDA.
L'échantillon,obtenu après sondage aléatoire,est composé de 273 sujets qui ont rempli,d'une façon anonyme,un questionnaire à plusieurs items.
L'age moyen des sujets est de 23 ans.Il y a autant de filles que de garçons,issus surtout d'un contexte familial modeste,et résidant en majorité en milieu urbain.Les deux tiers des sujets enquetes ont une connaissance précise de la définition de la maladie et des effets qu'elle provoque.Plus de la moitié d'entre eux(55%) connaissent le nom du virus et ses modalités de détection.
Par contre,près d'un étudiant sur trois ne connait pas ses modalités de transmission,et n'identifie pas correctement les groupes particulièrement exposés à la maladie.
En matière de comportement,si le problème inquiète deux étudiants sur trois,la plupart des sujets considèrent la maladie comme étant un phénomène non important dans le contexte socio-culturel actuel.
L'enquete montre la nécessité d'une action d'éducation pour la santé permanente en direction de cette population.

W.E.P.70

COMMUNITY RESPONSE TO THE AIDS EPIDEMIC IN FOUR U.S. CITIES: NEW YORK, SAN FRANCISCO, LOS ANGELES, AND MIAMI

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Objective. To describe the community response to the AIDS epidemic in four U.S. cities with large concentrations of people with AIDS. The purpose of this project was to provide this information to other cities which are developing a community response to AIDS.
Methods. Extensive case studies were performed in New York, San Francisco, Los Angeles and Miami during the spring and summer of 1988. Public officials, health care providers and representatives of community-based organizations were interviewed. Planning documents, local newspapers, and statistical reports were reviewed.
Results. The four cities differed along several dimensions. Race, income, risk group, and political influence of the community's AIDS population were important in shaping the community response. Larger proportions of uninsured, low income, minority, and/or drug abusing persons with AIDS have led to more difficulty in developing services. Other important influences have been the pre-existing health and social service systems and the availability of volunteers. Most communities have too few appropriate long term care, supportive housing, home health care and personal support services. The geography of the community (e.g. land area and geographic barriers) has also shaped AIDS services. A final determinant has been the cooperation between public agencies, which plan and fund services, and private providers.

W.E.P.71

IMPACT OF PILOT INTERVENTIONS TO REDUCE THE SPREAD OF HIV INFECTION AMONG HIGH RISK WOMEN IN AFRICA

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Objective: To develop and test an intervention model that will slow the transmission of HIV infection among urban prostitutes, a population at high risk of contracting and spreading AIDS as well as other sexually transmitted diseases.
Method: Peer health educators (PHEs) are recruited from prostitute groups and trained to provide information to other prostitutes on the risks and consequences of AIDS, to offer condoms and to encourage women to adopt "safer sex" practices.
Results: Preliminary data indicate that prostitutes are highly interested in taking actions to reduce their risk of AIDS, and are accepting and using condoms provided by the PHE. Clients, however, appear to be less willing to adopt risk-reducing behaviors and thus present compliance problems.
Conclusion: Development of appropriate educational materials and training for PHEs, coupled with adequate supplies of condoms, is likely to result in less high risk behavior among urban prostitutes and their clients.

W.E.P.72

SOCIAL AND CULTURAL CONSTRAINTS IN THE CONTROL OF AIDS AND HIV INFECTION IN SUB-SAHARA AFRICA

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AIDS and HIV infection have over the past few years become a major health, social, political, economic and cultural concern the world over. These are mainly acquired through social behaviours which are to a large extent influenced by society's cultural beliefs and practices. These differ from one Community to another, and may be constraints in the various strategies aimed at controlling the spread of AIDS and HIV infection.

The paper attempts to look at some of the salient social, cultural attributes in sub-sahara Africa namely, marriage customs, the right of women in sexual matters, the single man/woman, the adolescent, the desire for fertility, separation of spouses in search of economic gains, and the traditional/cultural beliefs and practices, which may have an impact on AIDS and HIV infection control programmes.

Their role in the spread of the epidemic and ways of changing or influencing them are discussed.

KEY WORDS: Social, cultural beliefs and practices, control of AIDS and HIV infection, Sub-Sahara Africa.

W.E.P.73

THE AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOR OF INTERNISTS AND SURGEONS: A COMPARATIVE ANALYSIS

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Objective. To identify factors accounting for differences and similarities of AIDS-related knowledge, attitudes, and behaviors between surgeons and internists.

Methods. In September 1987 an anonymous survey was delivered to all physicians at a 455-bed acute-care teaching hospital. Included in the survey were scales measuring AIDS-related knowledge, behaviors, attitudes, homophobia, and homosexual bias.

Results. A total of 68 internists- IM(68/98; 69%) and 34 surgeons- SG(34/69; 49%) responded. Three of the IMs and one SG identified themselves as homosexual. The IMs had a lower mean age (38.1 vs 40.0; p = .062), and were more likely male (84% vs 65%; p = .058). The only gender related difference in the parameters studied was a higher level of homophobia among male MDs (p = .014). The IMs were less biased in their attitudes towards homosexuality (p = .048) but were not significantly less homophobic than SGs. The IMs reported more favorable behaviors in hypothetical situations with AIDS patients (p < .001) and had slightly higher AIDS knowledge scores (p = .088) than SGs. IMs more frequently reported knowing someone with HIV infection (45/67; 15/34; p = .030) and they had more often cared for someone with AIDS (61/67; 22/34; p = .005). SGs were much more concerned about acquiring HIV through work exposure (p < .001) and reported a much greater level of contact with patients (p < .001). A majority (25/34; 73%) of surgeons were in favor of mandatory HIV testing of all hospitalized patients, while a minority (11/66; 17%) of IMs favored this (p < .01). Forty-seven percent (16/34) of the SGs and 28% (19/67) of the IMs desired a secret HIV test for themselves (p=.09).

Conclusions. SGs may exhibit less desirable behaviors towards PWAs compared to IMs due to more homosexual bias and more concern about at-work exposure. Education programs need to innovatively address these issues.

W.E.P.74

AIDS, AND FAMILY PLANNING IN ADOLESCENTS

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HIV has been isolated and/or cultured from endometrial biopsies, cervical mucus and vaginal fluids of seropositive women. These secretions and sloughed off infected endometrial cells adhere to the surface of intrauterine devices (IUD's) and their tails throughout the menstrual cycle. Lymphocyte-like infected cells are detected within cervical crypts. Local infection of susceptible cervical cells from infected semen precede systemic HIV s[illegible]. IUD's also cause dramatic increases in cervical/vaginal atypia, cervicitis and inflammation of HIV-infected women. There is increased risk of HIV infections of the cervix in women with "Pelvic Inflammatory Disease (PID)". In developing countries, most risk groups for AIDS and contraception are similar. AIDS counseling can be conducted in an INTEGRATED Family Planning/maternal-child, Health Center/Drug Treatment Center/STD Clinics. Adolescents should be provided with sex education, AIDS awareness information and adolescent contraceptives services at schools/colleges. To discourage adolescents to undergo unnecessary abortion; childless couples could adopt prospective infants of adolescence before birth. HIV-seropositive women should be counselled to avoid pregnancies since many infected women are asymptomatic. Temporary surgical contraception is recommended for seropositive women to avoid pediatric AIDS.

W.E.P.75

A STUDY OF KNOWLEDGE, ATTITUDES AND BELIEFS ABOUT AIDS AMONG FOURTH YEAR MEDICAL STUDENTS OF TANTA UNIVERSITY, EGYPT

BY

PROF.DR. IBRAHIM M. SHOAIB, MPH,MD.

The present study was conducted on a randomly chosen sample of 100 fourth year medical students of Tanta University who have not been exposed to formal medical education about AIDS. The purpose of the study was to assess their knowledge, attitudes and beliefs about AIDS. A self-administered questionnaire was distributed consisting of 31 questions which sould evaluate students' knowledge including; cause of the disease, modes of transimission, severity, personal susceptibility, and the need for including more detailed education about the disease in their medical courses.

Findings of the study revealed that, such students possess some knowledge about AIDS, although this knowledge is uneven. As regards disease transimission, 95% of students correctly stated that sexual itercourse transmitt AIDS from infected persons, however only 50% were aware that the use of a condom during sexual intercourse protect against the risk of infection. The majority (90%) agreed AIDS is a fatal disease, but only 40% were aware that no vaccine is yet available against AIDS and only 65% reported that AIDS could not be cured. Most students (85%) believe that AIDS is a serious problem and that it is important for them to know more about the disease through formal medical education.

W.E.P.76

ATTITUDES SUR LE SIDA ET COMPORTEMENT SEXUEL ENTRE LE PERSONNEL DE LA SANTÉ A LISBONNE: UNE ÉTUDE EXPLORATOIRE

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OBJECTIF: Etudier les attitudes du personnel de la santé face au SIDA en vue à l'etablissement d'un programme de formation et d'organisation des services.

MÉTHODE: La communication se base sur une enquête effectuée auprès de médecins et d'infirmières dans un Centre de Santé et dans un service hospitalier à Lisbonne (n=56). La recherche a utilisé un questionnaire auto-administré.

RÉSULTATS: L'étude a démontré des différences d'attitudes entre les infirmières et les médecins et les aspects suivants sont à noter: le SIDA est considéré comme le plus grand problème de santé par 27% des infirmières et 11% des médecins;parmi les maladies transmissibles par voie sexuelle 92% des infirmières et 75% des médecins considerent le SIDA comme la maladie la plus préoccupante; en ce qui concerne les formes de contagion, les médecins donnent une plus grande importance à l'homosexualité (46%) que les infirmières (19%), les infirmières (42%) donnent une plus grande importance aux relations hétérosexuelles que les médecins (18%), en ce qui concerne le risque de contagion périnatale, il est consideré par certains médecins et infirmières comme nul. Les médecins et les infirmières ont également montré des opinions et des attitudes différentes en ce qui concerne leur connaissance du SIDA.

Quant au dépistage du SIDA, les infirmières se montrent davantage d'accord avec le dépistage obligatoire (77%) que les médecins, (50%), pour les groupes de risque.

Les réponses face aux pratiques sexuelles montrent également des différences entre les médecins et les infirmières, les médecins ayant une plus grande tendance à accepter des pratiques telles que le sexe oral: médecins 71%, infirmières 46%; sexe anal: médecins 36%, infirmières 31%, homosexualité: médecins 29%, infirmières 12%.

Les médecins (57%) et les infirmières (85%) disent avoir peu de connaissance sur le SIDA et ils montrent des attitudes différentes en ce qui concerne la totale approbation de l'usage de préservatifs: médecins (7%) et infirmières (31%).

CONCLUSION: L'etude démontre l'existence de grandes différences d'opinion et d'attitude entre les infirmieres et les médecins, et aussi que les deux groupes considerent avoir peu de connaissance sur le SIDA. Ceci a permis l'élaboration d'un programme de formation qui est actuellement en cours dans le Centre de Santé où la recherche a été effectuée.

Tendances démographiques, tendances de la fertilité
Demography and Fertility Patterns

Th.E.P.1 CONTRACEPTIVE UTILIZATION IN AND OUT OF THE MARITAL SETTING: IMPLICATIONS FOR THE TRANSMISSION OF HIV IN KINSHASA.

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Objective: To determine and compare the level of contraceptive utilization in and out of the marital setting.
Methods: A working population in Kinshasa and their spouses were interviewed to obtain contraceptive and sexual histories.
Results: Overall 32% of 1063 monogamously married men(MMM) and 29% of 1084 monogamously married women(MMW) currently use contraception with their spouse. Condom usage with spouses was 2% in MMW and 3% in MMM, with 12% "regular" usage, primarily for pregnancy prevention. Thirty-five % of MMM and 2% of MMW acknowledged extramarital contacts(EMC) in the past year. Use of condoms in EMC was low (13%) and infrequent (23% regular use). Half knew that condoms were effective against HIV, and this was associated with condom use in marriage (p=0.002) but not in EMC. Use of condoms in marriage was 4 times higher in men and women with a history of EMC than those without EMC (p=0.07).
Conclusions: The potential for HIV transmission in this population is high, given the prevalence of unprotected extramarital relations. Education and counselling efforts for both family planning and prevention of HIV should take this into account.

Th.E.P.2 MODELLING THE SPREAD OF HIV/AIDS AND ITS DEMOGRAPHIC IMPACT: A REVIEW OF APPROACHES

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Objective. To review models of the demographic impact of AIDS developed by selected authors in light of modelling approaches, data needs, assumptions, algorithms and usefulness for measuring the impact of selected interventions.
Methods. Numerical information is reviewed on the nature of the HIV agent, modes of transmission, duration from infection to AIDS to death, and regional patterns. Current models are reviewed and classified according to their ability to incorporate behavioural, biological and epidemiological elements, and measure the demographic impact of behavioural and other changes.
Results. Models requiring very few parameters are often uninformative from a policy perspective; those requiring many parameters were hampered by insufficient empirical data. Modelling results appear sensitive to assumptions of the shape of the incubation function, time distribution of infectivity, heterogeneity in sexual behaviour, and interaction among population groups.
Conclusions. In spite of shortcomings, models have already helped enhance our understanding of expected short and long-term demographic effects of vaccine development, behaviour changes and blood screening. The extent to which numerical results depend on assumptions of parameter values, distribution functions and model structures is not clear at present. The Population Division Task Force will be further investigating these issues as part of its efforts to synthesize the results of world-wide modelling efforts.

Th.E.P.3 RISK FACTORS FOR HIV-2 INFECTION

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Objective: To determine the risk factors and historical parameters associated with HIV-2 seropositivity in a cohort of prostitutes in West Africa.
Methods: An analysis of 139 registered female prostitutes was performed on a subset of approximately 1100 prostitutes registered at an STD clinic in Dakar, Senegal. The HIV-2 seropositive females in the subset had been matched by age, nationality and years registered in the clinic with seronegative females, yet still were representative of the entire clinic population in age (+ 2 years), nationality distribution and years in the clinic. The matched historical parameters were analyzed in relation to serostatus to HIV-2.
Results: In the subset of 139 prostitutes, as well as in the clinic population, a slightly higher seropositivity rate to HIV-2 was associated with an original nationality outside of Senegal. Also associated with significantly higher seropositivity was the "workplace" parameter usually seen with the non-Senegalese prostitutes ("Chez elle" or brothel setting), confounding the above observation.

Interestingly, the seronegative prostitutes in the subset were more likely to have been previously hospitalized and to have a history of transfusions. No association was seen with HIV-2 seropositivity and female circumcision, scarification, tattoos or previous vaccinations, such as BCG. In evaluating the historical parameters concerning the prostitutes' children, no difference was noted in seropositives versus seronegatives in the number, health status or infant/childhood mortality of their offspring. There was no difference in the age of first sexual encounter between seropositive and seronegative prostitutes. Estimates of the number of lifetime sexual partners, however, was significantly associated with seropositive status.
Conclusions: HIV-2, as with HIV-1, appears to be a sexually transmitted disease. Follow-up of this cohort will provide insight into the epidemiology of and parameters associated with HIV-2 infection.

Th.E.P.4 DETERMINANTS OF CONTRACEPTIVE PRACTICES AMONG INTRAVENOUS DRUG USERS IN NEW YORK CITY

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OBJECTIVE: To identify factors associated with contraceptive use among IV drug users in New York City.
METHODS: Structured interviews with 403 IV drug users recruited through street outreach in New York City produced information about contraception, AIDS risk behavior, and socio-demographic characteristics. Analyses used crosstabular and logistic regression techniques.
RESULTS: Forty-two per cent (167/403) reported current use of contraceptives or other forms of birth control. Thirty-three per cent (135/403) used condoms. Contraception was significantly positively associated with education, plans to have children, employment, number of sex partners, currently being in a sexual relationship, being non-Hispanic, and engaging in drug injection risk reduction practices. Contraception tended (p>.05) to be greater among younger and non-homeless subjects, but was not related to gender, having children, levels of alcohol use, or past psychiatric history. In stepwise logistic regression, the number of sexual partners, current sexual relationship, race, and making drug related behavior changes remain significant. Similarly, for condom use alone, the number of sexual partners, drug injection behavior changes, and involvement in a sexual relationship were significant predictors.
CONCLUSIONS: Among IVDUs, there is considerable contraceptive and condom use but not nearly enough to prevent pregnancy. Almost half of the sample practiced at least one form of contraception or birth control in an average month. These findings associating education, working, and contraception are consistent with the findings from general population surveys. Since contraception consisted mostly of barrier methods such as the use of condoms, this should serve to retard HIV spread through heterosexual and perinatal transmission.

Th.E.P.5 CHARACTERISTICS OF MEN IN THE NATIONAL MORTALITY FOLLOWBACK SURVEY WHO DIED OF AIDS

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Objective: To contrast the social and demographic characteristics, health care access and utilization, and disability prior to death of men dying from AIDS with those of other men.
Methods: Descriptive statistics are presented for data from a nationally representative sample of adults aged 25 or more who died in the USA in 1986. The sample consists of 18,733 decedents, 204 of whom died of AIDS. The data yields the first population level statistics on many characteristics of men dying from AIDS in the USA.
Results: Men dying from AIDS tended to be younger, more highly educated, and hold higher status occupations than other men. They were more likely to suffer disorientation and need help with daily activities. Caretakers of AIDS decedents were less likely to be family members and more likely to be visiting homemakers or nurses. Use of physicians, mental health professionals and hospice care was also greater among men dying from AIDS than others.
Conclusion: The social, demographic and health characteristics of men dying from AIDS are considerably different than those of men dying from other causes. Understanding these differences can help in developing programs to assist those who are infected with HIV. The NMFS data can provide information on many characteristics of AIDS decedents not available from any other source in the USA. As a nationally representative sample, the data can be used for generalizing to the population as a whole.

Dépistage
Testing

Th.E.P.6

Th.E.P.7

CENTRE DE DEPISTAGE ANONYME VOLONTAIRE ET GRATUIT DE MEDECINS DU MONDE. PARIS. FRANCE.

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Objectif. En juillet 1987, Médecins du Monde entreprend une action contre la pandémie du SIDA, en créant le premier centre de dépistage anonyme et gratuit du V.I.H. en France. Cette démarche qui a permis d'informer et de sensibiliser les personnes face à l'extension de ce fléau, sera reprise par les pouvoirs publics six mois plus tard.
Méthodes. L'équipe est composée de bénévoles : 30 médecins hospitaliers et libéraux ; 5 psychologues ; 15 infirmières ; 1 personne d'accueil ; 1 statisticien. Nos critères sont l'accessibilité au test, le volontariat, l'anonymat, la confidentialité, la gratuité, et l'information personnalisée avec pour but la prévention. L'annonce de la séropositivité apparait un moment primordial et le travail de l'équipe psychologique nous semble important.
Résultats. Nous avons dépisté 4 280 personnes, dont 67% d'hommes, 33% de femmes. Le pourcentage de séropositifs est de 7,5%.
Conclusion. Il nous est apparu important de faire une étude sur le profil des personnes séropositives à partir du questionnaire anonyme et du carton réponse en reprenant certains critères : le sexe, l'âge, la catégorie socio-professionnelle, le comportement sexuel, la toxicomanie.

Th.E.P.8

ESTIMATING THE PERCENTAGES OF HIGH RISK GROUPS WHICH HAVE BEEN TESTED AND COUNSELED FOR HIV BY 1988. Judson, Franklyn; Douglas, J.; Davidson, A. Denver Public Health, Denver, Colorado, USA

Objective. To estimate the percentages of homosexual and bisexual men (GM) and heterosexual intravenous drug users (IVDU) ever tested/counseled for HIV.
Methods. Recent surveys indicate that about 3% of men aged 18-60 consider themselves homosexual or bisexual (GM) and thus are at potential risk of HIV infection. By December, 1988, Denver Public Health (DPH) alone had recorded 5,228 HIV testing/counseling visits by GM, or more tests than the estimated 4,524 GM in Denver's population of 510,000. Because this approach does not correct for multiple testing of individuals, we asked all patients making initial visits to the Denver Metro STD Clinic 1/1/88 - 9/30/88 if they previously had been tested for HIV and recorded the numbers tested during the current visit.
Results.

STD Clinic Patient Group	No. Visits	No. Previously Tested (%)	No. Tested/Retested Current Visit (%)	Total No. Tested (%)
Homosexual Men	833	548 (62.2)	369 (41.8)	708 (80.4)
Male IVDU	532	185 (34.8)	288 (54.1)	397 (74.6)
Female IVDU	275	122 (44.4)	174 (63.3)	233 (81.1)

Conclusion. Based upon a unselected sample of patients attending an STD clinic, we estimate that 60-80% of homosexual men and 40-75% of heterosexual IVDU have undergone HIV T/C. For GM, high rates of T/C acceptance, declining prevalence of HIV in recent T/C volunteers, a 1988 increase in new AIDS cases of only 10% over 1987, and dramatically falling incidence rates for gonorrhea, syphilis, and HIV infection affirm the success of 7 years of efforts toward safer sexual practices and bode well for eventual control of AIDS in this risk group.

Th.E.P.9

Emotional Impact of Voluntary HIV Antibody Testing
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Objective: To assess prospectively the psychological effects of HIV testing in conjunction with individualized pre-and post-test counseling.
Methods. Standardized measures of distress were completed 2 weeks before HIV test notification, immediately before and after notification, and 10 weeks later by 214 asymptomatic adults (138 gay/bisexual men, 25 IV drug users, 51 heterosexuals with suspected HIV-infected partners).
Results. For the 174 seronegatives, visual analogue scale (VAS) measures of anxiety and depression fell immediately upon notification compared to scores at entry and immediately before notification (all $p < .001$), even though most seronegatives (76%) had correctly predicted their results. Compared to entry values, their scores on VAS, Beck Depression Inventory (BDI), and State Trait Inventory (SAI) at 10 weeks after notification were all significantly decreased (all $p < .02$). Immediately after notification, the 40 seropositives had a transient increase in reported depression, but did not have significant increases in the VAS measure of anxiety. At 10 weeks, after notification and continuing psychoeducational counseling, VAS depression had returned to its baseline, BDI had decreased significantly ($p < .002$) and VAS anxiety had decreased below its values at entry ($p < .02$).
Conclusion. HIV serological testing when combined with individualized counseling was emotionally helpful for both seronegative and seropositive research subjects at two months following notification.

Th.E.P.10

HIV ANTIBODY TESTING BY CANADIAN GENERAL PRACTITIONERS AND FAMILY PHYSICIANS
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Objective. To assess HIV antibody testing by primary care physicians in Canada. Methods. A mailed questionnaire survey was used to obtain information from a proportionate, random sample of Canadian general practitioners and family physicians, stratified by geographic region and size of community. Results. 80.4% of the physicians returned a completed questionnaire. Of the 833 respondents, 75% had ordered at least one HIV Ab test in the last two months. Of these 625 physicians, 66% stated that the test was patient-initiated over three-quarters of the time. 13% of physicians received at least one positive result. 72% of physicians always obtained informed consent, 22% never do; 68% always do pretest counselling; and 37% never do post-test counselling. Factors identified by logistic regression as being associated with those physicians who always pretest counsel and obtain informed consent include feeling at ease when pretest counselling, feeling concerned about HIV infection in their practice, and conduct routine risk assessment. 35% of all respondents stated they would inform the patient's partner of a positive result without the patient's consent, 32% would sometimes. Conclusion. Much of HIV testing is patient initiated. The importance of informed consent, carrying out pretest and post-test counselling needs to be emphasized.

Th.E.P.11

TELEPHONE SCREENING FOR MEN AT RISK OF HIV INFECTION
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Objectives: To test the feasibility of conducting telephone interviews with a random sample of men in Los Angeles to determine their engagement in activities placing them at increased risk of HIV infection, and to assess the effects of feedback on their degree of risk (low/increased) on their follow up of this information.

Methods: Random digit-dialing telephone calls were placed to residences; men ages 18-60 were asked to participate in a risk-assessment interview. Those determined to be at increased risk were so informed and given a toll-free 800 number to call for further information, counseling, and referral for a free medical evaluation, if indicated.

Results: Seventy-percent of men contacted were interviewed; 1,610 interviews were completed, half in 18 census tracts, with an incidence of 19.2 cases of AIDS per 1,000 men. The rest represented all other areas of Los Angeles. 4.7% of men stated they were homosexual/bisexual. Of heterosexual men, 13.2% had >4 partners in the past 2 years. Rates of HIV testing were associated with degree of risk. Overall, 14.7% (adjusted for oversampling) of men in Los Angeles had been tested for HIV antibodies. Despite facilitating access to counseling/care, only 4% of those at risk took advantage of the assistance offered and called the 800 number.

Th.E.P.12

CAMPAGNE DE PROMOTION POUR LE DEPISTAGE VOLONTAIRE, ANONYME ET GRATUIT A LYON - FRANCE.
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L'association Médecins du Monde a réalisé à Lyon du 11 au 26 avril 1988, une campagne d'affichage publicitaire (sur 300 panneaux municipaux, 50 panneaux commerciaux de 4 m x 3 m, plusieurs centaines d'affichettes en milieu étudiant) pour promouvoir le dépistage volontaire, anonyme et gratuit.
Le slogan retenu était "Moi, je préfère savoir" et le support visuel le portrait d'une chanteuse populaire chez les 15 - 25 ans. Un numéro d'appel téléphonique gratuit était donné par l'affiche pour connaître les différents centres de dépistage anonyme, publics et privés, de la ville.
Cette campagne ciblant les jeunes reposait sur la théorie selon laquelle une personne connaissant sa sérologie (positive comme négative) est plus motivée pour respecter les mesures de prévention, par rapport à une personne en situation de doute.
Dans les six semaines qui ont suivi la campagne d'affichage, 6 800 appels téléphoniques ont été reçus, la fréquentation moyenne de tous les centres a été multipliée par trois. Au cours des consultations de rendus de résultats et d'information, un questionnaire épidémiologique était proposé aux patients. Le pourcentage de séropositifs dépistés pendant cette période a été plus faible que pendant les mois précédents (5%).

Th.E.P.13 ANONYMITY SOUGHT IN HIV ANTIBODY TESTING

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Objective. To determine HIV antibody test site client preferences for confidential versus anonymous antibody testing across two data collection points: 1987 and 1988.

Methods. In Study I (1987) and Study II (1988) 417 and 697 consecutive clients (respectively) from the San Francisco HIV Antibody Test Site were surveyed about their preferences for confidential versus anonymous testing prior to receiving their test results.

Results. Study I. Of the 326 respondents comprised of gay men, bisexual men, intravenous drug users (IVDUs), and heterosexual contacts with multiple partners, 46% reported they would not have taken the test if anonymity were not guaranteed. An additional 30% said they were not sure whether they would be tested under confidential procedures. Bisexual, gay, and IVDU respondents were significantly more likely to express doubt about utilization of other than anonymous testing procedures ($p<.0004$). Also prior to notification, seropositives and seronegatives differed in their response to the question ($p<.01$) with the majority of positives (71%) stating they would not be tested without a guarantee of anonymity. Study II. Results will be presented on 1988 preferences for confidential versus anonymous testing. Comparisons across time points, gender, race/ethnicity, and risk group will also be presented.

Conclusions. Based on 1987 data, the guarantee of anonymity in the testing process was an essential factor leading to utilization of the Antibody Test Site in San Francisco.

Th.E.P.14 ASSESSING THE ETHICAL AND POLICY IMPLICATIONS OF TESTING SURGICAL PATIENTS FOR HIV ANTIBODY IN THE USA

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Objective. To assess the ethical and policy implications of HIV antibody testing of USA surgical patients in the context of preventing occupational transmission of HIV in surgical settings.
Methods. 1) Review of data concerning: a) HIV occupational transmission in surgery, b) current status of HIV testing technology, and c) rationale advanced for antibody testing of surgical patients; 2) analyze the surgical health care worker and patient relationship regarding health promotion and maintenance; and 3) assess the scope of policy benefits and policy problems which may be generated by antibody testing in surgical settings.
Results. Review of data suggests that HIV occupational tranmission is a minimal risk, espcially when U.S. Centers for Disease Control (USCDC) recommended precautions are routinely followed. The current status of HIV antibody testing remains problematic due both to false negative and false positive results. In assessing ethical and policy issues, it appears that antibody testing on a mandatory level in surgical settings would generate more difficulties than benefits at the present time. It could also disrupt the normative ethics of the health care worker and patient relationship.
Conclusion. Mandatory HIV antibody testing for surgical patients in the USA is not recommended at this time. The routine offering of HIV antibody tests especially if clinically indicated, is recommended. Such testing should address counseling needs and patient consent.

Th.E.P.15 PRELIMINARY EVALUATION OF AN ADMISSION, HIV ANTIBODY, VOLUNTARY SCREENING PROGRAM IN A LARGE PRIVATE HOSPITAL

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Objective: To evaluate an admission, HIV antibody, voluntary screening program in a large (1280 bed), private hospital as to testing compliance, attitudes, positivity rate, cost and confidentiality.

Methods: Data were obtained from The Methodist Hospital (TMH) Information Services, Virology Laboratory, and from individual patients' medical records. One hundred patients (50 who agreed to and 50 who refused testing) were interviewed.

Results: From 12/1/88 to 1/15/89 there were 3987 patients admitted to TMH; 2115 (53%) agreed to testing. There were 9 (.43%) true +, 3 (.15%) false +, and 3 (.15%) indeterminate results. Of the 9 true +, 6 were admitted for proven or probable HIV-related disease; all 9 patients were known to be in a high-risk category on admission. Informed consent for testing was obtained by admitting personnel, ward clerks, or nurses - seldomly by physicians. The most common reasons to agree to testing were "I wanted to know" (50%) and "I thought it was required" (28%). The most common reasons to refuse testing were "I'm not at risk" (48%) and "I was previously tested" (16%). Of the 100 patients interviewed, 85% felt that this screening program was in their best interest and should be continued. Cost of testing was borne by private insurance or by Medicare DRG payments. No problems with confidentiality were documented.

Conclusion: An admission, HIV antibody, voluntary screening program can be implemented in a large private hospital with favorable patient opinion and at least moderate patient compliance. If greater patient testing compliance is desired, better education and physician-patient interaction is suggested. In this low HIV+ -rate population, it is difficult to show that universal admission screening adds to a practical approach to hospital infection control. Although previously unknown HIV+ patients were discovered, the majority could have been predicted by a history of risk factors and this is a significantly more cost-effective method of HIV screening.

Th.E.P.16 EVOLUTION DES MOTIFS DE PRESCRIPTION DE SEROLOGIE VIH EN MEDECINE GENERALE EN AQUITAINE, FRANCE, 1987 - 88

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Objectif . Etude de l'évolution de la prescription de sérologie VIH par les médecins généralistes et des facteurs influençant cette prescription.
Méthode . Un réseau télématique de surveillance épidémiologique par des médecins "sentinelles" répartis sur la région Aquitaine -2,720,000 habitants- a été mis en place en 1986. Depuis octobre 1987, 80 médecins généralistes transmettent des données concernant leurs prescriptions de sérologie VIH.
Résultats . En 15 mois, 566 sérologies VIH ont été prescrites, dont 20 (3,5%) ont été positives (confirmation par Western Blot). Le nombre moyen de prescriptions par médecin et par mois a augmenté de 20% (de 0,41 fin 1987 à 0,53 fin 1988). Dans 46% des cas, le test est prescrit à la demande du patient, et dans 54% des cas à l'initiative du médecin. Ces proportions sont restées stables au cours du temps. Les demandes de sérologies concernent aussi bien les hommes (52%) que les femmes (48%). On retrouve dans 40% des prescriptions un comportement à risque pour l'infection par le VIH . Dans 10% des cas il s'agit d'homosexualité/bisexualité, associée ou non à une toxicomanie, dans 5% des cas d'hémophilie ou d'antécédents de tranfusion, et dans 25% des cas d'un contact avec des partenaires hétérosexuels multiples ou à risque. Pour 60% des prescriptions (191 femmes et 147 hommes), aucun comportement à risque n'est identifié à l'origine de la demande. Dans ce contexte, la sérologie est demandée à l'occasion d'un examen prénuptial pour 41% des hommes et 35% des femmes, ainsi qu'à l'occasion d'une grossesse pour 41% des femmes. Lorsqu'aucun comportement à risque n'est identifié, des antécédents de maladies sexuellement transmissibles sont retrouvés dans 12% des cas ; cette proportion est de 18% chez les hommes et de 7% chez les femmes.
Conclusion . La demande de sérologie VIH en pratique généraliste libérale augmente régulièrement en Aquitaine. Plus de la moitié des prescriptions sont effectuées chez des sujets ne présentant aucun comportement à risque . Dans ce cas, le médecin est aussi souvent à l'origine de la demande que le patient . Les bilans prénuptiaux et prénataux sont souvent à l'origine d'une prescription.

Th.E.P.17 CARACTERISTIQUES DES CONSULTANTS D'UN CENTRE DE DEPISTAGE ANONYME ET GRATUIT DE L'INFECTION PAR LE VIH, BORDEAUX, 1988

Jost, Jean-Paul* ; Mamane, G.* ; Chaslerie, A.** ; Frossard, AM.*** ; Géniaux, M.* ; Salamon, R.**
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Objectif. Une enquête a été effectuée pour étudier le profil de la population consultant le centre.
Méthodes. Un questionnaire anonyme est rempli pour chaque sujet, par un médecin, au cours de la consultation. Une prise de sang permet ensuite de pratiquer de manière confidentielle ou anonyme, le sérodiagnostic (dépistage par un test Elisa, et confirmation par un test Western-blot).
Résultats. Du 1er Août au 31 Décembre 1988, sur les 685 tests effectués, 29 étaient positifs (4,2%). Pour 95% des consultants, il s'agissait d'un premier dépistage . Le sexe ratio homme/femme (H/F) est de 1,8:1, mais on trouve plus de femmes chez les moins de 20 ans (H/F=0,8:1) que chez les plus de 20 ans (H/F=2:1) ($p<0{,}002$). La tranche d'âge des 20-29 ans prédomine (51%), suivie de celle des 30-39 ans (25%). Les consultants sont le plus souvent célibataires (77%) et hétérosexuels (78%). Les homosexuels utilisent plus souvent les préservatifs (58%) que les hétérosexuels (27%) ($p<0{,}001$). Les toxicomanes IV représentent 12% des sujets testés. Les principaux motifs de demande de dépistage sont par ordre croissant : appartenance du partenaire actuel à un groupe à risque (7%), appartenance du sujet testé à un groupe à risque (23%), souci personnel lié aux relations sexuelles antérieures (45%) . Dans 55% des cas, l'anonymat est préféré à la confidentialité .
Conclusion. Le consultant type du centre de Bordeaux est un homme, jeune, célibataire, hétérosexuel, ayant en général des rapports sexuels non protégés, ne présentant pas d'autre comportement à risque, et demandant pour la première fois une sérologie par souci personnel. Ce profil correspond à celui des patients consultant habituellement pour des maladies sexuellement transmissibles.

Th.E.P.18 CHARACTERISTICS OF PATIENTS SUBMITTED TO HIV SEROLOGY IN A CLINIC FOR SEXUALLY TRANSMITTED DISEASE OF DOWNTOWN MONTREAL

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Objective. To describe the evolution in time of sex, age, sexual orientation and prevalence of HIV infection in patients submitted to HIV serology in an STD clinic of downtown Montreal (Clinique L'Actuel).
Methods. All patients' charts with HIV serology reports were anonymously reviewed: serology results, age, sex and sexual orientation were recorded.
Results. 2,709 patients were submitted to 3027 tests for HIV from November 1985 to December 1988. The global prevalence was 15.8% in this population. The mean age was 30.8 years. The following table presents the time trends:

Semester/Year	Prevalence	% of women	% of heterosexual	N
2/85, 1/86	52.9%	2.1%	6.7%	140
2/86	38.0%	2.5%	10.4%	163
1/87	23.2%	13.2%	37.7%	448
2/87	10.2%	23.5%	54.3%	829
1/88	7.0%	25.9%	49.6%	715
2/88	10.4%	24.2%	48.8%	732

Conclusion. As expected, the prevalence of HIV infection in tested individuals decreased at the same time that the proportions of women and of heterosexual individuals increased in that population. However, the increased prevalence noted in semester 2, 1988, might reflect a recent increase of heterosexual transmission in downtown Montreal. This observation has to be confirmed by additionnal data.

Th.E.P.19 ALTERATIONS SOCIO-ECONOMIQUES ET COMPORTAMENTAUX DES PERSONNES INFECTÉES PAR HIV.

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OBJECTIF: Identifier les alterations socio-économiques et comportamentaux que sont avec plusieurs fréquens dans les personnes infectées par HIV.

MÉTHODE: L'étude il a developper en train d'analiser les découverts que ont choisi dans les Promptuaires Sociaux de personnes HIV+ dans la période de mars à décembre 1988, totalizant 170 personnes infectées.

RÉSULTATS: Les alterations plus fréquentment observés, ont:

SOCIAUX	N	%	ECONOMIQUES	N	%	COMPORTAMENTAUX	N	%
Rejet familliaire	51	30	Démission	68	40	Engagement en batailles par le meilleurs conditions d'assistance et traitement aux infectés	25	15
Rejet des amies	170	100	Sous-emploi	83	49	Etat morbide	80	47
Rejet des professionels de santé	170	100	Eloigners pour le medicin de l'emprise	100	59	Transformation du comportement sexuel	39	23
Stigmatisation	170	100	Abandonées	20	12	Negation de l'accepter la possibilité d'être infecté par HIV	85	50
Discrimination	170	100						

CONCLUSION: Les alterations qui ont observés montre à la question de le stigmate, de le rejet et de la discrimination comme facteurs que provoquent les autres alterations d'écris. Nous craions que travers d'un ample programme d'orientation et d'education extensif à toute la population, cette chaîne puisse être interrompie.

Th.E.P.20 FUNK AND EPIDEMIOLOGY: VIRAL DIALECTICS IN THE SOUL MUSIC OF PRINCE.

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AIDS Coalition to Unleash Power, New York NY, USA.

Objective: To elucidate the hitherto unexamined impact of the HIV epidemic as deployed in motifs of the seminal work of a major 1980's musician. Methods: Analysts listened to, read the lyrics of, danced to and attended concerts containing material from the albums SIGN "O" THE TIMES and LOVESEXY. Discussion: "In France a skinny man died of a big disease with a little name. By chance his girlfriend came across a needle and soon she did the same." "Positivity. Have U had your plus sign 2-day? Positivity. Do we mark U present or do we mark U late? ... Where did it come from? What did U have 2 do? Can U sleep nights? ... Positivity. Have U had your plus sign 2-day?" Conclusion: "Hold on 2 your soul. We've got a long way 2 go." (In concert:) "Cross the Line!"

Th.E.P.21 STUDY OF THE PREVALENCE IN A HIV TESTING CENTER

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AIDS Reference Laboratory, Université de Liège, Belgium.

Objective: The AIDS Reference Center of the University of Liège has developed a program to evaluate the HIV seroprevalence in relation with motivations of consultants and actual risks of transmission.

Methods: A preliminary interview with the consultant is held with each team member and a confidential epidemiological survey form is filled. Seroprevalence is determined by classical serological methods (EIA, WB).

Results:

Motivations	*Percentage*	*Evaluation of real risks*	*Seroprevalence*
to be reassured	44%	none	0%
multiple heterosexual relationships	17%	±	0%
homosexual relationships	9%	+	2%
IV drug users	3.5%	+	1%
sexual relationship with seropositive	6%	+	1%
professional risks	4%	-	0%
others	16.5%	-	0%

Conclusion: In Belgium, the seroprevalence rate among blood donors is 2/100,000. In our AIDS Reference Center, this rate is 4/100 among people requiring a HIV test. The rate climbs to 1/9 in the population considered at risk.

Th.E.P.22 PREVALENCE OF ANTI HIV ANTIBODIES IN PHIHISICE - SOROCABA (SÃO PAULO) - BRAZIL

GONCALVES, V.L.C-Dos anjos, R.M.P.-Gomes, M.C.O.-Ramos, T.F.

Prevalence of anti HIV antibodies was investigated in 100 internal patients of CONJUNTO HOSPITALAR DE SOROCABA (CHS) Thisiology Infirmary thourong ELISA recombined test, in a period going from May 12, to August 20, 1987. All patients were of male gender, their age varying from 16 to 86 years (medium age 36 years). 36% of them of white colour and 50% single.
In the epidemiological examination realized later, to select persons with AIDS-risky behaviour, we verified:

a) 14% of the patients were homosexuals or bissexuals.
b) 58% of the patients had antecendents of sexual transmissible diseases.
c) 50% of the patients donated or received blood.
d) 26% of patients
e) 05% of the patients were using injetable drugs.

5 Soropositives (5%) were encountered, being minimum 23 and maximum 33 years old (medium 28 years); four (4) of them where white and single. All presented a risk factor (one or more) for AIDS Virus infection: Being 04 homossexuals or bissexauls (two of them were using injectable drugs) and 1 blood receptor, with a total of 2 tranfusions.
For the five (5) HIV (+) patients, one was blood donor, one has been jailed, and 3 admitted that they had transmissible sexual diseases, and in the medical examination, two of them had signals and symptoms related to AIDS.
After leaving the infirmary, they were sent to health centers, near their house, for attendance. Only one belonged to our district and died after presenting disseminated Sarcoma Iaposi.
M. Tubercolosis encountered in individuals with AIDS has been related with relative frequency, appearing before AIDS, concomitantly after the diagnostic of the infection by HIV.

Th.E.P.23 SOCIAL ACCEPTABILITY OF HIV SCREENING AMONG PREGNANT WOMEN.

Moatti Jean Paul, (1), Le Galès C (1), Pr Henrion R. (2) et Pr Papiernik E. (3)
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Since 1987, free HIV screening is systematically proposed, at their first prenatal visit, to all pregnant women attending 9 obstetrical clinics of public hospitals in Paris region. During December 1987 and January 1988, a questionnaire in written form was submitted, just before HIV screening proposal, to all women attending two of these clinics: response rate was 97% and 400 questionnaires were analyzed.
Respondents were significantly older (68% between 25 and 35 years of age) and had a higher level of education than the general population of pregnant women in the region (Civil Census Data).
26.4% declared having already been tested for HIV (43.8% of these tests have been prescribed during ambulatory prenatal care). *93.7% knew, before attending clinics, about the risk of transmission of HIV from mother to fetus.* 92.7% having learned about it through the media. 94.2% believed in such transmission during pregnancy, 29% during delivery, 11.1% through breast feeding, and only 2% by taking care of child after birth.
92% supported systematic HIV screening proposal during pregnancy. 81% thought that female HIV carriers should renounce to pregnancy, and 80% supported abortion proposal for pregnant HIV carriers.
Among women already tested before attending clinic, 9.5% perceive themselves as being "more than average" at risk for HIV; among women not already tested but having previously thought about testing, 15.5% are in this category vs only 2.8% among others (p<0,01). *It suggests an important effect of reassurance of testing. High acceptability of screening is also revealed by the fact that 70% were ready to financially participate in order to get access to testing.*

Th.E.P.24 PSYCHOSOCIAL PREDICTORS OF PEOPLE WHO FAIL TO RETURN FOR THEIR HIV TEST RESULTS

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Objective: Although the majority of people who seek HIV antibody testing return for their results, a substantial minority fail to return. An understanding of the barriers to returning for test results is important to HIV prevention efforts that depend on people having knowledge of their HIV antibody status.

Methods: Data were collected from 997 individuals seeking HIV antibody testing at free anonymous test sites in California (96% volunteer rate). Respondents were assessed (self-administered questionnaires) when they came to have their blood drawn and reassessed when they returned for their test results two weeks later.

Results: Twenty-eight percent did not return for results (n=287). Relative to returnees, non-returnees were more likely to be of lower educational level, more anxious about contracting AIDS, less knowledgeable about HIV testing, and more likely to be young transfusees; groups did not differ on sexual orientation, gender, race, age, marital status, reasons for seeking testing or knowledge of HIV transmission routes.

Conclusion: Efforts are needed to motivate young transfusees, and those with less education to obtain their test results; more on site counseling to reduce anxiety and increase knowledge of test results may enhance return rates.

Th.E.P.25 A CONFIDENTIAL PUBLIC HEALTH HIV TESTING CLINIC AS AN ACCEPTABLE ALTERNATIVE TO ANONYMOUS TESTING

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Objective To analyse the results of 5,189 HIV antibody tests done over a 39-month period at a combined AIDS Testing and STD Clinic operated by a provincial government in Canada and to compare this confidential service with anonymous testing by private physicians.

Methods Testing in British Columbia is free-of-charge and available through any physician and through the Vancouver VD Clinic. Patients seen in the clinic are required to provide identifying information but tests done by physicians outside the clinic do not involve the transfer of identifying data to Public Health.

Results Of 5,189 tests performed on clinic patients, 220 (4.2%) were reactive. Over the same time period, 1,944 of 53,116 tests performed by private physicians were reactive (3.7%). The demand for testing through both sources rose significantly over the 39 months and seroprevalence rates dropped from 16-17% to 2-3%. The following seroprevalence rates were recorded at the clinic: 206 of 3,733 tests on males (5.5%); 12 of 1,371 tests on females (0.9%); 194 of 1,268 tests on homosexual/bisexual males (15.3%); 10 of 2,152 tests on sexually-active heterosexuals (0.5%); 2 of 335 IVDUs (0.6%); 1 of 23 homosexual IVDUs (8.7%); 1 of 38 female IVDU prostitutes (2.6%); none of 22 non-IVDU female prostitutes; and 2 of 85 blood transfusion recipients (2.4%).

Conclusion Non-anonymous HIV testing through a public health clinic is an effective and acceptable alternative to anonymous testing through private physicians. Homosexual/bisexual males in Vancouver are heavily infected with HIV but heterosexuals and IVDUs are thus far relatively spared.

Th.E.P.26 FACTORS AFFECTING THE DECISION TO REFUSE HIV TESTING AMONG HAITIAN IMMIGRANTS IN MONTREAL

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Objective. To identify factors associated with acceptance or refusal of anti-HIV testing in Montrealers of Haitian origin.

Methods. In an ongoing study of knowledge, attitudes and practices related to AIDS in the Montréal Haitian community, anti-HIV testing and appropriate counselling about the test were offered. Subjects could participate in the study and yet refuse the test component. Acceptance or refusal of the test as well as reason for refusal were noted on each questionnaire. Analyses were conducted to identify differences between the "accept" and "refuse" groups and between the reason-for-refusal sub-groups which numbered four.

Results. Of the 264 study subjects, approximately 40% (107) accepted anti-HIV testing and 60% (157) refused. Few significant ($p<0.05$) and meaningful differences were found. Subjects who accepted the test were proportionally more likely to have had occasional sex partners in the past, to currently be in a steady relationship, to have changed their sexual behavior because of the advent of AIDS, to have ever thought of having the test, to have a higher income, to see condom use more positively, and to be more in favor of mandatory anti-HIV testing for immigrants and everybody else. Within the refusal group, the reason for refusal of the test was not associated with any particular characteristic of the study subjects.

Conclusion. Acceptance of anti-HIV testing among Haitian Montrealers seems to be influenced by positive attitudes towards the test itself and by self-reported behavior change in response to the AIDS crisis.

Th.E.P.27 Anxiety and attitudes to HIV testing in an ante-natal clinic.

L. Sherr, C. Victor, A. Stevens - St. Mary's Hospital London, U.K.

Objective:- Monitor the psychological cost of HIV Screening in Pregnant Women.

METHOD:- 140 women attending routine A/N in the area of highest incidence in the U.K. were questioned about HIV testing, routine testing and anxiety & attitudes surrounding these. Mean age 27.1 years, 52% were primiparous and 48% were multiparous. They were born in 23 countries. 57% were married, 18% coupled and 24% single.

RESULTS:- Although 82% thought women had the right to be offered a test, 39% would refuse if asked personally and 10% were unsure. If anonymous blood was tested 37% would mind. HIV raised more anxiety than other routine tests. (% anxious for B/P = 5%; other blood tests = 11%; scan = 15%; HIV = 50%). On the other hand reassurance from such tests was low (1 in 5 would be reassured by the HIV test compared to 1 in 2 by a scan). AIDS & HIV usually generate a high information demand but here 24% wanted a lot more, 17% a little more, 50% no more and 10% wished they had less! Only 2 women had discussed anything to do with HIV with a doctor. Simply carrying out the survey generated much staff concern.

CONCLUSION:- There is a high emotional cost to HIV testing in pregnancy and routine policies need to proceed with caution.

Th.E.P.28 HIV TESTING AND COUNSELING PRACTICES IN THE UNITED STATES: A DESCRIPTIVE NATIONAL STUDY

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Objective: To describe the HIV testing and counseling practices at various types of sites in the United States.

Methods: A questionnaire was developed for this study and subjected to procedures to establish content validity. The tool was mailed to 400 randomly selected HIV testing sites selected from a combined list derived from information provided by CDC and state health departments. The final sample size was 258, and the response rate was 65.7%. 92 (35.7%) of respondents were located in higher AIDS prevalence states.

Results: 23% of respondents conducted anonymous testing only, 20.2%, confidential only, and 56.8%, both. Fees charged ranged from $0.00 to $100.00 (mean = $4.05, s.d.= 10.67). HIV testing/counseling programs located in general health departments were significantly less expensive, saw fewer clients per month, had a lower percentage of HIV positive test results and were more likely to be conducting testing in lower AIDS prevalence states than were other types of sites (e.g. hospital clinics). In 85.4% of respondents, it was policy for clients to see the same person for pre/post counseling if possible. Nearly half of the respondents (45.8%) indicated that if a person who was well known in the community came to their site for a HIV test it could be known why they were there despite procedures in place. Description of content covered in counseling, waiting time, and cost comparisons for high and low AIDS prevalence states will be presented.

Conclusions: Conclusions derive from the results above.

Th.E.P.29 IMPACT OF EXPERIENCE WITH AIDS ON HIV TESTING PATTERNS: AN ANALYSIS OF MINNESOTA AND U.S. HOSPITALS

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Objectives. To obtain data on three issues regarding HIV antibody testing in key U.S. and Minnesota hospitals: how often patient consent is obtained; how often that consent is documented; how often adequate risk-reduction counseling is done in conjuction with HIV antibody testing.

Methods. In February 1988 surveys were sent to infection control departments at the 200 hospitals in the U.S. which conduct infectious disease (I.D.) fellowship training and to all 171 short-term care Minnesota hospitals, as a follow-up to a previous study (JAMA 1988; 259: 1819-1822). The survey included one item related to each of the three issues above. Respondents were asked to circle a response. The response set range for each item was 0%-100%, divided into 10% increments.

Results. Responses rates and results were:

	U.S. I.D. hospitals	Minnesota hospitals
	U.S.: 124/200; 62%	Minnesota: 133/171; 78%
1. Freq. of obtaining consent for testing	mean = 70.1%; S.D.= 33.9%	m = 35.2%; S.D.= 41.6%
2. Freq. of consent documentation	mean = 62.9%; S.D.= 37.1%	m = 33.7%; S.D.= 42.3%
3. Freq. of risk reduction counseling	mean = 52.8%; S.D.= 30.8%	m = 21.8%; S.D.= 31.7%

The U.S. hospitals were separated into 3 groups according to the number of AIDS patients served. ANOVA testing found that hospitals serving a higher number of AIDS patients tended to give higher estimates on each of the items ($p < .05$). A similar trend was found among the Minnesota hospitals.

Conclusion. HIV testing practices vary widely from hospital to hospital in the U.S. and Minnesota. Hospitals serving more HIV+ patients are probably more likely to obtain and document consent for HIV antibody testing and to provide risk-reduction counseling in conjunction with testing. Positive changes in HIV testing practices were not apparent (JAMA 1988; 259: 1819-1822). The need for practice improvement continues, especially in areas of lower incidence of HIV infection.

Th.E.P.30 CHARACTERISTICS AND RESPONSES OF MEN SEEKING HIV ANTIBODY TEST RESULTS

Ostrow, David*; Joseph, J.*; Beltran, E.*; Chmiel, J.** and Phair, J.**
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Objective: To determine whether there are subgroups of gay/bisexual men who respond differentially to learning their HIV antibody (HIV-ab) status.

Methods: This is a continuation of the collaborative Coping & Change Study (C&CS)/Chicago MACS examination of the behavioral and mental health consequences of HIV-ab disclosure (AIDS Education & Prevention 1, 1-11,1989). We compared the 63 men who requested their HIV-ab status within the first 6 months those results were available to the 79 men requesting results later, and the 819 men whose results were not disclosed (ND). Also, the baseline characteristics and mental health responses of men showing behavioral change after learning HIV-ab status (responders) were compared with men who did not change (non-responders).

Results: Earlier study showed no aggregate behavioral consequences of HIV-ab disclosure. Current analyses focus on identifying the men who did and did not positively respond to antibody results with behavioral risk reduction. Responders had higher levels of risk, higher anxiety and depression levels, and were of lower socioeconomic status than non-responders. No differences were observed in terms of self-perceived risk of AIDS, health status, reasons for seeking disclosure, or attributes considered important for health related behavioral changes. Seropositive responders were more likely to delay seeking HIV-ab results and experienced the most prolonged elevations of mental health symptoms following disclosure.

Conclusions: These results suggest that there are subgroups of homosexual/bisexual men, based upon socioeconomic, behavioral, and mental health characteristics, which respond differentially to learning HIV-ab status. The implications of these findings to the design of HIV-ab testing and counseling programs need further consideration.

Th.E.P.31 PREMARITAL SCREENING FOR ANTIBODIES TO HIV-1 IN THE U.S.

White, Carol, Petersen L, and the Premarital HIV Screening Study Group, U.S.A.

Objective. To evaluate premarital (PM) HIV screening in the United States. Methods. 1) Surveyed all states to determine which had PM HIV legislation. 2) Compared number of marriages from 1/88-8/88 to similar months in previous two years to determine the impact of mandatory PM HIV screening laws in two states. 3) Conducted blinded HIV seroprevalence surveys of marriage license applicants (MLA) using routine PM syphilis serology specimens in 8 areas. Results. PM HIV legislation has been proposed in 36 states. Mandatory PM screening (started 1/1/88) in Louisiana and Illinois resulted in 14% and 13% fewer marriages and repeal of the Louisiana law (7/88). Blinded surveys of MLA showed prevalences similar to military recruit applicants (MRA).

Area	Date	MLA % POS (N)	95% C.I.	MRA % Pos*	Adult AIDS**
Alabama	11/87-01/88	0.21 (4694)	0.11-0.40	0.12	136
Alameda Co., CA	11/85-08/87	0.66 (1522)	0.34-1.25	0.48	819
Long Beach, CA	03/87-08/87	0.00 (277)	0.00-1.08	NA	NA
Connecticut	01/88-04/88	0.33 (1494)	0.12-0.82	0.28	381
Georgia	10/87-10/88	0.23 (5663)	0.13-0.40	0.32	342
Mississippi	02/88-12/88	0.00 (2226)	0.00-0.13	0.08	109
Albuquerque, NM	12/87-06/88	0.18 (541)	0.01-1.18	0.05	225
Oklahoma	03/87-07/88	0.07 (8144)	0.02-0.15	0.09	128

*Age- and sex-adjusted to MLA; **Incidence per million population ≥13 years

Conclusion. HIV antibody prevalences in MLA were as high as 0.66%. Mandatory PM screening resulted in fewer marriages in two states. Voluntary PM screening may be justified in high AIDS incidence areas.

Th.E.P.32 THE EFFECT OF MANDATORY AIDS EDUCATION ON VOLUNTARY HIV TESTING IN PRISONS

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Objective. To assess whether mandatory interactive AIDS education leads to fewer at-risk inmates refusing to be HIV tested and counseled.
Methods. We divided 1477 consecutively admitted inmates into two cohorts by date of admission: the first admitted 9/87-12/87 received only a 10 minute videotape on AIDS (n=966) and the second, admitted 1/88-2/88, received the videotape and a mandatory interactive session with an AIDS counselor (n=511). All inmates were then offered HIV antibody (HIV Ab) testing. HIVAb status for inmates declining testing was determined by testing serum routinely drawn for syphilis serology after personal identifiers had been removed. All sera were also tested for hepatitis B core antibody (HBcAb). Results were linked to a questionnaire that assessed the inmates history of risk behaviors administered after the education was given.
Results. Sixty-three percent (927) of all the inmates were at risk for HIV infection defined as being positive for either HBcAb, IV drug use, and/or male homosexual. The cohorts were not different in their proportion of at-risk inmates (62.4% in the first and 63.4% in the second). Nineteen inmates were HIV Ab positive (1.3%, 95% confidence limits [CL] 0.7%, 1.9%). Compared to at-risk inmates who did not receive interactive AIDS education, at-risk inmates who received interactive AIDS education were 25% less likely to refuse testing for HIV (79/324 vs. 192/603, p=0.02). IV drug users who recieved interactive education were 23% less likely to refuse testing than IV drug users who did not receive education (63/279 vs. 155/512, p=0.03). HIV positive inmates who received education were 67% less likely to refuse testing than HIV positive inmates who did not receive education (1/7 vs. 5/12).
Conclusion. Providing mandatory interactive AIDS education before offering HIV testing may lead to fewer at-risk inmates refusing to be tested and counseled.

Th.E.P.33 A REPORT ON A NEWLY DEVELOPED AIDS INTERVENTION PROGRAMME IN MONTREAL.

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Objective: To develop a comprehensive AIDS programme for the population at large that incorporates education, anonymous H.I.V. testing, follow-up counselling and medical support, with the objective to examine who, of the population at large, is using the service and to isolate the seroprevalence rate of this particular population. Method: Through a co-ordinated mandate by the Ministry of Health and Social Services and the CLSC Métro -Youth and Women's Clinic, the AIDS Intervention Centre was conceived. A staff of 4 counsellors were hired to provide the necessary education and counselling component to this programme. In-service education was provided for all support staff, both professional and non professional of CLSC Métro - Youth and Women's Clinic to assure consistency and sensitization. Telephone information, pre and post counselling, psycho-social support, follow-up and referral are provided to all beneficiaries of this programme.
Results: Since the initiation of the programme, we have tested (to date)337 individuals, which shows a seropositivity rate of 5.4%. This seropositivity rate is represented exclusively (100%) by the homosexual population.
Conclusion: This particular, comprehensive approach to H.I.V. testing is most commonly utilized by the "worried-well" population, but also reveals a seropositivity rate consistent with the prevalence rate of homosexual population which is a targeted high-risk group.

Updated statistics available on day of conference.

Anthropologie
Anthropology

Th.E.P.34 SEXUALITY AND HIV TRANSMISSION IN KAGERA REGION, TANZANIA.

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Kagera Region accounts for more than 60% of the total AIDS patients in Tanzania. A Sero-Survey based on healthy individuals in the area revealed prevalence rates ranging from 33% in urban areas to 10% in the rural areas. Transmission of the infection is largely heterosexual. However, no study has ever delved into the cultural factors governing sexual behaviours of the people in the area. This one year anthropological study is a contribution in that direction. It highlights on the cultural construction of sexuality among the people of Kagera with a view of designing appropriate control measures against AIDS pandemic in the area.

Th.E.P.35 SEXUALITE ET CONNAISANCE DU SIDA CHEZ LES LYCEENS ET LES JEUNES FEMMES DE DAKAR ET BANLIEUE

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OBJECTIFS Les objectifs de cette enquête sur le SIDA visent à déterminer des groupes cibles, d'évaluer leur niveau de connaissance de la maladie, d'identifier les pratiques, habitudes et conduites culturelles autour de la sexualité, la contraception, les MST et le SIDA, de participer à la conception de l'information, de participer à la conception et à la realisations des actions de prévention du SIDA. Les groupes cibles sont ici des individus en activité sexuelle évidente: des femmes fréquentant des centres de PMI nombre de 400 au et des individus seuil réel désiré d'activités sexuelles: des lyceens (ennes) de collèges à Dakar au nombre de 122.
METHODOLOGIE: Un questionnaire comprenant le 4 grands thèmes envoyés a été élaboré et complèter par des interviews semi- directives industrielles et collectives.

RESULTATS: Les résultats de l'enquête montre que la sexualité du niveau de celle de la population cible est très libre: précocité, fréquence des rappots sexuelles, multipartenariat, recherche de plaisir multiforme. Ceci avec des nuances en rapport avec le niveau d'instruction, le sexe. Utilisation relativement faible des preservatifs ainsi que le multipartenariat encore persistant montre le divorce existant entre un niveau d'information grandissant et des moeurs et pratiques sexuelles très peu contrôlées. CONCLUSION: L'enquête ouvre des pistes pour améliorer et créer des instruments d'information plus adéquats et plus conformes aux réalités sociologiques et culturelles.

Th.E.P.36 THE ROLE OF IV DRUG WITHDRAWAL SYMPTOMS AND SYMPTOM ANTICIPATION IN AIDS RISK-REDUCTION

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Objective. To describe the experience of withdrawal within the social context of drug use and HIV-related risk activities. To determine the influence of withdrawal on the continuance of high-risk practices.
Methods. A 20-item questionnaire was administered to 130 IV-drug using individuals at a methadone maintenance facility, a detoxification unit, and a drug-free residential facility. 15% of those surveyed were followed with an in-depth interview. Self-reported information was amplified with ethnographic observations "on the street."
Results. Interpreting the withdrawal experience in a context of drug use reveals an illness category more complex than that illicited from a clinical diagnosis. The withdrawal experience affects an individual's ability to prevent AIDS transmission. 52% of those sampled who indicated that "it had come to mind that the person they were about to share a needle with might be HIV-infected" did not act on this thought in the form of prevention. Perceived withdrawal sickness was a prominent reason for not taking preventative action.
Conclusion. Interpreting the withdrawal experience in its natural context can shed light on the meaning, experience and actions taken to alleviate symptoms of withdrawal and some of the barriers to integration of needle cleaning during needle sharing episodes. AIDS outreach education could prove more effective if, as part of the negotiation with active users to adopt needle-cleaning practices, withdrawal symptoms were addressed as a problem area.

Th.E.P.37 A CROSS-CULTURAL PERSPECTIVE ON AIDS-RISK-RELATED SEXUAL BEHAVIORS AS DEPICTED IN ART THROUGHOUT HISTORY

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Objective. To demonstrate that behaviors related to sexually transmitted diseases in general, and to acquired immune deficiency syndrome (AIDS) in particular, do not represent newly emerging patterns of human sexuality.
Methods. Drawing on the archives of The Kinsey Institute, we will provide examples of the representation of at-risk sexual behaviors in art and artifact from cultures around the world dating from 400 years before the Christian era to the present.
Results. Our review, which begins with the classical works of Greece and Rome where some of the earliest realistic representations of sexual behavior have been found and includes examples of erotic materials from the cultures of Prehistoric Peru, China, Japan, Persia, Africa, Latin America, Western Europe, and the United States, clearly demonstrates that behaviors implicated in the transmission of HIV are neither new nor rare.
Conclusion. Even the most cursory examination of the archaeological and ethnographic record reveals art, artifacts, literature, and ephemera that reflect the ubiquitous, panhistoric, and omnicultural nature of those behaviors implicated in the transmission of human immunodeficiency syndrome (HIV).

Th.E.P.38 TRADITIONAL HEALERS AND AIDS AMONG THE YORUBAS IN NIGERIA

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Objective: To identify knowledge, attitude and practice of Yoruba traditional healers as regard AIDS.

Methods: Some well-known traditional healers in Ondo and Oyo States of the Country (N=25) were purposively selected for the study. Non-structured, indepth interview method was used.

Results: The study shows that 88% of the traditional healers believed that AIDS is not a new disease and that it is curable and preventable. Nearly all the traditional healers believed that it is acquired only through sexual intercourse.
Few of the traditional healers believed it is a variant of a syndrome called MAGUN among the yorubas and, therefore, claimed to have a cure for it.

Conclusion: These beliefs probably exert considerable influence on health seeking behavours of the communities in relation to AIDS. Implications of the findings for the prevention of HIV infection and care of AIDS patients in the country are discussed.

Th.E.P.39 AIDS - KNOWLEDGE, ATTITUDE AND PRACTICE IN A DEPRIVED URBAN AREA OF NAIROBI, KENYA

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Objective. To determine the knowledge, attitude and practice about AIDS in a deprived urban area of Nairobi.
Methods. A random sample of 372 adults (sex ratio 1:1) were interviewed in Kibera, Nairobi. In this area there is no running water, no electricity and unemployment is over 50%.
Results. Knowledge: Almost all (98.4%) had heard about AIDS mainly from the radio or other people. Eighty-eight percent knew that sexual intercourse, 50% that infected blood transfusion and 48% that unsterile needles were major risk factors. Eighty per cent knew that avoidance of multiple sexual partners and having one faithful partner would reduce the risk of AIDS and only 3% thought that a vaccine or medicine would help. Eighteen per cent knew someone with AIDS and 73% knew that there is no cure.
Attitude: They shared the universal fear of an AIDS patient; 46% would avoid all physical contact and 55% would not share food, utensils, toilets or baths. However, 54% would take someone for treatment.
Practice: To avoid catching AIDS only 30% had considered reducing the number of sexual partners and less than 1% would use condoms.
Conclusions: Our findings suggest that, in a deprived urban area, knowledge about AIDS was excellent but that it had not yet influenced behaviour. Thus, education alone may not reduce the spread of AIDS.

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Th.E.P.40 CONNAISSANCE DU SIDA: REPRESENTATIONS ET PRATIQUES POPULAIRES EN AFRIQUE CENTRALE

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Objectifs. Etudier les représentations et pratiques populaires connexes au SIDA. Offrir des exemples concrets pour élucider les divers modèles étiologiques sur lesquels sont fondées les réponses au SIDA.
Méthodes. Observation-participante, entrevues et recherches bibliographiques.
Résultats. La persistance de croyances très anciennes dans les domaines de la sexualité, de la procréation, de la vie, de la maladie et de la mort offre des échappatoires devant la nécessité de changement. Ces croyances persistent malgré la présence d'idées nouvelles disséminées par les institutions d'information contemporaines. Néanmoins, la compartimentalisation des connaissances permet d'agir une fois la nécessité appréhendée sans dissonnance cognitive.
Conclusion. Malgré la persistance des représentations et pratiques, la culture de la région permet à certaines personnes d'opérer des changements protectifs de comportements pour limiter la transmission du SIDA. Comme d'autres sont entravées davantage par leur statut socioéconomique, il serait erroné et dangereux de blamer les victimes de cette situation pour leur sort.
Mots clefs: représentations, pratiques populaires, échappatoires, changements

Rôle de la religion
Role of Religion

Th.E.P.41 RELIGIOUS ORGANIZATIONS RESPOND TO A COMMUNITY AFFECTED BY HIV

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Objective. To demonstrate the new demands being placed on religious organizations as caregivers and to promote partnerships in education, advocacy, residential/financial services, spiritual care that impact the wider community.
Methods. the Archdiocese has a three-tiered response including education, pastoral care & direct client services provided by full-time, trained staff; all services, including residential program, emergency fund, couseling/advocacy services are available to individual living in a three county area. The Episcopal Chaplaincy provides a twelve week clinical internship enabling participants from all over the world to develop local programs in education/caregiving. The training includes ministry time in clinic, supervision, seminars, field work. The Jewish AIDS Project provides counseling, outreach to family members, financial assistance, education and referral services to its clients.
Results. Archdiocesan programs served over 3550 people in 1988; the Episcopal program has to date trained over 35 people; the Jewish AIDS Project assisted over 1050 individuals in 1988.
Conclusion. While the services/programs in these models may not be entirely replicable, they offer an example to creative/responsive outreach to challenge other religious organizations.

Th.E.P.42 INVOLVING THE RELIGIOUS COMMUNITY - A STATEWIDE MODEL

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Episcopal DIOCESE of Conneticut, U.S.A.

Objective: present a model for involving the Christian community in responding appropriately to the AIDS/HIV crisis.
Method: The model, AIDS Ministries Program of Connecticut, began in August of 1987 and was designed to work in a state where persons with AIDS were spread throughout the state, not just within a few urban areas. The model includes: forming an ecumenical statewide AIDS task force; creating and publishing a curriculum for AIDS education for the Christian Community; provide training programs for clergy and lay professionals on pastoral care with PWAs/HIV infected persons; development of respite care teams on a regional basis; and a PR plan that received media attention. Results: participants will leave the workshop with the following information: a) a process for getting AIDS education into your parish; b) a review of a new curriculum which will work in the Christian community and which is sensitive to AIDS/HIV issues; c) a process for setting up respite care teams using volunteers from churches; and d) how to hold Services of Healing and Prayer and thus raise consciousness and begin ministry. Conclusion: The religious community has a unique role and opportunity in responding to the AIDS/HIV crisis. That role can be defined and lived out on both the parish and denominational level.

Th.E.P.43 RELIGION AS A TOOL IN PREVENTING THE SPREAD OF HIV IN UGANDA.

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Objective: To describe the success of using religion in preventing the spread of HIV in Uganda.

Methods: Focus groups and direct observation were used in several Christian Church groups in Uganda. Interviews with AIDS patients were done. Scientific analysis of information collected reveals how important christianity has been in preventing HIV spread especially in Urban areas.

Conculusion: Christian religion has had a significant impact in the prevention of AIDS in Uganda.

Th.E.P.45 MOBILIZATION OF VOLUNTEERS FOR CONTROL OF THE HIV EPIDEMIC

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A review of US efforts to control Syphilis between WWI and WWII reveals that education, a partially effective drug(Arsphenamine),case finding,contact tracing and free treatment resulted in a significant drop in Wasserman positive military recruits. Identification followed by involvement in a long treatment program (18 months with Arsphenamine) modified behavior sufficiently so that further spread was significantly reduced. We must identify the 1.5 million Americans infected with HIV and embrace them in a social-medical program which will so alter their behavior that transmission of HIV will be significantly reduced. This can best be accomplished by emulating the "buddy" system of San Francisco except that the buddy begins to care for and to advocate for the HIV seropositive person as soon as that person is identified and long before that person is ill. With early identification there will be several years available for behavior modification through the social-medical-buddy involvement before the HIV positive person becomes highly infective. By that time the embrace should have been so effective that further transmission rarely occurs. The only practical way to mobilize large numbers of long term dedicated volunteer "buddies" is through the churches. The Christian Church grew explosively from the 2nd to the 4th centuries AD as the Christians cared for the victims of the smallpox and measles epidemics which struck Rome beginning in 165 AD while devotees of the State Religion fled from the ill. Such fearless demonstration by Christians of faith in God and of God's love in the face of terrifying disease attracted an enormous following. We must remind Christians of their heritage and convince them to take up this historic and critical role. Such a buddy program combined with widespread testing,contact tracing and free treatment can control HIV in our society.

Th.E.P.47 WHERE ARE PEOPLE IN ENGLAND & WALES DYING FROM AIDS?

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Objectives. To determine 1) Where people with AIDS (PWA) are dying;:- in hospital, at home or hospice; 2) Whether their cause of death was related to where they die and whether these factors are changing with time.
Method. All PWA reported to the Communicable Disease Surveillance Centre by December 1988, were reviewed to ascertain those who had died and on whom there was a matched death entry. Demographic data and cause and place of death information were also collected.
Results. By the end of 1987, 1243 PWA had been diagnosed of whom 362 had matching death entry data. Of these these 302 (83.4%) died in hospital, 55(15.2%) at home, and 5(1.4%) in hospice. Of the 60 PWA who died outside hospital, 58 were men, 2 were women; 63% (38/60) were aged 30-40 years; 18% (53/228) of homosexual/bisexual men died in the community compared with 9% (1/11) of injecting drug users and 8% (3/38) of haemophiliacs. Preliminary data for 1988, albeit incomplete, confirms that place of death is changing. Data on cause of death related to place of death will be presented.
Conclusion. National surveillance data has an important role to play in understanding patterns of terminal care, which have previously not been recognized and which are of value in highlighting important resource implications.

Th.E.P.44 HOW ORGANIZED RELIGION IMPACTS ON THE AIDS PANDEMIC IN PREVENTION, EDUCATION, AND PREJUDICE

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Objective: To examine how the major religions impinge on the AIDS crisis in two areas: prevention and education, and discrimination against PWAs and those at risk for AIDS.
Methods: An analysis will be made of pertinent statements by prominent clerics ranging from the Pope through television evangelists. Major articles in the religious press will be analysed. Secular publications will be examined for editorial opinions reflecting a religious influence.
Results: Analysis of pertinent materials shows a condemnation of the so called life styles of the groups at risk for AIDS. Many demoninations express the attitude that "they" deserve what "they" got, thus contributing to prejudice for people with the syndrome and those at risk. This attitude has helped to slow governmental and medical response to the AIDS pandemic, and added immeasurably to the attendant adverse social and economic suffering.
Furthermore, with their narrow, restrictive view of sex the same demoninations have blocked efforts to teach safe sex, thus placing at grave risk all those outside of a strict, monogamous, heterosexual marriage.
Conclusion: By not adopting a truly Christian response to those with AIDS, organized religion encourages judgmental, condemnatory reactions, actually exacerbating the adverse medical, social and economic effects of the epidemic.

Sociologie du SIDA
Sociology of AIDS

Th.E.P.46 COMPORTEMENT SEXUEL ET ATTITUDES RELATIVEMENT AU SIDA DANS LA VILLE DE LISBONNE: UNE ÉTUDE EXPLORATOIRE

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OBJECTIF: La comunication présente les résultats d'une étude sur le comportement sexuel dans la ville de Lisbonne (800.000 habitants) en vue de l'obtention de données pour l'établissement d'un programme d'education sur le SIDA. Les objectifs sont simultanément substantifs et methodologiques.

MÉTHODE: Il a été utilisé une méthodologie écletique avec des techniques qualitatives et quantitatives suivantes: Sondage à l'opinion publique sur la connaissance du SIDA (N=144); - Enquête auprès des médecins et des infirmières dans un service hospitalier et un Centre de Santé (n=59)-Analyse de contenu de 583 petites annonces d'offre et de recherche sexuelle dans 4 journaux de Lisbonne durant un mois; - entrevues avec des informateurs qualifiées; - Histoires de vie d'individus appartenant à des groupes de risque.

RESULTATS: Entre les résultats à présenter on notera les données préliminaires suivantes: considerant le SIDA, celui-ci est associé par la population, en général (53%) et par le personnel de la Santé (32%) à l'homosexualité. Ces données sont discutés avec les données epidemiologiques connus.
La crainte d'être contagié par le SIDA a été détecté dans la population en générale (24%) et dans le personnel de la Santé, cette crainte étant plus grande entre le personnel de la Santé (34%).
Dans une population bien identifiée, 13% disent utiliser les préservatifs mais l'analyse a démontré que l'usage de préservatifs n'est pas continue tout au long de l'année.
L'étude du personnel de la Santé a surtout montré un manque de connaissance (59%) et une déorientation face à la nécessité de soigner des personnes HIV positives (21%).
Dans la population en générale, il a été détecté un grand manque de confiance dans les services sanitaires en ce qui concerne la contagion (22%). Les données recueillies par les annonces de journaux ont démontré: offre ou recherche de contacts homosexuels 11%, offre de massages 23% et sexe à trois 11%.

CONCLUSION: L'étude a permis le développement d'une méthodologie pour la poursuite de l'étude du comportement sexuel et l'obtention d'indicateurs pour le planning d'actions d'education sur le SIDA.

Th.E.P.48 PRATIQUES DE RISQUE ET SIDA PARMI LES HOMOSEXUELS-BISEXUELS

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Objectifs. Connaître d'une façon scientifique la situation des homosexuels-bisexuels espagnols face au SIDA quant aux pratiques de risque. Connaître leur opinion en toutes les matières relatives au risque d'être porteur du VIH ou de développer la maladie. Étude détaillé des changements des habitudes, etc. des homosexuels-bisexuels espagnols.Etude de l'éloignement et du refus social dans l'Espagne.
Méthode. Enquête d'opinion pour toute l'Espagne. Personnes âgés de plus de 14 ans. Proportionnel parmi des villes de moins de 10.000 habitants et plus de 500.000 habitants. Par régions, habitat, sexe et âge. Questionnaire: 300 questions et réponses possibles, résultant 1.117 entrevues validées, avec une erreur ± 3,5% niveau de confiance = 2 (95,5%) et la variance populationale P/Q 50/50.
Résultats. 40% a un couple fixe. 50% a eu plus de 50 couples différents. Plus du 70% se stimulent les génitaux avec la bouche. 70% a eu des relations sexuelles hors de son couple. 23% utilise le préservatif pour le coït anal. 83% est informé sur le SIDA. 50% a réalisé l'éjaculation orale et 42% l'a reçue. 64% a reçu le coït anal et 75% l'a réalisé. 50% s'est observé lui-même ou chez ses camarades des traumatismes sanglants. 75% est d'accord pour se faire la preuve de détection des anticorps.
Conclusion. 57% reconnait que le SIDA a changé sa vie sexuelle. Ces changements sont: on a laissé d'ingérer de la semence (24%); on exige le préservatif (30%); on a reduit le nombre de couples (45%); on ne visite pas de "chambres noires" ou locaux gay.

Th.E.P.49 AIDS TREATMENT DEFICITS: AN ETHNOGRAPHIC STUDY OF THE MANAGEMENT OF THE AIDS EPIDEMIC, THE ONTARIO CASE

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The Objective: To describe the organizational conflicts producing deficits in the management of treatment for individuals with HIV infection.
Method: This research is organized from the standpoint of individuals infected with HIV. Its purpose is to make visible the social organization of the management of AIDS that goes beyond the scope of their immediate lives, and that determines the kind of treatment they receive. Technically speaking, this research constitutes an institutional ethnography of the textuall mediated organization managing the AIDS epidemic in Ontario.
Results: An analysis of the data provides a social relational description o the management of AIDS as organized within the relations of: 1) public health, 2) medical research, 3) treatment, and 4) palliative care. The firs two are put together within the bureaucratic organization linking governments (federal and provincial), university teaching hospitals, and the pharmaceutical industry. The fourth is organized as a voluntary enterprise. By way of contrast, the social relations of treatment are structured professionally within the traditional organization of the doctor-patient relation
Conclusion: Organizational conflicts exist between health protection and treatment (e.g., nominal vs. anonymous testing), research and treatment (e.g., the ethical conundrums of AIDS research), and palliative care and treatment (e.g., treatment vs. AIDS as a fatal disease). In each instance, public interests supersede private ones, resulting in the well being of the individual taking a backseat to the management of the epidemic.

Th.E.P.50 AIDS AS AN EMERGENT FIELD; LESSONS FROM A COMPARISON WITH PERINATAL MEDICINE AND GERIATRICS

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Objective: This paper compares patterns of development of medical fields, in particular, Perinatal Medicine and Geriatrics, which provide contrasting models for analyzing the emergence of the field of AIDS.
Methods: The institutionalization of the response to AIDS is analyzed using the framework of sociology of science and medicine within the context of specialty formation and the integration of new knowledge into practice. Factors which are identified and compared include critical external forces, training programs, literature, patterns of communication, the relationship between research and practice, the locus of the work, who is doing it, who 'owns' it and the patient, and the rate of growth of the field.
Results: The speed with which AIDS moved from a fatal disease requiring primarily acute care, as well as biomedical research, to a spectrum disease requiring the full range of services typical of a chronic condition uniquely challenges the health care system. The traditional 'orderly' progression identifying etiology, diagnosis, therapeutic interventions, management and prevention was short-circuited by the overwhelming needs of a variety of constituencies, simultaneously interacting in new ways.
Conclusion: The forced negotiation between disciplines, redistribution of patients, and new divisions of labor require the formation of a new problem solving organizational apparatus linking research, education, practice and patient management. As a spectrum disease, the structures required in the elucidation and effective management of AIDS are strikingly similar to the Geriatric rather than the Perinatal Medicine model but informed by both.

Th.E.P.51 THE IMPACT OF AIDS ON THE HOMOSEXUAL CLONE COMMUNITY IN NEW YORK CITY

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Objective: To understand the affect of AIDS on the sociocultural organization of the homosexual clone community in New York City.

Method: Longitudinal field work

Results: The impact of AIDS upon the homosexual clone community in New York resembles the psychosocial consequences of a disaster. The social science literature on calamities demonstrates that disasters destroy a community's preexisting sociocultural order and foster individual and collective trauma among survivors. Qualitative data from an ongoing field study of the homosexual clone community indicates that AIDS has similar effects among this population. The data show that the epidemic has: (1) decimated the community's social networks and gathering places; (2) transformed the group's value structures and behavioral patterns; (3) dissolved the community's sense of communallity; (4) eroded the group's sources of support and identity; and (5) engendered emotional numbness and depletion among survivors.

Th.E.P.52 CONNAISSANCE, ATTITUDES ET CROYANCES SUR LE SIDA A BANGUI (R.C.A.)

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** Projet OMS SIDA/ Comité de Lutte contre le SIDA, Bangui, (R.C.A)

OBJECTIF: Evaluer le niveau de connaissance de la population sur le SIDA en vue de juger de l'efficacité du programme de lutte contre le Sida en Republique Centrafricaine .
METHODE: Un échantillon randomisé de 200 personnes (âgées de 15 à 44 ans), représentatif de la population sexuellement active, a été intérrogé à Bangui (la capitale) au sujet de la connaissance et des croyances sur le SIDA, ainsi qu'au sujet de leurs pratiques sexuelles.
RESULTATS: 90% des personnes interrogées savent que le SIDA est une maladie mortelle dont le mode de transmission est surtout de type sexuel et contre laquelle il n'existe pas de traitement efficace. Les pratiques sexuelles existent précocement (58%) avec un nombre élevé de partenaires du sexe opposé (54 %). Les antécédents des maladies sexuellement transmissibles sont très fréquents (81%). Si l'utilisation du préservatif paraît acceptable (79%), elle est en pratique rarement répandue: (59%) disent l'avoir utilisé au moins une fois.
CONCLUSIONS: La population sexuellement active de Bangui a conscience des problèmes soulevés par l'existence du SIDA, mais n'a pas encore changé en profondeur de comportement sexuel.

Th.E.P.53 AIDS AS A CHALLENGE TO PHYSICIANS' PROFESSIONAL IDENTITY

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AIDS is challenging many attitudes and practices core to physicians' professional identity. This survey reports on this challenge and its implications for the emergence of new patterns of professional behaviour. To understand how physicians are respondinq to AIDS, we conducted a mailed survey of 440 North American physicians and completed 67 indepth interviews. Respondents included a variety of medical specialties and a range of exposure to AIDS and seropositive patients. We obtained a response rate of 61% (N=267)

Five concepts central to physicians' professional behaviour were examined: (1) Autonomy (desire for professional independence): e.g. 89% believed physicians and not other health care professionals should remain key AIDS decision-makers. (2) Service (precedence of concern for other over concern for self): e.g. 67% would delay treatment of an AIDS patient in an emergency situation until the doctor was properly protected. (3) Affect (extent of emotional involvement with patients): e.g. 79% believed that physicians were generally homophobic. (4) Responsibility (primary allegiance to society or to the individual): e.g. 79% said they felt more obligation to protect others from exposure than to protect patients' privacy. (5) Skills (belief in the efficacy of one's professional tools): e.g. 45% believed a cure for AIDS will not be found in the next 10 years despite increased resources.

Th.E.P.54 A MODEL COMPARING CONDOM USE VS. PARTNER REDUCTION STRATEGIES

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Objective. To compare the risk reduction strategies of using condoms vs. decreasing the number of partners. This is an important choice faced by many people today.
Methods. A Probability model was developed which allows for comparing condom use with failure rates varying from 100% to 10%, to changes in number of partners from 20 to 1. Prevalence rates are simultaneously varied from .25 to .0002 and infectivity rates varied from .02 to .002. The number of sexual acts is 500.
Results. Under all the prevalence and infectivity conditions considered, having 500 sexual acts and using condoms with a 10% failure rate with 20 partners, entails a lower risk of HIV infection than having those 500 sexual acts with one partner and not using condoms. Under conditions of lowest risk, it would take a condom failure rate of well above 50% and having 20 partners to equal the risk of HIV infection entailed in have one partner and not using condoms (.012%). Even under conditions of highest risk, it would take a condom failure rate of more than 10% and having 20 partners to equal the risk of HIV infection of someone not using condoms who has one partner (25%).
Conclusion. Our results support the greater importance of careful condom use over reductions in numbers of partners as a strategy to reduce the risk of HIV infection.

Th.E.P.55 AIDS IN AN AGING SOCIETY: ETHICAL AND PSYCHOSOCIAL CONSIDERATIONS

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Objective.To analyze ethical and psychosocial issues of AIDS in an aging society.
Methods. Health care services and health research funding agencies have not acknowledged similarities between needs of America's aging population and the estimated 1.5 million Americans infected with HIV. Knowledge of individual variation of susceptibility to HIV infection, latency of HIV disease expression, HIV infection of the central nervous system, and lifelong HIV infection in currently asymptomatic individuals is especially applicable to older people. Ethical and psychosocial issues are similar; e.g., agism, homophobism, racism, loss of self-esteem, insurance coverage, access to health benefits and services.
Results. Currently, 10% of AIDS patients are ≥ 50 years of age; 25% of these are ≥ 60 and 4% are ≥ 70 years of age. In Europe, 11% of AIDS cases have been reported in persons ≥ 50; 42% of these are ≥ 60 years of age. Ethical issues include autonomy, non-maleficence, beneficence, justice; psychosocial issues include stigmatization, erratic access to health services, age of qualifying for federal health care programs and age of receiving retirement benefits.
Conclusions. Ethical and psychosocial effects on the older individual with AIDS and the impact of the AIDS epidemic on the elderly as a group would benefit from comparative analysis. We suggest that appropriate societal responses to the AIDS pandemic and a rapidly aging population in Western countries provide a paradigm for health care services and research in the United States.

Th.E.P.56 HEALTH PROFESSIONALS' VIEWS OF SOCIAL DISTANCE FROM PERSONS WITH AIDS AND OTHER CONDITIONS

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Objectives: To determine the social distance health professionals feel comfortable putting between themselves and persons with AIDS or other conditions. To determine whether differences in social distance were perceived for persons in various AIDS transmission categories.
Methods: The pretested instrument was developed using a modified social distance scale after the work of Bogardus and Gentry. It was distributed randomly to nurses, pharmacists, lab technicians and others at two large hospitals, one in a high AIDS prevalence area and one in a lower AIDS prevalence area in a midwestern state. 425 subjects received questionnaires, 219 responses were received for a response rate of 51.5%.
Results: Respondents perceived the most distance between themselves and persons with conditions that could be said to be under the voluntary behavioral control of the affected person such as drug abusers, ex-convicts, alcoholics, promiscuous persons, homosexuals, etc.; however, persons with AIDS from unknown sources had means that were virtually equal to homosexuals and bisexuals. No statistically significant differences were detected between those respondents in high/low prevalence areas, between those with HIV infection vs. AIDS, or between males and females. White respondents were willing to allow a closer social distance for all disease conditions and AIDS transmission categories except for IVDA's than were non-white respondents.
Conclusions: Will be reported based on results.

Th.E.P.57 GUARDIANSHIP STATUS AND SUPPORTIVE RELATIONSHIPS AS CO-DETERMINANTS OF ENROLLMENT OF HIV-POSITIVE CHILDREN IN A PLACEBO-CONTROLLED STUDY

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Objective. To identify psychosocial factors influencing enrollment of asymptomatic and mildly symptomatic HIV-positive children in a double-blind placebo-controlled intravenous gamma globulin study.
Methods. Eligibility criteria: non-hemophiliac children under 13 years with CDC classifications: P_1B, P_2A, P_2C (not hypoxic), P_2D_3, P_2F. Consenting and refusing caregivers were compared re: guardianship and socioeconomic status. Supportive contacts prior to consent or refusal were enumerated.
Results. Of 38 children eligible, consent for treatment was given for 13.

Guardianship	Consent Given	Consent Withheld
biologic parent	9 (24%)*	6 (16%)*
adoptive parent	2 (5%) *	1 (3%)
other family member	2 (5%) *	4 (11%)*
foster care agency	0	14 (37%)
TOTAL:	13 (34%)	25 (66%)

*More than 1 prior supportive contact with 9 (69%) consenting caregivers and with 2 (18%) withholding.

No socioeconomic differences noted between the 2 groups of caregivers.
Conclusions. Biologic and adoptive parents are most likely to consent to the blinded treatment trial. Other family members are more likely to refuse consent while foster agencies are the most reluctant. A supportive relationship with caregivers can positively influence study enrollment.

Th.E.P.58 PERINATAL STUDY COMPLIANCE OF HIV-INFECTED WOMEN: SIGNIFICANCE OF RISK FACTORS AS A DETERMINANT

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Objective. To determine whether specific risk factors influence compliance of HIV-infected women in a Prospective Perinatal Transmission Study.
Methods. Of 80 women at risk for HIV infection enrolled in a perinatal HIV transmission study over a 2 year period, 45% (36/80) were HIV-infected at entry; 60% (22/36) carried to term. Risk factors were determined by a structured questionnaire and counseling. They were categorized into 2 primary groupings: (1) Past or current intravenous drug use (IVDU), (2) Heterosexual contact with high risk partners. Compliance was defined by the patients' attending 2 post-partum visits within 6 months of delivery.
Results. Of the 36 HIV-infected women, 61% (22/36) had histories of intravenous drug use; 39% (14/36) were infected as the result of sexual contact with an HIV-infected partner. These women denied IVD usage. Of the 22 women with histories of IVDU, 77% (17/22) complied with follow-up; of the 14 women infected heterosexually, 71% (10/14) complied. In all cases, aggressive interventions and follow-up methods were employed.
Conclusion. No significant difference in compliance between the 2 groups was observed. Aggressive interventions and follow-up may normalize differences between the 2 groups.

Th.E.P.59 CHANGES IN SEXUAL BEHAVIOR OF A COHORT OF FEMALE HEALTH CARE WORKERS DURING THE AIDS ERA

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Objective. To determine whether health care workers (HCWs) in a university hospital with AIDS patients altered their sexual behavior from 1984 to 1987.
Methods. As part of a prospective study examining the risk of nosocomial HIV infection, 116 female HCWs at UCLA Medical Center (Los Angeles) were enrolled in 1984 and completed followup 3 years later. At each visit HCWs responded to questions including demographics and sexual practices (sexual preference, number of sexual partners/year and number of sexual contacts/month).
Results. Fewer sexual partners in 1987 were reported by 23 of 106 respondents whereas 73 had approximately the same number and 10 had more partners ($p=.02$ for fewer partners). Those workers sexually active in 1984 ($n=70$) decreased their activity by 1.6 contacts per month in 1987 (mean ± SD= 7.4 ± 6.6 (1984) vs 5.8 ± 5.6 (1987), $p=.04$). Fourteen of 109 HCWs changed sexual preference from male to female ($n=2$) or male to no sexual partners ($n=12$) during the 3 years ($p=.04$ for less male sexual contact).
Conclusion. After 3 years of followup female HCWs in a large university hospital in Los Angeles reported fewer sexual partners, fewer sexual contacts and less heterosexual activity. This may reflect an increased awareness of risk factors for community-acquired HIV infection.

Th.E.P.60 SOCIAL ASPECTS OF AIDS : AN ANALYSIS OF ATTITUDES AND AWARENESS

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AIDS is the epidemic of economic, social, political andcultural reactions and responses to HIV infection and AIDS. This epidemic is of recent origin and it is also viewed a global phenomenon. A public awareness about AIDS grows, as the number of HIV-infected persons increases and as the number of AIDS cases rises steeply during next five years. The impact of AIDS and HIV infection on social and economic development may be critical. The present study is an attempt to analyse the attitudes and awareness of AIDS epidemic with the help of perception technique and tool of behavioural analysis, on the origin and prevention of the disease, medical care, public awareness among AIDS and other major killer diseases and psychological attributes such as guilt, anxiety and depression and stressful emotions. The analysis of findings revealed that the people felt the need for useful therapies and they perceived that the most effective therapy begins to bring a sense of well-being born out of a positive outlook towards life. Among urban population AIDS has caused a deep concern in the individual as well as society whereas in rural areasthe awareness of this new disease is negligible or not at all even reached. Among rural population the awareness on the prevalence of local diseases are found to be higher than AIDS. Still a higher percentage of population have no knowledge about its origin. Based on the findings it is felt essential that priority should be heavily laid to gear up mass media programmes in both urban and rural areas as the most necessary public health measures.

Les arts
Arts

Th.E.P.61 OUR LADY OF AIDS: THE TALISMANIC DESIGN OF ANDRÉ DURAND'S PLAGUE ICON "VOTIVE OFFERING"

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In 1987 London-based Canadian artist André Durand depicted the Princess of Wales as a royal healer touching American PWA Sunnye Sherman in "Votive Offering," a large (6'x 12') oil painting in Renaissance style displayed in several British churches in 1988. The icon includes portraits of saints traditionally associated with plagues and healing miracles (George, Sebastian, Catherine of Genoa) as well as images of doctors, nurses, and gay male PWAs.
Objectives. To account for the revival of Renaissance plague iconography in the Age of AIDS; to discuss the healing function of "Votive Offering" as a magical talisman; and to consider the political implications of Durand's representation of PWAs as martyrs.
Methods. A Panofskian iconological approach to Durand's imagery will be adopted to reveal its origins in Florentine theurgy (Neoplatonic magic). Slides will be shown.
Conclusions. Mystical/magical notions of healing tend to flourish during plague-times when faith in the power of the medical and political establishment wanes. Durand's arcane art of healing is comparable to modern 'imaging' therapy.

Th.E.P.62 Back to basics:Use of Popular Theatre in AIDS Awareness Campaign.

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Objective:To show how popular theatre can be used,effectively,as a tool in the AIDS awareness campaign.
Methods: The paper seeks to show how popular theatre groups have been used in the campaign against AIDS,in Zimbabwe.It examines some of the problems that have been encountered in using popular theatre and indeed what successes have been achieved.The main focus is on the achievements of a theatre group sponsored by a non-governmental organisation called Aids Counselling Trust (ACT),which the author has been involved with.However,work by other theatre groups is also reviewed.
Results: The paper tries to show that although various approaches have been employed by various organisations to spread the message on AIDS,the message,it would appear,has by and large fallen on deaf ears.The majority of the people have still to take heed of the warning and change their sex and other habits.This paper argues that the conventional information dissermination methods and tools are often ineffective due to problems of inaccessibility (eg TV,radio,newspapers etc)for the majority of the population,and at times the problem of illiteracy. There is therefore an urgent need to develop fresh and more effective strategies for the campaign.
Conclusion: In the light of the afore-mentioned problems,some organisations have gone 'back to basics' and introduced popular theatre as the latest weapon in the AIDS awareness drive - with a considerable degree of success.

Th.E.P.63 PRIVATE/PUBLIC SECTOR COOPERATION IN AIDS EDUCATION

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SAFECO Insurance Companies, based in Seattle, awarded a grant to Plays for Living in early 1988 to develop an AIDS education play for students in Seattle Public Schools. Plays for Living, a New York-based organization with a Seattle office, hired a playwrite, Bruce Peyton, to develop the play with a panel of local educators and SAFECO representatives. Live Wire is a 30-minute dramatic play performed by young professional actors. The performance is the "first act" of the prevention effort. The "second act" occurs when students return to classrooms to discuss the play with trained volunteers using a study guide created for this purpose. The play was performed for 6,300 students (11-14 years) during the 1988/89 school year. The use of live theater was a powerful medium for AIDS education and the involvement of SAFECO increased the perceived legitimacy of the project, contributing to its success. Evaluative comments from students, a description of the play and its development, and recommendations for working with private sector companies will be presented.

Th.E.P.64 1989 PARTNERSHIP IN CARING CALENDAR

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Objective A calendar was conceptualized as a visual expression of the message that AIDS is a human health problem worthy of a broad, societal caring response. Its purpose is to promote a partnership of community resources in providing such a caring response. This message was conveyed in a way which balanced hope and reality, and motivated viewers, especially the uninvolved, to engender a caring attitude and positive response.
Methods Collaboration with major AIDS organizations. Choice of a title which reflects the theme which is reinforced in the text. Each month focused on how different segments of society are responding. Illustrations were commissioned which symbolically and dramatically underscore the human dimension of AIDS and which move beyond stereotypes. Quotations were selected from "heros" in history to reinforce the visual images. Concrete examples of caring responses were provided, and a directory of national and local resources was included.
Results The enclosed 1989 calendar has been enthusiastically and unanimously received. It is being used in medical offices and facilities, in work places, in local, state and federal government facilities, in religious organizations, and as a training tool to emphasize a multidisciplinary, "partnership" approach to AIDS care.
Conclusion The calendar will be considered for continuation in 1990, potentially as a fundraiser, and as a vehicle for involvement of the arts in the AIDS epidemic.

Th.E.P.65 THE RURAL THEATRE PROJECT: AIDS EDUCATION IN THE VILLAGES OF TRINIDAD AND TOBAGO

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Objective. To reach rural populations with an entertaining and educational theatre production that encourages discussion of AIDS prevention and the impact of AIDS on the community. To evaluate the effectiveness of this intervention and its relevance for other Caribbean nations.
Methods. An international collaboration developed and financed a communications research project to reach rural villages in Trinidad and Tobago with a popular theatre production that examined the impact of AIDS on a family in which a son who is bisexual contracts and dies of AIDS. A promotional campaign preceded the theatre presentations, an AIDS educator led group following the presentation. Written materials and condoms were distributed, and the audiences completed evaluation forms.
Results. More than 3700 people in 30 villages viewed the dramatic production during a five week period; all indicated an interest in additional AIDS educational presentations, both in dramatic and written form. Most questioned the meaning of the "AIDS test" and were concerned about how to avoid AIDS.
Conclusion. AIDS education via popular arts is well-received. This channel provides information in a friendly, non-threatening manner and encourages community discussion of AIDS. Theatre can help Caribbean populations address controversial subjects such as death, sexuality, and modern family life.

Th.E.P.66 PHYSICIAN-PATIENT RELATIONSHIPS IN AIDS DRAMAS

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In the spring of 1985 two plays about AIDS, As Is by William Hoffman, and The Normal Heart by Larry Kramer, opened in New York City. The physician-patient relationships they depict provide insight into how people with AIDS and their friends perceive doctors and interact with them.

In As Is, five nameless physicians function as shadowy, background figures who are unapproachable. They are perceived as expensive, insensitive, and ignorant. At the end of the play when the main character, Rich, is hospitalized with AIDS, a nurse and a janitor interact with him, and physician contact is noticeably absent.

In contrast to As Is, The Normal Heart portrays a physician, Dr. Emma Brookner, as an emotionally involved care-giver. She is politically aware and empathetic. She symbolizes everybody's vulnerability to disease because she is a victim of polio, who is confined to a wheelchair. In one scene she tells Felix, a major character, about his AIDS diagnosis. In another, she holds his hand as he dies.

By analyzing these two plays, one may appreciate the contrast between the special covenant Dr. Brookner and Felix share and the distance separating Rich and his doctors.

La communauté (partie 2)
Community (Part 2)

Th.E.P.67 THE FUNDACION SIDA DE PUERTO RICO EXPERIENCE

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OBJECTIVES:To describe demographic, social and clinical characteristics of clients seeking services.
METHODS:**Fundaciòn SIDA de Puerto Rico** was established in 1983 as a volunteer community organization to provide services to persons with HIV infection, their families and significant others. Clients received services in four areas: prevention and education, emotional/practical support, financial aid and advocacy. We reviewed 182 records of clients seen from Oct.1987 to Jan.1989 (91% of cumulative records).
RESULTS:There were 130 males(71%) and 52 females(29%)seeking services. The majority (53%) were in the age range of 30-39 yrs. Risk factor was known for 156 persons:24% were homosexuals and 76% were either IVDU's or their partners. PWA's accounted for 70%, PWARC 6%, and asymptomatic HIV+ 24%. Most persons (91%) were from low socioeconomic background,including some imprisoned (2%) and others homeless(6%). A large proportion (41 of 182) showed migration patterns with mainland USA.Close to half(48%) required direct financial aid, as well as emotional support(49%), and advocacy (25%).
CONCLUSION: Persons seeking aid from this community based service organization needed a wide variety of services. Long range goals of similar organizations should include these.

Th.E.P.68 Le Comité sida aide Montréal et ses activités

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Le Comité sida aide Montréal fut mis sur pied en septembre 1985, par des intervenants de différents milieux. Depuis sa fondation, le Comité sida aide Montréal n'a cessé de progresser et d'améliorer ses services. Le CSAM est devenu par ses activités un organisme non-gouvernemental complémentaire du réseau de la santé et des services sociaux de la province, particulièrment à Montréal.
Avec l'expertise accumulée, les représentants du CSAM sont souvent appelés à travailler comme consultants dans divers endroits oeuvrant dans la lutte contre le sida.
Les objectifs du Comité sida aide Montréal sont d'assurer le support aux personnes atteintes et à leurs proches, d'aider les personnes séropositives et leurs familles et amis; de prévenir et de sensibiliser le public sur la question du sida, sur la maladie et ses effets, aider certaines populations dans ses comportements; enfin, le CSAM intervient auprès des hautes instances afin que les décideurs aient toutes les informations nécessaires pour mettre de l'avant une politique d'aide et de prévention.

Th.E.P.69 HIV RELATED SERVICES:A MODEL FOR COMMUNITY SERVICE PROVISION

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Objective.To describe a model for HIV-related community services.Services include outreach, community education and support services for persons with HIV infection,their partners and families.
Method.Services are developed thru contracts with not-for-profit organizations throughout New York State.State initiatives are generated on the local level with input from community leaders,local health and human service providers to effectively respond to needs of specific regions/communities. This public/private partnership is strenthened as programs expand sources of funding as well as sphere of influence and coordination with other community-based organizations and health and human services systems.
Results.Since 1983,11 Community Service Programs(CSPs) have been developed throughout the State.Programs are located in urban areas to provide services to a region.Outlying areas and hard-to-reach populations are served through volunteer task forces, satellite offices and staff outstationed in human service settings.
Conclusions.Advantages of developing regional not-for-profit programs: greater flexibility in designing strategies for HIV prevention and support services which are responsive to regional needs.2)CSPs play a significant role in HIV related service delivery through identifying needs/gaps in services and coordinating provider resources to fill those gaps.The effectiveness of other health and human services in response to HIV is maximized through coordinating providers, thereby ensuring direct needs are met in an efficient and expeditious manner.

Th.E.P.70 CONTRIBUTIONS OF THE INTERNATIONAL GAY COMMUNITY TO AIDS RESEARCH

Falk, Lawrence A., Jr., Verick, W.A., et al. Committee for A Nobel Endeavor, Chicago, Illinois, USA

AIDS was first recognized within the gay community and since then other at-risk groups have been identified. Although the threat of AIDS is world wide, particularily to developing African nations, early recognition of high density AIDS cases within the gay community provided scientists with a cooperative group of individuals, yielding numerous clinical specimens and essential information on probable transmission modes. The international gay community has played an essential role in advances of knowledge concerning AIDS:

i. isolations of putative etiologic agent: lymphadenopathy associated virus (LAV), human T-lymphotropic virus type-III (HTLV-III) and AIDS associated virus (ARV), collectively classified as human immunodeficiency virus (HIV) were made from clinical specimens obtained from gay men
ii. blood samples from gay men expedited development of blood screening assays which have reduced significantly transfusion-associated AIDS
iii. provided the medical/scientific community with innumerable clinical specimens for immunologic and virologic studies
iv. participated in clinical studies for safety and efficacy evaluation of potential therapeutic agents
v. developed and implemented educational and safe sex programs that have served as models for programs presently in place for other at-risk groups

These contributions of the international gay community will be summarized and reviewed and compared with initial advances in hepatitis B research and vaccine development.

Th.E.P.71 LONDON LIGHTHOUSE - A CONTINUUM OF CARE

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Objective To describe a unique model of care for people with HIV, ARC and AIDS in the London area which is of potential value in all health care planning strategies.
Method The description of London Lighthouse, a community project offering a continuum of care for people with HIV. This project has based its services on needs as defined by people with the virus and on principles of love, respect and non-oppression.
Results London Lighthouse has grown in 2 years to become one of the largest AIDS voluntary organisations in the UK. The centre's services complement the work of voluntary and statutory agencies. Care and emotional support are provided both in the home and within the centre, by means of counselling, training, health programmes and residential nursing care.
Conclusion This basic model of integrated and continuous care can be incorporated into planning strategies for other local, national and international projects and could have far reaching consequences not only for people with HIV but also for other types of health care.

Th.E.P.72 CREER UN MILIEU DE VIE: UNE APPROCHE ARCHITECTURALE NOVATRICE

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OBJECTIF: créer un milieu de vie pour les personnes atteintes qui soit adapté à leurs besoins.
METHODE: le projet a été élaboré par une équipe multidiscplinaire composée de médecins, travailleurs sociaux, architectes, administrateurs, personnes atteintes. Le projet a fait l'objet de consultations auprès d'autres groupes ou individus impliqués dans l'intervention auprès des personnes atteintes ou ayant développé un projet similaire en fonction d'autres pathologies. Les différentes étapes de la maladie et les besoins spécifiques y étant reliés ont été cernés. Le type et la qualité de l'intervention ainsi que les besoins des intervenants ont a été clairement établis.
RESULTAT:Le choix du site et le concept architectural qui réunit une rénovation sur un bâtiment ancien à une construction neuve témoignent d'une préoccupation majeure de créer un milieu de vie répondant aux différents besoins des personnes atteintes:

cadre de vie familial, enracinement dans la communauté, vie communautaire vs intimité, autonomie, semi-autonomie, convalescence, sécurité vs insécurité, silence-recueillement vs communication-expression, présence continuelle, soins et support à la vie quotidienne, encadrement médical léger, activités récréatives et artistiques.

CONCLUSION: Un concept architectural polyvalent pour recevoir 11 personnes atteintes, l'espace organizé par modules en fonction des besoins et des activités permet de répondre à une mixité de clientèle à différentes étapes de la maladie.

Éducation (partie 3)
Education (Part 3)

Th.E.P.73 THE STOP*AIDS MODEL FOR COMMUNITY CHANGE: ACCEPTABILITY IN A LOW-INCIDENCE AREA FOR AIDS

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Objective. To pilot a San Francisco-based risk reduction model in a low-incidence area for AIDS.
Method. The STOP*AIDS model, which uses the peer-led group meeting as a forum for education and support, appears to have been effective in changing sexual norms in the San Francisco gay community. Gay/bisexual volunteers from a CDC-funded AIDS prevention study were trained in a 30-hour seminar to implement the model in an area where seroprevalence is believed to be low. The trained volunteers recruited STOP*AIDS meeting participants through targeted outreach to gay bars, social networks and the prevention study cohort.
Results. During October through December 1988, 260 gay and bisexual men agreed at outreach activities to be contacted for participation in a local STOP*AIDS meeting. At recontact, 188 men were scheduled for one of 14 meetings; 86 men (46%) actually attended their scheduled meeting. Fifty-five meeting participants (63%) expressed interest in becoming STOP*AIDS project volunteers. Attrition rates are comparable to those reported for New York City and San Francisco.
Conclusion. The acceptability of STOP*AIDS at this pilot site suggests that the model may be exported to communities outside the AIDS epicenters. Even where seroprevalence is low, the need for information, emotional support and social action may be high. Studies are now needed to evaluate the effectiveness of the model in motivating sustained behavioral change.

Th.E.P.75 RESOURCES FOR EDUCATING ABOUT MARRIED HOMOSEXUAL AND BISEXUAL MEN - A FACILITATOR'S KIT IN ACTION

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Objective. To review materials specifically developed to assist in the understanding of the nature bisexual behaviours and H.I.V. transmission, and the significance this has for educating married homosexual men.
Methods. A review of materials contained in the AIDS and Bisexual mer and their Partners - Facilitator's Kit, analysing the approaches most appropriate to educating the target group. Exploring the needs of married homosexual men and their partners, and the implications that these have for educating about H.I.V. prevention.
Results. First hand experiences at using materials and the opportunity to discuss the relevance of the content of the content and the strategies in working with or identifying the needs of married homosexual and bisexual men and their partners.
Discussion. The Facilitator's Kit contains Workshop resources which provides participants with experiences leading to an understanding of the range of constraints and needs expereinced by married homosexual men and the implications that this has for the education about AIDS and the prevention of transmission.
Conclusion. The opportunity to discuss and explore the issues related to bisexuality, enables one to more fully appreciate the needs and concerns of many men in or community who may be at risk of contracting H.I.V.

Th.E.P.74 EDUCATIONAL INTERVENTION IN A COHORT OF HOMO/BISEXUAL MEN TOWARDS A CHANGE IN HIGH RISK BEHAVIOR FOR HIV INFECTION: AN ASSESSMENT OF THE PROCESS AND ITS EFFECTS.

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*Inst. de Med. Tropical "A. von Humboldt", Lima, Perú; **MHOL-Perú, Lima, Perú; ***AIDSCOM/Academy for Educational Development, Washington, U.S.A.

Objectives. Developing an educational intervention in a cohort of homo/bisexual men in Lima, pursuing an increase in their knowledge about HIV/AIDS and the adoption of safer sexual practices.
Methods. Fifty middle class homo/bisexual men in Lima, Perú, attend a program of three workshops offering general information about HIV/AIDS and eroticizing safer sexual practices, through several group dynamics and audiovisual methods. Pre- and post-workshop questionaires are given to attendants; so are surveys about the workshops themselves. One month after the last workshop, another questionaire is given. The trial is controlled through comparison with a non-intervented, parallel group.
Results. The program, begun in 1988, is continuing. The results from the first stages show that: (a) The starting knowledge level was high, so it did not rise significantly; (b) The attendees were generally willing to assume promptly behavioral changes towards risk reduction; and (c) The workshop was generally found to be entertaining and of appropiate length, the information appeared to be new and of appropiate complexity, and the audiovisual presentations were well accepted.
Conclusions. This program shows to be welcome and to succeed in producing the desire for behavioral change. The information level, which was already high when the trial began, does not increase significantly.

Th.E.P.76 STD PATIENTS' AND PROSTITUTES' KNOWLEDGE ON AIDS: MODIFICATION OF SEXUAL PRACTICES, AND EDUCATION NEEDS.

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Objectives: To assess STD patients' and prostitutes knowledge of AIDS with a view to identifying education needs and to assess if knowledge of HIV-status could influence sexual practices.

Methodology: 50 randomly selected STD patients and 25 prostitutes volunteers were interviewed concerning knowledge on AIDS, and sexual practices. HIV-antibody screening was carried out on all and the results were made known to them. Participants were reinterviewed 6 months later concerning their sexual practices after knowledge of HIV-status.

Result: There were serious gaps in knowledge about transmission and prevention in both groups. Majority of STD patients had prostitutes as clients while prostitutes were not discriminatory. None used condoms regularly. Majority of participants who know that condom could be used to prevent STD were not aware of its effectiveness in the prevention of AIDS. Over 95% of the prostitutes who screened negative for HIV-antibody responded 6 months later that they now insist on usage of condom while 30% of STD patients said they now keep to one sexual partner or regularly use condoms.

Conclusion: Identifying various gaps and other areas of education needs would be used to provide effective information needed to design health education strategies. Knowledge of the negative status of HIV-antibody could possibly be used to modify sexual behaviour in high risk groups. Integration of AIDS campaign into STD services is recommended.

Éducation
Education

E.501

CULTURAL DIFFERENCES IN AIDS-RELATED ATTITUDES, BELIEFS, AND BEHAVIOR CHANGE

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Objective. To assess differences among Hispanics, non-Hispanic Whites (Anglos), American Blacks, and Caribbean Blacks on AIDS-related attitudes and beliefs and their impact on reported behavior change.
Methods. A subsample (N=140) of respondents recruited in primary care and STD clinics for a high-risk heterosexual transmission study received a 25-minute interview. Group differences were assessed with ANOVA, and correlations assessed relationships with behavior change for each of the 4 groups.
Results. Hispanics were most worried about contracting HIV, Caribbean Blacks and Hispanics had the strongest moral associations with AIDS, Anglos had the most negative feelings about condom use, and Anglos and American Blacks had the most negative feelings about having sex only with people they knew well. Blacks reported the greatest intentions to change sexual behaviors, though there were no differences on reported behavior change. Different variables predicted reported behavior change for the various groups. American Blacks who believed that the proportion of PWAs who were women and heteroseuxal men was high, those with a positive attitude toward reducing sexual partners, and those who saw HIV as preventable were more likely to reduce risky behavior. Hispanics who had strong moralistic attitudes about AIDS, believed spontaneity was important in sex, and that their friends would approve of increased condom use were more likely to have reported change.
Conclusion. There are important cross-cultural differences in beliefs and attitudes about HIV as well as differences in predictors of behavior change. These results have important implications for public health education.

E.503

FOSTERING PUBLIC-PRIVATE PARTNERSHIPS: The New York City Experience.

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Objective: To describe the design and outcome of the NYCDOH technical assistance initiative for community based organizations under contract to provide AIDS prevention services.
Methods: During the 12 month fiscal year 1988-89, NYCDOH let 30 contracts with community based organizations for the provision of AIDS education and outreach services. To facilitate the coordination and effectiveness of resultant programs, DOH staff provided technical assistance to the contractors. This assistance included program development, training, evaluation design, coordination of borough and city-wide collaborative efforts, and on-site program review.
Results: Requests for technical assistance in the initial stages of the initiative were administrative in nature, i.e. clarification of fiscal and contractual policies and resource availability. Requests made by organizations later in the year concerned more programmatic issues, i.e. staff training, outreach skills, development of referral sources, and evaluation.
Conclusion: The provision of technical assistance must be responsive to the specific needs of recipients. Several factors influenced need and demand for technical assistance, including geographic density of similar efforts; size, age and sophistication of agency; familiarity of agency with contract procedures; and complexity of service scope. Thus, a multi-tiered approach was utilized: 1) organizational development, 2) program and staff development, 3) quality assurance and evaluation, 4) review and expansion.

E.505

SOCIETAL IMPACT OF HIV INFECTION IN WOMEN.

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Objective. To study the impact of HIV infection on the families of affected women. Methods. 31 HIV-seropositive women, 26 infected by intravenous drug use (IVDU) and 5 by heterosexual transmission (HT), were thoroughly evaluated and monitored for 32-months (mean) in a multidisciplinary ambulatory care program. Intrafamily relations were observed and family counselling was provided. Results. The 31 women (mean age 31) had 57 living children, ranging in age from 1 to 20 (mean 6.2 years). 5 of the women had no living children. For the remaining 26 women, nuclear family structures remained intact in only 3 instances (2 of 5 infected via HT and 1 of 21 via IVDU). Among the remaining 23 women with children, 5 were widowed as a result of AIDS, 11 were divorced and 6 had never married. In only 7 of the 23 families were all minor children living with the affected mother. With all women who lived with one or more children, problems related to child care had a negative impact (e.g., difficulty in keeping ambulatory care appointments) on maternal health care. Conclusion. The societal impact of HIV in women is disproportionately large, both because of the effects of maternal HIV infection on family dynamics, and because obligations to childen often interfere with health care of the mother. More comprehensive efforts to deal with the emotional, social and economic impacts of HIV infection in women are urgently needed.

E.502

COMMUNITY-BASED PROJECTS FOR HIV PREVENTION: TYPES OF ORGANIZATIONS, TARGET POPULATIONS, AND EDUCATIONAL STRATEGIES

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Centers for Disease Control, Atlanta GA, USA

Objective: To provide financial support and technical assistance to minority and other community-based HIV prevention projects.
Methods: On January 9, 1989, the Centers for Disease Control (CDC) announced the availability of funds for minority and other community-based HIV prevention projects. These projects will be conducted in coordination with existing community organizations including State and local HIV prevention programs. In July 1989, awards will be made to approximately 75 community-based organizations. The CDC expects a large number of organizations to apply for this funding.
Results: Authors will report on the number and types of organizations applying for funds, the demography and risk groups of the target populations to be addressed, their size, and the amount of funding requested. Authors will summarize the proposed outcomes for these projects and the types of activities designed to contribute to their achievement. Authors will discuss the relative likelihood of the success of these projects based on the quality of their plans and their relationship to models of behavioral change. This information may be useful to community-based organizations in designing more effective proposals for behavioral change.

E.504

THE IMPACT ON CHILDREN WHOSE PARENTS OR LOVED ONES HAVE HIV DISEASE

Sinclair, Rebecca; Private Practive, counselor and consultant, Cascade Aids Project, Portland, Oregon, U.S.A.

Objective. To describe the unique personal, social, and familial issues children face when a parent or adult friend has HIV disease.
Methods. Interviews and counseling sessions with male and female children between the ages of 10-18 years and their parent, relative,or adult friend.
Results.Information gathered indicates that there are unique commonalities children and their family members experience. Some of these commonalities are: isolation, fear, anger, loss, shame, and a need to hide. These identified issues are greatly intensified because of the stigma paired with HIV disease.
Conclusion. Children who live with or know someone with HIV disease face unique difficulties. It is extremely important to identify and assist these children in breaking the cycle of fear and isolation. Care providers need to help children access their beliefs and feelings, introduce accurate information about HIV disease, and connect them with appropriate support systems.

E.506

EVALUATION OF CARE PROVISION TO AIDS PATIENTS AND PSYCHOLOGICAL PROBLEMS OF RELATIVES OF (DECEASED) AIDS PATIENTS

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Objective: Evaluate hospital and homebased care; inventory of psychological problems and coping mechanisms of relatives. By striving for more homebased and less hospital care, the pressure on the supportsystem (partnes, family, friends) will only increase, meaning that the patient's social network will be increasingly confronted with shorter and more frequent episodes of hospitalization. Relatives of deceased AIDS patients are a valuable source of information with respect to the quality of health care, with respect to the feasibility and endurance of homebased care, to their own need for support and help, burn out, and dealing with the process of becoming ill, dying and death.
Method:_interviews with relatives of ± 100 deceased AIDS patients (the total number of deceased patients in the Netherlands is ± 300).
Results: the first results of the study, based on ± 50 interviews, will be presented.

E.507

PSYCHOSOCIAL STATUS OF PARTNERS OF HAEMOPHILIACS WITH HIV INFECTION : A CONTROLLED INVESTIGATION.

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Objective. To establish prevalence of psychosocial problems in partners of HIV+ haemophiliacs; to compare it with that of the infected partners; to identify the characteristics of those with problems; to assess the need for further psychological intervention.
Methods. Partners (n=36) of randomly selected and matched for haemophilia severity HIV+ (n=17) and HIV- (n=19) patients were studied. Measures included psychiatric state (PSE, POMS, Hopelessness); social adjustment; sexual functioning; coping (self-esteem, health locus of control, Hardiness).
Results. The majority of HIV+ subjects were asymptomatic. All the women were HIV-. Psychosocial status, coping style and other measures of partners of haemophiliacs were not affected by the men's HIV status. There was a trend suggesting that the women had worse psychosocial functioning than their partners (whatever the men's HIV status), but this seldom reached statistical significance.
Conclusions. Partners of HIV+ asymptomatic haemophiliacs do not appear to suffer more psychological difficulties than those of HIV- haemophiliacs. Possible reasons for this are considered, and include their being aware of their partner's HIV status for at least three years, and their prior experience of coping with a chronic condition such as haemophilia.

E.509

A LONGITUDINAL STUDY EXAMINING THE IMPACT OF AIDS AND HIV ON PARTNERS AND FRIENDS - RESULTS FROM BASELINE, THREE AND NINE MONTH RETEST DATA.

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Objectives: To assist with targeting support for informal carers by 1) Determining anxiety and depression levels in carers 2) Establishing the degree of role, habit and attitudinal changes experienced 3) Isolating factors predictive of positive or negative outcome.
Method: Informal carers of PWA's and healthy seropositives were recruited (N=50). Anxiety and depression questionnaires were given along with the St. Mary's Personality, Behaviour and Cognitive Changes questionnaire. Controls were cancer carers (N=15).
Results: Carers' lives are greatly affected by the conditions of their partners. Their work and social lives are severely restricted. Many carers reported positive relationship changes. Social support and satisfaction with social support was significantly correlated with anxiety and depression levels in the carer. (P<.01). Carers at time one were highly anxious overall, 25% being more anxious and depressed than index patients. Time in itself did not have a uniform effect on anxiety and depression scores in carers. There was a trend for carers to have higher anxiety scores at time two. Those most distressed at times one and two, had less social contact at retest. A predicted factor of increase in stress levels from time one to time two was the perceived (rather than actual) impact on work, social life etc. Comparisons with impact on carers of cancer patients is also presented.
Conclusions: The impact of the caring role can be burdensome. However, it is possible to isolate factors indicating need for support in carers and the areas in which it should be provided.

E.511

E.508

THE ROLE OF PEOPLE WITH AIDS. THEIR FAMILIES AND FRIENDS AS HEALTH EDUCATORS IN THE AIDS EPIDEMIC

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Objective: To demonstrate that People with AIDS and their loved ones continue to be effective in AIDS education and prevention efforts; and to explore ways of overcoming cultural, moral and political resistance to their participation in that capacity.
Methods: A panel will model the effectiveness of the peer education approach. Though peer educator programs have been shown to be most effective in reaching people with health promotion messages, this model frequently encounters community resistance when applied to AIDS prevention. A teenager with AIDS at a classroom presentation may provide the most effective AIDS prevention message to that audience, school boards and/or parent groups may resist this. The authors discuss ways of working with community groups to promote use of People with AIDS, their families and friends as AIDS educators.
Results: Though health education campaigns have repeatedly shown the value of peer education, there is still much resistance to having individuals known to be infected with HIV appear at public presentations, in classrooms, churches, etc. A panel of HIV-infected people model ways to overcome this resistance, demystify people living with HIV infection, and promote not only healthier lifestyles, but more compassion and understanding.
Conclusion: People with AIDS/ARC/Ab+, their families and friends can be effective spokespersons in AIDS prevention efforts.

E.510

THE IMPACT OF AN AIDS DIAGNOSIS ON PATIENTS AND THEIR SOCIAL SUPPORT SYSTEM

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Objective: The primary purpose of this study was to obtain information about the impact of the diagnosis of AIDS on the social support system of persons with AIDS (PWA's).
Method: Qualitative semi-structured interviews with fifteen PWA's and their primary helpers were completed to obtain thorough and specific descriptive information about the impact of the illness on patients and their social support networks. Computerized analysis of this qualitative data was conducted with the Ethnograph analysis software. Interviews were analyzed according to grounded theory qualitative content methods (Glaser and Strauss, 1967).
Results: The PWA's and their primary helpers reported profound effects on their social networks due to the diagnosis of AIDS. The stigma associated with the illness resulted in reduced levels of support for the primary support network, and placed them at higher risk of increased stress. The diagnosis impacted on the depth and structure of the relationship between the PWA and their primary supporter and their social support network.
Conclusion: The needs of the primary support network should be assessed and addressed by the mental health professional.

E.512

PREVENTION METHODOLOGIES FOR WOMEN AT RISK FOR AIDS

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As part of on-going efforts to prevent HIV infection in women at risk, 42 drug dependent pregnant and post-partum women receiving comprehensive treatment were surveyed. Drug use history revealed that 95% are current or past IV drug users with an average of 12 years of needle sharing; 82% of the subjects reported cessation of needle sharing. The women completed questionnaires detailing their sexual and drug-using behaviors followed by a 30 minute factual didactic session on AIDS. Questionnaires were repeated two to three weeks after the session. Results revealed that 79% are currently engaged in some risk behavior for HIV infection, such as prostitution, lack of condom use and sexual partners who are IV drug users. Nearly all women (97%) knew that AIDS is spread by sharing needles and 88% knew how to effectively clean needles. All women knew that condoms provide protection during intercourse. The women showed concern about AIDS and 71% feared infection, but did not believe they would catch the disease in spite of their past and/or current high risk behaviors. Didactic sessions had little influence on the subjects' knowledge and behavior since differences in pre and post tests were insignificant. These women are clearly at high risk for exposure to HIV infection, both through sexual and needle sharing behaviors. Although this survey revealed some cessation of needle sharing practices, condom use and other safe-sex practices were negligible. Conventional teaching efforts had a limited effect on increasing knowledge or changing behaviors. Therefore, these women clearly remain at high risk for future infection in them and their children until IV drug use ceases and sexual behaviors change. As a result of this study, other methodologies are being defined in an effort to prevent HIV infection in women who are involved in high risk behaviors.

E.513

AIDS AND THE CHANGING AMERICAN FAMILY

Levine, Carol, Citizens Commission on AIDS for New York City and Northern New Jersey, New York, NY, USA

A major crisis like AIDS heightens processes of social change already underway and sets in motion new, particularized responses. This presentation will explore the potential impact of some of these changes on American families.

I. **Who Counts as "Family"?** Along with other social and cultural factors, AIDS is contributing to a broadened and more functional definition of family. The essential characteristics of these relationships are permanence (at least in intention), commitment to mutuality (not necessarily equality) of various forms of economic, social, and emotional support, and a level of intimacy that distinguishes this bond from other, less central attachments.

II. **The Failure of Institutions to Reflect the Reality of Family Functioning.** The two basic kinds of families discussed in this presentation--the biological family and the acquired or chosen family--differ in significant ways. Each demonstrates particular strengths and weaknesses in responding to the challenges of AIDS and HIV infection. This presentation will discuss in particular three areas where courts and other institutions have already had to deal with the tension and where institutional change seems most likely: (1) medical treatment decisions, (2) housing, and (3) custody.

III. **The Formation of New Families.** The process of change and adaptation is incomplete. Just as existing families continue to adjust to the exigencies of AIDS, the formation of new families may also be affected by law and changing custom. Some of these changes may reflect the epidemiology of AIDS. In some minority communities, large numbers of men and women of childbearing age are HIV-infected. These communities place a high value on reproduction; how will HIV infection, and the consequent threat of the birth of HIV-infected babies, affect the formation of new relationships? Even among groups where procreation is not a supreme value, HIV status may be influential in the formation of new relationships. Public policy and medical practice discouraging marriage and reproduction among HIV-infected people may play a significant role. Personal choices of sexual and especially marriage partners, only recently (and incompletely) freed from considerations of religion, race, and economic or social status, may be tempered by disease. A sexual relationship must always be constrained by concerns about transmission. While existing relationships may survive and even be strengthened by knowledge of a partner's HIV infection, the formation of new relationships may well be deterred by the realities of the situation.

E.514

NGOs AND AIDS - MOVING FROM APATHY TO ACTION: TWO YEARS OF EXPERIENCE FROM THE LEAGUE OF RED CROSS AND RED CRESCENT SOCIETIES.

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Abstract: NGOs have been, and will continue to be at the forefront of the AIDS pandemic in the fields of prevention, counselling, care and counteracting discrimination.

However, this involvement with AIDS has not always been easy, sometimes because of pre-existing problems, sometimes as a result of relatively new difficulties posed by the pandemic.

This paper will outline and discuss the major areas of concern which have been encountered by the League of Red Cross and Red Crescent Societies during the past two years, how they have affected the activities of Red Cross and Red Crescent Societies and how they have been or are being overcome. An NGO AIDS flow-chart will be presented based on these experiences.

E.515

PRATIQUES DE RISQUE ET SIDA PARMI LA POPULATION ESPAGNOLE

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Objectifs. Connaître d'une façon scientifique la situation de toute la population espagnole face au SIDA quant aux pratiques de risque. Connaître leur opinion en toutes les matières relatives au risque d'etre porteur du VIH ou de développer la maladie. Etude détaillé des changements des habitudes, etc. de toute la population espagnole.
Méthode. Enquête d'opinion pour toute l'Espagne. Personnes âgés de plus de 14 ans. Proportionnel parmi des villes de moins de 10.000 habitants et plus de 500.000 habitants. Par régions, habitat sexe et âge. Questionnaire: 333 questions et réponses possibles, résultant 1.117 entrevues valides, avec une erreur du ± 3,5% niveau de confiance = 2 (95,5%) et la variance populationale P/Q 50/50. Enquête qualitative à des groupes et à des individus de toute l'Espagne. Intervention des Comités et des Commissions Citadines de l'Etat Espagnol et le Plan du SIDA du Ministère de Santé et de Consommation.
Résultats. 36,8% de la population espagnole a maintenu des relations sexuelles avec une seule personne pendant toute sa vie; 25% entre 2 et 5; 14% entre 6 et 20. On pratique d'une façon majoritaire le coït vaginal. 45% n'utilise aucune méthode d'hygiène. 28% n'utilise aucune méthode de anticonceptive. Préservatif: 30%. Retour en arrière: 13%. Pilule: 11%. 10% a réalisé la pénétration anale, 25% l'éjaculation orale.
Conclusion. Seulement 7% de la population espagnole a changé de conduites à cause du SIDA.Ces changements sont: augmentation de l'utilisation du préservatif (13%); abandon de l'usage de la prostitution feminine (23%). 70% de toute la population est partisan de se faire la preuve de détection des anticorps.

E.516

UNE APPROCHE SOCIO-ANTHROPOLOGIQUE DU SIDA EN FRANCE

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Objectif: Apporter aux personnes qui interviennent sur le Sida des éléments permettant de s'y retrouver dans la difficulté et la complexité des questions soulevées.
Méthodes: Une série d'enquêtes de type anthropologique ont été réalisées, en liaison avec les Pr. FOURIER, MOUTON et BEAUCAIRE et leur équipe, auprès de populations touchées et de "populations menacées" afin de voir la manière dont l'épidémie se transmet et est représentée dans ces milieux très différents les uns des autres.
Résultats: L'approche anthropologique des groupes touchés, notamment autour de *ce moment fondamental qu'est la sexualité*, montre que l'épidémie développe dans le corps social en des lieux où il y a eu **fragilisation du tissu social**. Cette fragilisation est à considérer comme un effet normal dans **l'époque de grande mutations** que nous vivons. Le système des relations et le système des représentations est dans une période de transition, des explorations des nouvelles limites sont réalisées - autant de phénomènes qui créent des situations de fragilisation, et qui mettent en évidence la place que tient la **communication** dans l'épidémie et sa prévention, et souligne le rôle que peut tenir la fonction de **médiation** dans la prévention.

La situation particulière de la France (pourquoi un développement plus rapide que dans les autres pays d'Europe?), et la situation atypique du Nord-Pas-de-Calais (pourquoi moins de cas que dans d'autres régions françaises comparables?) conduisent à des réflexions sur **l'importance du tissu social intermédiaire.**
Conclusions: La capacité des groupes et des individus à réagir face à l'épidémie (et à assurer la solidarité avec les personnes touchées) est liée à la **capacité de parler** du Sida, et aux **méthodes de communication** mises en œuvre à cet effet.

E.517

A CONTRIBUTION TO THE DEVELOPMENT OF A BLACK ANTHROPOLOGICAL PERSPECTIVE ON COMMUNITY-BASED AIDS EDUCATION USING THE EXPERIENCE OF COMBAT IN TORONTO, ONTARIO, CANADA.

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Objective: An analysis is provided of some of the major problems associated with developing and delivering culturally sensitive AIDS education information in a multi-ethnic Black community situated within a multi-racial society.
Methods: AIDS in the Black community presents a unique epidemiological configuration since, as a disease of the family, it affects all age and gender categories more or less equally. The participant observation method was used to investigate the problems that are encountered when AIDS educational information is modified in order to address each category of persons within the Toronto Black community.
Results: Despite the fact that each Black ethnic group has developed mutually unintelligible, predominantly English derived vernaculars for communication about sexual orientations and practices. (ie: botty-man, bullamen, antimen, hen and sami-maker, which all translate to homosexual orientations), there nevertheless exists underlying common cultural understandings that allow for the communication of AIDS education information.
Conclusion: Combat's experience would strongly suggest that resolutions can be found for the problems and contradictions that tend to inhibit the transmission of a quality of AIDS education information that will influence sexual behaviour within the Black community. However, the more important contradictions and conflicts between Blacks and the broader society can and have impeded the effectiveness of AIDS education in Toronto's Black community.

E.518

E.519

AN ETHNOGRAPHIC STUDY OF THE SEXUAL PRACTICES AND DRUG BEHAVIORS OF INTRAVENOUS DRUG USING MALE PROSTITUTES

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Despite a widespread belief that safer sexual practices have been adopted by many gay and bisexual men, little research has been conducted to determine the extent of behavior change that has occurred among male prostitutes since the appearance of AIDS. Additional knowledge in this area is important to determine what factors might be involved in designing behavioral change programs to influence these individuals to reduce or eliminate their AIDS risk behaviors.
Methods. Ethnographic techniques were employed to gain access to a cohort of 30 male prostitutes over a four year period from 1985-1989.
Results. Half of this sample had used intravenous drugs at least once. All had practiced unsafe sexual behavior on multiple occasions with different partners. Six of the individuals stating that they had practiced unsafe sex also had knowledge of their own HIV seropositivity. The unsafe sexual behavior continues to the present time and for some of the individuals was reported to be increasing along with IV drug use.
Conclusion. Effective behavioral change programs are needed to decrease transmission of HIV among male prostitutes and their sexual partners.

E.520

CULTURAL CONTEXT OF HIV INFECTION AMONG HOMELESS FAMILIES IN NEW YORK CITY

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Objectives: To explore the significance of HIV infection and AIDS among residents of homeless shelters with particular attention to women and children in terms of their own understanding and strategies for prevention.
Methods: Field work, structured interviews, participant observation, discussions with groups and collection of documentation.
Results: Most people in shelters have heard of AIDS; the exception is women who speak mainly Spanish and live in hotels for the homeless. Most people are aware of the main sources of transmission. A clear issue emerges with regard to the limitations to their implementing preventive strategies within the life-style imposed by homelessness and lack of resources.
Conclusion: Prevention, either through individual counselling or mediated through medical care facilities, spreads information but attention to the social and economic situation will be needed for more effective changes to be implemented.

E.521

GEOGRAPHICAL MOBILITY AND HIV TRANSMISSION AMONG LONDON PROSTITUTES.

S DAY, HELEN WARD, J R W HARRIS, The Praed Street Clinic, St Mary's Hospital, London, W2, United Kingdom.

Objective: To assess the importance of geographical mobility in relation to HIV infection among prostitute women in London.

Methods: An analysis of geographical mobility among 122 women in the Praed Street Clinic prostitutes cohort was made on the basis of regular interviews and correlated with HIV status and socio-demographic factors.

Results: Forty women (33%), including 9/18 non-British nationals, have worked abroad since 1979 in a total of 20 countries:

	Place of Work				
	Middle East	Continental Europe	Australia	Far East	North America
No. Visits (No. Women)	30 (21)	22 (19)	5 (5)	5 (4)	3 (3)

Those who worked abroad were more likely to work privately or for agencies in London than those who did not (29/40 v 30/82; p = < .001); none was HIV-1 seropositive. On all but 3 visits abroad, mobility was associated with the same or lesser degree of condom use.

Conclusion: The London cohort is characterised by high mobility, especially among better paid prostitutes, and the place of work influences the safety of the contact. The potential role of prostitutes as "bridges" between areas of relatively high and low HIV prevalence is not borne out in the London study as travel is not associated with areas of known high prevelance.

E.522

SEXUAL PRACTICES AND CONDOM USE AMONGST MALE PROSTITUTES IN LONDON: DIFFERENCES BETWEEN STREETWORKING AND NON-STREETWORKING PROSTITUTES

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Objective: To examine the differences in sexual and other practices relevant to the risk of HIV infection between non-streetworking male prostitutes (non-SWPs), commonly known as "call boys", and streetworking prostitutes (SWPs).
Methods: Between November 1988 and January 1989, as part of an ethnographic study, 12 non-SWPs, 10 SWPs and 7 clients completed a 2½ hour-long structured interview concerning sexual practices, condom and drug use.
Results: Reports from non-SWPs and their clients disagree on the incidence of 'high risk' sexual activity. According to the non-SWPs, the incidence of anal intercourse with their clients is low but is much higher with non-paying partners. Moreover, they say that condoms are more likely to be used with clients than with other partners. Their clients, however, report anal intercourse to be common.
According to their self-reports, SWPs are more likely to engage in anal intercourse with their clients than non-SWPs. With non-paying partners, anal and vaginal intercourse is high. They report lower rates of condom use than non-SWPs in both cases.
Conclusions: High risk sexual behaviour is more likely between prostitutes and their non-paying partners than with clients. SWPs are more likely than non-SWPs to engage in such behaviour with both groups of partners. Differences in the reports suggest that some non-SWPs are more likely to engage in 'high risk' activities than others.

E.523

SEXUAL PRACTICES AND HIV RISK FACTORS: THE ETHNOGRAPHY OF PROSTITUTION IN RIO DE JANEIRO, BRAZIL

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Universidade do Estado do Rio de Janeiro

Objective. To differentiate between distinct forms of prostitution in Rio de Janeiro, Brazil, and to analyze variations in risk-related sexual behavior.
Methods. Ethnographic description, based on indepth interviews with selected informants, is used to distinguish between different forms of prostitution and to map out the sexual geography of Rio de Janeiro. Patterns of sexual behavior can then be linked to patterns of HIV transmission.
Results. Class and gender emerge as key factors in differentiating distinct forms of prostitution. A distinction is made between female prostitution, transvestite prostitution, and male prostitution, which, depending on the class background of the participants, take place in specific areas of the city and can be tied to specific sets of sexual practices. Different types of prostitution in different areas involve distinct patterns of heterosexual, homosexual, and bisexual behavior, as well as distinct patterns of vaginal, oral, and anal intercourse.
Conclusions. Understanding these diverse forms of prostitution is essential to understanding the role of prostitution in the spread of HIV, as well as to developing effective AIDS information materials for individuals who are involved in prostitution.

E.524

THE RESEARCHER-ADVOCATE MODEL IN THE STUDY OF PWA'S: PSYCHOSOCIAL SUPPORT AS A FEATURE OF PSYCHOSOCIAL RESEARCH

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Background: Because fatally ill patients (such as PWA'S) participating in psychosocial research require researcher support, I adapted Cassell's researcher-advocate model. This study examines its effectiveness for highly stressed research participants.
Objectives: This descriptive paper analyzes the methodological features of two research projects with 100% participation rates until respondent's death.
Methods: The adapted model is based on PWA'S (1) life expectancy; (2) emotional vulnerability; (3) stress levels. Researcher-advocacy includes: (a) type and frequency of feedback; (b) relationship between the researcher and PWA'S social network; (c) the researcher's role vis-a-vis HCP'S.
Results: The model provides guidelines to psychosocial AIDS researchers. Research was assessed by PWA'S and HCP'S as a "humanizing experience" in the two psychosocial studies reported, where participation was continuous despite severe disease, stress, and opportunity for non-participation. Researcher burnout was limited by the reciprocity of support built into the model.
Conclusion: Literature indicates that PWA'S are aware of the potentially depersonalizing features of clinical care. The philosophy, structure and continuity of the research-advocacy model may counteract the stress experienced by otherwise socially stigmatized research participants.

E.525

DEPRESSION VIRO-INDUITE DES DEFENSES SOCIALES.

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Objectif. Décrire la nature des résistances sociales opposées au changement des pratiques sexuelles.
Méthodes. Enquêtes sociologiques :

- enquête de référence BVA-INSERM, échantillon 1.000 personnes à risques, septembre 1988
- enquête réalisée auprès de 400 étudiants, Laboratoire de Sciences Sociales appliquées, Université Paris XII Val de Marne, Septembre 1988.

Résultats. Une sociabilité française qui souvent oppose le privé et le public voit aujourd'hui s'affaisser momentanément ses défenses collectives : l'information SIDA transmise par les médias et rationalisée par la Santé est d'emblée constituée en réalité virtuelle, hors du champ de la sphère privée, hors sujet pour l'individu, bloquée dans l'espace de la télé-sociabilité et donc sans prise sur le changement des pratiques sexuelles.
Conclusion. Nécessité d'une information de proximité qui relève du génie social.

E.526

PRATIQUES DE RISQUE ET SIDA PARMI LES TOXICOMANES ESPAGNOLS

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Objectifs. Connaitre d'une façon scientifique la situation des toxicomanes espagnols en face du SIDA quant aux pratiques de risque. Connaitre leur opinion en toutes les matières relatives au risque d'etre porteur du VIH ou de développer la maladie. Etude détaillé des changements des habitudes, etc. des toxicomanes espagnols. Etude de l'émargement et du refus social en l'Espagne.
Méthode. Enquete d'opinion pour toute l'Espagne. Personnes agés de plus de 14 ans. Proportionnel parmi des villes de moins de 10.000 habitants et plus de 500.000 habitanus. Par régions, habitat, sexe, et age. Questionnaire: 333 questions et réponses possibles, résultant 1.117 entrevues valides, avec une erreur ± 3,5% niveau de confiance = 2 (95,5%) et la variance populationale P/Q 50/50.
Résultats. 70% des toxicomanes sont insatisfaits ou indifférents sexuellement. La plupart d'eux se sent malade, ils ne peuvent pas éjaculer. 75% a eu des relations sexuelles avec 5 personnes différentes. La moitié des hommes a réalisé l'éjaculation orale et la moitié des femmes l'a reçue. 41% n'emploie aucune méthode anticonceptive. 40% ne connait pas le SIDA au niveau d'information. 60% s'injecte de l'heroine, 45% de la cocaine. Un 9% seulement stérilise le materiel, et autre 9% se drogue de n'importe quelle manière.
Conclusion. Face a l'apparition du SIDA, 41% consulté ne partage pas d'aiguilles ni de seringues. Plus du 90% ne peut pas se détacher des drogues. Sexuellement on a laissé d'avoir des relations avec des prostituées (13%); 25% a reduit le nombre de couples. 50% propose de terminer le trafic pour quitter la drogue definitivement.

Services sociaux
Social Services

E.527

PSYCHOSOCIAL CONSEQUENCES OF INFORMAL CAREGIVING TO GAY MEN WITH AIDS

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Objective: To understand the psychosocial consequences of providing informal assistance and care to gay men with AIDS.

Method: Structured individual interviews with gay men with AIDS and their primary caregivers.

Results: The main sources of social support and informal assistance to gay men who were diagnosed with AIDS (in the last 12 months) are their friends and lovers, followed by family members. Analyses of the initial interviews with 50 informal caregivers reveals that, even in the early stages of the disease, when the large majority of the AIDS patients were still functioning well, providing care and assistance was seriously impacting on the caregivers' own lives. A substantial minority of caregivers reported experiencing physical strain, financial burdens and employment related burdens. A sizable minority also scored in the clinical range on at least one of two measures of psychological distress (CES-D or Rutter Malaise). There is little evidence of negative coping strategies, in the form of increased substance abuse, at this stage in their caregiving experience. Furthermore, there are indications that, at least within the first year of the patients' illness, caregivers are finding some satisfactions in their role, feeling good about the job they are doing and finding it to be a source of self-esteem.

E.528

THE ESSENTIAL ROLE OF CASE MANAGEMENT AND COMMUNITY SUPPORT FOR HOME TREATMENT OF PERSONS WITH AIDS IN A LARGELY RURAL REGION.

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Objective. To assess the need for case management and community support services in a largely rural region for the successful treatment of AIDS patients at home.
Methods. Patients (22) who received therapy for an AIDS defining illness were included for analysis. All persons received at least a portion of their therapy at home. A positive outcome was defined as successful resolution at home; negative as admission to the hospital or death.
Results. Six persons received a complete course of therapy at home, while 16 began therapy while hospitalized and completed their course at home. Diagnoses included PCP (6), cryptococcal disease (6), CMV (5), wasting/dementia (4) and lymphoma (1). Therapies included IV fluid and medication (17), aerosolized medication (12), and oral antibiotics (3). Support personnel included visiting nurses (17), family members (8), friends and volunteers (26). [illegible] outcomes occurred in 12, negative in 4 (all deaths) and 6 remain in treatment. Positive outcomes were associated with the availability of live-in care givers (8), support personnel (19, mean 5 visits weekly) and a case manager (7). Four patients chose to discontinue therapy and subsequently died.
Conclusion. Seventy-five percent of our patients with AIDS were successfully treated at home for complex medical illnesses in a largely rural region. Successful treatment was dependent upon the availability of support services and a case manager to coordinate them. Health care policy in all areas must recognize the need for home nursing, volunteer networks, and case managers in caring for patients with AIDS.

E.529

DEVELOPING AN INTEGRATED AND COMPREHENSIVE LOCAL COMMUNITY RESPONSE TO AIDS IN A LOW INCIDENCE COMMUNITY

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Objective: To develop an integrated and comprehensive community plan to deal with the problems of AIDS and HIV illness in a low incidence community.
Method: A broad-based group of community leaders was convened to provide overall direction to the effort to respond to AIDS. This group included local representatives from government, human services systems, both public and private, and the business, medical, academic, legal and gay communities. Staff support for this effort came from an interdisciplinary team assembled from 8 local human service systems who were loaned to the coalition for 9 months on a part-time basis. Primary data were collected through individually designed surveys of persons with HIV illness, businesses, hospitals, schools, and human service organizations. Secondary data were collected from focus groups of AIDS-related providers.
Results: The information base developed by the Shared Staff identified local estimates of incidence through 1991, of numbers of people in high risk transmission categories, current need for both education/prevention and treatment/support and current capacity to address those needs. From these, a plan has been developed that specifies needed effort, the projected 3 year costs and specific implementation strategies.
Conclusions: The conscious development of a broad-based community approach to the problem of AIDS has resulted in a more integrated and positive community dialogue, more effective intersystem cooperation and increased community funding.

E.530

A STATEWIDE APPROACH TO LOCAL PUBLIC HEALTH LEADERSHIP IN HIV PREVENTION

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Objective. To design a statewide system that enables MN Community Health Services agencies to develop and implement HIV prevention programs.
Methods. In August 1987, the Commissioner of Health presented expectations for HIV prevention to 47 community health boards: appoint an HIV resource person, establish a local HIV task force, develop HIV policies, provide and coordinate community education and resources. These expectations are consistent with statewide goals for health promotion. The MDH cooperates with community health boards and staff to; fund 7 model projects, provide statewide conferences on HIV epidemiology, policy development, risk assessment and behavior change, staff an HIV Subcommittee of local health and elected officials, and develop a funding proposal to the legislature.
Results. All 47 community health boards representing 87 counties have appointed a trained HIV resource person. HIV task forces are established in most areas. Community resources are being assessed and coordinated statewide. The subcommittee developed guidelines and recommendations for HIV program development. The state legislature is considering a proposal for formula funds to community health boards. Educational products of the model projects are available.
Conclusion. Local health departments play an important role in organizing community constituencies to prevent HIV transmission. This role is enhanced through cooperative efforts between state and local health department. This approach has potential value for other state and local health departments.

E.531

A COMMUNITY-BASED APPROACH TO AIDS PREVENTION AND CONTROL

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The province of Ontario (pop. 9.2 million) has 40% of the cases of AIDS occurring in Canada. Epidemiologic surveillance since case reporting became mandatory in 1983 has shown that 90% of cases occur as a result of homosexual/bisexual practices. Some gay communities responded by forming local education and support committees. Recognizing the unique position of community-based organizations in the fight against disease transmission, the Ontario Ministry of Health made the decision to fund community-based AIDS education and support programs. With assistance from community activists, guidelines and a formal application form were developed. The main criteria for funding are a demonstration of the need for a program or service that does not duplicate existing services, strong community endorsement of the proposal, fiscal responsibility and the establishment of a voluntary Advisory Board.

The ministry targeted specific groups as priorities for funding. In the first year 10 community-based AIDS groups were funded and one-time grants were given to 5 other organizations mainly for educational purposes.

This paper will describe the evaluation of these programs after 1 year and show how funding enables these groups (e.g. IV drug users, prostitutes, hemophiliacs, street youth and ethnic and native communities) to assume responsibility for the control of AIDS and HIV infection at the community level.

KEY WORDS: AIDS, community groups, funding

E.532

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Objective: To describe the design and operational structure of a community based volunteer program operating in an acute care hospital setting.
Methods: This is a volunteer directed and operated program by members of Sha'ar Zahav, which provides nutritional, psychosocial, and spiritual support to the inpatient and outpatient populations; significant others and hospital staff are included. An interest assessment of congregational membership was performed. The idea was discussed with the Bikkur Cholim (Acts of Loving Kindness) Committee at Sha'ar Zahav, a reform Jewish Congregation. We then presented the concept to administration at Kaiser Hospital, and together developed guidelines. A 1.5 hour HIV sensitivity training was offered to participants. Volunteers prepare food at home and meet at the hospital. Psychosocial and spiritual support is provided as necessary. Volunteers deliver food and visit with immobile patients. We provide live classical music and flowers to enhance the party-like atmosphere. Financial assistance is primarily from contributions directed to the program.
Results: The AIDS Brunch Program has been instituted and occurs monthly. It is coordinated by community volunteers in cooperation with hospital volunteer, social services, enviornmental services, and nursing departments. Inpatients and outpatients, with significant others, as well as hospital staff attend regularly.
Conclusion: An ongoing community based brunch program is providing support for people with HIV disease and others, in an acute care hospital setting. It has been recognized as a model in San Francisco, providing a new adjunct service utilizing community resources.

E.533

AN INNER CITY VOLUNTEER PROGRAM UTILIZING COMMUNITY AIDS EDUCATION AS A VEHICLE FOR RECRUITMENT.

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Objective. To describe the effectiveness of community AIDS education as a recruitment vehicle for Project BRAVO, an inner city volunteer program.
Methods. This paper describes our work in recruiting volunteers to provide practical and emotional support to persons with AIDS (PWAs) in the Bronx, New York; an area that is predominantly comprised of people from minority backgrounds and low socio-economic status. This paper describes an AIDS education model which goes into the community to church and school organizations with already established ties to the people who live and work there. Workshops are scheduled for area residents at times that are convenient for them. Participants receive culturally sensitive AIDS education as well as an introduction into the psycho-social concerns of PWAs. Volunteers currently working with BRAVO also share their experiences and the rewards they have received from doing this work. A segment on the Epidemiology of AIDS in the Bronx, which differs somewhat from the national picture is also provided and adds a very real dimension to the day's proceedings.
Results. Project BRAVO has recruited twelve volunteers who work on a daily basis with PWAs. We have recruited twenty volunteers who are available on a per diem basis as well as four volunteers who act as peer counselors at community AIDS education seminars.
Conclusion. People from minority backgrounds and economically oppressed circumstances can be utilized as volunteers for persons with AIDS if agencies clearly state not only the need for volunteer services but what volunteer opportunities are available to them and how their role can have an impact on the community in which they live.

E.534

A COMMUNITY GENERATED AIDS PREVENTION PROGRAM: THE CASE OF CAMDEN, NEW JERSEY

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Objective: This presentation is a report of the Area Health Education Center (AHEC) community AIDS prevention outreach program. Attempts at controlling the spread of the AIDS epidemic will continue to depend on education and efforts aimed at attitude and behavior change as we search for a vaccine or cure. Change in behavior can, and should, occur at the micro- and macro-level of human interaction. This project is one such effort.
Procedure: Early in 1988, AHEC received CDC funding, through the NJ Health Department, to provide a cultuarlly sensitive AIDS education program in Camden. In developing the outreach approaches which include home visits, church meetings, etc. AHEC sought and received the cooperation of other agencies, church and community leaders. We present data on 393 participants over a 4-month period. Results: 64% of participants were female. Age range = 9-85 ($\bar{x}$=31.7) years. 72% were black, 15% were white, 10% were hispanic. 51% of those reached had never been married, while 22.4% are married. Comparison of the pre- and post- intervention global scores on the knowledge, attitude, and beliefs (KAB) questionnaire demonstrate a significant change in scores. Implications of the results are discussed.

E.535

BUILDING A COLLABORATIVE APPROACH TO AIDS PROGRAM PLANNING: THE BOSTON AIDS CONSORTIUM

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Objective. To develop an organization to facilitate a community-based planning process that involves all interested members of of the community concerned with AIDS service, prevention and education programs.
Methods. A working group was convened in the Fall of 1987 to consider the need for a community-based planning organization for the City of Boston that would focus on the ongoing identification needs for new HIV-related services, education and prevention programs as well as the need for additional resources to support ongoing efforts. It was hoped that a consortium approach would foster collaborative efforts among diverse interests in our community.
Results. Since beginning operations in January 1988, over seventy public and private agencies and two-hundred individuals have participanted in Consortium efforts. The Consortium operates nine issue specific Task Forces (Hospital Care,Ambulatory Care,LongTerm Care,IV Drug Use, Family Networks,Mental Health Prevention and Education,Housing and Reimbursement) which are collaborative activities open to all. In October, the Consortium released its first publication, Task Force Reports and Preliminary Recommendations, and presented it to the State as a way of signifying key issues for change that had been highlighted as a result of this community process.
Conclusion. The Consortium provides a useful forum for open discussion and planning of AIDS programs in our community.

E.536

JOINT CARE PLANNING BETWEEN THE HEALTH AUTHORITY, LOCAL AUTHORITY AND VOLUNTARY ORGANISATIONS

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Objectives:- To develop common policies where possible regarding provision of services for people who are H.I.V. positive or have A.I.D.'S.
Method:- A series of sub-groups were established to report on the following to the Joint Planning Team:- Housing, Day Care, Respite Care, Domiciliary Care, Staff Training/Support, Terminal Care, Child Care, Drug Abusers. The Joint Planning Team commissioned the Social Services Department Planning & Research section to undertake a survey to enable the team to build up a picture of the services already available to those with H.I.V. related disease and the number of people requiring the services.

Results:-
1). The recommendation in these reports will act as a basis for health and local authority planning and service provision.
2). A comprehensive directory of local services for professionals working with people with H.I.V. disease has been produced.
3). During the last year a home for 2/3 people with H.I.V. disease has been established by a voluntary organisation in the borough. The Social Services department facilitates a drop-in coffee morning once a week for local people who are H.I.V. positive. The Health Authority provides health care to the residents as necessary.
4). Another home is planned for 1989. A project worker for this development has been funded by the Health Authority to facilitate the development of the homes and develop new initiatives between the voluntary organisation, Local Authority and the Health Authority.

E.537

COMMUNITY CAPACITY FOR COPING WITH HIV/AIDS

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Objectives: To development strategies to monitor resources and needs affecting community capacity to cope with HIV/AIDS; and to support local efforts to enhance that capacity in specified settings in Africa.
Methods: Longterm and interdisciplinary comparison of different types of community affected by the HIV/AIDS epidemic. Social research methods include ethnographic survey employing local people as interviewers; indepth case studies of family and household dynamics; focus group discussions; and Mass Observation diaries to monitor changes in community attitudes, organisation and levels of morale. All quantitative data will be stored on computer and a data base and monitor created.
Results: These materials will reveal local networks and support systems, sources and channels of communication and information, and the likely boundaries of social and sexual interaction and opportunity. The methods will provide a basis for qualitative studies of sexual relationships and decision-making lacking in KAP and general survey research to date.
Conclusions: Studies of coping in the face of crisis tend to focus on economic impact with little reference to general health or questions of community identity and morale. This programme will seek to clarify the balance of economic and affective elements. The systematic comparisons proposed will allow both the methods used and the findings on specific communities to be generalised for wider application.

E.538

PROBLEMS IN EVALUATING COMMUNITY-BASED AIDS EDUCATION PROGRAMMES

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The paper reviews the development of evaluation frameworks and the emergence of the linear experiment paradigm, which is currently predominant in the evaluation of health promotion strategies. The limitations of this approach in the field of community-based AIDS education are discussed and the need for alternative evaluation strategies, incorporating concepts of utility and plurality, is emphasised.

Drawing on examples from the Sheffield AIDS Education Project, key obstacles to effective evaluation are outlined: epidemiological, sociological, political. The conflicting evaluation requirements of service providers and service planners are identified. The role of the evaluator is examined in relation to contrasting models, of inspector and consultant.

Examples are given of how these problems may be overcome in developing practical evaluation processes, agreed to be relevant at city level and proving applicable elsewhere.

E.539

AN ELECTRONIC INFORMATION AND EDUCATION SYSTEM ENHANCES COMMUNITY AIDS PROGRAMS

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Objective. To demonstrate the effectiveness of electronic communication in uniting community activities related to AIDS.
Methods. ACTION was established in 1984 to promote and facilitate education, planning, and coordination of efforts in Orange County. More than 50 agencies are currently involved in ACTION. Monthly meetings did not provide the needed communication in a rapid enough fashion. An electronic mail and conferencing system with up to the minute news, medical information and other data sources was implemented. The system, called AEGIS (for AIDS Education and Generalized Information Service), is easily accessible using a low cost terminal, modem and telephone line. Currently, no fees are charged for the service, which is inexpensive to operate.
Results. Participants are able to exchange information and ideas rapidly and accurately. Coordination of inter-organization events and projects is greatly simplified. People are better informed, and the decision making process is accelerated, while decision makers are better informed.
Conclusion. Electronic mail and conferencing systems can be implemented by, and are affordable to, organizations and agencies dealing with AIDS, and a substantial return on investment can be demonstrated.

E.540

COMMON BARRIERS: TOWARD AN UNDERSTANDING OF AIDS AND DISABILITY

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Objective. To examine how people with disabilities ought to understand AIDS.
Method. Literature review of books and articles on social aspects of AIDS compared with articles about Independent Living Movement. AIDS is examined from medical, legal and gay community perspectives with the intention of suggesting how the disabled community ought to view this disease.
Results. AIDS ought to be considered a disability by people living with other disabilities. Persons with AIDS share many common interests and barriers with the disabled community. The concept of Independent Living, defined as "a process whereby disabled citizen's achieve their desired individual lifestyle by assuming responsibility for the development and management of personal and community resources," can be useful in building understanding between these two groups.
Conclusion. Disability may be seen as a combination of physical and social factors. AIDS presents these factors in a unique way. Responses to the disease will add to understanding about self-help, self-care and Independent Living.

E.541

SOCIOLOGICAL CO-FACTORS IN THE PROGRESSION AND MORTALITY OF HIV DISEASE: BUREAUCRACY, GREED, HOMOPHOBIA AND RACISM.

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Objective: To examine political, economic and social structures in the USA which impede access to health care and drug trials, delaying efforts to combat HIV. Methods: Analysis of drug development spending, clinical trials protocols, accural demographics, hospital and trials contracts and Federal legislation. Results: Structural deficits in the US health care delivery system include a 2-class medical system, with inadequate access to care for the poor, the slow pace of clinical trials, poor coordination among bureaucracies and the private sector, and the marginalization of groups most affected by HIV. New treat- ments are too costly for many. Congress barred funds from explicit AIDS education materials. Conclusion: The HIV epidemic has made acute the chronic inequities of health care in the USA. Health care delivery must become more equitable. Drug development should be streamlined to take advantage of new techniques and discoveries. Drugs should be provided for those unable to pay. AIDS prevention efforts must be frank and comprehensive. People living with AIDS must participate in all decisions affecting their lives.

E.542

ONE CONCEPT OF SUPPORTED HOUSING FOR PEOPLE WITH AIDS

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Objective To provide home-like, stress -free accomodation for people with AIDS who are in a respite condition, but who need to be near a hospital. Units are for three/four people

Method To develop 'caring ' families, who are grouped around a core person without AIDS. The accomodation provides bed and breakfast and all facilities for ordinary living. Bedrooms have en-suite bathrooms, there is a communalliving room. A visitors suite is provided.Support is provided by Local Goverment Domicillary Care and Health Service Community Nursing,Social Workers and Voluntary Organisations.

RESULTS Since 1987 6 people have been supported in the house, of whom three have died. Quality of life has been maintained and enhanced. Support has also been offered to families of people with AIDS.

CONCLUSION The first house, set up as an experiment has been successful in terms of appropriate service provision and cost effectiveness. Funding has now been agreed by the local Health Authority to fund a development worker for more projects.

E.543 THE COMMUNITY CARE AND RESIDENTIAL CARE NEEDS OF PEOPLE WITH AIDS IN CALGARY: REPORT FROM A DELPHI RESEARCH PROJECT

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Objective: To present results of a Delphi Study on residential care needs of people with AIDS in Calgary.
Methods: Interviewer-administered questionnaire examined the expert opinion of 19 persons central to AIDS community and residential care in this city of 650,000 people.
Results: While there was some disagreement, significant consensus emerged for generic hospital acute care services, a carefully and confidentiality protecting multidisciplined clinic, and an integrated hospice care service. (Results accepted for publication in the Canadian Journal of Palliative Care.)
Conclusions: Report concludes with series of recommendations for Calgary Community and for involvements of the Roman Catholic Diocese of Calgary.

E.544 REPORTED SKILLS DEFICITS IN THE USE OF CONDOMS IN A SURVEY OF GAY MEN.

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Objective. To determine skills deficits in AIDS risk-reduction efforts among sexually active gay men.
Methods. A total of 425 gay/bisexual men were surveyed concerning their sexual practices at local Gay Pride events and among entrants into an ongoing AIDS-risk-reduction education program during the summer and fall of 1988, and their responses compared to those of 3,291 gay/bisexual men surveyed at an alternative test site for HIV antibody testing from December 1985 to February, 1987. In addition, they were queried regarding their use of condoms and lubricants used in anal intercourse.
Results. Compared to those surveyed in 1985-1987, gay men surveyed during 1988 reported reductions in the numbers of new sexual partners, and increases in reduced-risk sexual behaviors, including use of reduced-risk alternatives, and condoms for anal sex. Most reported use of appropriate condoms (latex rather than natural), but many reported use of inappropriate lubricants such as hand lotion, petroleum jelly, mineral oil, and vegetable oil, that increase the risk of condom breakage in anal intercourse.
Conclusion. These results suggest that ongoing efforts at AIDS-risk-reduction education require greater specificity in information regarding condom use, and may require greater specificity in other areas of risk-reduction information.

E.545 THE CHALLENGE OF AIDS IN AN AREA OF SCATTERED POPULATION AND LOW PREVALENCE

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Our AIDS and HIV figures are "normal" for the U.K. and very much lower than London - 28 AIDS cases and 254 diagnosed as HIV positive. We have encountered serious obstacles in pursuing our aim of developing non-hospital based care. Among the issues I would like to discuss are:

1. Medicalisation of care of people with AIDS.
2. Protectiveness/possessiveness of established carers - largely medical.
3. Lack of confidence of people with AIDS and medical providers in social workers.
4. Non-reality of AIDS as an issue in areas of normal (low) prevalence.
5. Social workers' perception of being de-skilled by HIV and its implications - is this an appropriate or inappropriate response?
6. Training - who and how to target training to social workers when AIDS is seen only in theory as a priority area, and in practice is seen not to be relevant to most social workers in a local authority.
7. Non-availability of substantial, vocal and cohesive groups of people with AIDS.

E.546 MYTHS AND REALITIES OF THE MIGRATION-AIDS RELATIONSHIP: THE CASE OF MEXICAN MIGRATION TO THE UNITED STATES

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The concern about the effect that movements across the frontiers -travelling, migration- may have on the dissemination of the HIV has generated a large number of proposals for action which, in general, imply taking a test and submitting some kind of certificate with the results. However, little has been researched with respect to the actual impact that temporary migration processes have on the dissemination of the HIV. The case of Mexican migration to the United States enables demonstrating the danger of jumping to conclusions. The analysis of the available information allows showing that while certain data confirm the existence of this relationship, other information weakens it.
The paper will include and up-dated analysis of the existing information about AIDS cases in Mexico and their migratory background. To this date, it has been found that some of the Mexican entities (provinces or states) which largely contribute to migration are over-represented in the distribution of AIDS cases in the country. There is also evidence that the majority of Mexican migration to the United States goes to those states with the highest prevalence of this ailment (California, Texas). Some preventive measures are suggested, as well as lines of action concerning this population group under risk.

E.547 PROJECT BEACH: A PEER APPROACH

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Outreach to the Beach is an HIV peer education and risk reduction outreach program targeting youth in a summer resort town. This program was designed to reach youth for exposure was high but educational and risk reduction messages were usually not available.

During the summer months, the population of Ocean City, a resort town on Maryland's Eastern Shore, increases from 37,000 to 250,000. Youth, who come to work in the local businesses for the summer or for a vacation, account for much of this increase. To reach these young people, three peer educators, ages 20-23, were stationed in this resort town for he summer.

Working out of the Ocean City Youth Health Center, these educators provided direct one-to-one outreach to young people on the beach, at private parties and on street corners known to be frequented for drugs and/or sex. In addition, they coordinated a 24-hour AIDS Hotline, offered to local businesses employing a large number of young people, established temporary free condom distribution sites, sponsored "Safer Sex Nights" at area nightclubs, and administered KAB surveys. They also served as pre/post-HIV test counselors for the health center.

These three educators made 2,970 direct one-to-one contacts, distributed over 10,000 condoms, and administered 500 KAB surveys. Ninety percent of the local businesses contacted agreed to make AIDS literature available to their youth employees. Overall condom distribution for the area served increased by 300% during the summer months.

E.548 ANDROLOGICAL FEATURES IN HIV1 INFECTED PATIENTS

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We performed a complete clinical and laboratory andrological examination in 20 HIV1 infected patients at state WR 3-5 and a minimum Karnovsky index of o.7. Diagnostic measures included registration of quantity, motility and morphology of spermatozoes, cultural and immunological assessment of microbiological parameters in sperm and serumanalysis of Testosteron, FSH and LH. In all patients analysis of spermatozoes and seminal plasma revealed a higher incidence of abnormally shaped and immobilized spermatozoes compared to normal values in our laboratory.
The quantity of spermatozoeswas diminished only in patients at state WR4 and 5. Zidovudine treatment caused an aggravation of morphological and functional damage and a further diminuition of spermatozoic numbers. In spiteof remarkable loss of libido no alterations of endocrinological parameters (LH, FSH and Testosteron) were found neither in Zidovudine treated patients nor in patients not receiving the drug. Compared to normal values in our laboratory there was no increase of leucocyte numbers or microbes in seminal plasma. We found, however, in one case a contamination with Shigella not accompanied by clinical or laboratory signs of Shigella infection in other organ systems.

E.549 CONTRACEPTIVE PRACTICES AND THEIR PERCEIVED EFFECTIVENESS IN PREVENTING HIV INFECTION AMONG FEMALE COLLEGE STUDENTS

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Objective. To describe contraceptive practices of female college students and to determine their perception of the effectiveness of these practices against HIV.
Methods. 334 randomly selected, female undergraduate students, responded to a questionnaire in October 1988 in a major southeastern United States university. Data collected included demographic information, frequency of use of contraceptive methods, and the women's perception of effectiveness of these contraceptive methods in preventing HIV infection.
Results. The students' knowledge of effectiveness of contraceptive methods as a barrier against HIV was high. Most were able to identify condoms as an effective method to prevent HIV infection. 48% of the sexually active women reported using birth control pills as their main method of contraception, whereas only 18% reported regular condom use.
Conclusion. College students appear to have a high level of knowledge about HIV but only a few actually report regular condom use. More educational efforts should be aimed at changing behavior with emphasis on regular condom use for preventing HIV infection.

E.550 WILLINGNESS TO PARTICIPATE IN A NATIONWIDE SEROPREVALENCE STUDY

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Objective. To associate levels of knowledge, perceptions of risk, demographic and experience factors with a decision to participate in a nationwide seroprevalence study of HIV infection.
Methods. In 1987, the US National Health Interview Survey (NHIS) added an AIDS supplement that concluded with a question on the willingness to participate in a hypothetical nationwide seroprevalence study. Univariate and multivariate analyses (logistic regression) were used to identify factors which might influence participation.
Results. 69% were willing to participate, 21% unwilling, 7% unsure. Widowed (53% willing), older (>64 yr, 55%) and less educated respondents (<12 yr. of school: 63%) were least willing. Those with higher levels of AIDS-related knowledge (74%), higher perception of risk (78%) and greater awareness of tested people (80%) were more likely to participate. Multivariate analyses indicated that each of the three AIDS-related variables was a better predictor of willingness to participate than sociodemographic variables.
Conclusion. Those with sociodemographic characteristics most dissimilar to reported AIDS cases were least willing to participate. However, higher AIDS-related knowledge, higher perception of risk, and greater awareness of tested people were associated with a greater willingness to participate.

Éducation
Education

E.551 DEAF COMMUNITY AIDS/HIV EDUCATION IN DALLAS

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Objective. To make AIDS/HIV education accessible for deaf and hearing impaired people. Methods. Deaf HIV education began with installation of a TDD (telecommunications device for the deaf) hotline at the health department. The TDD hotline number for HIV telephone information, counseling, and antibody testing appointments was the first in the U.S. Personal contacts with social service and education agencies serving the deaf community increased the health department'- visibility among the service providers and the target population. A six-part series of AIDS and safer sex workshops was developed with emphasis on practical and visual teaching methods. Deaf agency professionals were trained to help address HIV issues. Over three hundred deaf people attended the HIV workshops. The health department, along with other deafness and AIDS service agencies established the Dallas County Deaf AIDS Task Force to focus attention on education, prevention and service delivery for a population not reached by television and radio. School curriculum was developed and used to teach deaf high school students about HIV and prevention techniques. Results. Deaf people called the TDD for information, counseling, referrals, and for HIV antibody testing. The outreach education efforts provided a resource that assisted in mobilizing the deaf community to implement their own independently funded AIDS education program and to host the Southwest Conference on AIDS and Deafness. Conclusion. HIV education and services for the hearing impaired in Dallas now serve as a model for other communities.

E.552 AIDS KNOWLEDGE AND ATTITUDES OF ADULT LATINO STUDENTS IN ENGLISH-AS-A-SECOND-LANGUAGE CLASSES

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Objective. To evaluate adult Hispanics' change in knowledge of AIDS transmission and related attitudes following an AIDS education presentation. Method. A 16 - question survey was administered to adult Latinos through the English-as-a-Second-Language (ESL) classes prior to the AIDS presentation. The class provided information transmission, prevention, and sources of further information. A post-test was given to the students two weeks later. Results. The pretest was completed by 433 students in 8 schools. We received 171 completed post-tests. 48% of the respondents were male, and 50% were married. The percentage of correct answers increased significantly (p<.01) for six of nine transmission questions. Knowledge on sources of information increased from 13.6% to 63.2% (p<.0001). Scores on four transmission questions did not improve significantly since the pretest scores were over 75-93% correct.
Conclusions. Test-taking difficulties may be attributed to low literacy levels and resolved by a graphic/illustrated test format. The increases in knowledge on transmission are encouraging for our objective of reducing fear and raising risk behavior awareness.

E.553 AIDS-RELATED ISSUES: A PROFILE OF HEALTH CARE PROVIDERS SERVICING MINORITY PATIENTS

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U.S.A.

Objective. This study sought to establish a general profile of attitudes, practices and perceptions about AIDS among health care providers who serve primarily minority patients within an urban setting.

Method. The sample of 51 predominately Black male (22) and female (29) respondents, including clinicians (50%) and other health care providers (50%), were asked to complete an 11 item questionnaire while attending a regional minority focused HIV conference. The questionnaire was developed based on a revision of selected items from the June, 1988 National Health Interview Survey, Advanced Data Report of the National Center for Statistics.

Results. An item analysis of the data revealed a recurring theme that the respondents questioned--the degree of risk for HIV infection for the general population. When asked whether they thought the risk factor was a matter of debate, the majority (98%) overwhelmingly agreed. In fact, the respondents felt that health officials conveyed a feeling of ambivalence (86%) about AIDS. Moreover, many reported that reliable and pertinent data on the incidence of HIV-1 infection was relatively sparse among the medical community (78.4%). In support of these views, the data also revealed a definite interest in seeking "real" answers to the national rate of HIV infection in the general population. The vast majority (98%) reported that, if asked to participate in a national seroprevalence study of HIV infection, they definitely would say "yes"!

An assessment of the data regarding gender and profession provided additional insight into the factors which should possibly be addressed in training activities and educational programs for health care professionals providing services to minorities who may exhibit high risk behaviors for HIV infection. Recommendations and implications for further research were indicated.

E.554 AIDS RELATED DENIAL AND ITS IMPACT ON THE AFRO-AMERICAN COMMUNITY

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Objective. To discuss AIDS related denial and how it has impacted the Afro-American community. By investigating the greatly muted response from the community a connection will be made between this reaction and its cause and effect.
Methods. This goal will be reached with imput from leaders within the Afro-American community along with research provided by educators working with this problem.
Results. Showing the correlation between the muted response fror the community and the concerns of stigmatization. We will demonstrate where stigmas have affected the community and how that history creates an atmosphere of mistrust. The end result being one where the community feels a necessity to shelter itself at almost any cost.
Conclusion. The necessity for AIDS educators and administrators to be aware of the specific needs and concerns of the Afro-American community. The need for all parties concerned to open all channels of communication so that unnecessary suffering can be alleviated has to be addressed. This problem is presented in the in the context of the Afro-American community but could represent numerous other communities affected by the AIDS crisis.

E.555

WORCESTER LATINO AIDS NETWORK

Sanchez, Luis Arturo*, Ortiz-Ortiz, L*; Collazo, J.**; Paluyera, L.****; Morales, R.****; Trillo, S.***; *Worcester City Health Department; **Worcester Area Community Mental Health Center; ***AIDS Project Worcester; ****San Juan Lutheran Church, Worcester, Massachusetts, USA.

Objective: To develop effective strategies for AIDS education and risk reduction for Latinos using resources within the Latino Community.
Methods: Through the efforts of the Worcester City Health Department, community service agencies, and Latino community leaders, a Latino AIDS Network was established. The following areas of need were identified: 1-Education/Prevention through Local Media, 2-Education/Prevention for high risk groups; 3-Education for Providers; 4-Education/Prevention for children; 5-Support services for HIV infected Latinos and their families.
Results: The following strategies have been implemented in each area of need: 1-A weekly radio program in Spanish with audience participation dealing with issues around AIDS; 2- Outreach in Night Clubs with distribution of educational materials and bleach/condoms; 3-An AIDS curriculum in Spanish for bilingual providers that work in Human service agencies and a library with videos directed toward minority communities; 4-The Worcester School Department and the Network has developed and translated into Spanish, a High School AIDS Curriculum; 5-A support group for Spanish speaking HIV infected Latinos and concerned others has been established.
Conclusion: A comprehensive AIDS education and risk reduction program directed toward the Latino community was established in the second largest city in New England. This model may be applied to other urban communities.

E.557

DEVELOPING COMMUNITY PARTNERSHIPS FOR AIDS PREVENTION IN AN URBAN LATINO NEIGHBORHOOD: AN ETHNOGRAPHIC EVALUATION

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Lee, J., Freudenberg, N., et al.**

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** Center for Community Action to Prevent AIDS, Hunter College, N.Y., N.Y. USA

Objective: To describe an AIDS Prevention Project in a Latino community in the South Bronx.

Methods: Investigators conducted 30 semi-structured interviews with health center staff and leaders of community organizations - schools, churches and housing projects.

Results: Factors contributing to an effective partnership between an AIDS prevention project and community groups included a clearly defined common agenda, previous experience working on drug and sex related issues, a participatory planning process, and a project staff sensitive to socio-cultural issues.

Conclusion: An effective partnership can be established between health centers and community organizations to bring AIDS prevention messages to populations at risk of HIV infection.

E.559

THE EPIDEMIC SPREAD OF AIDS LITERATURE AND ITS IMPLICATION FOR THE MANAGEMENT OF THIS CRISIS

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Objective: To identify the major gatekeepers and networks that serve the various publics concerned with the state of the field and to examine and compare the roles played by these assessors in the dissemination of new findings and information regarding AIDS.
Methods: The major gatekeepers examined are 1)communications from the CDC; 2)MEDLINE; 3)the UPI wire service; 4)the AIDS clearinghouse (NAIC) and ; 5)a self-appointed specialized AIDS news service's current awareness summaries. A typology was developed which was used to classify articles which appeared during the past year by study type, coverage, approach, and time of appearance in each of the five datasets.
Results: Multiple examples of the almost simultaneous appearance of these tentative 'findings' (ie case reports, drug trials, therapeutic interventions, prevention models) in scientific communications, informal networks, the journal literature and mass media were identified. In addition, many examples of instant codification of cutting-edge work in progress research findings into tertiary textbook literature were found.
Conclusion: The crisis brought on by the AIDS epidemic, coupled with the speed with which research findings become incorporated into the bibliographic network and into practice, have truncated the stages of assessment and evaluation traditionally required before new knowledge becomes codified. Structures, roles and mechanisms must be created which will allow for the more scientific assessment of findings and reduce the risk of their premature incorporation into practice.

E.556

SEGMENTING THE MARKET OF BLACK GAY MEN FOR AIDS PREVENTION EDUCATION AND RISK REDUCTION

N.Dey,* Toby Marotta PhD,* (*Polaris Research and Development, San Francisco, CA USA)

Objective To develop an analytic model for defining and differentiating between subgroups of Black men who have sex with other men for purposes of segmenting them for AIDS prevention interventions
Methods A review of the literature and ethnographic research led to development of a three dimensional matrix that differentiates between subgroups values, associational patterns, and communication styles and channels The matrix locates Black men who have sex with other men in terms of the extent to which they self-identify as gay, bisexual or heterosexual, the degree to which they are Black-identified in terms of cultural style and attitudes; and their socioeconomic class (as measured by occupation, education, and income)
Results Subgroups identified to date include Black gay intellectuals (men who are high on all three dimensions of the model), Black transvestite prostitutes (men who are Black identified, gay identified, and low on the socioeconomic scale), Black street hustlers (men who are Black identified, heterosexually identified, and low socioeconomic), Black bisexual professionals (Black identified, non-gay identifed, and mid to upper socioeconomic), gay-identified Black men (primary identification as gay, low to moderate Black identity, mid to upper income)
Conclusions Black men who have sex with other men and who are at-risk of AIDS as a result of their behaviors do not all share the same values, do not all engage in the same behaviors, do not get their information from the same sources or find the same sources credible Given their differences they require different messages delivered through different media.

E.558

COMMUNICATING RISK ABOUT HIV INFECTION

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Objective. To describe the problems and processes associated with communicating risk information to a national audience; effectiveness to date.
Methods. The United States Public Health Service has used a variety of vehicles to inform the American public, including persons at high risk, what factors increased risk of exposure to human immunodeficiency virus (HIV) infection, how risk could be reduced, and what situations entailed low or no risk to uninfected persons. These efforts are often complicated by political, social, scientific, and resource constraints. The effectiveness of these efforts is monitored through a continuous, cross-sectional household survey that measures HIV/AIDS knowledge and attitudes in a probability sample of noninstitutionalized adults (18 years and older).
Results. American adult citizens are very knowledgeable about how HIV is transmitted. Knowledge levels about true transmission risk factors range from 92% to 98%. Erroneous notions about transmission risks remain disturbingly high, though steady improvement has occurred over the past 18 months.
Conclusion. Translating scientific findings into understandable and believable communications requires equally scientific rigor. Misperceptions, once established, are difficult to eradicate.

E.560

CONTENT ANALYSIS OF AIDS EDUCATIONAL MATERIALS IN THE UNITED STATES

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Objectives: 1) To develop categories based on social learning theory for classifying the content of AIDS educational messages, 2) To describe the distribution of these categories in a representative sample of materials in the US, 3) To profile common patterns of message content and their association with types of media and targeted audiences, 4) To correlate ratings with the judgements of a panel of AIDS education experts who independently assessed the quality of materials.
Methods: A random sample of AIDS educational materials was derived from the AIDS Information Resources Directory (American Foundation for AIDS Research, 1988.) The 4 categories of media are brochures, cards, and inserts (n=104), pamphlets, books, and monographs (n=41), posters (n=44), and videos (n=60). The samples are classified by target group including minorities, drug users, gay/bisexual men, children/adolescents, HIV test-takers/HIV positive, and others. Ratings are performed by two raters; inter-rater reliability is assessed in a separate sample using Cohen's kappa.
Results: The content categories based on social learning theory are: Factual including epidemiology, transmission, community resources, testing and legal issues; Motivation- Target and risk groups, symptoms, AIDS imagery, risk behaviors, safe sex; Risk Reduction- Practical and interpersonal skills; Costs/Benefits- Tangible and intangible; Other- Mood, prompts, vernacular and AIDS-related terms; Design/Layout; and Human Models- Characteristics, performance, rewards, emotional response. Kappas on 11 Factual items in 9 brochures are distributed: 1=0.4, 1=0.6, 1=0.8, 8=1.0. Efforts have been made to improve reliability where deficient. Ratings of the AIDS education experts have been obtained from the American Foundation for AIDS Research.
Conclusions: Categories for classifying the content of AIDS educational materials can be derived from social learning theory. Preliminary results indicate that inter-rater reliability is adequate.

E.561

INNOVATIVE APPROACHES TO SCHOOL-BASED AIDS EDUCATION

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Objective. To describe a national school-based AIDS prevention education teacher training project.
Methods. The Teaching AIDS Training Project, developed by ETR Associates and supported by the U.S. Centers for Disease Control, was designed to increase the number of junior/middle and senior high schools nationwide providing effective AIDS prevention education that is locally determined, consistent with community and family values, and appropriate to community needs. In 1988 five Texas sites (Arlington, Austin, El Paso, Harlingen and Houston) were selected to receive training for experienced family life educators with a commitment to school-based education about AIDS. By September 30, 1988, 242 experienced health or family life education teachers received the two-day AIDS Teacher Training, resulting in the implementation of AIDS prevention education for over 8,000 junior and secondary level students. After completing the 2-day training, participants were asked to rate each training activity for usefulness and quality on a Lickert-type scale. Mean scores for usefulness of activities ranged from 4.07 to 4.82 and quality of activities ranged from 4.14 to 4.86 (highest possible score was 5). A pre-post instrument was developed to measure participant's knowledge about AIDS, HIV transmission modes, at-risk behaviors, and participants' attitudes towards Persons With AIDS. Mean scores from the pre/posttest showed statistically significant increases in participant knowledge and attitudes.
Conclusion. Positive responses were expressed by training participants underscoring the deep commitment and need for providing direction in how to prevent the spread of HIV/AIDS among youth.

E.563

COMPARISON OF ATTITUDES TO AIDS IN 12 COUTRIES AMONG THE GENERAL POPULATION

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In 1987, the Gallup Organization, Conducted a survey to look at attitudes to the disease in 12 countries including Brazil.

The objectives of the research were: (1) to know attitudes related to some issues in order to set up priorities, for public education and (2) to draw conclusions about the strategies to be used in the future to prevent the epidemic.

Methods: A questionnaire was developed and carried out though domiciliar visits. In Brazil 1200 persons of both sex were interviewed.

The population sampled was randomized and proportional to the size of the administrative regions.

The questions were related to: "the most urgent health problem facing the country at the present time", Will AIDS hit everyone ?; Am I at risk ?; fear at the office ?; attitude of compassion and solidarity ?; AIDS reach only homosexuals, IV drug users, hemophiliacs, etc.

Conclusion: The data show, that awareness of AIDS is very high, but also show that people are not taking the steps to change their sexual behavior. Substantial numbers of people in many parts of the world still refuse to work with an infected person and that around the world misconceptions are still common. Finally the research also suggests, that people will be able to deal with AIDS in a humane way, since right information be provided.

E.565

SEXUALITE ET CONNAISANCE DU SIDA CHEZ LES LYCEENS ET LES JEUNES FEMMES DE DAKAR ET BANLIEUE

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OBJECTIFS Les objectifs de cette enquête sur le SIDA visent à déterminer des groupes cibles, d'évaluer leur niveau de connaissance de la maladie, d'identifier les pratiques, habitudes et conduites culturelles autour de la sexualité, la contraception, les MST et le SIDA, de participer à la conception de l'information, de participer à la conception et à la realisations des actions de prévention du SIDA. Les groupes cibles sont ici des individus en activité sexuelle évidente: des femmes fréquentant des centres de PMI nombre de 400 au et des individus seuil réel désiré d'activités sexuelles: des lyceens (ennes) de collèges à Dakar au nombre de 122.
METHODOLOGIE: Un questionnaire comprenant le 4 grands thèmes envoyés a été élaboré et complèter par des interviews semi- directives industrielles et collectives.

RESULTATS: Les résultats de l'enquête montre que la sexualité du niveau de celle de la population cible est très libre: précocité, fréquence des rappots sexuelles, multipartenariat, recherche de plaisir multiforme. Ceci avec des nuances en rapport avec le niveau d'instruction, le sexe.Utilisation relativement faible des preservatifs ainsi que le multipartenariat encore persistant montre le divorce existant entre un niveau d'information grandissant et des moeurs et pratiques sexuelles très peu contrôlées.CONCLUSION: L'enquête ouvre des pistes pour améliorer et créer des instruments d'information plus adéquats et plus conformes aux réalités sociologiques et culturelles.

E.562

AIDS RELATED KNOWLEDGE IN A SAMPLE POPULATION FROM A PRIMARILY BLACK, INNER CITY AREA OF THE U.S.A.

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Objective: To determine the existing level of AIDS related knowledge in a sample population from an impoverished, primarily black, inner city area of the United States.
Methods: 398 individuals, accessed through a hospital waiting area, were interviewed using a standardized question set developed by the U.S. National Center for Health Statistics.
Results: In our study population, 73% of whom were black and 77% of whom had 12 or fewer years of education, AIDS related knowledge was at least equal to that of the general population in the United States by comparison of results with identical NCHS questionnaires. Specifically, 99% were aware that AIDS is an ultimately fatal illness, 98% knew that the virus can be transmitted by sharing of needles in drug abuse and 96% knew that either homosexual or heterosexual sexual contact may result in transmission. In virtually all AIDS related subject areas examined, the knowledge level in this sample population was either equivalent to or greater than that known to exist in the general American population.
Conclusion: Efforts to control the HIV epidemic in inner city areas may need to focus much less on increasing simple cognitive awareness, and much more on methods of behavioral modification.

E.564

E.566

ISSUES IN THE SELECTION, TRAINING AND DEPLOYMENT OF AIDS COMMUNITY HEALTH OUTREACH WORKERS: THE SAN FRANCISCO MIDCITY PROJECT.

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Objective. This 3 year old project was created to intervene in the AIDS epidemic among intravenous drug users (IVDUs) through the use of trained workers (CHOWS) who educate the target groups wherever they can be found.
Methods. The methods of selecting, training and deploying AIDS health outreach workers revolve around a series of issues. Examples of these issues are as follows. Should ex-addicts or non-addicts be selected as outreach workers? Are the best training recruits judgmental or non-judgmental about drug use and alternative lifestyles? What perspective works best for CHOWS, psycho-social or socio-historical? "How far to go," educator or case worker? Confidentiality: a legal and research issue vs confidentiality on the streets. Political and pragmatic considerations in deploying CHOWS.
Results. In the areas where CHOWS have been deployed, their work has had a dramatic impact. An independent survey has shown an increase in needle using hygiene (e.g. cleaning needles between uses with bleach) from 39% in 1986 to over 70% in 1988. The same population reported an increase in the use of condoms from 23% in 1986 to 42% in 1988.
Conclusions. Outreach education has shown great promise in changing the behavior of IVDUs.

E.567 MAINSTREAMING AIDS EDUCATION VIA COMMUNITY BASED HOTLINES

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Objective. To evaluate the educational outreach of the volunteer staffed hotline at St. Clare's Hospital, NYC (a comprehensive AIDS Care Facility).
Methods. Training of volunteers is by Hospital professionals which includes: 1) interview 2) orientation 3) education 4) "Buddy System" and 5) follow-up individual and group support. As a toll-free National Hotline, outreach is National, contiguous states and the local community.
Results. In 1988, the number of calls averaged 500 per week representing a decline of 50% since 1987. The geographical distribution of calls remained the same in 1988 as in 1987. Ninety percent of the calls from New York, 6.3% from contiguous states (New Jersey, Pennsylvania and Connecticut) and 3.3% from other states and Puerto Rico. The intensive educational training enables volunteers to disseminate accurate, timely information on AIDS transmission and offer psycho-social support to callers freeing hospital professionals from such routine queries.
Conclusion. The decrease of calls could be attributed locally to the increasing publicity of AIDS Hotlines throughout the tri-state area and nationally, to the increase of AIDS services and resources. Decentralizing hotlines from national or state sponsorship to community health organizations and local hospitals gives the public greater accessibility and options to receive information and referrals. Mainstreaming volunteers addresses those concerns which allow hospital personnel to concentrate their time on effective patient care.

E.568 DEVELOPING AN AIDS CURRICULUM FOR OUTREACH WORKERS

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Objective. To present curriculum content needed to train indigenous outreach workers to educate and motivate addicts to engage in risk reduction behaviors.
Methods. By anecdotal information gathered by informal survey with 58 sites around the USA which are NIDA funded outreach research demonstration projects.
Results. An informal survey indicated a myriad of training needs for outreach workers. Primarily, many outreach workers find it difficult to work within the framework of a research project because of the logkeeping, field notes and additional paperwork involving number of contacts, type of contacts, etc. that are necessary in such a project. A ranking of training requests from NIDA research demonstration projects indicates the need for skill building in basic outreach strategies. This includes the do's and don'ts of appropriate street outreach conduct, troubleshooting situations that will arise while conducting outreach activities, developing rapport building skills, developing and practicing "active listening" etc. Although most of the outreach workers are ex-addicts, many programs indicated a need for workers to understand both the pharmacology and psychosocial aspects of addiction including immune system impact.
Conclusion. From this needs assessment a core curriculum consisting of 13 modules was developed and delivered to outreach workers in NIDA funded projects.

E.569 LET'S TALK! ONTARIO MINISTRY OF HEALTH AIDS HOTLINE

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*City of Toronto, Department of Public Health, Toronto, Ontario, Canada, **University of Toronto, Toronto, Ontario, Canada,***Street Outreach Services, Toronto, Ontario, Canada.

Objective: To provide a comprehensive telephone service to residents of Ontario, as part of The Ministry of Health multimedia AIDS Education Program.
Method: A staff of 35 well-trained telephone operators provide services seven days a week, fourteen hours per day. Callers are provided with 1) information on epidemiology, transmission, prevention of HIV virus 2) crisis counselling, 3) referral to appropriate community resources.
Results: Major trends in the type of services provided to callers:

Type of Service	Content	Frequency
I Basic Education	Oral sex, casual contact intercourse and general information	87%
II Counselling	Behaviour change re: safer sex	18%
III Referral	Medical/dental care/support/psycho-social issues Health Unit Advocacy/legal/compliant	17%

Characteristics of the Caller:
Sex: 54% male 42% female 4% unknown sex
Sexual Preference: 16% same gender 4% bisexual 47% other gender 33% unknown
Age Group: 39% (0-19yrs);26% (20-29yrs);16% (29-39yrs);7.5% (39+yrs);11.5% Unknown
Conclusion: The target population (under 39 yrs.) is represented by 80% of callers. An increased awarness of service by 1) non-English speaking, low literacy, injection drug use and gay/bisexual population is needed. Expanding the Hotline's awarness of AIDS and related services will be essential.

E.570 COOPERATIVE LEARNING WITH TEAM PACKS, A ROLE PLAYING PROGRAM FOR AIDS EDUCATION OF ADOLESCENTS

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Objective. To measure the effectiveness of TEAM PACKS, a self-contained printed role playing program for AIDS education of 14 to 17 year old high school students.
Methods. TEAM PACKS provide factual information and direct students, in groups of four with minimal teacher supervision, through a role playing scenario about HIV infection. Randomized health classes, received; (A) the TEAM PACK, (B) a lecture with matched content, (C) the TEAM PACK and the lecture, or (D) neither intervention. Pre and post tests assessed knowledge and attitudes about AIDS.
Results. Knowledge was significantly improved by each of the three interventions (A,B, or C), as compared to controls (D), attitudes were improved by the combination of TEAM PACK and lecture (see table).

	KNOWLEDGE				ATTITUDE			
	A	B	C	D	A	B	C	D
N	67	64	71	72	67	64	71	72
%*	41.9+	29.0+	42.7+	9.5	10.2	10.6	20.4+	11.8

*=% of maximum possible improvement; +=different from control at $p<0.05$.
Conclusion. TEAM PACK, like the lecture, increases cognitive gain. The active involvement of students, promoted by the TEAM PACK, was essential to effect an attitudinal change. Additional TEAM PACKS dealing with other sexually transmitted diseases should increase the attitudinal change. Whether they will lead to behavioral change will require further study.

E.571 MASHIGO AIDS GAME: DESIGNED AND CREATED BY MR ASHLEY MASHIGO

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Objective and aims: to be simple and informative; to create awareness and educate even semi-literate persons about AIDS and prevention in a spirit of competitiveness, the reward being to become "The Grand Master of HEALTH"; to change attitudes and behaviour; to create understanding of other religions and traditional beliefs; to create a global spirit of goodwill and cooperation.
Methods: Based on existing tribal games already known in rural and urban areas it was designed to be played in four different ways:

i) for the very young player: a very simplified version of draughts;
ii) for older children a version of snakes and ladders with rewards or admonishment for answering questions correctly or wrongly;
iii) for sexually active people a more complicated chess-like game;
iv) for the general public a game with questions like trivial pursuit.

The board design is a variation of a traditional chess board, with 16 pieces consisting of a Hospital, Doctors, Nurses, Warriors (sexually active person or drug pushers hunting to conquer sexual partners or drug users), AIDS viruses (carriers) and Blood (potentially infected). All four variations can be played by the "captains" of opposing teams on a life-size mat with children as draught pieces. A "referee", for example the Biology Teacher or Health Sister, encourages players and onlookers to discuss aspects of the disease and argue against decisions in order to share and improve knowledge. After educational lectures self-study is encouraged from handouts and library references aiming at inter-school competitions.
Results: Enthusiastic response from audiences in limited trials.

E.572 AIDS INFORMATION THROUGH CITY WATERBILL DELIVERY IN HOUSTON, TEXAS, USA

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Objective: How to provide written AIDS information in a simple, cost-effective way, to 400,000 people, and in the process, promote other agencies to do the same.
Methods: The City of Houston Public Works Department provides public information on various topics through billing inserts. In order to utilize this distribution method, a question and answer insert was prepared with the most commonly asked questions about AIDS. This insert was written in both English and Spanish at a level of understanding equivalent to eighth-grade reading skills.
Results: In the months of September and October 1987, the AIDS information inserts were included in over 400,000 City waterbills. This was the first mass mailing of AIDS information by the City of Houston to its citizenry. The total cost for this project was $12,518, for typesetting and printing. No additional postage was required to include this insert.
Conclusion: Other agencies are now interested in trying what the City of Houston has initiated, including Southwestern Bell, Houston Lighting and Power, and Entex Gas Co.

Special thanks to James G. Haughton, M.D., M.P.H., former director of Public Health, and George Greanias, City Councilmember, for their direction, support and interest.

E.573

E.574

THE ROLE OF AIDS HOTLINES IN A DEVELOPING COUNTRY: RESULTS FROM THE NATIONAL AIDS HOTLINE OF TRINIDAD AND TOBAGO

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Objective. To determine the effectiveness of AIDS information hotlines in dissemination HIV prevention messages and in collecting knowledge, attitudes, and behavior data. To develop a pilot program relevant to use in other Caribbean countries.
Methods. Feasibility studies were conducted assess the usefulness of a National AIDS Hotline. Key informant interviews were used to help shape the hotline services. A pilot operations guide was developed, monitored, and evaluated. Data collection forms were designed and evaluated. Sub-samples of callers provided in-depth information regarding AIDS knowledge, attitudes and behaviors. A cost-effectiveness analysis of the service has also been developed.
Results. The national hotline has become a model program, including instruments to test feasibility, design and operational needs, data collection methods, usefulness of hotlines as a means of collecting information, and cost effectiveness. Early data indicate popularity of the hotline. Calls increased by 36% after the first two weeks of service. Callers indicate confusion about the meaning of HIV infection and a desire for more information about HIV antibody testing.
Conclusion. A hotline can be effective in disseminating and collecting AIDS prevention information in a developing country. Data collected can help shape prevention messages in national campaigns and can help direct targeted intervention efforts.

E.575

TRAIN-THE-TRAINER MODEL PROGRAM FOR DEVELOPMENT OF AIDS HOTLINES IN THE ENGLISH-SPEAKING CARIBBEAN

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*AIDSCOM, Washington, D.C.; ** National AIDS Hotline Coordinator, Trinidad and Tobago; *** National AIDS Committee, Trinidad and Tobago; **** Ministry of Health, Jamaica.

Objective. To develop a Caribbean-specific model training information hotline service.
Methods. Experts from English-speaking Caribbean nations joined communications specialists from the U.S. to design, test, implement, evaluate, and refine a model train-the-trainer program for AIDS hotline coordinators and volunteers.
Results. A five-day train-the trainer workshop model was developed and implemented with Caribbean AIDS educators. the model was later tested and evaluated in the field. A 100 page training guide was developed and distributed: samples will be available. The guide helped direct the implementation of AIDS hotline programs in Trinidad and Tobago and in Jamaica. These programs will serve examples for other interested countries in the Caribbean region. Date from the two national programs will be presented as well.
Conclusion. A train-the-trainer model similar to those developed for use in the U.S. can be modified to be relevant to English-speaking nations in the Caribbean. The model can successfully direct the development of national hotline services in developing countries.

E.576

MODEL AIDS HOTLINE TRAINING PROGRAM: MODIFYING THE U.S. COMMUNITY-BASED ORGANIZATION EXPERIENCE TO THE CARIBBEAN

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Objective. To develop a hotline training model based on the community-based organization model of the United States for national AIDS Programs in several Latin American and Caribbean countries.
Methods. Design and pilot test a modular training program focusing on the goals, development, operation, and management of a volunteer operated AIDS Hotline. Training methodology focused on experiential and observational training techniques and instructional design. The training modules and materials were pilot tested in a U.S.-based workshop with representatives from two Caribbean countries Trinidad and Tobago and Jamaica.
Results: A 5 day train the trainer workshop model was developed and implemented with Caribbean AIDS educators. The model was later tested and evaluated in the field. A 100 page training guide was developed and distributed which is being used to help direct the implementation of the AIDS hotlines in Trinidad and Tobago and in Jamaica. This program is serving as a model for other Caribbean programs as well.
Conclusion. The U.S. model can be adapted for English speaking nations in the Caribbean. This model can successfully direct the development of national hotline services in developing countries.

E.577

AIDS: HUMAN RIGHTS AND PUBLIC HEALTH: THE SEARCH FOR APPROPRIATE RESPONSES

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The need to protect AIDS victims from unjustified discrimination is growing. In developing the means to so protect these individuals, a balance must be struck between the rights of those suffering from the disease and the needs of public health officials in controlling the spread of the disease.

The recognition of the rights of HIV sufferers reflects our commitment to fairness and could be important in the public health effort to control the spread of AIDS.

A key feature in the public health effort to control the spread of the disease is the use of public education programmes. An impediment to the success of such programmes, however, is the reluctance of those at whom they are aimed to identify themselves as carriers of the disease.

Human rights legislation can ease disincentives to HIV sufferers to identify themselves by minimizing the social consequences that can flow from the fear of AIDS.

In developing such legislation, however, the rights of AIDS victims must be balanced against the need for reasonable preventitive measures. Although AIDS discrimination would be justified in only the rare case, even measures with an element of coercion could be justified if they did not infringe unduly on the rights of AIDS victims.

E.578

E.579

INTÉGRATION DES ENFANTS ATTEINTS DE VIH DANS LES CENTRES COLLECTIFS INFANTILES (GARDERIES ET ÉCOLES)

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Objectifs. Etablir un programe pour l' intégration des enfants atteints d'infection VIH dans les garderies et les écoles.
Méthodes: INFORMATION: á la Direction du Centre et au professeur responsable de l'enfant de:a) la situation actuelle de l'infection VIH;b) l' état clinique de l' enfant atteint qui va entrer dans le centre collectif infantile. REUNIONS périodiques de l'équipe de santé avec les personnes responsables de chaque centre et réunions trimestrielles avec tous les centres impliqués. CONFIDENCIALITE: Il est demandé la plus grande discrétion devant le reste du personnel du centre et devant les parents des autres élèves.
Resultats: Durant les années scolaires 1987-88 et 88-89, 11 enfants VIH(+), âgés de 2 á 4 ans et en état clinique P_2A (CDC), ont été admis dans des collectifs scolaires.
Nous avons pu observer un net progrès dans l'attitude, la connaissance du sujet et l'attention á ces enfants VIH(+) de la part du personnel des centres scolaires ou des garderies.
L'adaptation de ces enfants a été normale dans tous les cas.
La communication à la direction du centre et à la persone responsable, avant l'entrée de l'enfant dans ledit centre, de sa séro-positivité a été le facteur clef de l'intégration normale de celui-ci.
Conclusions: Nous considérérons d'une importance capitale la communication au Centre (Directeur, professeur responsable) de la séro-positivité au Ac VIH d'un enfant avant son entrée dans l'établissement.
Les réunions périodiques de l'équipe de santé avec les responsables du Centre ont été très utiles pour tracer les modèles d'action.

E.580

PERCEPTIONS ABOUT PERINATAL AIDS TRANSMISSION AMONG DOMINICAN ADOLESCENTS: KNOWLEDGE AND EMPOWERMENT

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HIV Center for Clinical and Behavioral Studies, New York State Psychiatric Institute, New York, New York, U.S.A.

Objectives: Among adolescents in the Dominican Republic, to determine the barriers that must be overcome in order to make effective, a preventive program that emphasizes perinatal transmission of AIDS.
Methods: A series of 30 interviews, individual or small group, among 60 persons (36 scholars or students), documents the perceived connexions between condom use, HIV transmission, and perinatal transmission of AIDS.
Results: These were the barriers encountered:
1. Few people mentioned, or appreciated, the role of perinatal transmission.
2. People did not feel themselves at risk. Some expressed disbelief about the presence of AIDS in their country; many considered it a disease confined to homosexual men, Haitians and sex workers.
3. There was considerable objection to using condoms, and many doubted their efficacy in prevention.
4. Mutual monogamy was emphasized; at the same time there was a widely recognized impression that men were "macho," and not monogamous.
Conclusions: Economic resources (which seem not easily available) are required to mount an intensive educational campaign to overcome these barriers. These resources will compete for priority with other recognized health, social and educational needs.

E.581

LEVEL OF KNOWLEDGE REGARDING TRANSMISSION OF THE AIDS VIRUS IN A SAMPLE OF HIGH SCHOOL ADOLESCENTS

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Objective: To describe and compare the level of knowledge regarding casual, IV drug, sexual, blood transfusion, and prenatal transmission of the AIDS virus in an adolescent sample (N = 250).
Method: A comprehensive close-ended questionnaire measuring knowledge, attitudes, and behaviors related to the nature, cause, transmission, and prevention of AIDS was developed and administered during one 45 minute class period in 10 tenth grade classrooms in two suburban high schools.
Results: Preliminary data on 111 students indicate that over 80% of the sample are well informed about IV drug, sexual and prenatal transmission of AIDS. However, students were less well informed about casual transmission and transmission through blood transfusions, with item scores falling to less than 60% correct. Item analysis indicates that all items discriminate well in the expected direction between students scoring high and low in overall knowledge.
Conclusions: Even in a middle class high school system that has implemented a mandatory AIDS education curriculum, students manifest marked deficiencies in knowledge of specific areas of AIDS transmission, and show great variability in overall knowledge. This indicates that AIDS prevention education programs need to be tailored to meet the needs of specific student populations, and to focus more on areas such as casual transmission which have major implications for the stigmatization of AIDS victims.

E.582

HIV EDUCATION IN A PUBLIC PSYCHIATRIC SYSTEM

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Objective: To demonstrate the effectiveness of small group process in two "train the trainors" models for HIV education in public psychiatric systems.
Methods: To compare and contrast two train the trainer models of HIV education to public psychiatric employees. In the first model didactic training was the primary method of education. In the second model didactic training was interspersed with small group process.
Results: As measured by evaluations and observation of training participants, the training method that includes small group process, was more favorable than those received for the strictly didactic training.
Conclusion: The more effective method of imparting information to mental health professionals concerning HIV is a curriculum that relies on group process to facilitate the reduction of fear and anxiety associated with AIDS.

E.583

AIDS EDUCATION FOR FIRST YEAR MEDICAL STUDENTS: A QUASI-EXPERIMENTAL STUDY IN KNOWLEDGE AND ATTITUDE DEVELOPMENT AND RETENTION INVOLVING THREE TEACHING METHODOLOGIES

Carroll, Jamell L, Wolpe, P.R.,U.S.A.

Objective: To examine the relationships between AIDS educational methodologies and the development and retention of knowledge and attitudes in first year medical students.
Method: Randomized Pre-post Test Control Group Design utilizing 114 first year medical students from a large urban medical center. A total of six groups were given AIDS education. Two groups received either an experiential, didactic, or audio-visual educational format, while two control groups received no AIDS education.
Results: Data analysis revealed that there were no significant differences in AIDS knowledge or attitude scores with respect to teaching methodology. However, when attitudinal questions were analyzed separately, there were several significant differences in reported comfort levels in working with persons with AIDS. These results indicate that certain teaching methods may be more effective for teaching about AIDS, but that the most effective strategy would be to combine teaching methods. Qualitative data revealed that medical students are feeling afraid and uncomfortable about working with persons with AIDS and that they have a difficult time discussing their feelings.
Conclusions: Much more work is necessary in the area of AIDS education. There is no comprehensive data on how medical students are being prepared to work in the current AIDS epidemic. This study sheds light on this area.

E.584

"CANADIAN ADOLESCENTS AND AIDS: A SURVEY OF KNOWLEDGE AND ATTITUDES ABOUT AIDS AMONG TEENAGERS VOLUNTEERING IN TORONTO HOSPITALS"

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University of Toronto, Toronto, Ontario, Canada.

Objective: This study examines the impact of mandatory AIDS education initiated in Ontario Schools during the fall of 1987.
Methods: One hundred and eighty students - 135 females, 45 males, mean age 16.3 years - working as volunteers in 13 Toronto area hospitals were surveyed during the summer, in terms of 1) General Health Knowledge, 2) Knowledge about HIV infection, 3) Attitudes towards persons with AIDS and safe sex practices, using both open ended and multiple choice questionnaires.
Results: Knowledge about HIV, but not Attitudes, was found to correlate positively with general health scores. The only variables to correlate significantly with attitude scores were sex ($p<0.00$[illegible]) and sociocultural background ($p=0.005$) with females and children of Canadian, American and European backgrounds being significantly more positive in their attitudes towards safe sex and persons with AIDS than males and children of Asiatic or Third World countries. Approaching significance were the trends for children of highly educated parents (especially health professionals) to be more negative than children whose parents had not completed high school.
Conclusion: Increased knowledge about HIV does not necessarily guarantee positive attitudinal changes.

E.585

DO SEXUAL PRACTICES IN UNIVERSITY STUDENTS JUSTIFY THE PROMOTION OF CONDOM USE?

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*Directorate of Epidemiology, Ministry of Health, MEXICO. **Population Council MEXICO

Objective: To describe sexual practices, and knowledge and use of condom in Mexican university students.
Methods: A survey to determine sexual practices regarding the risk of AIDS transmission was carried out in university students in three cities, 2 touristic resorts and one USA border city. The information was obtained through a questionnaire. 473 men and 430 women were interviewed.
Results: The main results are presented in the following tables.

SEXUAL ACTIVITY

	MALE	FEMALE	P
AGE (Average)	22	21	NS
Sexually active	43%	11%	<.001
Homosexual practices	3.5%	0.5%	NS
Partners (average in the last 6 months)	1.8	0.8	<.001

KNOWLEDGE AND CONDOM USE IN SEXUALLY ACTIVE

	MALE	FEMALE	P
Knows condoms	49%	38%	<.001
Ever used one	59%	57%	NS
Purpose of use:			
Family planning	38%	47%	NS
AIDS prevention	1%	0%	NS

Conclusion.- Contrary to expectations prevalent sexual practices in university students justify educative interventions to promote condom use, although it may thought that Latinamerican students have less risky practices than students living in industrialized countries. Condom use is now associated to family planning.

E.587

AIDS KNOWLEDGE AND SOURCES OF INFORMATION ABOUT AIDS AMONG IV DRUG USERS

McCoy, H. Virginia*; McCoy, C.B.**; Chitwood, D.D.**; and Trapido, E.J.**; and McKay, C.Y.** *Florida International University, Miami, FL, USA, **University of Miami School of Medicine, Miami, FL, USA.

Objective. To describe the distribution by sex and ethnicity/race of sources of AIDS information and to determine the effect of the source of information on AIDS knowledge among IVDUs.
Method. As part of a study which tests two interventions to reduce AIDS among IVDUs, 346 subjects were recruited from drug networks and interviewed. Bivariate analyses were conducted to assess the distribution of information sources and the relationship to AIDS knowledge. Gamma values assess the strength of relationships.
Results. Print media was the most likely source of AIDS information used by IVDUs. Information source varied, however, by ethnicity/race and sex and was statistically significant. Each source (TV/Radio, print, institutions, persons) was more likely to be the choice of a particular ethnic/racial group. The source of information was also related to the accuracy of knowledge about AIDS. Those who obtain information from individual persons, such as outreach workers and friends, score higher on a knowledge test.
Conclusion. Communications about AIDS should be ethnic/race-specific and sex specific using particular media for each group.

E.589

POST-TEST IMPROVEMENT IN AIDS KNOWLEDGE SCORES AMONG INTRAVENOUS DRUG USERS (IVDU) IN A PRISON-BASED AIDS EDUCATION PROGRAM

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Objective. To assess the impact of an educational program on AIDS knowledge among incarcerated IVDU's in a New York City detention facility.
Methods. Newly arrested male IVDU's were offered a five-session small group AIDS education program as part of a pilot project in 1985-86. Formats included didactic sessions, role-playing, and printed materials. Participants took self-administered seventeen-item true/false pre- and post-tests. Pre- and post-test scores were compared overall, for individual items, and by sociodemographic variables.
Results. Pre- and post-test results were available for 104 inmates, of whom 47(45%) were black, 46(44%) Hispanic, and 11(11%) white; mean age was 31.7 yrs.; 84(81%) had secondary school education or less. Mean percent correct for pre-test was 76%, vs. 89% for post-test (P<.01), with no significant differences in improvement by race, education, or age. Pre-and post-test scores were both >90% correct for items concerning risks of needle-sharing, heterosexual contact, and perinatal transmission of HIV. Significant post-test improvement (P<.05, McNemar's test) was seen for items concerning condom efficacy, needle hygiene, perceived risks of casual contact, and certain medical aspects of AIDS.
Conclusion. Results indicate significant post-test improvement in AIDS knowledge scores among incarcerated IVDU's participating in a prison-based AIDS education program, especially regarding prevention behaviors and popular misconceptions about AIDS. Pre-test knowledge was high regarding certain aspects of drug and heterosexual transmission. Data suggest that prisons may be strategic sites for targeting AIDS education programs for IVDU's, combined with strategies to promote behavior change.

E.586

AIDS EDUCATION OF DRUG ADDICTS

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*Presenter

The strategy of risk reduction in substance abusers is dependent on the stage of awareness and recovery of the population. We have shown that the techniques used with a population in methadone maintenance, while similar in some respects to the techniques used within therapeutic communities are markedly different from the population not currently engaged in treatment. The use of didactic materials and audiovisual devices are effective in both treatment settings. One significant difference between the techniques implied in the methadone programs is the need for the timing of education intervention at or before the administration of medication, while the therapeutic community allows more latitude in the scheduling of the same interventions.

This should be contrasted with the needs of the street based interventions that by necessity must be much briefer in duration and be addressed to an immediate interest of the user on the street, such as bleach to clean their works, or a condom "to protect themselves." This intervention is further distinguished by the need to recognize what phase of drug acquisition and intoxication is being displayed by the client.

Notwithstanding the above differences, the similarities of tailoring the materials in a upbeat, non-judgemental fashion in appropriate language to the audience is paramount in importance. We will present examples of the above interventions in our presentation.

E.588

REACHING HIGH-RISK YOUTH: TRAINING THE PROVIDER

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Objective: To describe the outcome of a two day intensive training on increasing AIDS knowledge, comfort and skill level in providers working with high-risk youth.
Methods: Three regional trainings for a total of 80 youth intervention program staff took place in the spring of 1988. Youth intervention programs are designed to provide outreach and early intervention services to youth identified with alcohol and drug related problems. The program was planned and implemented with the collaboration of the Dept. of Public Health, Planned Parenthood, community-based agencies and people with AIDS. A safe environment was created by skilled trainers. Role modeling, affective and didactic methods were used. Participants were exposed to issues faced by gay, black and latino youth from the perspective of members of these communities. Pre, post and follow-up questionnaires were used to measure change in knowledge, comfort and delivery of service.
Results/Conclusion: Preliminary results show significant increase in understanding of AIDS information, in comfort and skill level in addressing issues of sexuality and in comfort and skill level in educating high-risk youth about AIDS and AIDS prevention. Follow-up surveys indicate participants are using the risk reduction and prevention strategies developed during the training.

E.590

A COMPARISON OF STUDENTS', TEACHERS', AND SCHOOL BOARD PRESIDENTS' KNOWLEDGE AND ATTITUDES ABOUT AIDS

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**Case Western Reserve University, Cleveland, OH, USA.

Objective. To determine the level of knowledge about AIDS and attitudes towards persons with AIDS (PWAs) of high school students, teachers, and school board presidents. As more children with AIDS attend public schools, it is important for those who allow children entrance (school board), teachers working with the children, and their peers to have accurate knowledge about AIDS and positive attitudes towards PWAs. In order to design programs to counteract negative public attitudes towards AIDS, it is important to first determine what those misconceptions are. This study explores the knowledge and attitudes of these three groups.
Methods. A previously used knowledge and attitude questionnaire was administered to 10th grade students (n=448), school teachers (n=224), and school board presidents (n=190). The form contained questions about the risk of casual contagion, the meaning of the results of antibody testing, and modes of transmission. The form also contained questions about the subjects' attitudes towards social interactions with PWAs, level of discomfort around PWAs, and whether PWAs should attend public school.
Results. Data will be presented on the three groups' relative knowledge about AIDS and attitudes towards AIDS.
Conclusions. Differences between the groups will be highlighted. Recommendations for educational programs will be made.

E.591

TRAVAIL EDUCATIF QUI A REALISER À CÔTE DE LA SOCIETÉ CIVIL.

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OBJECTIFS:
1. Rapporter l'experience éducatif/informatif du Service Sociale sur les questions sociaux que enveloppent le SIDA par la societé civil.
2. Analiser les résultats obtenus.

MÉTHODE: L'étude a eté realiser dans le Municipe du Rio de Janeiro par deux assistents sociales qui ont conférences sour les conséquences sociaux de le SIDA, avec une fréquence relative de 40 persones pour conférence. L'evaluation de l'extension de l'information a eté realiser à partir de questionnements envoyées à les acteurs pendent la conférence; totalizant 50 conférences.

RÉSULTATS: A eue une moyenne de 5 questionnements pour conférence, dont les thèmes plus fréquents ont:

	%
Demission de persones seropositifs et/ou avec le SIDA	100
Préjugé avec homossexuels	30
Le control du sang au Brésil	30
Organisations non-gouvernementales existents	50
Discrimination par la personne qui porte le HIV	62
Travail realisé pour le Service Social dans l'Hôpital	73

CONCLUSION: On observé un grand intérêt pour les conséquences sociaux de le SIDA, et par le travail realisé pour le Service Social, principalment entre les jeunesses.L'experience a demonstrer que le professionel du Service Social commence a être compris et accepté comme détecteur de connaissances et functions especifiques à côte de la societé en general.

E.592

THE MOBILISATION PROJECT OF THE SOCIAL SERVICES IN GOTHENBURG,

Sonnergård, Ulla,SWEDEN

Objective. The objective of the project has been to create a greater awareness of HIV/AIDS and to disseminate in-depth knowledge to the staff.
Methods. 1. The project has been carried out on two fronts: to create an organisation that would facilitate basic information and knowledge to reach all employees in short time. A special network of representatives has been established of different district- and activity-related groups. 2. to increase the level of knowledge at the beginning of the project, lectures of facts about HIV/AIDS were held - one-way-communication. The change of values and attitudes required special in-depth education in small working-groups - two-way-communication. In order to change behaviour we used small highly motivated working groups.
Results. The organisation of the project has made it possible for the employees to increase the knowledge and awareness of HIV/AIDS in a short time and to create channels for quick and continous information.
Conclusion. This model has prooved suitable for giving information about HIV/AIDS to employees (aprox. 15.000) in a city of 1/2 million inhabitants. It can also be used by smaller cities/communities in cooperation.

E.593

PUBLIC HEALTH STAFF AND COMMUNITY HIV EDUCATION THROUGH A PERIODIC NEWSLETTER

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Objective. To summarize for public health staff and others the scientific basis for public health responses to common questions on AIDS.
Methods. A periodic 2-3 page newsletter called AIDS This Week (ATW) was initiated in July 1987 and issued every 1-3 weeks. ATW deals with a single issue or question, or reports on a single scientific paper. Concise conclusions and recommendations for staff to pass on to the public are included.
Results. In July 1987 the City of Toronto committed a portion of work of all 650 public health staff to HIV education in a 30-month AIDS Operational Plan. In addition, over 80 new staff were hired exclusively to deal with AIDS education and prevention. ATW was developed to support these staff and focused on common questions including HIV risk from a human bite, the risks associated with fellatio, the relationship between HIV transmission and head lice, and the safety of the blood supply. By January 1989, 34 issues had been produced and distributed to 449 DPH staff, community agencies, public health units and international AIDS organizations. A recent evaluation yielded 250 responses for a response rate of 56%. Eighty-three percent of respondents posted or circulated copies to their staff, 34% reproduced and distributed copies regularly, and 17% had quoted ATW for other publications. Ninety-eight percent indicated they found the recommendations helpful and 92% indicated they had learned something new about HIV.
Conclusion. A science-based periodic publication on high-interest issues in a simple format will be well received and helpful to staff and other groups concerned with answering the public's questions about AIDS.

E.594

AN EXPERIENTIAL METHOD OF EDUCATING HEALTH CARE PROFESSIONALS ABOUT PATIENTS' REACTIONS TO NEUROPSYCHOLOGICAL ASSESSMENT

Grace, William C., and the Walter Reed Retrovirus Research Group, Walter Reed Army Medical Center, Washington, D.C., United States of America

Neuropsychological assessment is geared toward delineating the cognitive capacities of a patient, and it has generally (but not always) been used with patients whose condition has clear neurological sequelae, such as cerebrovascular accident or head injury. HIV patients are now frequently referred for such assessment, but neither they nor their health care professionals may have a clear understanding of the processes involved in assessment. A method for helping health care professionals experience for themself the defenses and reactions of patients undergoing assessment is presented. By using a brief experimental task from developmental psychological studies, normal adults can be induced to experience and examine their defenses to unfavorable neuropsychological feedback. The experiences of the author in using this technique in teaching approximately 100 professional staff who work with HIV patients are discussed, and ideas for further application of this teaching technique are presented.

E.595

A STUDY OF DRUG TREATMENT STAFF ATTITUDES AND EDUCATIONAL NEEDS PERTAINING TO AIDS.

Margaret M. Connors, J.P. Russo, L.A. Baker, B.F. Lewis, Spectrum House,Inc.
155 Oak St., Westboro, MA 01581, U.S.A.

Objective: To determine knowledge, anxiety level and attitudes of staff at a drug treatment facility to accommodate needs for AIDS education.
Methods: In November 1987 and July 1986, the Research staff at Spectrum House, Inc., anonymously surveyed administrative, counseling, medical and support staff. Frequencies, cross-tabulations, and multiple regression analysis were used.
Results: Most (93%) respondents (N=61) have social contact with HIV+ clients at least once/week. Despite on-going AIDS education and an increase in self-rated knowledge over 14 months, one quarter of staff relayed various modes of casual transmission as applicable to HIV. While the majority (92%) of staff know their risk for acquiring AIDS through their work is not likely, 40% feel anxious about being infected while at work. A correlation (p≤05) was found for those who had little or no social contact with HIV+ clients and those who had a disinclination to work with HIV+ clients.
Conclusions: Knowledge that one is at low-risk does not necessarily erase the occupational "fear" of infection. Training for staff needs to occur on a continual basis to reinforce accurate knowledge of risks, update information, encourage expression of anxiety and provide support.

E.596

AIDS EDUCATION FOR NURSING STUDENTS: DOES IT MAKE A DIFFERENCE?

Calder, Barbara*, Brown, Y.*, Rae, D.*
*University of Saskatchewan, Saskatoon, Saskatchewan, Canada. S7N 0W0

Objective: To determine if increased knowledge changes nursing students' attitudes towards AIDS patients.
Methods: The design used in this study was pre test, post test. A questionnaire, developed and validated in the United States, and adapted for use in this study, was administered to the total population of first to fourth year baccalaureate undergraduate nursing students attending a one day AIDS workshop. Questions dealt with knowledge and fears concerning AIDS and caring for AIDS patients, and attitudes towards homosexuality and towards the terminally ill.
Results: Post test results indicated that all groups of students displayed a knowledge gain, a more positive attitude towards caring for AIDS patients (particularily by first and third year students). Although positive, younger students, married students, and students who had cared for AIDS patients were less positive. The level of significance was set at p .05.
Conclusion: In this study, AIDS education had a positive influence on attitudes of nursing students. This finding supports the use of education to foster positive attitudes towards AIDS and AIDS patients.

E.597

CORRECT CONDOM USE ASSESSMENT: AN INNOVATIVE TRAINING MODEL FOR HEALTH CARE PROVIDERS AND AIDS EDUCATORS

Helquist, Michael*; Stein, J.*; Smith, W.*
* AIDSCOM, Washington, D.C., U.S.A.

Objective. To develop, implement, and evaluate a curriculum module to train health care providers and AIDS educators to use an innovative approach to teach correct condom use among people at risk for AIDS.
Methods. A pilot project was developed and tested among focus groups using a protocol that guided a standard observation and assessment of study subjects' use of condoms. A companion survey elicited specific information about knowledge, attitudes and practices related to condom use. Based on these efforts, a training curriculum module was developed to disseminate this intervention through a train-the-trainer approach. The curriculum was presented and evaluated in the field; refinements followed. Sample copies of the curriculum will be available.
Results. Health care providers in the United States, the English-speaking Caribbean, and in the Dominican Republic have been receptive to use of the training module in their own settings. Evaluations from professionals and their clients will be presented.
Conclusion. Use of an innovative protocol for assessment of clients' correct use of condoms has proven to be an effective means for determining public attitudes and skills regarding condoms for AIDS prevention. The intervention also provides direct and effective training to clients about condom use.

E.598

NURSES EDUCATIONAL NEEDS AND ANXIETY LEVELS IN A LARGE LONDON TEACHING HOSPITAL.

Vearnals Simon; Kocsis A; Church J.

Psychology Dept. St. Mary's Hospital, London, U.K.

Objective: 1. To determine the efficacy of HIV/AIDS education for nurses. 2. To provide baseline data on knowledge, attitudes and anxieties for future planning.
Method: A 3 page questionnaire was circulated to N=200 qualified nursing staff at a large London Teaching Hospital. It comprised 29 basic knowledge questions about HIV/AIDS and a number of questiojs to look at nurses' anxieties and stress levels when caring for people with HIV infection.
Results: 100 (50%), 85 female, 15 male with mean age 28 yrs from a wide selection of departments throughout the hospital (Medical, Surgical, A&E, Intensive Care and Paediatrics) completed and returned the questionnaires. On the 29 basic knowledge questions 80% achieved fewer than 20 correct. 82% of nurses received training/education about HIV/AIDS, only 18% received no input. When asked about further input about specific topics, 72% requested basic transmission information and 70% counselling and infection control guidelines. We have found no correlation between levels of knowledge and a) refusal to care for patients with HIV infection, and b) concern when caring for people with HIV infection. Further data is available and will be presented at the conference.
Conclusions: Even nurses find it difficult to extract correct information from educational sessions concerning HIV/AIDs education. Therefor proper evaluation is essential to determine the best formats for nurses' educational needs for the future. One hour HIV/AIDS awareness sessions cannot deal with the many questions that nursing staff have and only relieve anxiety levels for a short period of time. Also it cannot be assumed that education alone cannot affect attitudes to nursing patients with HIV infection.

E.599

DIFFERENTIAL PERCEPTIONS OF PERSONS WITH AIDS BY HEALTH CARE STUDENTS BASED ON PATIENT DEMOGRAPHICS

Ficarrotto, Thomas J.*; Grade, M.*; Bartnof, H.*; Koenig, B.*; and Zegans, L.*
University of California, San Francisco, California, United States.

Objective. The purpose of the present investigation was to determine the degree to which health care students differentially assess whether particular demographic groups have been unjustly victimized by AIDS. If some demographic groups are perceived as being more responsible for contracting AIDS than others, then we should find variation in ratings of victimization contingent upon demographic group. Methods. A total of 113 incoming medical and 118 incoming nursing students were asked to rate the extent to which they agreed/disagreed, with one of six versions of the following statement: "__________ have been unjustly victimized by AIDS." Participants received the statement referring to either children, homosexuals, hemophiliacs, Blacks/Hispanics, women, or drug users. Groups were approximately equivalent in respect to age, professional/personal contact with persons with AIDS, and in composition by sex, race, and proportion of medical/nursing students. Results. Findings from Chi-Square analyses indicated that endorsement of unjust victimization by AIDS is contingent upon the demographic group being rated. The majority of students (82%) agreed with the statement that children have been unjustly victimized by AIDS, followed by homosexuals (65%), hemophiliacs (61%), Blacks and Hispanics (49%), women (27%), and drug users (17%), respectively. Non-white students were substantially more likely than white students to agree that Blacks/Hispanics, hemophiliacs, and drug users have been unjustly victimized by AIDS. Nursing students were substantially more likely than medical students to agree that women, and children have been unjustly victimized by AIDS. Finally, medical students were substantially more likely than nursing students to agree that Blacks and Hispanics, drug users, and hemophiliacs have been unjustly victimized by AIDS. Conclusion. Findings suggest a differential assessment of victimization by AIDS contingent upon the demographic group rated. Blacks/Hispanics, women, and drug users are rated as being least victimized by the disease, whereas children, homosexuals, and hemophiliacs are rated as being the most victimized. It is doubtful whether findings pertaining to homosexuals would be replicated in American medical schools outside of San Francisco, where public intolerance of homosexuality is likely to be greater. Surprisingly, findings pertaining to women might reflect that women have historically been held responsible for aspects of sexuality that become problematic (i.e., STDs, unwanted pregnancy). Consideration must be given, however, as to whether our measure of victimization simply reflects a differential assessment of epidemiological risk, or factors of social prejudice which may influence attributions of blame and responsibility for individual contagion. Results also suggest that educational materials be developed separately for nursing and medical students when sensitizing them to the needs of AIDS patients. Finally, in comparison to whites, non-white students might be more sympathetic, and thus better prepared to manage the needs of minority AIDS patients, as well as those of drug users and hemophiliacs.

E.600

DIFFERENTIAL PERCEPTIONS OF PERSONS WITH AIDS BY HEALTH CARE STUDENTS BASED ON PATIENT DEMOGRAPHICS

Ficarrotto, Thomas J.*; Grade, M.*; Bartnof, H.*; Koenig, B.*; and Zegans, L.* University of California, San Francisco, California, United States

Objective. The purpose of the present investigation was to determine the degree to which health care students differentially assess whether particular demographic groups have been unjustly victimized by AIDS. If some demographic groups are perceived as being more responsible for contracting AIDS than others, then we should find variation in ratings of victimization contingent upon demographic group. Methods. A between-subjects design was employed. A total of 113 incoming medical and 118 incoming nursing students were asked to rate the extent to which they agreed/disagreed, with one of six versions of the following statement: "__________ have been unjustly victimized by AIDS." Participants received the statement referring to either children, homosexuals, hemophiliacs, Blacks/Hispanics, women, or drug users. Groups were approximately equivalent in respect to age, professional/personal contact with persons with AIDS, and in composition by sex, race, and proportion of medical/nursing students. Results. Findings from Chi-Square analyses indicated that endorsement of unjust victimization by AIDS is contingent upon the demographic group being rated. The majority of students (82%) agreed with the statement that children have been unjustly victimized by AIDS, followed by homosexuals (65%), hemophiliacs (61%), Blacks and Hispanics (49%), women (27%), and drug users (17%), respectively. Non-white students were substantially more likely than white students to agree that Blacks/Hispanics, hemophiliacs, and drug users have been unjustly victimized by AIDS. Nursing students were substantially more likely than medical students to agree that women, and children have been unjustly victimized by AIDS. Finally, medical students were substantially more likely than nursing students to agree that Blacks and Hispanics, drug users, and hemophiliacs have been unjustly victimized by AIDS. Conclusion. Findings suggest a differential assessment of victimization by AIDS contingent upon the demographic group rated. Blacks/Hispanics, women, and drug users are rated as being least victimized by the disease, whereas children, homosexuals, and hemophiliacs are rated as being the most victimized. It is doubtful whether findings pertaining to homosexuals would be replicated in American medical schools outside of San Francisco, where public intolerance of homosexuality is likely to be greater. Surprisingly, findings pertaining to women might be a reflection that women have historically been held responsible for aspects of sexuality that become problematic (i.e., STDs, unwanted pregnancy). Consideration must be given, however, as to whether the measure of victimization employed in the study simply reflects a differential assessment of epidemiological risk, or factors of social prejudice which may influence attributions of blame and responsibility for individual contagion.

Results from this study also suggest that educational materials be developed separately for nursing and medical students when sensitizing them to the needs of AIDS patients. Finally, in comparison to whites, non-white students might be more sympathetic, and thus better prepared to manage the needs of minority AIDS patients, as well as that of drug users and hemophiliacs.

E.601

THE CANADIAN DENTAL ASSOCIATION'S RESPONSE TO AIDS

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OTTAWA, ONTARIO, CANADA.

OBJECTIVE To describe the role of a national professional organization in altering the practice of its members in response to the AIDS dilemma.

METHODS A significant outcome of AIDS has been the adoption of universal precautions for infection control. Specific procedures have been advocated for dentistry. The leadership role assumed by the Canadian Dental Association for promoting these new concepts was accomplished via: publications, a speakers and information bureau, a consensus conference, specific recommendations, and a practical information guide. In addition, two surveys of the infection control practices of dentists were performed in 1985 and 1988.

RESULTS The survey results indicated that 70% of the responding dentists in 1988 regularly used gloves compared to less than 10% in 1985. Among the surveyed dentists 75% had been immunized for hepatitis B in 1988 compared to 25% in 1985. Similar results were obtained for other aspects of infection control.

CONCLUSION The education and communication policies adopted by the Canadian Dental Association have had a positive effect upon the infection control practices of its members.

E.602

STAFF MEETINGS AS AN ORGANISATIONAL INTERVENTION ABOUT AIDS.

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Royal Free Hospital and School of Medicine, London, England.

Objective. To describe a process of using open forums as educational meetings and for interventions for changing conflicting and rigid views about AIDS.
Method. Meetings were held for one hour once a month over a period of 27 months (1986 - 1989). Meetings were open to hospital managers, clinical staff, laboratory staff, researchers, community care workers, administrative staff and lecturers. Some topics covered included: the life-cycle of AIDS/HIV, bereavement, in-patient and community care, AIDS and the family, the 'worried well' and drug trials. Each topic was discussed in relation to AIDS counselling; how it affects what might be said to patients and what issues it might raise for patients and staff.
Results. The meeting was initiated at a time when AIDS services in the district were negligible. Staff at the meetings participated in discussions on issues for patients or themselves, as staff. The meeting was overtly used as an educational meeting but was also used to demonstrate the importance and techniques of AIDS/HIV counselling and to bring a consistent approach to counselling in the district. An interest in AIDS in the district emerged. Services were developed and co-ordinated. Views about AIDS changed over time.
Conclusion. Forums for staff in which there are opportunities for discussion and education are important in the development of a healthy organisational climate. This leads to improved patient services and a consistent approach in the management of AIDS. Ultimately, staff and patient morale is improved.

E.603

A TRAINING APROACH FOR NURSES AND DENTISTS

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*,**,*** Divisão Nacional de DST/AIDS – Ministério da Saúde – Brazil

The Training unit was set up in 1987 as a professional training, education and consultation service on all aspects of AIDS, and has developed a wide range of courses designed to meet the needs of various professional groups.

Objetive: To envolve health professionals, such nurses, physicians, and dentists in the elaboration of their own instrutional materials.

Methods: 16 health professionals (8 nurses) and 8 (dentists) were intensively trained during 2 months in all technical aspects of HIV infection. The philosophy which includes the holistic and humanistic aspects, was also included in the process. We found that the most effective way to develop awareness and skills is by using participatory groups which encourage participants to share relevants experiences derived from their work situations. The course contans 3 Units. Each one is set up of (1) sequence of activities, (2) guidelines for facilitations and (3) evaluation of performance.

Conclusions: This training approach has been successful in reaching health professionals in primary health care and developing an understanding of who she (he) is, how one fells, thinks, and what she or he does.

E.604

AIDS EDUCATION IN PRIMARY SCHOOLS: THE NEED TO REACH THE INNOCENT

J. K. Nguma, K. Nyamryekunge, National AIDS Control Programme, Tanzania

Objective. To determine knowledge about AIDS and attitudes towards AIDS education in Primary 5-7 in Kagera region, Tanzania.

Findings. A survey of 66 primary 5-7 pupils in Kagera region indicates that about 23% of the pupils have had sexual intercourse. Whereas majority of these pupils are aware of AIDS, their knowledge about transmission appears to be limited. Indeed, there exists a number of misconceptions about AIDS transmission. AIDS education in primary schools was recommended by majority of the pupils.

Conclusion. It is apparent that majority of our primary 5-7 children are still safe from the AIDS epidemic. However, as they start indulging in sexual intercourse, this group may not continue to be safe for too long. The paper calls for an urgent introduction of AIDS education in primary schools within the family life education package.

E.605

A NATIONAL AIDS/HIV TRAINING PROGRAM FOR HEALTHCARE EMPLOYEES IN THE DEPARTMENT OF VETERANS AFFAIRS

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Objective: To meet the challenge of promoting humane patient-care and reducing risk of HIV-infection by rapid development and implementation of an effective AIDS/HIV training program for 194,000 healthcare employees in one of the world's largest national healthcare systems, the Department of Veterans Affairs (DVA).

Methods: Experience showed that caring for persons with AIDS often accentuated inappropriate staff attitudes and behaviors, due to misinformation, fear and ignorance. A unique educational response was needed without delay. DVA physicians, nurses and educators planned and implemented interactive training, based on established principles of adult learning. To train the largest number of staff in the shortest time, a train-the-trainer (TTT) approach was adopted, modifying existing programs and materials.

Results: Collaboration between the DVA and the California Nurses Association (CNA) resulted in training (April 1988) 21 master faculty. Master faculty teams facilitated 15 TTT Workshops (May-September 1988) and trained 391 trainers from 172 DVA Medical Centers in content, interactive teaching strategies and facilitation skills. These trainers are functioning (May 1988-present). Further evaluation will be reported in 1989 and 1990. Trainers are supported by teleconferences and updating of training materials.

Conclusion: Collaboration between clinicians and educaters, and between healthcare institutions with shared goals, can produce AIDS/HIV education that meets specific cognitive, attitudinal and behavioral needs of all categories of healthcare workers. The TTT approach expedites expansion of a quality, system-wide training effort. Trainers verify that skills, strategies and materials provided by this unique program revitalize existing training and reduce trainer stress and "burnout." Interactive learning approaches have proven singularly effective in dealing with anxiety and attitudinal barriers.

E.606

AIDS AND PHYSICIANS. ATTITUDE AND KNOWLEDGE RELATED TO AIDS AND AIDS PATIENTS IN WEST GERMAN DOCTORS NEED IMPROVEMENT.

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Objective. To describe their personal experience, ways of acquiring AIDS knowledge and education, attitude and clinical competence 200 West German physicians were asked to complete a multiple choice questionnaire.

Methods. One third of participants worked in private practices mainly as general practicioners, two thirds worked in a clinical setting mainly in internal medicine. Mean age was 42 years, 36.2% had had personal experience in treating HIV-infected or AIDS patients.

Results. 27% of the participants wanted to treat more AIDS patients, 35.2% wanted to treat no AIDS patients if they had the choice. Only 1.7% of the study sample was able to correctly answer 4 of 4 multiple choice questions relating to epidemiological and treatment issues. 8.6% correctly answered 3 of these questions.

Conclusion. AIDS knowledge in physicians seems to be acquired on a learning by doing basis. More correct answers were seen in those physicians that had treated more HIV-infected or AIDS patients. Growing numbers of AIDS patients will require a basis of AIDS related clinical competence in every physician. Continuing medical education in West Germany, at least if related to AIDS, needs further intensification and improvement.

E.607

MEDICAL STUDENTS' KNOWLEDGE OF HIV-INFECTION AND AIDS.

Michael M. Kochen*, J. Hasford** and members of the Association of Teachers in General Medicine (Vereinig. d. Hochschullehrer u. Lehrbeauftr. für Allgemeinmed.)
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Objective. To evaluate the knowledge on infection with the Human Immunodeficiency Virus (HIV) and the Acquired Immunodeficiency Syndrome (AIDS) of fourth year medical students in W-Germany.

Methods. We asked all members of the Federal Republic of Germany's Association of Teachers in General Medicine to distribute an anonymous questionnaire to forth year medical students during a normal teaching session. 19 universities (and the University of Vienna/Austria) agreed to participate. After providing some demographic data students had to answer 39 yes/no questions with regard to sexual, blood borne, social and "alternate" transmission of HIV, preventive measures, and clinical development of disease. After returning the questionnaires the correct answers were disclosed and discussed with the students.

Results. 1429 completed questionnaires were returned, 51% from male and 43% from female students (6% gave no information about their sex). 133 Students indicated that they know at least one HIV-infected patient personally (no data from 29%). The analysis of students' answers showed some remarkable deficiencies in "HIV-associated knowledge". 18% thought that oral sex is without risk; 5.8% indicated that condoms make sexual contact completely safe; 9.9% believed that transmission is effectively reduced with the number of sexual partners; 7.7% were convinced that HIV can penetrate the intact skin; 8.8% thought that female to male transmission of HIV has not been definitely proven; 14% said that transmission risk is low in vaginal intercourse; 30% deemed it unnecessary to advise persons from risk groups against donation of blood. That HIV can be transmitted by cough, common use of bath and kitchen, passive anal intercourse only, kissing and mosquitoes was indicated by 11, 9.3, 5.4, 14.2 and 11.3% respectively.

Conclusion. Although not representative for the whole country this study was conducted in 19 of the 25 West German medical schools and comprised a large number of fourth year medical students. The gaps in students' knowledge should motivate universities to reconsider the curricula where HIV-infection plays only a marginal role.

E.608

DIAGNOSING THE DOCTORS: HIV RELATED KNOWLEDGE, ATTITUDES, AND RESOURCE NEEDS OF PHYSICIANS IN THE SOUTH CENTRAL U.S.

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Delta Region AIDS Education and Training Center Center, New Orleans, La., U.S.A.

Objectives. To gain information with which to develop a tailored instructional program on AIDS for area physicians.

Methods. A comprehensive needs assessment questionnaire was mailed to a random selection of primary care physicians throughout Louisiana, Arkansas, and Mississippi. Primary topics addressed were provider attitudes, knowledge base, barriers to treatment, and preferred methods of education.

Results. The 113 respondents represented 2.0% of all licensed primary care physicians in the region. A mean of 4 hours/month was spent on HIV related issues. From a list of 12 HIV related issues, prevention techniques in the workplace, followed by modes of transmission, were rated most important. On a 9 point Likert scale physicians were comfortable with their knowledge of risk assessment (6.6), infection control practices (5.9) and diagnosis (5.7), but in an objective measurement of knowledge based on test questions they scored poorly in all these areas. Learning methods that would most likely be used were a professional's telephone hotline, local sessions of 1/2 day or less given by experts, and journals. Methods involving face to face contact with an HIV (+) person were strongly opposed.

Conclusions. In an area of the U.S. where AIDS is not yet epidemic, a lack of understanding of fundamentals prevails, as does inordinate concern over transmission in the professional setting and reluctance to encounter HIV (+) persons. These data help form the basis for an educational program.

E.609

AIDS: DIAGNOSING EDUCATIONAL NEEDS OF HEALTH CARE PROFESSIONALS

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Objective. To determine health care providers' attitudes toward AIDS education and learning needs in three southern states.
Methods. A written questionnaire was mailed to a random sample of 842 primary care physicians, nurses, infection control practitioners, dentists, dental hygienists and social workers. Additional data was collected from 15 key informant, telephone interviews. AIDS experts in the 3-state region were selected as informants. In addition to statistical analysis of the survey results, the quantitative data was triangulated with qualitative findings from the interview.
Results. An education needs profile within and across professional group categories found that health care professionals and AIDS experts agreed on the importance of AIDS/HIV education but differed on its focus. For example, AIDS experts described the need for learning in the psychosocial dimensions of AIDS treatment. Although survey respondents ranked low their current satisfaction level with these issues, psychosocial concerns were not a priority learning need. Instead, knowledge about prevention techniques and high risk groups and profession-specific skills related to AIDS/HIV treatment were more highly rated. Attitudes toward AIDS/HIV infection differed among professional groups as well as their perceived impact on service quality. Implications for educational programs based on health providers' learning style preferences and perceived educational needs are discussed.

E.611

A CLINICAL PROGRAM TO TRAIN PHYSICIANS AND PHYSICIAN ASSISTANTS TO PROVIDE OUTPATIENT CARE FOR HIV-INFECTED PATIENTS

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AIDS Education and Training Center, *Department of Family Medicine, **Department of Medicine, University of Southern California School of Medicine, Los Angeles, California, USA.

Objective. To provide physicians and PA's with knowledge and skills to manage the complications of HIV infection seen in the outpatient setting, and to increase the numbers of trained primary care providers caring for HIV-infected patients in the community.
Methods. Physicians and PA's from 5 counties in Southern California receive intensive, 1 week, one-on-one clinical training with a physician specialist in a multidisciplinary, university-affiliated AIDS outpatient clinic. The population includes ethnic minorities (40%), indigent (66%), women (4%), and IVDU's (3%). Additional training is provided in a private physician's office and an STD clinic. Training takes place during the course of patient visits and didactic sessions. Emphasis is on clinical instruction in the context of direct patient care supplemented by a comprehensive syllabus.
Results. Formal evaluation of the program includes exit interviews of the participants and 6 month followup. Preliminary data indicate that the trainees' goals are being met by the program.
Conclusion. An intensive, short-term clinical program is effective in modifying clinicians' management of HIV infection.

E.613

RESULTS FROM 1988 SURVEY OF MICHIGAN STATEWIDE SCHOOL HIV POLICY, STAFF INSERVICE, AND STUDENT EDUCATION

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Objective. To establish baseline data on the number implementing and quality of Michigan public school's HIV policy, staff inservice and student education.
Methods. Two AIDS Information Surveys were sent in May, 1988 on HIV program initiatives for the 1987-88 school year. A 62 item survey on district level activities was sent to 591 superintendents with an 88% return. A 91 item survey on building level activities was sent to 621 middle school principals with a 72% return and also to 615 high school principals with a 79% return. Random verification of survey data was conducted.
Results. Returns showed 74% of the reporting districts had a policy addressing attendance for persons with AIDS. Districts reported 34% had district staff inservice training with principals reporting 41% of the middle and 48% of the high schools had staff inservices. Both the middle and high school principals reported 41% had adopted written routine procedures for blood and other body fluid spills. A district, age appropriate K-12 program for educating students about AIDS occurred in 34% of the reporting districts though less than 10% taught anything in grades K-4, 17% in 5th, and 24% in 6th. Planned student AIDS education occurred in 62% of the middle and 78% of the high schools.
Conclusion. Assistance must be provided to school districts on policy issues i.e. confidentiality and handling body fluid spills. More total school staff inservice must occur. Districts need to incorporate student HIV education into a K-12 comprehensive school health education plan to be most effective.

E.610

TRAINING OF HEALTH CARE PROVIDERS IN SAO PAULO STATE.

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Objective.Trainning of health care providers to decrease the morbity and mortality caused by HIV infection in Sao Paulo State.
Methods. 80 hours course.40 hours of classes and 40 of practice. The program includes the following contents:Epidemiology,virology pathogebesis/imunology,clinical and laboratory management pediatrie Aids,blood bankscontrol,Human sexuality and Educational strategies.We established the same program with 5 clinical multiprofissional team from 5 references centers in Sao Paulo State. The course evaluation was made using a 15 marks questionary answered two times;before and after the course.
Results. 250 Health Care Providers trained in the period between april to december 1988.75% developed local programs for Aids prevention and control.
Conclusion. This is a very effective way of trainning and demands only a period of 2 weeks.

E.612

EVALUATING AIDS EDUCATION FOR HEALTH PROFESSIONALS

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The East Central AIDS Education and Training Center (ECAETC) has developed a wide range of educational methods and programs to educate health care workers about AIDS. Evaluating the match of educational methods to health care provider needs for AIDS education has been an integral component of ECAETC efforts over the last 12 months.
METHODS. The ECAETC evaluation effort functions on three levels: 1) trainee assessment; 2) program impact; and 3) regional impact. Methods used to evaluate these included participant assessments of programs; program documentation and dissemination surveys; and site visits and interviews.
RESULTS. Trainee assessment: 2717 health care professionals completed ECAETC program evaluations. Eighty-eight percent of participants indicated favorable responses to: importance/value of training content, improvement of knowledge; quality of presentations and materials; and overall quality of presentations and programs. Program impact: 16,947 health care professionals participated in ECAETC programs, including 5851 physicians; 3813 nurses; 1171 dentists; 2011 allied health; 1953 students; 987 counselors; 71 physician assistants; and 1090 emergency medical technicians. Regional impact: 138 key organizations/agencies were contacted in order to establish formal, ongoing linkages; 6000 entries were made in ECAETC databases; 3000 newletters were distributed; and 5000 brochures were distributed. More study is needed in order to determine the long-term impact of such AIDS education and training centers.

E.614

THE RELATIONSHIP BETWEEN CONCERN ABOUT AIDS, KNOWLEDGE OF TRANSMISSION, AND BEHAVIOR CHANGE: CORRELATIONS AT THE INDIVIDUAL AND NATIONAL LEVELS

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Objective. To examine correlations between concern about acquiring AIDS, knowledge of transmission, and reported behavior change.
Methods. Correlation coefficients were computed using aggregated data from 34 nations in which the Gallup organization conducted surveys of AIDS related knowledge, attitude and practice. The associations found were compared to results reported from several individual level studies which employed similar questions.
Results. At the national level, concern about acquiring AIDS was associated with belief in transmission by casual contact, a finding similar to several individual level studies that have shown a relationship between fear and inaccurate knowledge. Countries with higher levels of reported behavior change had lower levels of accurate knowledge. Lower levels of accurate knowledge were associated with reports of inappropriate behavior change such as avoiding homosexuals. Reports of behavior change that involved increasing condom use were associated with concern about getting AIDS, but not with accurate knowledge of transmission.
Conclusions. Caution is needed in drawing conclusions about the relationship between knowledge and practice from aggregated data. However, this study identified some concordance between results at the two levels of analysis, and suggests that inaccurate knowledge is associated with high levels of concern.

E.615

CHANGES IN AIDS-RELATED KNOWLEDGE, ATTITUDES AND BEHAVIOURS OF HIGH SCHOOL STUDENTS IN GREECE

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Objective.To estimate the AIDS-related knowledge,attitudes and behaviours of high school students and evaluate factors affecting their changes.
Methods.A questionnaire was developed and administered to a national representative sample of 5213 high school students,probing their knowledge about transmission and prevention of HIV,their attitudes and their behaviours about AIDS.
Results.Accurate responses about the main routes of transmission were given by more than 90% of the students.AIDS-related knowledge was associated with age and socioeconomic level.Females were less knowledgable than males,especially in younger and those living in provincial cities.The level of misinformation was high since 27-35% believed that HIV could be transmitted through casual social contact or by mosquitoes.Mass media and pamphlets distributed through the electricity bill were the main sources of information. Only 11.6% attended relevant lectures.Changes in sexual behaviour were declared by 28.7% of the students.They were more common in males and in older students.Suppresive measures for containment of the disease were suggested more often by younger and male students.Females and older children requested more information and could more often accept carriers as school-mates.
Conclusion.There is great need of implementing a systematic effective educational school programme to improve AIDS-related knowledge,and decrease misconceptions leading to unacceptable attitudes and behaviours.

E.616

VALUATION OF AN INFORMATIVE AND EDUCATIONAL PROGRAM IN TUSCANY' S HIGH SCHOOLS STUDENTS.

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Objective. To value the preventive capability of some informative instruments, which are different in modality of creation.
Methods. The informative validity is measure by a questionnaire, purposely created. The research has been carried out on statistical sample of students of province of Florence. The first valuation has been before the informative programs (video-tapes) and the second after it.
Results. With this questionnaire has been possible to verify the efficacy of the message and the modification of behaviour.
Conclusion. we could be able to realise a proper preventive behaviour, today it constitutes the only form of struggle against the disease.

E.617

AIDS INFORMATION AND TEEN-AGERS IN PARIS

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Objective. To describe the impact of AIDS information on teen-agers, some of them socially vulnerable.
Methods. 500 students from three secondary schools in the north of Paris, age 13 to 16, have been informed on AIDS in February and March 1988. The sessions were informal, with video and slides. A few weeks later, 335 (sex ratio = 1) responded to a confidential multiple-choice questionnaire. 81% reported no sexual relation. 75% were living in an unfavorable environment: low socio-economic level and ethno-cultural differences (families of North African immigrants and Asian refugees).
Results. 54% felt misinformed before this program. After it, the definition of HIV was better understood (96%) than AIDS (70%). 55% knew the three transmission routes among eight choices. Only 60% knew that seropositives and asymptomatic carriers are contagious. 61% misunderstood what "seropositive" is. Principles of prevention were well assimilated (89%) but 61% would not wait long enough before having the antibody test. Results in the more vulnerable group were not significantly different.
Conclusion. Appropriate information among teen-agers and vulnerable youth has to be stressed :
- transmission modes, particularly sexual, e.g. : HIV infection can escape notice ; asymptomatic infected persons are contagious.
- the 3-6 months delay before testing.
- instructions for condom use (e.g. avoid oil-based lubrifiants).
- the necessity not to change sexual partners.

E.618

AIDS INFORMATION IN FRENCH YOUTH

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Introduction. AIDS information is still underdeveloped amongst french youth. Media may be incorrectly perceived. Only a minority have benefited from personalized information, mostly at school, given by physicians, school nurses or educators.
Objective. To improve AIDS prevention for the young.
Methods. Among the 10.000 students that I personally informed from June 1987 to December 1988, more than 1500 expressed their opinion through an anonymous questionnaire.
Results. AIDS provokes contradictory attitudes : although they deny any direct threat from the epidemic, the young are bothered and disturbed by the media giving too much heterogeneous information that is sometimes incoherent and polemic. They feel that AIDS will in the short term modify their sexual and social behavior ; they are waiting urgently for authentic, more human and explicit information, indispensable for AIDS awareness. To better involve the young in AIDS prevention, new models of information are suggested, e.g. a "second generation information" : we need motivated young volunteers, previously trained and informed to convey basic data on AIDS, leading to concrete preventive counseling.
Conclusion. - The more specifically designed information modes given by adults or youth leaders to the young, the more efficient the prevention ;
- School is one of the best environments to experiment with these models (formal and non-formal) ; - personalized information delivered to small groups is necessary to teach them how to use condoms and to recommend to them their use in any new relationship (always of uncertain outlook)

E.619

Impact of Mandatory AIDS Education in Ontario Schools, 1987

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Objective: This study examines the impact of mandatory Aids Education initiated in Ontario Schools during the fall of 1987.
Methods: One hundred and eighty students - 135 females, 45 males, mean age 16.3 years - working as volunteers in 13 Toronto area hospitals were surveyed during the summer, in terms of 1) General Health Knowledge, 2) Knowledge about HIV infection 3) Attitudes towards persons with Aids and safe sex practices, using both open ended and multiple choice questionnaires.
Results: Knowledge about HIV, but not Attitudes, was found to correlate positively with general health scores. The only variables to correlate significantly with attitude scores were sex (p 0.001) and sociocultural background (p=0.005), with females and children of Canadian, American and European backgrounds being significantly more positive in their attitudes towards safe sex and persons with Aids than males and children of Asiatic or Third World countries. Approaching significance were the trends for children of highly educated parents (especially health professionals) to be more negative than children whose parents had not completed high school.
Conclusion: Increased knowledge about HIV does not necessarily guarantee positive attitudinal changes.

E.620

AIDS KNOWLEDGE, ATTITUDE AND BEHAVIOUR PATTERNS AMONG UNIVERSITY STUDENTS IN IBADAN. NIGERIA.

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This study investigated the knowledge, attitudes and Personal behaviours of University Students related to AIDS. Two hundred and fifty two Students from the University of Ibadan randomly selected from eight faculties were surveyed. Results indicated that 58.7% of respondents knew that AIDS is caused by a virus but 72.6% thought the disease could be spread through kissing, hugging or shaking hands and 48.0% belief they cannot have AIDS. Most respondents showed a high degree of aversion to AIDS victims while about a qufter reported having multiple sexual patners in the last five years. The results suggest that well organized, specifically targetted health education programmes are needed for University Students.

E.621

HIV RELATED BELIEFS, KNOWLEDGE AND BEHAVIORS AMONG SECONDARY SCHOOL STUDENTS IN KINSHASA

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Objectives. To assess HIV related beliefs and knowledge (BK) among adolescents in secondary schools and to evaluate the effectiveness of AIDS educational conferences(AEC) in schools as a means to improve AIDS-related knowledge of students.
Methods. One group (GpA) of secondary schools was randomly selected for a series of AEC. A second group (GpB) of schools was also selected from schools where students did not attend the conferences. A self-administrated anonymous questionnaire to assess BK was completed 4.5 months after the AEC by students in the last two years of secondary schools.
Results. A total of 1000 students (46% males, 54% females, aged 15 to 26 years, mean age 22.3) were enrolled in the study. Three percent of them thought incorrectly that AIDS does not exist, 7% and 12% respectively believed that there is a cure for AIDS and that a vaccine exists.
Percentage of correct responses regarding knowledge of HIV transmission

	AIDS risk factors					Non-AIDS risk factors		
School Group	PT	BT	NS	Sex	MB	Sweat	Public toilets	Clothes
GpA	79.3	93.8	94.4	70.2	86.0	96.3	96.0	98.0
GpB	79.0	92.0	91.5	77.3	82.7	99.3	95.6	96.0
Total	79.0	93.0	93.0	74.0	84.0	97.0	96.0	97.0

PT=Perinatal transmission; BT=Blood transfusion; NS=Needles and Syringes, MB=Mosquitoe bites.
Conclusion. We found that over 80% of respondents, when prompted, correctly identified HIV-associated risk factors. This high correct response rate was independant of participation in a conference on AIDS suggesting that the use of AEC in these schools was not an effective tool to improve HIV-related knowledge of the students. Other methods of increasing knowledge in this group need to be explored.

E.623

BLOOD, SEX AND NEEDLES

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In Africa, HIV transmission continues to be through heterosexual intercourse. In North America, homosexual intercourse has been numerically more important, although heterosexual transmission is rising slowly and IV drug abuse is increasingly significant.

All three routes of transmission unequivocally give rise to self-sustaining epidemics. By contrast, although transmission can occur through contaminated blood given for transfusion, such accidents either result in a single case or a small cluster of cases and are self-limiting.

Preventive strategies must focus resources on those individuals who have most sexual partners and, where appropriate, IV drug abusers. Unfortunately, these individuals often fall outside routine health services and in many settings their practices are illicit or frankly illegal. Rapidly emerging as the key problem in many parts of the world is that the leaders of society who control resources and set policies find it acceptable to clean up the blood supply but difficult -- and sometimes virtually impossible -- to sponsor projects to educate and provide condoms and clean needles to those groups where the epidemic is spreading most rapidly. Ways of overcoming this problem will be discussed, based on the experience of AIDSTECH internationally.

E.625

E.622

A SURVEY OF AIDS RELATED KNOWLEDGE AMONG ITALIAN MEDICAL DOCTORS

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Objective. To gather information about AIDS related knowledge, in order to plan educational programs for medical doctors (MD).
Methods. Administration of an 80-items multiple choice questionnaire to a sample (n=286) of MD from the National Health System. "Prominent" questions have been grouped into 6 scores concerning the following topics: cancer (not AIDS related) mortality [as a "control" score] (TUM), HIV biology (BIO), modalities of transmission (TRA), HIV screening tests (SCR), clinical aspects including therapy (CLI), and perinatal transmission (PED). Correct answers were awarded 2pts and uncorrect 1pt. The association of scores with age, sex, area of practice, was tested using the OR estimate. Correlations between scores were estimated using the r coefficient.
Results. A higher average level of AIDS related knowledge was noted for BIO and PED (1.68 and 1.63 pts per item, respectively), and a lower one for SCR and TRA (1.50 and 1.51), but the highest score was obtained in the TUM "control"(1.79). The strongest correlations were between BIO and CLI (r=.466), and between TRA and SCR (r=.388). No significant difference of knowledge by sex, age, area of practice has been observed.
Conclusions. AIDS related knowledge has not yet reached the level of other "classical" issues met in medical practice. In particular, the widespread need of correct information of MD about an appropriate use of HIV screening tests and about relevance of specific modalities of transmission and effective instruments of prevention must be stressed.

E.624

Developing an HIV/AIDS Training Institute for Administrators of Health Facilities

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Health services administrators are facing new challenges and demands as their organizations care for an increasing number of AIDS patients. While caregivers in general have benefitted greatly from the development of an extensive body of knowledge about AIDS and from their experiences in treating the disease, health care managers have not benefitted to the same extent from information specifically focussed on management issues. The development of the HIV/AIDS Training Institute for Administrators of Health Facilities bridges this knowledge gap. The project is developing a curriculum to be used in continuing education programs for health service managers. This curriculum will educate and inform health managers on such topics as the financial, legal, and moral/ethical issues involved in the management of facilities that care for AIDS patients, plus the strategic, operational, and personnel management policies that must be considered. Representatives from the field of health care management, as well as faculty from university programs in health service administration have been consulted as to what they believe to be the most pressing issues and concerns for administrators. A survey of 90 health administration and public health programs at universities in the U.S., Canada, and Puerto Rico was conducted to assess the extent to which AIDS is addressed in graduate and undergraduate program curricula. Results indicate that the majority of health administration programs offer little to no education on the management issues involved with AIDS patient care. Regional correlations were noted between areas where incidence and prevalence of AIDS was medium to high and the extent to which programs in those areas addressed AIDS in their curricula.

E.626

PHARMACISTS INVOLVEMENT IN CLINICAL DRUG TRIALS SPONSORED BY THE AIDS CLINICAL TRIALS GROUP: THE ROLE OF INVESTIGATIONAL RESEARCH PHARMACISTS.

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Objective: To describe the activities of pharmacists within the AIDS Clinical Trials Group(ACTG) and to establish a network of research pharmacists in the United States who specialize in AIDS clinical trials.
Methods: Since the creation of ACTG in 1986, pharmacists have been a crucial part of the health care team in developing, implementing and completing high quality clinical trials. From less than 20 centers in 1986, there are 51 centers currently in operation with at least one pharmacist at each center. Two questionnaires were mailed to gather information about the institution and the individual's practice. Data from SFGH is not included in these results.
Results: Out of 36 questionnaires sent to 36 hospitals, 31(86%) responded. Nine of 36(25%) respondents work on ACTG activities 0.75-1.00FTE with 17/36(55%) who work 0.25-0.75FTE and 5/36(16%) who work less than 0.25FTE. Individuals working part-time complete their practice with other pharmacy-related activities such as drug monitoring, adjusting drug doses, dispensing, and teaching. A follow up questionnaire was sent to 56 individuals at 51 institutions with 39(76%) responding. Four of 51(13%) have more than one pharmacist or technician on the ACTG grant. Nine institutions have another position for non-AIDS investigational drug services. Only two individuals have attended International AIDS Conferences due to expense and scheduling conflicts. While only 2 have written articles on AIDS, 10 of 39(25%) respondees regularly give 1-4 lectures per month in the community. 34 out of 39(87%) indicate a strong interest to increase their participation in the ACTG process with 33 of 39(85%) volunteering to offer advice on study design.
Conclusion: A select group of pharmacists are involved in completing AIDS clinical research in the United States. Pharmacists form an integral part of the health care team and are eager to provide assistance with future study design in the search for new medical interventions for HIV infection. Future plans include the development of a regular newsletter and periodic group meetings.

E.627

AN INTEGRATED APPROACH TO HIV-RELATED CURRICULUM FOR PHYSICIAN'S ASSISTANT STUDENTS.

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The Department of Physician's Assistant Studies developed and implemented a curriculum to teach physician's assistant students about the didactic, clinical, and psychosocial aspects of HIV infection. Student attitudes about AIDS and AIDS patients were measured using the Shrum-Turner AIDS Attitude Questionnaire at various points in the program curricula. The object of the model curriculum has been not only to make physician's assistants students more knowledgeable about the pathophysiology, diagnosis, and prevention of AIDS diseases but to stimulate an awareness of the psychosocial consequences and implications of HIV infections as well. An integrated methodology was devised for the junior year curriculum which placed appropriate information in numerous existing courses beginning with the Patient Evaluation II and Problem Solving Techniques I and extending through the Preventive Medicine and Community Health and Human Dynamics III courses. For senior students, the materials were covered in several senior seminars at the end of clinical rotations. Senior students also participated in a 4-week rotation with direct clinical contact with HIV-infected patients. Prior to patient contact, all students are taught basic principles in pathophysiology, diagnosis, and treatment/prevention for care of patients with HIV infections. Results of the attitude survey will be utilized to make adjustments in the program curriculum.

E.628

SELF-SELECTION AMONG PROSPECTIVE HEALTH CARE PROVIDERS AS A FACTOR IN AIDS-HIV EDUCATION

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Objective. To identify the characteristics of those individuals who elect to take an AIDS education course. In so doing, to ascertain whether or not need for education is being met by available opportunities within a major medical training institution. Method. Incoming medical and nursing students at the University of California, San Francisco (UCSF) were surveyed with respect to demographic characteristics (age, race, gender), previous clinical experience with AIDS patients, attitudes germane to AIDS, perceptions of occupational and personal risk, and knowledge about AIDS. Identifying factors were examined between those students who elected to take a 10 week, 10 hour AIDS elective course offered through the UCSF School of Medicine and those who did not. Results. Results from Chi-Square analyses indicated that the decision to take an AIDS elective course was contingent upon both race and gender. A substantially greater proportion of women elected to take the course in comparison to men, and a substantially greater proportion of white students elected to take the course in comparison to non-white students. No significant differences emerged between students who opted to take the course and those who did not in regard to mean age, and the number of AIDS patients worked with prior to entering professional training. Students who elected to take the course, however, started out with significantly greater levels of knowledge about AIDS in comparison to students who elected not to take the course. Attitudes likewise differed and will be reported. There were no significant differences in perceived risk.

Conclusions. Those persons who might be considered most in need of AIDS education (those, for example, with lower levels of knowledge) tend not to partake of available academic AIDS education. Such a finding lends further support to an argument for systematically incorporating AIDS education within required professional curricula. Greater attempt must also be made to appeal to the sensibilities of those individuals whose apparent tendency is to forego education of importance to the optimal care of HIV-spectrum patients.

E.629

FACTORS PREDICTIVE OF AIDS-HIV KNOWLEDGE AND ATTITUDES AMONG NURSING AND MEDICAL STUDENTS

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Objective. To identify psychosocial and psychological variables that explain negative attitudes toward AIDS patients and inaccurate medical information about AIDS among incoming medical and nursing students. Methods. A total of 113 incoming medical and 118 incoming nursing students were surveyed regarding their knowledge and attitudes about AIDS, their estimate of personal and occupational risk for HIV infection, and the number of AIDS patients with whom they have had professional contact. Students were also surveyed regarding their level of homonegativism, death anxiety, and intolerance of drug users. Results. The majority of students answered 50% or more of the knowledge items incorrectly. Nursing students scored higher on AIDS knowledge than medical students, although no differences emerged between nursing and medical students in respect to their overall AIDS attitudes, nor in their estimates of risk for infection. The majority of students, however, overestimated risk for HIV infection when compared to scientifically established estimates of risk.

Multiple regression analyses were performed to determine the best possible linear estimate of AIDS knowledge, negative AIDS attitudes, and 2 AIDS attitude subscales: professional resistance (measuring a student's unwillingness to work with AIDS patients), and negative affect (measuring a student's endorsement of negative affective responses in regard to a person with AIDS). Predictor variables were entered stepwise into the regression equation following the forced entry of items from the Crown-Marlowe social desirability scale. Results indicated that the best predictor of inaccurate medical information about AIDS was an overall negative attitude towards AIDS. Lack of clinical experience with AIDS patients, exaggerated estimates of risk, and homonegativism also significantly added to the prediction of low levels of AIDS knowledge. The best predictor of negative AIDS attitudes was exaggerated perception of risk. Homonegativism, an intolerance of drug users, lack of clinical experience with AIDS patients, high death anxiety, and low levels of AIDS knowledge also significantly added to the prediction of negative AIDS attitudes.

The best predictor of both professional resistance and negative affect was homonegativism. Exaggerated risk perception, an intolerance of drug users, and lack of clinical experience also significantly added to the prediction of professional resistance, whereas only an intolerance of drug users, and low levels of AIDS knowledge significantly added to the prediction of negative affect. Conclusion: These results suggest the importance of considering pre-existing fears about AIDS when designing educational interventions that will be effective in changing attitudes. Positive attitudes are apparently essential to the assimilation of even the most basic factual information about AIDS. The results also suggest that increased experience with AIDS patients, as well as greater familiarity and exposure to the lifestyles of groups at high risk might help ameliorate negative AIDS attitudes and reduce professional resistance of AIDS patients among future health care givers.

E.630

Projet de communication au congrès international sur le SIDA

Les travailleurs sociaux et les représentations qu'ils peuvent avoir sur le SIDA

Mieux Connaitre, Combattre, Prévenir

E.P.S.I. (Ecole de Service Social), Clermont, France
Morin, Nicole

L'objet de la communication que nous souhaitons faire est de montrer comment un centre de formation de travailleurs sociaux peut-être à l'origine d'un mouvement de sensibilisation sur ce qu'est le SIDA, et cela à partir d'une part de recherches menées par des étudiants et des professionnels, d'autre part de journées d'information et de formation.

partant de ce principe, nous avons proposé un travail qui pouvait s'articuler de la façon suivante :

- une phase d'investigation sur le terrain afin de connaitre les réalités
* population concernée * réaction des travailleurs sociaux * ceci grâce à 2 mini recherches menées l'une par les étudiants, l'autre par les professionnels de la Région.
- une phase d'information * pour grand public (2 jours) * de travail (6j.) amorce d'une action collective de prévention et d'information dans un lycée.

Le tout devant déboucher sur la production d'un document final qui aurait pour objectif de situer le problème du SIDA en AUVERGNE.

Notre souhait était de mobiliser par un travail action-recherche le maximum de professionnels autour du problème du SIDA.

E.631

WORKING WITH AIDS IN THE CARIBBEAN: A MODEL PUBLICATION FOR REGIONAL TRAINING OF HEALTH CARE PROVIDERRS

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Objective. To address the information and training needs of health care providers in the Caribbean regarding AIDS prevention counselling with clients and patients.
Methods. Two sets of regional train-the trainer workshops for 60 health care providers from 19 English-speaking countries in the Caribbean led to the developement of training guide to be used throughout the region. Components of the training and the guide were tested among focus groups; and the pilot trainings were implemented in national workshops as well. Materials were developed and tested in the field.
Results. Sixty health care professionals from the Caribbean rated the workshps as informative, effective, and valuable to their AIDS prevention efforts, During a four-month period more than 3000 individuals in 19 countries were reached with AIDS prevention counselling messages by these same 60 participants. As a result, a training guide was developed and is currently in use in the field.
Conclusion. A train-the-trainer model for disseminating AIDS prevention counselling skills can be effective among health care providers in the Caribbean. A guide to supplement these trainings has been useful to ongoing efforts.

E.632

IMPLEMENTING UNIVERSAL PRECAUTIONS IN A TEACHING HOSPITAL UTILIZING A CASCADE TRAINING METHOD

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Ours is a 300 bed teaching hospital with 1500 full and part-time employees in an area of high endemicity for HIV infection. The need to introduce concepts of universal precautions provided the means to simultaneously disseminate basic HIV information. This program consisted of the following elements: 1) a core MD/RN faculty, 2) support of hospital administration, and 3) emphasis of content to accommodate dissimilar work units. Employees were chosen by supervisors to be trainers based on criteria that selected for teaching potential rather than by professional status within the work unit. Two half-day seminars were attended by 38 trainers from 23 departments. Trainers were then required to hold at least one training session within their work groups. The faculty advised on individual programs and monitored content. In the first 3 months of the program, nearly 750 hospital employees received documented training. As a result, there has been 1) widespread compliance with new infection control procedures, 2) decreased anxiety regarding HIV transmission in the workplace as evidenced by decreased demand upon infection control nursing staff, 3) decreased use of inappropriate barrier protection, and 4) increased demand for Hepatitis B vaccine among high-risk groups. Hospital employees can successfully be taught basic HIV concepts by peers rather than by traditional teachers such as physicians and nurses.

E.633

SEXUALLY TRANSMITTED DISEASES AND THE AIDS EPIDEMIC: POLICY IMPLICATIONS

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Objective. Describe the policy implications of data showing that STDs increase HIV transmission.
Methods. Computer simulations using two different models of the effect of STDs on HIV transmission were run and the history of successful AIDS control efforts in the United States was reviewed.
Results. Computer simulations suggest that control of STDs will slow the HIV epidemic. If appropriate educational strategies are followed, the epidemic's impact is likely to result in sustained behavior change and a lower incidence of STDs in the population. Additional considerations suggest that STD control should be the priority intervention in developing countries with high rates of STDs.
Conclusions. 1. It is important to use persons with AIDS in health education and STD programs. 2. STD control should be a priority because (1) behavior change and condom use are generally resisted until late in the course of the epidemic; (2) treatment of STDs is highly sought by high risk groups; and (3) STD treatment facilitates health education of high risk individuals.

E.635

REPORTED KNOWLEDGE, CHANGES IN MID SOUTH TEXAS URBAN RESIDENTS: LONGITUDINAL RESULTS OF AN INTENSIVE HIV INFECTION COMMUNITY INTERVENTION

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Objectives: To examine the effects of a community intervention on reported knowledge relating to HIV infection.
Methods: Randomly sampled residents of a large Mid South Texas city completed a telephone survey in 1987 (n=493) and one year later (n=207, new sample of respondents). The survey included questions on HIV-related knowledge, attitudes, behavior and sources of information. The intervention included an AIDS hotline, featured communications in the local media, safer sex workshops, counseling and testing, and the passing of an AIDS anti-discrimination ordinance.
Results: Knowledge about transmission of HIV and HIV symptoms increased 8% ($p<.05$) and 15.5% ($p<.01$) respectively. At baseline, 43.4% cited television as the most influential source of information about AIDS, whereas physicians and health care providers were the most important source a year later (18.8%), followed by television (16.8%), mailings (12.8%), magazines (10.8%) and newspapers (8.0%).
Conclusions: Reported knowledge increased in a cross-section of urban residents after a multidimensional community AIDS prevention program. Reported information sources increased in variety which is a key element in successful public health AIDS prevention campaigns.

E.637

AIDS KNOWLEDGE AND ATTITUDES OF STUDENTS FROM A SELECTIVE U.S. GIRLS' PAROCHIAL PREPARATORY SCHOOL. Genser, Sander*; Genser, S.**; Preston, A.***; Haverkos, H.*.

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Objective: To trace the early development of AIDS knowledge and attitudes in primary school students in a selective Episcopal girls' preparatory school and compare results to a national sample of adult women. Methods: Questions covering basic biomedical facts and attitudes about AIDS were selected from the National Health Interview Survey (Natl Ctr for Hlth Stat). The resulting questionnaire was administered to entire classes in the 5th and 6th grades (ages 10-12) for a total N=72. Results: In this unusual sample of students, the 50th percentile corresponds in overall aptitude to the 97th national percentile. In the school, 88% of families pay the full annual tuition of over $8200/yr., 99% of graduates attend selective colleges & there are 16% minority students & 9% foreign nationals. On the factual questions, the 5th and 6th grade scores are significantly different at 41% & 58% respectively. Patterns of responses reveal areas in which these subjects (& samples of male students and adults from different studies) show developmental progression. The acquisition of accurate knowledge or beliefs, the rejection of inaccuracies, and the implications of this unique sample for a cognitive/developmental theory of the acquisition of AIDS knowledge and beliefs are discussed. Conclusion: Studies of the early patterns of information acquisition may guide educational efforts to strengthen the often tenuous connection between knowledge and effective prevention.

E.634

AIDS/HIV INFECTION : AN OUTREACH PROGRAM FOR HEALTH CARE PROFESSIONALS

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Objective: To develop a comprehensive AIDS educational program specific to the needs of health care professionals.
Methods: The program is comprised of four components: needs assessments, interventions, follow-up and evaluation. Interventions utilize conferences, lectures, workshops for health professionals. These also include the training of those individuals responsible for the instruction of physicians, medical students, nurses, nursing students, and other medical staff. The use of audiovisual educational tools (AIDS Training Modules-C.E. Lewis, MD) is incorporated into the programs when appropriate. Collaborations with other medical institutions and organizations promote the implementation of programs. Resource materials produced by CIRID at UCLA include the *AIDS/HIV Reference Guide for Medical Professionals, Third Edition*, and *AIDS/HIV Infection: A Reference Guide for Nursing Professionals*. In addition, periodic updates are provided through the *AIDS Medical Update* and *AIDS Nursing Update* newsletters. Needs assessments and evaluations include: surveys of AIDS-related needs of nurses, physicians, dentists, and dental students; evaluation of CIRID AIDS publications; and AIDS educational programs developed by CIRID.
Results: Needs assessments have indicated a need for AIDS knowledge and skills by health professionals and a preference for continuing education courses as the method to gain such knowledge. Surveys have shown AIDS related fears to be prevalent among health professionals and students and a deterrent in giving health care to the HIV-infected individual. Evaluation has shown that continuing education can effect a change in knowledge and attitudes. Data from a one-day AIDS conference for nurses demonstrated that significant pre- and post-test improvements had occurred in both knowledge and attitudes ($p<.05$); these were retained at re-testing ($p<.05$) of the participants three months later. The largest differences took place in the group with low knowledge of AIDS.
Conclusion: Our experience indicates that optimal AIDS education for the health professional relies on addressing their specific concerns using both traditional and interactive educational tools. This program has been conducted in several sites (including outside California) and can be adapted to local circumstances.

E.636

E.638

AIDS KNOWLEDGE AMONG UNIVERSITY STUDENTS

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Objective. To assess AIDS knowledge among students at a large Midwestern university.
Methods. A 24-item questionnaire assessing knowledge of HIV prevalence, transmission, and infectivity was administered by telephone to 214 randomly-selected students at the University of Michigan in March 1988 (response rate =96%). Each student was also asked about socio-demographic characteristics and whether the student was, by self-assessment, "sexually active."
Results. Students are very well-informed about sexual transmission of AIDS; more than 98% agreed that condoms are protective and that risk increases with increasing number of partners. However, many still believe AIDS can be transmitted by casual contact: shared eating utensils and toilets were considered unsafe by 30% and 23%, respectively. Age, sex, race and sexual activity are the most important predictors of AIDS knowledge. Knowledge is greater among students aged 21 and older (odds ratio=2, 95% confidence interval=1.1-3.4); men (OR=1.7, CI=1-2.9); whites compared to blacks and Hispanics (OR=2, CI=.7-5.7); and sexually active students (OR=1.5, CI=.9-2.6). Age modifies the relationship between sexual activity and knowledge (OR=.9 and 2.1 for younger and older students, respectively).
Conclusion. Education efforts directed towards university students need to distinguish more clearly between safe and unsafe activities. Health educators should target particular groups — women, younger students, and minorities — that are less knowledgeable.

E.639

SURVEY OF COMMUNITY COLLEGE STUDENTS' AIDS KNOWLEDGE, ATTITUDES, AND RISK BEHAVIORS

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Objectives. To determine the baseline level of AIDS knowledge and attitudes prior to a major educational intervention, to provide data for development of curricula, to measure the level of risk-taking behavior. Methods. Students in 2 community colleges were asked to complete a 55 question survey during regularly scheduled classes. A seven point likelihood scale rather than a binary true/false scale was used to measure knowledge of mechanisms of AIDS transmission. Results. A total of 429 students completed the survey: 60% females, 30% married, 41% freshmen. The students answered most transmission questions correctly but 30% believed that HIV could be transmitted by living with an infected person. 33% thought AIDS cases should be quarantined while 58% would attend class with a person with AIDS. 43% of the men with multiple sex partners thought they might be exposed to HIV in the next 5 years. Women were less likely to engage in promiscuous sexual behavior than men (19% to 6%), but also less likely to use condoms. Other differences emerged when controls were introduced for age, marital status and ethnicity. Conclusions. AIDS education programs aimed at heterosexual college age students must take into account gender based safer sex behaviors, attitudes, and knowledge.

E.640

A DEVELOPMENTAL APPROACH TO AIDS/HIV EDUCATION

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Objective. To plan and pilot a systematic developmental approach to AIDS/HIV education in a variety of settings with different population groups.
Methods. 1) Analysis of developmental education literature; 2) establish core AIDS/HIV content for use across settings and populations; 3) design a needs assessment system which can detect population-specific issues of age, sex, sexual orientation, color, religion, attitudes, and behavior; 4) implement the needs assessment system in four settings with differing population groups (gay males, heterosexual youth in public school, employees of a conservative religious organization, and black participants of an AIDS training session); 5) for each setting, develop a curriculum consisting of the core AIDS/HIV content and the specific results of the needs assessment with emphasis placed on the developmental stage of the group's knowledge and attitude towards AIDS/HIV; and 6) pilot and evaluate the developed group-specific curriculua.
Results. Sensitivity to group-specific issues increased the motivational level of participants to learn about AIDS/HIV.
Conclusion. Assessing the group-specific needs of any AIDS/HIV education population group, with emphasis on the group's perceptions of need and further development, will increase the likelihood of program success.

E.641

SEX EDUCATION: AN IMPORTANT ELEMENT OF AIDS EDUCATION

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Objectives. To describe a sex education curriculum that has been used as part of an AIDS education program in Brazil.
Methods. A human sexuality curriculum was tested as a part of a training program on AIDS for 9 different groups: religious leaders, teachers, health care professionals, mental heahth professionals, social workers, human resource professionals of the private industry, professionals that work with abandoned children, general population, and sexual workers (male, female and transvestite prostitutes). The curriculum is divided in four parts: a)Values clarification b) Basic information on human sexuality c)Specific information on human sexuality (AIDS related) and d)Specific strategies for each group depending on their needs and interests.
Results. Sex education proved to be an important element in preparing the groups for the inormation on AIDS. This was especially true for the religious leaders (of 17 different religions) and sexual workers.
Conclusions.a) The lack of knowledge about sexual behavior brings about misconceptions and fears that interfere with the transmission of facts about AIDS. b) Sex education is a necessary element of AIDS education.

E.642

AIDS Inside and Out: A National Education Programme for Prisoners in England and Wales

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**** Director, Prison Medical Service, London, England
***** World Health Organisation, Geneva, Switzerland
****** Adult Offender Unit, HM Prison Service, London, England

Objective: To describe the design, implementation and evaluation of a national education programme for prisoners in England and Wales on AIDS and HIV.

Method: An advisory committee composed of outside and independent experts on AIDS and HIV and experienced prison staff produced an education package consisting of a 20 minute video, manual for tutors and 2 leaflets. The elements were based on research surveys of inmate fears and attitudes regarding AIDS/HIV. The video film was shot on location in prisons in England and Wales and directly addresses the concerns and fears expressed by prison inmates. Results: to be discussed.

E.643

THE 'THREE-FOR-FREE' PROGRAM: A STATEWIDE CONDOM DISTRIBUTION PROGRAM IN MARYLAND, U.S.A.

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Objective. Describe key components leading to the successful, rapid expansion of a Statewide inter-agency program which distributes over 1.6 million condoms annually from over 340 sites sponsored by over 170 Agencies.
Methods. Internal measures and self-administered questionnaires.
Results. Since 1983 the Maryland State Health Department's Division of Family Planning has had the objective of decreasing barriers to condom use by making free condoms available for anonymous pick-up at as many sites as possible Statewide. With interagency cooperation with the AIDS Administration, the rate of expansion over the last two years has been exponential:

Year	# Condoms Reported Picked Up	# Sponsors	# Sites
1986	72,506	24	32
1987	572,315	32	164
1988	1,600,000*	169	339

* (Provisional: Based on reporting for first three quarters of 1988)

Conclusion. The Three-for-Free Program is a highly efficient method of expanding access to condoms among high risk populations. With an average annual cost per active client of less than $20.00 per year, the Three-for-Free program is an effective model for preventive community outreach based on interagency cooperation.

E.644

DESIGNING AND IMPLEMENTING A.I.D.S. EDUCATION FOR STUDENTS AND THE GENERAL PUBLIC IN A SMALL NOVA SCOTIA COMMUNITY.

E.F. Bartel, B.B.; James E. Burton : Richmond County District Board,Nova Scotia, CANADA

Objective: To present factual, objective and responsible data to persons at risk in a typical rural Nova Scotia community. Despite the low incidence and prevalence rates for H.I.V. infection, the degree of promiscuity and illegitimate births observed provided evidence of high risk behavior with few or no identified H.I.V. cases. A multi-desciplinary committee was formed to represent the target population and the community as a whole; policy and educational programs were designed to represent the most current information available.

Method: Fourteen percent of the population received between three and nine hours of intensive material delivered in a multimedia presentation. Concurrently one hundred and sixty Grade III graduating students were targeted for nine hours of class time over a three day period. A standardized pre-test was administered to determine the level of knowledge; a standardized mail out test was administered one year later.

Conclusion: Behavior among the youth of the community sampled is entrenched and subject to intense peer pressure. The presentation of frank, current and relevant data is not enough to alter high risk behavior. A.I.D.S. education as it is presently taught will be ineffective in reducing the incidence of H.I.V. unless behavior is altered. Youth have identified parents and the medical profession as best able to provide honest information however, when tested that information does not alter high risk behavior. We contend that the approach must focus on values in the context of the society in which we live while presenting comprehensive, up to date and factual information.

E.645 EDUCATING THE PUBLIC ABOUT AIDS IN LIMA, PERU

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Objective. To develop an AIDS mass media information campaign for thr city of Lima, Perú.
Methods. Five steps were followed to develop an information campaign: 1) an audience analysis carried out through focus groups and a KAP survey of 1,900 households; 2) design of 3 TV and 2 radio spots; 3) pre-testing of materials in the target population; 4) production of spots; and, 5) dissemination through tv channels and radio stations.
Results. Audience analysis showed high public awareness about AIDS but a low prevalence of preventative behaviours. Also, great interest on the subject overode any objections to the use of mass media to promote safer sex, condom use included. Testing of materials showed identification, acceptance and a good comprehension of preventative messages.
Conclusions: Audience analysis and pre-testing were crucial to determine content and format of the AIDS education campaign.

E.646 ISSUES IN THE EVALUATION OF AIDS EDUCATION PROGRAMS: THE CALIFORNIA EXPERIENCE

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Objective. To discuss the results and some of the critical issues in the evaluation of AIDS education programs in California.
Methods. All 87 of the state-funded community education and prevention programs for fiscal year 1987-88 were evaluated. Interviews were conducted with program directors and key program staff. All relevant educational testing materials were collected and analyzed.
Results. All of the programs met the objectives they had contracted to achieve. Specifically, programs reached the specified number and type of clients and those clients achieved the requisite level of educational competency regarding AIDS transmission and prevention. However, several problems were uncovered that cast doubt on the effectiveness of the programs to alter clients' attitudes and behavior. These problems related to evaluation design, test construction, test administration, and data analysis.
Conclusion. Most target groups reached by the educational interventions have achieved minimal levels of educational competency about AIDS transmission and prevention, and contracted program objectives were met. The state's program must move beyond emphasis on cognitive knowledge about HIV transmission and prevention and begin to stress interventions concerning, and evaluations of, attitude and behavior change.

E.647 EDUCATIONAL PROGRAMME ON AIDS - PEOPLE'S REACTION

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OBJECTIVE: To study people's reaction to the educational programme on AIDS launched by the Govt. through television, radio and newspapers.

METHOD: One Hundred Four patients of Sexually Transmitted Diseases and 37 Blood Doners randomly selected from three Govt. Hospitals in Delhi were covered. Only 70 individual, who were exposed to the programme were interviewed with a set of closed and open questions.

RESULTS: Among all channels, television was rated as the most effective to inform the public about the disease. Most of the respondents found time of telecast appropriate, but the duration was considered to be shorter to comprehend various aspects of the disease. Very few acquired correct knowledge on mode of transmission, incubation period; and symptoms. On the other hand, many of the respondents acquired correct knowledge on preventive measures-avoiding extramarital and homosexual contact. The educational campaign did create fear among the public regarding blood donation. This contributed a disturbing drop in the number of blood doners. The blood doner respondents were frightened for donating blood for the fear of contracting AIDS by sharing common needle used for blood donation.

E.648 AIDS AWARENESS AMONG COLLEGE STUDENTS IN INDIA.

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**Project Director, ICMR Centre for AIDS Research and Control (CARC). Pune, India.

Objective : To assess knowledge about AIDS among college students of a metropolitan city, Bombay, and a provincial city, Pune, both in Maharashtra state.
Methods : CARC carried out a limited questionnaire survey in October 1988. Anonymity was maintained and questions regarding personal sexual behaviour were avoided. Information was computerized for comparative analysis.
Results : A significantly higher proportion of Bombay students (62%) responded as compared to only 21.5% from Pune ($p<0.005$). About 77% of Bombay students compared to Pune ones indicated foreign magazines as the major source of information ($p<0.01$). In contrast, 60% of Pune and 35% of Bombay students had marked Indian newspapers/magazines as a major source ($p<0.05$) Overall, all students emphasised monogamous relationship. However, 51% of Bombay students as compared to 26% of students from Pune were aware of condoms for safe sex ($p<0.05$). There were a few misconceptions regarding transmission of HIV infection. e.g. 24% of students considered toilet seats to play a role in transmission. There were also several misconceptions concerning transmission through blood transfusion. This and subsequent surveys are presented.
Conclusion : The questionnaire survey though limited, establishes its usefulness in formulating health information programmes and indicates the need for a wider survey in different regions.

E.649 SEXUAL BEHAVIOUR OF UNIVERSITY STUDENTS: RESULTS FROM A PILOT STUDY

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An exact understanding of the actual sexual behaviour of a population is essential for predicting the speed and the direction of the spread of AIDS. In our survey 358 students of medicine and psychology were given a detailed anonymous questionnaire about their sexual activities and attitudes. 86% of the students (307) returned the questionnaire. The result revealed that 15% had had more than one sexual partner during the preceeding three months. Anal intercourse was reported by 35/307 (11.4%). A large proportion of the students was reluctant to using condoms for various reasons. E.g. 42% (129/305) saw no indication for using condoms although 18 of them had reported sexual contacts to more than one partner during the preceeding three months including two students who had praticed unprotected anal intercourse.

We conclude that more specific concentration on young, sexually active subgroups of the population and their needs is mandatory. Our results indicate that knowledge of even medical students is not sufficiently reflected by avoiding risky sexual behaviour.

E.650 STUDY OF THE ATTITUDES AND BEHAVIOURAL CHANGES OF SELECTED EGYPTIAN GROUPS TOWARDS AIDS

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Objective. This study is to measure cognitive knowledge of selected groups of the Egyptian populace of the AIDS problem and to determine the changes, if any, of the attitudes and behaviours of the groups studied as a result of their knowledge.
Methods. Four groups of Egyptians considered to be at risk were selected and questioned by five simple questions, the 1st 3 tested their knowledge and the last 2 to assess any change of the practices related to the AIDS transmission. The 1st group (240 persons): consisted of Inmates on vice offences, the 2nd group (400 persons) of drug offenders, the 3rd (500 persons) consisted of young university students and the 4th (300 persons) consisted of workers in tourism industry. The common denomination in these groups is that they are particularly vulnerable either because of drug addiction or active sexual lives or contact with foreigners.
Results: are outlined in the following table.

		Heard of the disease		Know of the nature of the disease			Know of the modes of infection			Change of practices related to injections		Change of sexual practices	
		Yes	No	✓✓	✓	x	✓✓	✓	x	Yes	No	Yes	No
Inmates in vice offences	240	220	20	50	170	20	50	170	20	60	180	60	180
Inmates on Drugs offences	400	320	80	0	320	80	0	320	80	40	360	40	360
University Students	500	500	0	70	120	310	70	120	310	120	380	90	410
Workers in the tourism industry	300	300	0	100	0	200	40	140	120	70	230	70	230

N.B.: ✓✓ correct. ✓ = incomplete. x = don't know.

Conclusion. The study showed that the relatively educated Egyptians are better informed about the disease than those less educated who are at ever more risk. In all the groups studied the impact on the change of behaviour is not great. The study showed that selective campogning targeted at the more vulnerable groups is needed.

E.651

RISK FACTOR SCREENING: ATTITUDE OF BLOOD DONORS TOWARDS QUESTIONING SEXUAL BEHAVIOUR DURING DONOR INTERVIEW

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Future extensions in definition of risk factors may require knowledge of risk or sexual behaviour of blood donors in the interest of safeguarding the blood supply from HIV contamination.
Objective: To investigate 1) donor attitude, and reactions to proposed questioning of sexual behaviour, 2) consequences for size of donor population and 3) under which conditions questioning sexual behaviour would be accepted.
Method: Postal questionnaire to random sample (n=600) from donor population (n=57,000) of R.C. Blood Bank Groningen-Drenthe, NL.
Results: Provided that privacy is guaranteed, majority (90%) of respondents show positive attitude towards questioning sexual behaviour, however, 30% expresses feelings of embarassment, 45% prefers communication with physician because of medical secrecy, 87% indicates that Blood Bank has the right to ask wahtever is justified in the interest of safe blood supply. When questioned on this subject, 5.4% would stop donating blood for privacy reasons.
Conclusion: Respondents show extreme tolerance to Blood Bank measures, provided that privacy is guaranteed, and requests regarding conditions and ambiance are respected. Only a small proportion of respondents indicates to stop donating blood. To generate acceptance of questioning sexual behaviour Blood Bank personnel should be trained to optimal interview techniques.

E.652

Title: A comparative KAB-P survey of ZAnzibar Urban and Rural Schools.

Authors: H.S.Nondo, H.S.Massor, H.M.Chwaya, O.J.Khatib
Ministry of Health, Zanzibar Tanzania, Zanzibar AIDS COntrol Program.

Objectives: (1) To determine the AIDS knowledge, attitudes, beliefs and sexual practices among Primary and Secondary school children aged 13-17 years. (2) TO provide guidelines for the development of correct information on AIDS, HIV infections, transmission and control methods.
Methods: A structured questionnaire was used on 269 Urban Primary and 174 Urban Secondary School Students as well as 92 Rural Primary and 179 Rural Secondary Schools. Students from the Randomly selected 5 Urban and 3 Rural Primary and Secondar Schools.
Results: 99% of the students had heard about AIDS (86% from RAdio, 45% from Newspapers and 21% from Schools). There is no Statistically significant difference between Urban and Rural Students knowledge about AIDS, its spread and presence in Zanzibar. Both Urban and Rural students thought that a student with AIDS or HIV infection should be expelled from school.

Conclussion: Though students (Rural and Urban) had heard about AIDS, yet they had misconceptions which should be addressed by a well planned IEC programme.

E.653

AIDS KNOWLEDGE, ATTITUDES AND BEHAVIOR AMONG FAMILY PLANNING CLIENTS: IMPLICATIONS FOR AIDS EDUCATION IN THE CARIBBEAN

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Objectives: Between male and female family planning clients, to determine differences in knowledge about AIDS transmission, perceived threat of disease and changes in contraceptive method.
Methods: Interviews of 242 family planning clients using a questionnaire of 25 open and closed ended questions, in seven Caribbean countries.
Results: The differences were that males were significantly more knowledgeable than females. In response to whether respondents asked a sex partner or had been asked by a sex partner to use a condom, females were significantly more likely than males to ask a sex partner. While 17% of all respondents reported having changed contraception method, only 5% reported actually having changed to the use of a condom.
Conclusion: While educational interventions may be effective in reducing misconceptions and increasing the likelihood of behavioral change, there is little evidence that these factors shape an individual's behavior. The paper will examine potential educational models to address these issues.

E.654

Knowledge, attitudes and beliefs of Greek people on AIDS

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Objective. To estimate knowledge, attitudes and beliefs on AIDS of the people in a high risk neighbourhood of Athens, namely Exarchia at first, where the pilot study was carried-out, aiming to cover the population of the metropolitan area of Athens in a full research financed by the World Health Organisation.
Methods. 128 questionnaires were completed by personal interviews on a randomly selected sample. Details about their demographic and scientific background along with questions on knowledge, attitudes and sexual behaviour related to AIDS were asked to be completed.
Results. Of the 128 people who completed our questionnaire 67 were males and 58 females 62,1% were higher education graduates, most of them self-employed and a high percentage belonged to the age group 25-34. Most of the people in our sample were well-aware on issues related to AIDS. 93,8% admitted having gained all information on AIDS through the mass-media. 56,3% claimed that they havent changed their sexual behaviour and only 13,3% are planning to make some changes in the future even though 52,3% consider AIDS a serious threat for their region. A small percentage insist on the use of condom. 83, 5% disagree to the proposal for the AIDS carriers/patients to be dismissed from their job or to be isolated despite their will (38%).
Conclusion. Our target population were highly knowledgeable about the disease, showing considerable sensitivity and tolerance towards those who are AIDS carriers or patients but had contradictory answers with respect to their own sexual behaviour.

E.655

COMPREHENSIVE HIV EDUCATION FOR UNIVERSITY STUDENTS IN A HIGH INCIDENCE AREA

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Young adults are considered to be at risk for HIV infection due to their frequent sexual activity and experimentation with alcohol and drugs; college students attending a university in a high incidence area present a unique target audience for HIV education/prevention. Sixty-seven undergraduate students enrolled in a fourteen week, 3 semester hour credit course entitled "AIDS: The Epidemic" presented at the George Washington University in Washington D.C. This course covered technical, psychosocial, ethical, economic, legal and political issues related to HIV disease and presented information through lectures, audio-visuals, and panels of (1) individuals exhibiting high risk behaviors; (2) health care providers; and (3) the media. The largest percentage of majors represented were psychology, communications/radio/TV and premedicine; females comprised 80% of the class, and juniors were the largest group of students. Sexual orientation was given as 86.7% as heterosexual, 11.7% as homosexual/bisexual and 1.7% as no response. An assessment battery of attitude and knowledge surveys was given prior to, and at the completion of the course. Results showed a significant increase in knowledge ($p < .0001$), a more positive attitude toward people living with AIDS ($p < .004$), a decrease in homophobia ($p < .13$) and a reduction in anxiety over dying ($p < .06$). Recommendations for university HIV prevention programs include: (1) comprehensive coverage of the epidemic; (2) presentation of material relevant to peer issues; and (3) incorporation of panels of individuals representing the many facets of the HIV epidemic.

E.656

EVOLUTION D'UNE STRATEGIE D'INFORMATION NON GOUVERNEMENTALE

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Objectif: Adapter les publications de l'association ARCAT-SIDA à des besoins exprimés et mesurables, dans un contexte national de sous-information.
Méthode: informatisation détaillée des demandes, analyse permanente des données, sondages, interviews.
Résultats: Les auteurs, à l'origine des premiers documents d'information parus en France (pour l'association AIDES), ont, depuis février 1985, mis au point un système informatisé d'analyse des demandes de documentation (la documentation est gratuite mais elle doit être demandée par écrit. Elle n'est jamais distribuée au hasard). Depuis 1987, dans le cadre de l'association ARCAT-SIDA, la part des demandes émanant des professionnels de santé ainsi que des professions-relais s'est accrue de façon importante. Dans un premier temps, cette augmentation a été attribuée à un bon fonctionnement des professionnels comme relais pour la diffusion de l'information. Des sondages limités mais répétés ont permis de constater que les demandes correspondaient paradoxalement aux besoins des demandeurs eux-même autant, voire plus qu'à ceux de leurs clientèles.
L'Association ARCAT-SIDA a, depuis diversifié, sa documentation. La brochure initiale a évolué au cours de ses éditions successives (aujourd'hui 40 pages) pour répondre principalement aux interrogations des professionnels de santé, même si elle continue d'être "destinée" à la population générale. Des brochures ou documents spécifiques ont été édités ou sont en cours de fabrication pour les médecins généralistes, les dentistes, les travailleurs sociaux, le personnel hospitalier, les kinésithérapeutes, etc.
Conclusion: la demande la plus forte provient des professionnels de santé et des professions relais (professeurs, éducateurs, travailleurs sociaux, etc.). L'effort d'information national, public et associatif, devrait s'adresser en priorité à eux afin d'en faire les relais d'une véritable campagne tous publics.

E.657

MILIEU SCOLAIRE ET PROBLEMATIQUE DU SIDA

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OBJECTIFS: Convaincre les structures officielles de l'Education Nationale d'organiser des séances de prévention du SIDA dans les lycées et collèges par des intervenants extérieurs formés pour cela avec un matériel adapté.

METHODOLOGIE: Après plus de 200 interventions spontanées en 1988, sur les demandes des enseignants, des infirmières scolaires, des parents et des jeunes, avec des documents spécifiques (vidéos et brochures), l'AJCS a pu effectuer un travail de pression auprès des autorités de l'Education, des parents d'élèves et de la presse pour généraliser ces séances.

RESULTATS: Une seconde étape est aujourd'hui franchie. Les interventions jusqu'alors sauvages, s'officialisent. Les demandes émanent des médecins scolaires , des chefs d'établissement et des autorités locales (rectorats).

CONCLUSION: Les réticences du milieu scolaire et de la communauté éducative à accepter des interventions extérieures ont été levées en douceur par une persuasion basée sur la confiance et la réponse aux besoins exprimés par les jeunes eux-mêmes.
Les associations ont eu un rôle précurseur de première importance, tant par la collaboration avec les partenaires que pour la conception des programmes.

E.658

IMPLEMENTING AIDS EDUCATION INTO THE CURRICULUM IN N.IRELAND

O'Donnell Fiona; Kilbane M P J, UNITED KINGDOM

Objective: To explore the feasibility of joint health and education initiatives to introduce AIDS Education into the secondary school sector in N.Ireland. This initiative occurred against a background of a conservative culture, a school system dominated by religious teaching and a reported antagonism towards homosexuality. There were no standardised sex education programmes in schools and in addition N.Ireland is an area with a low level of drug misuse and a low prevalence of HIV infection and AIDS.
Methods: An interdisciplinary approach was adopted in this initiative involving collaboration in a consultative process between health and education sectors, and the formation of a joint team to produce suitable health promotional materials.
Results: Unprecedented attendance for inservice training and use of material occurred in N.Ireland with some 76% of post primary schools in the Eastern Health and Social Services Board having one or more teachers trained in the programme. Further uptake occurred from schools for children with special needs and colleges of further education.
Conclusion: It is possible to implement AIDS schools prevention programmes even in a conservative and unfavourable climate in a population with low prevalence. The paper will detail the process by which this was achieved and the vital components of the programme.

E.659

"AIDS EDUCATION ON PSYCHIATRIC UNITS"

Polansky, Jerrold; Ponton, L.; McGill, C. U.S.A.

Most health care organizations have emphasized the vital importance of AIDS education for the general public. The AIDS policy for inpatient psychiatric units developed by the American Psychiatric Association addresses briefly the topic of AIDS education, recommending appropriate counseling for patients and staff. The rationale for educating psychiatric inpatients includes: eliminating HIV-related risk behaviors reported by psychiatric patients, addressing the needs of the increasing number of patients with AIDS hospitalized on psychiatric units, reducing fears and prejudice among patients and staff, and fulfilling a responsibility as health professionals to provide patients with information about HIV. We are presenting two models of AIDS education that target adult and adolescent psychiatric inpatients. The models are tailored to four psychiatric units affiliated with the University of California, San Francisco. Each one takes into account patient sociodemographic characteristics, level of psychiatric impairmetn and HIV-related risk behaviors. Descriptions of clinical interventions for the different models are presented.

E.660

PERFORMANCE STANDARDS FOR THE DEVELOPMENT AND EVALUATION OF SCHOOL HIV/AIDS EDUCATION CURRICULA FOR ADOLESCENTS

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Objective. Most USA schools provide HIV/AIDS instruction for adolescents and either (1) utilize outside curricula, or (2) develop their own curriculum. Performance standrds against which current curricula can be evaluated or new curricula can be developed are needed. This paper describes the development of a performance standards checksheet.
Methods. Professional literature and health experts were used in developing the performance standards. Particular attention was centered on suggested content and pedagogical approach, including learning and instructional theory. A list of standards or evaluative criteria was generated, and arranged on paper as a checksheet.
Results. It was determined that the most ideal curriculum would have both the student and teacher guides. Seventy-two specific performance standards were generated for both guides. The student guide had ten major components: nature of HIV/AIDS, impact of AIDS, HIV transmission, individual HIV prevention, HIV control efforts, learning enhancement, learning domains approach, verbal quality, visual aesthetics, and tone of message. The teacher guide had six major components: HIV/AIDS school education, implementing the curriculum, learning activities, handouts, evaluation, and educ/infor sources.
Conclusion. Specific performance standards for school HIV/AIDS education curricula for adolescents can be generated and can assist educators in (1) determining the specific strengths and weaknesses of existing curricula, and (2) developing new curricula. Educators are encouraged to utilize the performance standards checksheet for both of these tasks.

E.661

FACE-TO-FACE: INTEGRATING PERSONS WITH AIDS INTO ADOLESCENT AIDS PREVENTION EDUCATION

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Objective. To enhance the impact of AIDS prevention education efforts on adolescent audiences in public schools.
Methods. Persons with AIDS were recruited, screened, trained and fully integrated into a four-session AIDS prevention education module. Difficulties of community and staff resistance, parental approval, logistics and the limited personal resources of the persons with AIDS involved in the program were addressed. The person with AIDS presentation was preceded by two sessions on basic information and affective education about AIDS, and was followed by one session of emotional feedback from students.
Results. Anecdotal reports from educational faculty indicate that this format powerfully affects the attitudes and awareness of students. This may translate into true behavior change.
Conclusion. This model of AIDS prevention education may be easily replicated by other educational systems with minor modifications.

E.662

AIDS PREVENTION FOR ADOLESCENTS IN SCHOOL. DO SCHOOL PRINCIPALS PERCEIVE THE NEED?

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Objective. The long-term goal of this project is to implement and subsequently evaluate an AIDS prevention program in the high schools which will favorably modify the behaviors that place students at risk for acquiring HIV. The school setting maximizes access to the adolescent population, but poses a host of challenges since a good fit between needs of the program and the school must be achieved. To determine the desirability of AIDS education, our first step was to target principals, the prime decision making group within the schools.
Methods. In June, 1988, an interview combining open-ended and structured items was administered by telephone to principals (or other high ranking school personnel) in Manhattan and Rockland County high schools.
Results. Our surveys indicate that principals view AIDS prevention as a high curriculum priority. There was total consensus that the goals of a school AIDS prevention program should include knowledge, attitudinal change, and drug abstinence skills. There was less agreement regarding the promotion of behavior change related to sexual abstinence and safer sex.
Conclusion. Principals generally concur with the need for an AIDS education program that would target knowledge, attitudes, and behavior. The commitment to AIDS education among teachers, parents, and students will be surveyed next.

E.663 AIDS AND THE MEANS OF COMMUNICATION: FROM HIGH RISK GROUPS TO HIGH RISK FACTORS; FROM HIGH RISK FACTORS TO AN UNDERSTANDING OF THE VIRUS.

Arredondo,C; Conde, F. , Coronado, A.*, Gil, E.*.
Ministery of Health.-Spain.

Objective. The manner in which AIDS and the AIDS problem has been put across to the general public has gone through several phases since the discovery of the virus in the early 80's. The major source of information has been the medical-scientific world and though the stress has changed from the defining of high risk groups to the present emphasis on high risk factors, AIDS has been and is still understood in pure epidemiological terms.
Conclusion. This paper analizes these sources of information,their underlying factors and proposes an alternative scientific discourse which would bring clear information on the transmission of the virus, a better understanding of this process and help change the ever increasing "quarantine" mentality towards the people afflicted with AIDS.

E.664 HEALTH AND MEDICAL APPRENTICESHIP PROGRAM OF AIDS RESEARCH

Clavreul, Genevieve M. World Immunological Network, Los Angeles, California, USA, Greenspan Michael, UC Berkeley Health and Medical Apprenticeship Program

OBJECTIVE To provide a support network to assist students and community members in the dissemination of AIDS information
METHODS This group research project will examine technical, social, poltical and econmic aspects of the global HIV epidemic The goal of the project is to produce a portion of an accurate, current information resource for use by AIDS educators and the general public
RESULTS It will provide trained and prepared students and community members, who are aware of the inner-workings of AIDS research and facilities
CONCLUSION There is a demonstrated need for an apprenticship program where interested students and community members can learn first-hand the inner workings of research In this way they will have been trained in many of the fundamentals, as well as exposing them to a field of work in which they have expressed interest In this way the end product would be dedicated professionals entering the field with prior knoweldge and therefore confidence in their ability to met the needs of AIDS research

E.665 EDUCATIONAL AND TRAINING STRATEGIES IN SÃO PAULO STATE, BRAZIL.

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The state of São Paulo, Brasil, has a population of 33 million. From 1980 until December 1988, 3213 Aids Cases were reported to the Health department.
In 1987 was organized the first massive Campaign with 12 million pamphlets, 1.5 million posters, 5.000 bilbords, 100.000 guidelines for infection control, 4 videos for TV, 4 spots for radio.
Apart from the massive programs and Campaigns the Educational and Training UNIT on Aids,, from secretary of Health, developed strategies of training health care providers and community leaders in order to be those who will train and inform others.
During 1988 we trained 2110 community leaders to give Aids information in the frontline.
Conclusion: The person to person information on Aids is most effective way of prevention specially in our region which is full of contrasts of all sorts cultural, educational, economical and Social.

E.666 EFFECTS OF AN EDUCATIONAL CAMPAIGN TO REDUCE BLOOD TRANSFUSIONS IN CHILDREN IN KINSHASA, ZAIRE

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*Department of Pediatrics, Mama Yemo Hospital, **Ministry of Health, Kinshasa, Zaire and *WHO, Geneva, Switzerland.

Objective: To evaluate the effectiveness of an educational campaign to reduce the number of blood transfusions and thereby reduce the transmission of AIDS.
Methods: An investigation carried out at the Department of Pediatrics revealed that malaria induced anemia was the major cause of transfusion. Nevertheless, children with a hemoglobin as high as 11 gm% have been referred for transfusion to Mama Yemo Hospital, the major transfusion center in Kinshasa. A survey at its blood bank revealed that 6.3% of all donors were HIV seropositive, and 55% of seropositive children, 2-12 years old, have received previous transfusions. Therefore in order to reduce the number of transfusions, an intensive campaign on its inherent risks was launched. Conferences were organized for the Zairian Society of Pediatrics, for the faculty and housestaff and guidelines were set. Based on hemodynamic evaluation, transfusion were reserved for children with a hgb. of less than 5 gm% if there were signs of hemodynamic compromise. In addition an HIV screening unit was installed at the blood bank.
Results: Dramatic results followed the campaign. There was a 72% decrease in the number of transfusions from 16,352 in 1986 to 4,531 in 1987 with no increase in mortality. Transmission of other endemic infections such as malaria, cytomegaloviruses and hepititis B were proportionately reduced.
Conclusion: A worldwide educational campaign is required to reduce the number of unnecessary transfusions. This coupled with HIV screening tests prevents the risk of HIV transmission by this route.

E.667 PATIENT OPINIONS ABOUT DENTISTS AS AIDS EDUCATORS.

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Objective. There has been little discussion about whether dentists would be appropriate disseminators of HIV information. We wanted to determine if patients would accept dentists as HIV educators and if patients have experienced dentists acting in this role as part of their response to the HIV epidemic.
Methods. Telephone interviews were conducted in July and August 1988 with 2000 English-speaking, United States adults, using a representative national sample generated by random digit dialing. The response rate was 75%. The denominator for the data reported below is all those who have received dental care in the past five years (n=1825; 91% of sample).
Results. Only 13% of the respondents had discussed AIDS with their dentist; in 80% of these cases, the conversation was started by the patient rather than the dentist. Twenty-one percent of respondents wanted to discuss AIDS, 49% did not care, and just 30% "would prefer not to talk" about it. A majority of patients were "very" or "mostly" comfortable with the idea of discussing AIDS (86%) or intravenous drug use (80%) with their dentist, but a minority (45%) felt that way about discussing their sexual behavior. Of those who were willing to discuss AIDS, 35% believed patients themselves should start the conversation; the rest thought the dentist should (35%) or that it did not matter who began the conversation (30%).
Conclusion. These data show that dental patients are willing to use their dentists as information resources concerning HIV. On the topic of sexual behavior, however, patients were more reticent. We believe patients would be more receptive to dentists providing patients with educational information on HIV and suggest that dentists initiate such discussions with patients.

E.668 A MODEL HIV EDUCATION/PREVENTION PROGRAM FOR A PREPAID HEALTH PLAN

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The Kaiser Permanente Medical Care Program is a group practice prepaid health plan with approximately five million members in twelve regions of the United States. An Inter-Regional (nationwide) AIDS Committee has been formed to respond to and plan for issues that the AIDS epidemic presents to complex health care systems like ours. The Education and Counseling Subcommittee has developed a model program to educate, reduce fear, and overcome denial; to allow our employees, physicians, and members to prevent the transmission of HIV; and to deal more effectively and humanely with the AIDS epidemic.
Three specific populations have been targeted for education and counseling:

1. Kaiser Permanente employees and providers (including physicians).
2. The general patient membership.
3. Patients and employees who practice behaviors that put them at risk for HIV infection.

A four-step process for AIDS prevention in the context of ambulatory health care will be presented:

1. Identifying members who practice high-risk behavior.
2. Providing same day information.
3. Providing risk reduction education.
4. Implementing risk reduction counseling programs aimed at gay and bisexual men, IV drug users and their steady sexual partners, hemophiliacs and their steady sexual partners, adolescents, and the steady sexual partners of anyone known to be infected with HIV.

E.669

EVALUATION OF THE IMPACT OF AIDS EDUCATION

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American Red Cross and Navy Environmental and Preventive Medicine Unit, Naples, Italy.

Objective. The potential severity of HIV infection has demanded aggressive intensive and effective educational programs to limit the spread of disease This study evaluated the level of knowledge concerning HIV transmission factors in a diverse overseas American community, and established a methodology to evaluate which educational activities could result in modification of high risk behavior.
Methods. An educational program was designed to present information on the HIV epidemic. Prior to and immediately following the program, a questionnaire was administered to assess levels of awareness concerning transmission and non-transmission factors for the HIV virus.
Results. The study group of 139 predominantly young (20-30 year old) individuals were all aware of the principle transmission factors; however, 70% had significant misconceptions related to the infection and disease process, including blood donation (38%), insect bites (33%), and kissing (30%). Initial data indicate that certain channels of communication are preferred by population subgroups; and specific formats are more likely to improve levels of knowledge and actually result in changes in behavior.
Conclusion. While the majority of persons are aware of the transmission factors related to HIV, a significant number of individuals provided misinformation. Educational programs must be developed to provide sufficient, comprehensive information; targeted to specific groups to result in behavior modification; and evaluated to document effectiveness.

E.670

CONDOM USE ASSESSMENT AND INTERVENTION STUDY: A NEW TOOL FOR CONDOM PROMOTION

Smith, William*; Pareja, Reynaldo**; *AIDSCOM, Washington, D.C.; **AIDSCOM, Dominican Republic

Objective. To determine level of correct application and removal of condom among targeted populations.
Methodology. Using an observation protocol respondents are asked to place on a surrogate object a condom. The researcher, through observation, records data about placement and removal, noting such items as how package opened, whether/how condom unwound, whether condom breaks due to respondent error etc. Observation protocol is followed by brief KAP Survey.
Results. Findings in the Dominican Republic indicate that basic training in the fundamentals of correct placement and removal are required. Specific findings will be cited (n=100) - comparison will be made with results from Jamaica and Trinidad.
Conclusions. As materials are developed to encourage condom use, a return to basic knowledge gathering may be called for. The hypothesis that knowledge of the basic placement and removal procedures is universal may require further exploration.

E.671

CORRECT CONDOM USE: AN ASSESSMENT AND INTERVENTION STUDY AMONG SEXUALLY ACTIVE MEN IN TRINIDAD AND TOBAGO,

Woods, William.*; Cleghorn, F. **; Mahabir, B. ***; Helquist, M.*; Renaud, D.**
*AIDSCOM, Washington, D.C.; ** Caribbean Epidemiology Centre, Trinidad and Tobago;
*** Queens Park Counselling Centre and Clinic, Trinidad and Tobago.

Objective. To assess the degree of correct condom use among sexually active heterosexual, bisexual, and homosexual men in Trinidad and Tobago and to compare different approaches to teaching correct use.
Methods. Contact investigators at an urban STD clinic invited 200 male clients to participate voluntarily in a condom use study, Selection based on client availability. An initial assissment of knowledge and use of condoms was followed by 1 of 2 interventions and an immediate post-test. Intervention#1 had the interviewer model correct condom use with a surrogate object and #2 involved providing a brochure with pictorial explanations of condom use procedures.
Results. Study in progress; but pilot study indicated men knew basics about putting condoms on but were less clear about important ways to avoid condom breakage. Interventions with immediate consultation helped increase skills considerable.
Conclusion. Clients at risk for HIV need information and skill-building for correct condom use. Which teaching intervention proves more effective remains uncertain; this study may help indicate whether mass produced and distributed "How to use condoms" brochures are useful for increasing correct condom use.

E.672

THE CELEBRATION OF LIFE: TEN BASIC GUIDING PRINCIPLES FOR AIDS PREVENTION IN THE DOMINICAN REPUBLIC

De Moya, E. Antonio; Guerrero, E; Belliard, M; Peña, C; Garris, I.; Domínguez, L.
PROCETS, Ministry of Public Health, Santo Domingo, Dominican Republic.

Objective. To present the ten basic guiding principles for AIDS prevention developed by PROCETS, and to analyze the supporting empirical evidence accumulated from 1985.

Methods. Principles are discussed together with the main supporting findings derived from CAP studies and educational research.

Results. Key principles that have proven effective for AIDS prevention are: 1) Enhance the target-audience's self esteem; 2) Speak to the heart of the targets; 3) Emphasize the value of health, love and life; 4) Increase awareness of one sexual contact infectiousness; 5) Promote a high perception of the preventive value of condom use; 6) Educate the population about other STD; 7) Insist on mother-infant transmission; 8) Keep high levels of perceived threat of AIDS in women and low levels in men; 9) Create awareness of individual responsibility for contagion; 10) Always speak of hope, joy of live and power to control AIDS.

Conclusion. High standards of acceptance and responsiveness to the Program - have been reached through an approach that deemphasizes disease and death - while promoting health, love and life.

E.673

LE CENTRE REGIONAL D'INFORMATION ET DE PREVENTION SIDA (CRIPS), PARIS

JAYLE D.*, DAB W.**, FERRY R.** FRANCE

*CRIPS
**Observatoire Régional de Santé

Objectif. Centre de ressources pour la prévention du SIDA en Ile-de-France destiné aux professionnels de la santé et de l'éducation. Lieu d'échange et de rencontre pour les acteurs de santé au sein de la région la plus touchée par le VIH en Europe. Une initiative du Conseil Régional d'Ile-de-France.
Méthodes.
1- Recenser les actions de prévention, publiques ou privées, entreprises dans la région.
2- Rassembler et classer par thème la documentation sur la prévention (en collaboration avec UCL Belgique).
3- Conseiller sur le plan méthodologique ceux qui montent des projets de prévention.
4- Organiser des formations pilotes.

Résultats. Depuis son ouverture en novembre 1988 :
- La documentation représente plus de 2.000 références indexées accessibles à distance et 100 films vidéo.
- la lettre du CRIPS est adressée périodiquement aux professionnels.
- des formations pilotes pour des centres de dépistage HIV, médecine préventive universitaire, PTT, policiers ont été organisées.

Conclusion. Le CRIPS est une structure pilote para-publique. Lieu de rencontre pour les associations et les professionnels, destiné à favoriser les initiatives et la circulation de l'information.

E.674

WORLD AIDS DAY ACTIVITIES AND THEIR SIGNIFICANCE FOR AIDS PREVENTION IN CATALONIA.

Wohlfeiler, Dan;* Segura, A;** Procupet, A.** FRANCE

Objective: To initiate World AIDS Day activities in Catalonia, and determine their significance for future AIDS prevention efforts.
Method: The government, Church, citizens' organizations and mass-media all actively partcipated in World AIDS Day activities. These included distributing information, releasing balloons to commemorate those who had died of AIDS, a condom party at a gay discotheque, and documentary and feature film premieres at local cinemas. Mainstream, religious and gay media gave extensive coverage with features and scientific articles. Direct advertising was kept to a minimum.
Results: This was the first time a multisectorial AIDS prevention effort took place in Catalonia. Success would have been enhanced by instituting a coordinating team. Potential new community opinion leaders were identified and recruited. By focusing on media coverage, costs were kept low.
Conclusion: World AIDS Day provides an opportunity for education and coalition building among otherwise unaffiliated members of the community. It also serves to identify community participants necessary to maintain high levels of AIDS awareness throughout the year.

E.675

THE NEED FOR PSYCHOSOCIAL EMPHASIS IN ACADEMIC COURSES ON AIDS

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*Rollins College, Winter Park, Florida 32789, U.S.A.

Hypothesis. Although the number of educational programs concerning AIDS has multiplied significantly during the past 3 years, frequently, more attention is paid to the epidemiology and clinical aspects of the disease rather than the psychosocial issues which need equal or greater emphasis.
Method. To evaluate this premise pre/post tests on attitudes were administered to two groups of students enrolled in one semester, intensive courses on AIDS. One course taught only facts and the other taught facts, values clarification, and attitudinal change of biases.
Results. The course in which medical and psychosocial aspects of AIDS was emphasized resulted in significant attitudinal change among the students. The post course questionnaires revealed a markedly more ethically responsible and compassionate attitude toward persons with AIDS than existed prior to the course. The course which taught only facts resulted in no statistically significant attitudinal change.
Conclusion. If academic courses on AIDS are to be effective in disseminating information and in increasing compassion and reducing biases of students, then the teaching model for such course work must address the psychosocial issues as well as the scientific facts.

E.676

EVALUATION OF THE NIDA SPONSORED TRAINING OF TRAINERS PROGRAM ON AIDS AND THE IV DRUG USER

Ashery, Rebecca S.
National Institute on Drug Abuse, Rockville, Maryland USA

Objective. The purpose of the study was to conduct a followup evaluation on the NIDA train the trainers (TOT) program on how to deliver the NIDA AIDS curriculum to drug treatment personnel.
Methods. A mail questionnaire was sent to participants of 16 TOT workshops conducted for selected individuals from 14 states and the District of Columbia. The self administered questionnaire was designed to assess the usefulness of the training, the extent to which it increased their skills in specific areas and their AIDS training activities since the TOT and additional technical assistance needed from NIDA.
Results. Out of 152 respondents 93% indicated that the overall effectiveness of the TOT course was excellent or good. Nearly 75% of the respondents had delivered training in the six months after they had received the TOT. Less than 20% of the respondents followed the NIDA curriculum exactly, changing either the time schedule or adding and deleting units.
Conclusion. It was estimated that 16,500 people had received some training by graduates of the NIDA TOT workshops. By most factors considered in the survey, the TOT program is considered a success.

E.677

FEAR AROUSAL AND SHOCK TACTICS DO THEY WORK?

Lorraine Sherr - St. Mary's Hospital/Roehampton Inst. UNITED KINGDOM

Objective:- To evaluate the use of fear-arousal in AIDS Campaigns.

INTRODUCTION:- Fear arousal for behaviour change has little recorded success. The Govt. Health Education Campaign on AIDS used fear messages targetted at spread via contaminated needles. Is fear arousal effective? If not is this because the recipients are not frightened (& hence greater fear should be induced) or is the technique based on dubious theory and of limited use (& hence should be abandoned)?

METHOD:- 111 subjects (52 consecutive Drug Dependence Unit attenders in the area of highest U.K. HIV incidence & 59 students in the same area) had anxiety level measured pre and post exposure to the posters (visual) and television adverts (audio-visual) material to monitor anxiety change. Attitudes, drug using and sexual behaviour and perceived personal risk was monitored.

RESULTS:- The DDU group were significantly more anxious than students ($p>.001$) as a group. Fear messages significantly increased in students ($t=3.8$ $p=.0001$) but had no impact on drug users. Visual and audio-visual material was inconsequential in contributing to the effect. Drug users were less likely to rate material as realistic. Likelihood of changing sexual behaviour was low for both groups (+ ⅓ had multiple sexual partners in the proceeding six months). Perceived personal risk was low (42% DU & 24% Stu felt at no risk). Many students have taken drugs in the past six months (72% pot, 20% harder, 2.3% I.V.). 85% DU and 83% Stu stated that the HEC had not changed their drug using behaviour. Not one subject thought the message was aimed at them. Both were worried about AIDS (mean 3.5 and 4.1 on 7pt scale). CONCLUSION:- Fear arousal has limited use.

E.678

HIV COUNSELING AND TESTING IN PRIVATE MEDICAL PRACTICE IN NEW JERSEY

Ose, Molly*; Sanders, E.*; Kyllingstad, A.*; French, J.*; Costa, S.*; Davidson, R.**
*New Jersey State Department of Health, Trenton, New Jersey, USA; **Academy of Medicine of New Jersey, Lawrenceville, New Jersey, USA

Objective. To assess the extent to which HIV counseling and testing exists in private practice, solicit information concerning the extent to which HIV counseling and testing sites (CTS) are being utilized for referrals, and the perceived need for continuing medical education related to HIV infection.
Methods. In September 1988, a nine point questionnaire printed on a self-mailing postcard was sent to approximately 10,000 physicians in New Jersey. Of 2,048 responses 2,017 questionnaires were screened for obvious errors, transcribed, and entered into an SAS data set. All analyses were carried out using SAS.
Results. Physicians indicated that they manage only about 40% of post-test counseling themselves, in contrast to about 68% of all other counseling and testing activities. The 597 physicians who reported receiving CME credit on AIDS reported significantly increased counseling activities, with the largest relative increase in post-test counseling. Of those physicians who refer patients for counseling and testing, 48% refer to local infectious disease specialists, while only 20% refer to local CTS. Furthermore, only 13% of respondents could accurately identify their local CTS.
Conclusion. The response rate of 20% suggests that the subject matter is considered to be important by a significant segment of the medical community. Very few physicians, however, even those with AIDS patients, are aware of the New Jersey CTS. Taking CME credits in AIDS significantly increases personal involvement both in the treatment of AIDS patients and in the provision of pre and post test counseling. Information obtained via this survey is being used to plan future CME curricula.

E.679

E.680

DIFFERENCE D'EFFICACITE DU SOUTIEN ASSURE PAR UN OU DEUX VOLONTAIRES.

LEMOUX, Yvon.
Association AIDES, Comité de Paris, France.

Objectif. Evaluer l'efficacité du travail d'accompagnement dit "en binôme". Il s'agit du soutien assuré par deux volontaires visitant individuellement la personne atteinte de SIDA.
Méthodes. Etude comparative réalisée sur 100 dossiers (période de référence : mars 86 à janvier 89) de suivis en binômes et de suivis individuels.
Répartition : 50% en binômes
50% en individuels
Principales sources d'information : comptes-rendus écrits par les volontaires après chaque contact, témoignages de volontaires et de personnes suivies.
Résultats. Les arrêts de suivis assurés par un seul volontaire pour des raisons non expliquées (autre que le décès du malade ou sa volonté clairement exprimée de l'arrêt de l'aide) sont beaucoup plus nombreux qu'en binômes :
50% des cas en individuel
10% des cas en binôme
Conclusion. Il est nécessaire de développer ce type de prise en charge à deux, afin d'améliorer le service offert d'une part et protéger les volontaires d'autre part. Cette technique de co-responsabilité peut-être également envisagée pour l'animation de groupes de volontaires.
Enfin, le principe du suivi en binôme paraît la meilleure approche en cas de prise en charge de toxicomanes.

E.681

AIDS KNOWLEDGE OF MALE STUDENTS FROM A SELECTIVE U.S. PREPARATORY SCHOOL. Genser, Sander*; Genser, J.**; Haverkos, H*. *National Institute on Drug Abuse, Rockville, Maryland, U.S.A.; **Potomac, Maryland, U.S.A.

Objective: To assess knowledge of AIDS and AIDS transmission in a group of male students in a selective independent non-parochial secondary school in the U.S. in comparison to a national sample of adults. Methods: Questions covering basic biomedical facts about AIDS and AIDS transmission were culled from the National Health Interview Survey (Natl Ctr for Health Statistics). The resulting questionnaire was administered to entire classes in the 5th through 8th grades (ages 10-15) and a smaller sample in the 10th grade, for a total N=240. Results: In this unusual sample of students, the 50th percentile of students tests at the 90th percentile for verbal ability and the 94th for mathematical ability by national norms, over 90% of families pay the annual tuition of over $8000/ year and 99% of students (from the school) have consistently gone on to selective colleges upon graduation. Each class scored at least 74% correct on the factual questions with a gradient of increasing knowledge with grade level apparent only in questions about central nervous system effects of AIDS. Overall knowledge matched or exceeded that found in the general population of adult males. However, students in the lower grades felt that they knew less about AIDS, had a greater percentage of "don't know" responses and showed a wider (within grade) variability of responses. Conclusion: In this subpopulation, extensive AIDS knowledge asymptotes below the age of expected increasing risk of exposure. However, one cannot assume that this knowledge will translate to rational risk reduction behavior.

E.683

MEDICAL CENTER RESPONSE TO HIV POLICY ISSUES
Fine, Richard, M.D.; Miller, D., M.P.H.; Luce, J., M.D.; Sowa, P., M.H.A. S.F.General Hospital, San Francisco, CA, USA

Objective. To document the response of an urban public medical center in addressing HIV issues related to both patient care and health worker safety.
Methods. The Executive Committee established a multi-disciplinary Task Force to document HIV related problems. The Task Force addressed its response in context of community practice, ethical and political issues and maintaining safe, quality care. The first project was the institution of a Counseling and Testing Service for patients. The Service provides counseling for patients, consultation to houseofficers and attending physicians and training in appropriate counseling. The Service also implements the testing and counseling protocols for health care workers who have experienced a blood or body substance exposure. Once the systems for HIV counseling and testing were in place, the Task Force addressed the financial impact of HIV programs that ensure health worker safety. This evaluation looks at both the direct and indirect costs of HIV programs at San Francisco General Hospital.
Results. The Task Force has established a common knowledge base and common experience in addressing HIV related policy issues. The findings of this group led to shaping internal hospital policy in addition to supporting university and legislative change.
Conclusion. The establishment of a multi-disciplinary team to identify and address HIV related problems completed its charge. The work of this group continues on quality of care, policy and budgetary decisions.

E.685

E.682

REPORT OF THE UNITED STATES DEPARTMENT OF HEALTH AND HUMAN SERVICES WORK GROUP ON PEDIATRIC HIV INFECTION AND DISEASE: A NATIONAL AGENDA

Novello, Antonia; Wright, A.; and Willoughby, A.

National Institute of Child Health and Human Development,
National Institutes of Health, Bethesda, Maryland, U.S.A.

Objective. To determine how the U.S. Department of Health and Human Services could respond most appropriately and effectively to the challenge of increasing numbers of children with HIV disease.
Methods. An interdepartmental group of agency experts reviewed and defined the population at risk, the research and treatment modalities, potential gaps and overlaps in the areas of treatment, research, availability and adequacy of benefits, financing of care and services. Further analyses were submitted and subdivided into four areas: research, care, financing of care, and prevention.
Results. Activities requiring immediate action as well as those requiring further study were identified and targeted for action.
Conclusion. With HIV disease rising rapidly and becoming increasingly recognized as one of the leading causes of death among children; manifesting itself as a complex entity different from that of adults, specially tailored approaches encompassing research, care, financing of care, and prevention need to be developed.

E.684

QUALITY OF CARE REVIEWS FOR PERSONS WITH AIDS AND HIV RELATED ILLNESSES IN NEW YORK STATE
Rango,Nicholas,M.D.*;Feldman,I.*;Rodriguez,H.,M.D.*;Anderson, E.*;Wielk,C.**and Burke,G,M.D.*.*New York State Department of Health,AIDS Institute,Albany,New York,**New York Statewide PSR Council,Inc.,New York,New York. U.S.A.

Objective.To describe quality indicators among 476 symptomatic HIV patients in 13 AIDS Center Hospitals.
Methods.AIDS Centers routinely receive scheduled quality of care reviews conducted by the AIDS Intervention Management System(AIMS).The reviewers utilize quality of care guidelines developed by AIDS Center criteria workgroups.These workgroups,have also been established to develop criteria for nursing,case management,pediatric,obstetrical and ambulatory care. Physicians with experience in the care and treatment of AIDS patients are selected to the committee and are also utilized as reviewers resulting in a peer review process whereby AIDS Center physicians review the quality of care provided by other AIDS Center physicians.
Results.A summary of onsite review experience indicated that 11.7% of the cases reviewed had quality of care issues identified.The most commonly identified quality of care issues were delayed,inappropriate or inadequate consults(17%),tests(16%),and procedures(14%).
Conclusion.The Statewide Peer Review process has succeeded in developing clinically relevant quality of care standards.Also it has provided an important forum for discussion between AIDS clinicians,participating hospitals and the New York State Department of Health.This cooperated developmental model will be applied to other care settings in New York State.

E.686

MARGINALIZATION OF GAY MEN IN AIDS FUNDING AND PROGRAMS
Krutchey, Chuck; Walsh, Kevin
San Francisco AIDS Foundation, U.S.A.

Gay men and other men who have sex with men are the most disproportionately affected population for acquiring HIV infection and disease. Through misinterpretations of available data, and prejudice, a dramaticly shrinking proportion of funds and programs are being directed toward this population. The available data, based on cohort studies in large urban epicenters of the epidemic, cannot be easily generalized to other gay men. Their demographic profile, sensitization effects, unique geography, socioeconomic status, and personal motivation to be involved in long term studies makes them unlike the average in many ways. The high seroprevelance in urban areas among these men, and the problem of relapse to unsafe sex, make the assumption that the epidemic is over a highly dangerous one for the public health. Misinterpretation of this data also frequently serves as a cover for a prejudice to not serve this population.

E.687

A.I.D.S. THE DEVELOPMENT OF SCHOOL BOARD POLICY ON SENSITIVE ISSUES

Conrod, G. Scott, Adams, S., and Hanafi, L.
Laurenval School Board, Duvernay, Laval, Quebec, Canada.

Objective: To present to participants the process the Laurenval School Board used in establishing a policy on A.I.D.S.
Methods: To establish a school board policy on A.I.D.S., a committee including medical expertise prepared a document which was subjected to consultation with the parents, committees and teacher councils of 19 schools.
Results: The policy, which attempts to teach appropriate behaviour, while respecting individual rights, was accepted by an entire community without rancour, division. The process raised everyone's awareness in a period of relative calm. We are now prepared should an employee or a child acquire A.I.D.S.
Conclusion: The process establishing a policy on A.I.D.S. is in and of itself an education for all involved.

E.688

IMPLICATIONS OF FAILURE TO DEVELOP COMPREHENSIVE POLICY RE AIDS/HIV

Suki Terada Porta Director,Family Health Project/ Vice Chair, National Minority AIDS Council N.Y.C.,N.Y.S., USA.

N.Y.C. is the epicenter of AIDS as well as pockets of poverty as Harlem with an Infant Mortality Rate of 26.7 compared to N.Y.C.'s overall 12. As of 1/12/89 59% of the cumulative 18,116 adults are Black, Hispanic, Asian and Native American CDC defined AIDS, and of these cases, 84% of the women are also minority (2,249). Peds cases are 361 of the total 402 with a Black or Hispanic mother. The probable transmission and risk factor of both adult and peds are drug related. To extrapolate out the adolescent cases - it is for males 13-19:25 cases, females 13-19: 10 cases. Of the 7 to 10 year incubation rate, today's cases are males 20-29:2,272, females 20-29:539. NYC Health Dept. estimates of 50,000 HIV+ females would translate to predict if they are primarily Black and Hispanic and mirror images of present cases, each will have a majority drug related risk factor, primarily low income and limited education with 1-4 children. Low birth weight and other indicators of poverty status (less than 13% have no refrigeration for infant formula)arrival at hospital to give birth with little or no prenatal care prevents information re HIV risk factors. Implications for comprehensive planning for prevention that is class, income,education and culture/race/ethniculture specific are seen in failure at present to cope with CRACK cofactor, the spectre of 50,000 HIV positive women leaving as orphans from 50,000 to 300,000 healthy, emotionally unstable children.

E.689

LESSONS FROM FAILED TRIALS: A COMMUNITY RESPONSE

Eigo, James; Kirschenbaum, D. and Long, I. AIDS Coalition to Unleash Power, New York, New York, USA.

Objective. To discuss the randomized controlled clinical trial in an ethical context.
Methods. Specific trials will be presented and the ethical dilemmas faced by subjects will be evaluated.
Discussion: Ethical abuses in trial design have led to slow enrollments, high dropout rates and inconclusive data in many HIV drug studies. From an ethical standpoint, participation in a controlled clinical trial is often an HIV-infected person's only way to get a particular treatment. Research protocols must be understood as a form of treatment. U.S. AIDS Clinical Trial Group trials 005, 036 and 019 will be discussed.

E.690

AIDS DRUGS AND THE POLITICS OF BIOMEDICINE

Eigo, James and Harrington, M. AIDS Coalition to Unleash Power, New York, New York, USA.

Objective. To place biomedicine and AIDS drugs in the U.S. in its political context.
Methods. An analysis of the U.S. biomedical research budget, specific AIDS-related clinical trial protocols sponsored by the National institutes of Health and private drug companies and drug regulations as they have been applied to experimental AIDS drugs.
Results. 1) In the U.S., most people with AIDS are from populations that have been historically marginalised, so there has never been broad-based political pressure to fund AIDS research. 2) Scientists do research to advance scientific inquiry; this favors elegant solutions to scientific problems over the development of practical therapies. 3) High-tech companies favor high-tech solutions; i.e. knockout cures and vaccines, which means writing off just about everyone who has AIDS now.
4) Regulators only accept data from controlled clinical trials, so a drug proven effective after treating thousands of people on a "compassionate use" basis has been denied marketing approval.
Results. The pragmatic politics of influential constituencies, the academic politics of basic research, the market politics of drug companies and the bureaucratic politics of the regulators all delay the delivery of effective therapy to people with AIDS.

E.691

HOMELESSNESS AMONG HOSPITALIZED PATIENTS WITH AIDS-RELATED COMPLEX (ARC) IN NEW YORK (NYC)

Ramon A. Torres*; Mani S**; Martin M*; Brickner PW*. *St. Vincent's Hospital (SVH) and Medical Center; **Mt. Sinai Hospital and Medical Center, New York, N.Y. USA.

Objective: To determine the prevalence of homelessness among hospitalized patients with ARC over a 6-year period in a community hospital in NYC; and compare the characteristics of homeless patients to those of non-homeless patients with ARC.
Methods: Retrospective review of the medical records of all patients with ARC (total= 160) admitted to SVH between 1981-1987.
Results: Twenty-four percent of patients with ARC (38/160) were homeless, i.e. were living in shelters or streets, at time of admission to the hospital. Homeless patients had significantly higher rates of intravenous drug use (IVDU), Mycobacterium tuberculosis (MTB) and bacterial pneumonia (BP), than non-homeless patients. More homeless patients signed out AMA (SOAMA) or were lost to follow-up (LTFU) and the majority were discharged to shelters or streets (D/C S-S):

	Homeless No.	(%)	Non-Homeless No.	(%)	P Value
IVDU	22	(58)	29	(24)	<0.001
MTB	13	(34)	11	(09)	<0.001
BP	25	(66)	51	(42)	<0.01
SOAMA/LTFU	08	(21)	15	(12)	<0.20
D/C S-S	25	(66)	03	(02)	<0.0001

Conclusion: Because of a high incidence of IVDU, MTB and BP among homeless patients with ARC, who are likely to progress to full-blown AIDS, homelessness should be addressed in these patients prior to hospital discharge, in order to halt transmission of HIV through needle sharing or airborne transmission of opportunistic pathogens in shelters or streets.

E.692

TREATMENT IND AND AIDS DRUGS: A BROKEN PROMISE

Eigo, James; Long, I; McCarthy, M.; Harrington, M; Kirschenbaum, D. AIDS Coalition to Unleash Power, New York, New York, USA.

Objective. To evaluate the success of the Food and Drug Administration (FDA)'s Treatment IND program in delivering AIDS-related drugs to HIV-infected people. Method. An analysis of FDA regulations governing Treatment IND (1987) and streamlining drug approval (1988), an evaluation of protocols governing the release of the two AIDS-related drugs available under Treatment IND and interviews with FDA officials. Results. The FDA's Treatment IND program, codified in June 1987, was designed to make drugs of some proven efficacy available before their marketing approval to people with serious illnesses or life-threatening conditions. Two AIDS-related drugs are available under Treatment IND. The FDA drew the original protocol for ganciclovir so narrowly that community organisations threatened suit; as a result, the FDA capitulated and broadened the protocol. Ganciclovir is available under a Treatment IND protocol that is one of three protocols replacing a compassionate use protocol: the drug is less available under the Treatment IND program than it was before it was granted this status. Recent FDA regulations state that Treatment IND will bridge the time from the end of a clinical trial to the final decision on marketing approval, which is a severe narrowing of the program's original purpose. Conclusion. Treatment IND initially promised the early release of effective drugs to HIV-infected people; however, the program has actually restricted access to promising therapies.

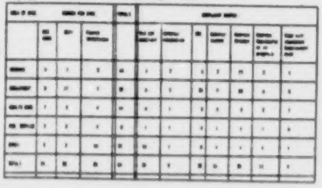
E.693

AIDS DISCRIMINATION IN CANADA

Westwood, John T. Executive Director, B.C. Civil Liberties Association, Vancouver, British Columbia, Canada

Objective. To determine the range and extent of unfair discrimination in Canada against persons who are, or who are feared to be, infectious with the AIDS virus.
Method. Questionnaires were sent to all agencies likely to receive complaints, posters soliciting anonymous complaints were distributed, and contact made with advocates for persons with AIDS.
Results. 84 reports have been received, including oral reports and cases reported in the media. Two areas of discrimination are discussed in some depth. In one, access to dental care, the investigation indicated that some progress has been made in reducing unfair discrimination. In the other, treatment of inmates, there has been little progress.

Conclusions. Although AIDS and HIV seroprevalence are, as disabilities, included as prohibited grounds of discrimination under federal and provincial Human Rights Acts, there remain areas in which unfair discrimination continues unabated.



E.694

AIDS AND HEROIN: STRATEGIES FOR CONTROL

Kleiman, Mark*; Mockler, R.
*John F. Kennedy School of Government, Harvard University, Cambridge, Massachusetts, USA;

Objective. To analyze the effects on the spread of HIV among heroin users of various drug law enforcement regimes, drug treatment programs, and policies to change needle-sharing behavior.
Methods. Variables important to the spread of HIV in heroin-using communities are identified, and various policies are analyzed to determine their impact on these variables.
Results. The rate of HIV transmission among heroin users depends on the frequency of needle sharing, the contact-specific risk of needle sharing (risk of infection from any one act of sharing), and seroprevalence in the drug abusing population. Public policy can influence each of these variables. Crackdowns on street-level heroin markets (unlike high-level heroin enforcement) can increase the difficulty of purchasing the drug, thus reducing heroin use without enriching dealers; enforcement against "shooting galleries," where works are routinely shared and rented, can reduce sharing. Illegalizing needles, confiscation of "works," and arrests for needle possession are, by contrast, likely to increase needle-sharing. The distribution of bleach (for sterilizing needles), and needle distribution and exchange programs, can reduce contact-specific risk if coupled with effective education; but needle distribution and exchange programs can have undesirable side effects. The potential for drug treatment to stem HIV infection depends on the rate of seroprevalence in the general user population and among users in treatment.
Conclusions. The decisions of criminal justice and drug treatment officials have an impact on the spread of HIV, and should be taken with AIDS in mind. Police should stop making needle-possession arrests and confiscating "works;" they should target "shooting galleries" for enforcement; and they should crack down on street-level heroin dealing. Education and outreach aimed at heroin users should be stepped up and instituted during the confinement of heroin-using arrestees; simultaneous bleach distribution, and in some cases needle distribution or exchange, may be helpful. Drug treatment should teach needle hygiene in recognition of high rates of recidivism, and treatment programs should give priority to new, uninfected users in areas with high seropositivity and to infected users in areas with low seropositivity.

E.695

PRINCIPLES AND FACTORS AFFECTING HEALTH BEHAVIOR FORMATION AND CHANGE: Report of the Minnesota Commissioner of Health's Task Force on AIDS

Moen, Michael; Burns, D.; Isensee, J.; Shultz, J.; Heckert, K.; The Commissioner's Task Force on AIDS, Minnesota Department of Health (MDH), Minneapolis, MN, USA.

Objective. To provide a framework for Minnesota state and community planners of HIV programs to systematically consider principles and factors affecting health behavior formation and change.
Methods. In January 1988, the Commissioner of Health convened a task force representative of academic institutions, public health, communities of color, government, gay community, and religious organizations, many with recognized expertise in social and behavioral sciences. The task force reviewed epidemiologic data, behavioral literature and identified target behaviors related to transmission of HIV. Demographic, environmental, and individual factors that affect these behaviors were defined relative to implications for HIV prevention and risk reduction.
Result. Specific programmatic recommendations were developed to guide the MDH prevention programs and program planners statewide.
Conclusions. Based on established health behavior principles and data relevant to HIV infection, the report presents strategies that are socially and culturally sensitive and amenable to effective application in a variety of communities, including the gay/bisexual populations, communities of color (American Indian, Asian, Black, Hispanic), and the drug using population. This process can be used to plan future initiatives, assess the appropriateness of existing prevention programs, and is likely to be useful to other states and communities.

E.696

COMMUNITY LEADERSHIP RESPONSE TO THE AIDS EPIDEMIC: THE WORK AND RECOMMENDATIONS OF THE PHILADELPHIA COMMISSION ON AIDS.

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**Department of Public Health, Philadelphia, PA, USA

Objectives: To investigate the impact of the AIDS epidemic on a large metropolitan community and to further mobilize the community's leadership in the fight against AIDS.
Methods: The Pew Charitable Trusts initiated and funded a 14-member blue-ribbon commission--the Philadelphia Commission on AIDS (PCOA)--which conducted a year-long study of the impact of AIDS in Philadelphia, including sponsorship of 15 separate studies and surveys.
Results: PCOA-sponsored research projected AIDS cases and service needs until 1992, surveyed experiences of persons with AIDS, and documented attitudes of business leaders. The PCOA also delivered a final "Report to the Community" with 109 wide-ranging recommendations to the public and private sectors, based on research findings. The Commission also co-sponsored 6 conferences with existing organizations, and helped to institutionalize AIDS concerns in a number of mainstream organizations.
Conclusions: A broadly-based group of community leaders can be helpful in mobilizing public opinion, drawing attention to the deficiencies of existing programs, defining the costs of AIDS care and the service needs, supporting the work of community-based organizations and stimulating policy debate and planning for health and social services.

E.697

A CLINIC-CENTERED PROPOSAL FOR ENHANCING ACCESS TO NONVALIDATED THERAPIES FOR HIV DISEASE

Freedman, Benjamin; McGill University and the Jewish General Hospital, Montreal, Canada

Enhanced access to nonvalidated treatments for persons with AIDS has been an important thrust of public agitation and policy reform, but carries with it dangers that ineffective and/or dangerous drugs will become clinically established, that the superiority of subsequently developed drugs will never be demonstrated, and that drug companies will reap premature profits from preying upon the credulity and desperation of patients. It is proposed that centres combining clinical expertise, research activity, and appropriate laboratory support, be prospectively permitted to employ investigational new drugs within their own protocols, whether open or controlled, at their discretion (monitored retrospectively by drug agencies), and with the informed consent of their patients. Potential benefits of this proposal include the minimization of prospective regulatory expense and delay; the provision of optimal information to those patients seeking nonvalidated therapies; and, compatibility with the need to complete testing on new agents prior to their being licensed for sale. These aspects of the proposal on its own terms and in comparison with alternatives are detailed, as are uncertainties which need to be resolved prior to implementation.

E.698

MICHIGAN MODEL COMMUNICABLE DISEASE CONTROL POLICY FOR SCHOOLS

Hower, Barbara J., Project Coordinator*; Staff experts from State Departments**; Legal Consultants***. *Michigan Department of Education, Health Education, Lansing, Michigan, USA, **Michigan Departments of Public Health and Civil Rights, Special Education, and State Attorney General's Office, Lansing, Michigan, USA, ***et al.

Objective. To assist local education agencies (LEA) in developing a legal, ethical, and medically sound policy for handling issues relating to HIV infected students or staff members.
Methods. An advisory committee was appointed to provide expert guidance in the development of a model communicable disease control policy which includes an appendix for communicable diseases known not to be spread by casual contact. This model was disseminated to all Michigan LEAs for use by their policy writing committees as a guide for structuring their local policy.
Results. A model policy was developed within the context of a general communicable disease control policy that legally addresses the issues surrounding HIV infected individuals in the school setting. This policy was structured to address those diseases which are known not to be transmitted by casual contact in the school setting and those which can be transmitted by casual contact within the school setting. The policy includes confidentiality issues, handling body fluid spills, student and staff education, legal due process, and legal concerns of special education students.
Conclusion. The model policy has been accepted in districts throughout the state of Michigan. It is currently being trained to other state education agencies at the Centers for Disease Control Training/Demonstration Conferences. The National Association of State Boards of Education is using the model policy in the current development of their HIV policy guide.

E.699 SOCIAL WORK STUDENTS' KNOWLEDGE AND ATTITUDES ABOUT AIDS.

Frankel, Harvy*, Grosser, Shirley*
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Objective. To describe social work students' knowledge and attitudes about AIDS, identify relevant contributors.
Methods. Approximately 240 Social Work students completed a survey designed to evaluate their knowledge and attitudes regarding AIDS. A subsample (N = 100)also completed a social distance questionnaire aimed at separating the effects of feelings about homosexuality from feelings about AIDS. This study is the first phase of a broader evaluation of an "inhouse" AIDS education package at the University of Manitoba School of Social Work.
Results. Preliminary results will focus on the level of students' knowledge about AIDS and the nature of their attitudes. The effects of a variety of demographic and contextual variables will be explored.

E.700 FAILURE TO DISCLOSE AIDS DIAGNOSIS, PSYCHOLOGICAL STRESS AND THE UTILIZATION OF SERVICES

Schiller, Nina; Crystal, S.; Dejowski, E.; Hansell, S.; Merzel, C.; Bock, P.

Rutgers University, New Jersey, United States

Objective. To examine the extent, and consequences of the failure by People with AIDS to disclose their AIDS diagnosis to members of their social support network.
Methods. Data from a survey of a population based random sample of living PWAS in New Jersey is analyzed. The sample includes a high number of Intravenous drug users, male homosexuals, racial and ethnic minorities and women. The relationship between this failure to disclose diagnosis and measures of psychological distress, health status and the utilization of informal supports and of formal services is explored.
Results. Failure to disclose diagnosis is found to be widespread. Only a limited number of relatives and friends are told about the diagnosis. The relationship with this attenuated network is strengthened. The failure to disclose diagnosis is shown to vary by risk group, gender, and cultural background and to be related to distress but not to the utilization of formal services.
Conclusion: Failure to disclose diagnosis is a significant variable in the analysis of the psychosocial status and coping behavior of PWAS.

E.701 Adult Day Health Care as a Service Delivery Model

LEAH MASON BECK AND LEN MCNALLY
Village Nursing Home AIDS Day Treatment
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Adult Day Health care has long been available as a service delivery model for older adults. This paper will describe the development and application of this service model for a heterogenous AIDS population at the Village Nursing Home in New York City. Currently serving a client roster of 75, the program provides nutrition, skilled nursing services, psychiatriccar. psychotherapy, medication monitoring and administration, therapeutic group activities and other alternative therapies.
Costs are under a hundred dollars per day per client, and clients demonstrate marked initial improvements in body weight, grooming and mental status. There are some indications as well that the daily nursing|psychiatric triage of each client is shortening hospitalizations. Further study will be required to determine the program's effect on positive outcomes.

E.702 PROJECT OPEN HAND - ATLANTA; DAILY MEALS FOR PERSONS WITH AIDS AND ARC.

RENEE L. PEUGEOT, PROJECT OPEN HAND, Atlanta, Georgia, U.S.A.

OBJECTIVE: To describe a non-profit community based AIDS/ARC support service devoted to providing meals to persons with HIV infection.
METHODS: Project Open Hand - Atlanta, is a non-profit volunteer organization designed to provide nutritionally balanced meals to needy persons with HIV infection. A ten member Board of Directors recruits the aide of volunteers and appeals for funding to Community Organizations, Private Foundations, and Individuals. St. Bartholomew's Episicopal Church provides kitchen, office and storage space for the Project and its volunteers. Daily operations are handled by a volunteer staff consisting of a project director, kitchen coordinator, secretary and approximately 15-20 volunteers each day who assist in preparation and delivery of meals to clients. Each client receives two meals each day, if the client has no way to heat or store the meals, Project Open Hand can loan microwave ovens or refrigerators as needed. Clients are referred by physicians, nurses, social agencies and friends. To qualify for services, clients must express a need for assistance and secure a physician's statement verifying the HIV diagnosis. Assessments are completed on each client to determine special dietary requirements and needs. These needs are addressed when meals are prepared and delivered.

RESULTS:	9/88	10/88	11/88	12/88	1/89
clients served	15	27	38	48	61
meals served	900	1364	2220	2,237	2767
volunteer hours	600	1334	1093	1800	1164

Total $34,000.00 raised for project.

CONCLUSION: Many people with AIDS/ARC face difficulties in matters of daily living. Financial obligations often exceed the amount of disability checks. Many face physical wasting, loss of appetite and apathy about eating. Project Open Hand Provides nutritionally balanced meals to clients at no charge. Clients enjoy the personal contact when the meals are delivered and look forward to the next day.

E.703 A HOSPITAL-BASED VOLUNTEER PROGRAM FOR PATIENTS WITH HIV INFECTION

Bender, Paula, and Sullam, Paul
Department of Medicine, Veterans Administration Medical Center and The University of California, San Francisco, California, USA

Objective: To describe a hospital-based specialized volunteer program devised to meet the emotional and practical needs of HIV+ patients.
Methods: Joint effort of Voluntary and Social Work Services with four components: 1) recruitment of hospital employees, federal employees at large, and gay/lesbian community members, 2) selection based on application and group interview processes, 3) training for 1.5 day training to inform and sensitize volunteers to HIV-related issues, and 4) supervision through individual and group sessions. After "hospital internship," volunteers eligible to work with outpatients.
Results: Volunteers provide necessary emotional/practical support to patients and staff, and aid in bridging communication gaps between patients and staff. Improved continuity of care with volunteers contributing a holistic approach to care.
Conclusions: Volunteers are a necessary component to patient care. Specialized preparation is essential for a successful program. Volunteers aid in decreasing isolation, provide an opportunity to express thoughts and feelings, engender a caring environment, reduce patient stressors, alert staff to daily psychosocial and medical changes, and effectively share the overwhelming burden of care.

E.704 SOCIAL SERVICE WORK RELATED TO AIDS PATIENTS

Mancini,S.; Lotfi,C.J.; Ferreira,A.C.; Motta,P.R.; Colombo,A.L.;Lewi,D.S. from Escola Paulista de Medicina,BRAZIL

OBJETIVE: To give bio-psichosocial counseling to assure a bitter quality of life to the patients.
METHOD: The patients are all with positive HIV results. Nowadays we have 130 patients from jul/1988 to jan/1989. Interviews with the patients and counseling are our means of methodology reaching data that will help clarify their needs.
RESULTS: Characteristics of the patients: 86,2% male,13.8% female; 18.5% married; 72,0% single; 9.2% others; 83,9% are between 24 and 45 years of age; 57.7% homossexual; 13.0% drug addicts; 10.0% bissexual; 19.3% others. We have observed that through the whale work, the 130 patients presented the following patterns: 49.3% of consciousness, 23.9% of behaviour, 3,8% economic, 3.8% of work, 3.1% family, 12.3% two or more patterns and 3,8% clinical occurrences. From these 130 patients: 59.2% maintain their profissional activity; 25.9 are in social security and only 14.6% are inactive.
CONCLUSION: The multidisciplinary help, the education process of conscientization; the process of unmystifying stigmas and diminishing tthe basic social problems surely lead to maintain the AIDS patients productive and socially integrated.

E.705

THE FIRST FEW TIMES GENDER DIFFERENCES IN THE SOCIO-SEXUAL DEVELOPMENT OF WEST-GERMAN ADOLESCENTS

von Salisch, Maria; Oswald, H.; and Lukas, H.
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Objective. In order to find out about adolescents' sexual behavior, their values in sexual relationships and their way of dealing with AIDS on a cognitive, emotional and behavioral level, 425 15-to-18-olds filled out a questionnaire on these topics. The sample is about half male and half female and representative for Berlin students of three of the four secondary school types.
Results. (1) Young people of both sexes make their first sexual experiences at about the same age as their peers five or ten years ago;
(2) Berlin adolescents are generally well informed about the ways in which AIDS is transmitted;
(3) Boys and girls differ substantially in the number of sexual partners they report and in their behaviors designed to cope with the risk of an infection. When asked what they considered important in a sexual relationship, girls endorsed "love", "trust & understanding", "tenderness & care" and "sexual fidelity" significantly more often than boys.
Conclusions. Boys and girls embed their first sexual encounters with members of the other sex in the context of different relationship values. Preventive measures have to take these gender differences in socio-sexual development into account.

E.706

SECURING FUNDING FOR PRESERVATION OF LIVES.

Kunst, Robert P.; CURE AIDS NOW, INC., Miami, Florida USA

OBJECTIVE: *To secure funding sources from local government and private sources for implementation/expansion of cost effective direct service and stress management programs.*

METHOD: Submitted role-model cost effective proposals to the *The City of Miami, Dade County and The City of Miami Beach who in the past two years have given us $300,000 in grant monies for our Meals Program, a U.S. first.*

CONCLUSION: *CURE AIDS NOW's "Meals on Wheels" program in the past two years has delivered over 54,000 meals to over 430 clients. Our program delivers not only nourishment, but compassion and companionship to everyone (regardless of age, sex, race etc.) which is the door opener to "TRUST".*

RESULTS: *This nourishment and nurturing effort also addresses the malnutrition problem of AIDS. Through trust and compassion we have helped reduce the stress which accelerates the disease and reduce the hospital cost of $1,000 per patient, per day to the taxpayers.*

E.707

SURVEY OF EMERGENCY HOUSING FACILITIES IN NEW JERSEY FOR PEOPLE WITH AIDS (PWAs) AND HIV RELATED CONDITIONS

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New Jersey State Department of Health, Trenton, NJ, USA

Objective. Adequate care for those with HIV related conditions often begins with emergency, off-street shelters. In order to estimate the scope of support services throughout New Jersey a survey was mailed to the 72 shelters.
Method. The four-page questionnaire contained items concerning demographics services/facilities rules/regulations and AIDS.
Results. There was a 76% response rate (55/72; 23-1st mailing, 19-2nd mailing, 13-telephone follow-up). More than half of the shelters serve women, men and families; roughly one-fourth serve alcoholics/IVDUs; only 5 sites serve runaway youth. Frequently listed criteria for admission included: free of communicable disease (73%), drug (excluding methadone)/alcohol free (71%), and willing and able to work (38%). Sixteen respondents said their shelter's policy was to admit PWAs. Reasons for not admitting PWAs were: facility not appropriate, insufficient staff or staff training, and negative client, staff or community reaction. Nine respondents said they would be willing to have their shelter listed as a resource for PWAs. While almost all had written rules/regulations, few had formal infection control guidelines (13%).
Conclusions. While only nine facilities are currently willing to be listed as a resource for PWAs, with provision of AIDS education, infection control guidelines and additional support, other shelters may also be willing to supply this vital emergency care in the future.

Prévention et santé publique
Prevention and Public Health

E.708

PRIOR HIV ANTIBODY TESTING EXPERIENCE (AbTE): ASSOCIATION WITH HIV Ab SHARING AND HIGH-RISK BEHAVIOR IN A SAMPLE OF GAY/BISEXUAL MEN.

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[*] Denver Disease Control Service, Denver CO; [**]San Francisco Public Health Dept, [***]Howard Brown Clinic, Chicago IL; [****]Centers for Disease Control, Atlanta, GA., USA.

Objective: To evaluate prior HIV AbTE and its association with Ab sharing and persistant high-risk sexual behavior in a sample of homosexual/bisexual men.
Methods: 517 men attending STD clinics in Chicago, Denver, and San Francisco, who engaged in unprotected anal or oral sex in the previous 4 months were interviewed from April-December, 1988. Prior HIV AbTE was as follows: 1) 18% tested HIV+ (T+), 2) 34% tested HIV- (T-), 3) 9% were tested but didn't learn results (TNR), and 4) 38% were never tested (NT). Comparisons were made using X^2 and Kruskal-Wallis 1-way ANOVA procedure.
Results: HIV AbTE did not vary by age, ethnicity, education, or AIDS knowledge. T- men shared their Ab status with a greater number of both steady (77% vs. 46%, p<.0001) and nonsteady (15% vs. 7%, p<.0001) partners than did T+ men. Differences in knowledge of sex partner's HIV Ab status varied as follows:

Percent Sex Partners of Known HIV Ab Status by Subject's Prior HIV AbTE

	T+	T-	TNR	NT	p
Primary Partners	67	66	33	25	.0001, T+/T- vs. TNR/NT
Steady Partners	39	43	22	25	.0001, T+/T- vs. TNR/NT
Nonsteady Partners	4	11	15	5	.0001, T+/T-/TNR vs NT

In the past 4 months T+ men were significantly more likely (p<.007) to have: 1) a greater number of nonsteady sex partners, 2) a greater % of unsafe receptive anal contacts, 3) been the receptive anal partner, 4) paid for sex and, 5) injected IV drugs.
Conclusions: Among gay men persisting in high-risk sexual activity, HIV AbTE correlates with sharing/knowledge of HIV Ab status as well as certain risk behaviors, but more research is needed to determine if observed findings are due to AbTE or intrinsic subject differences.

E.709

A COMPARISON OF SEROLOGIC CHARACTERISTICS IN HIV ANTIBODY POSITIVE VS. HIV ANTIBODY NEGATIVE VOLUNTEER BLOOD DONORS

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Objective. A retrospective analysis of volunteer blood donors from a regional blood center in the South Central United States was conducted to evaluate serologic characteristics and determine whether other markers occur with increased frequency in anti-HIV positive, WB positive donors.
Methods. From March 1985 through December 1988, 205,413 donors had 505,528 donations. All donations were routinely tested for the following serological markers: anti-HIV, HBsAg, anti-HBc, RPR, and ALT (SGPT).
Results. Seventy-six donors of the 205,413 were found to be positive for anti-HIV (EIA), WB confirmed, resulting in a seroprevalence of 0.037%. The table below compares the percentage of positive test results within the two groups.

Test	anti-HIV Pos, WB Pos (n=76)	anti-HIV Neg (n=205,337)
HBsAg	5.3%	0.19%
Anti-HBc	42.1%	2.7 %
RPR	2.6%	0.17%
↑ALT	13.2%	0.2%

Conclusion. Our results confirm an increased frequency of seropositivity for HBsAg, anti-HBc, RPR, and elevated ALT in anti-HIV positive, WB positive donors. The significance of anti-HBc and elevated ALT as surrogate markers will be discussed.

E.710

COMPARATIVE EVALUATION OF PASSIVE PARTICLE AGGLUTINATION TEST FOR ANTIBODY TO HIV-1 IN A BLOOD DONOR POPULATION

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Objective. The primary objective of these studies was to compare the performance (sensitivity and specificity) of a new Particle Agglutination Test, SERODIA HIV*, to that obtained with the well established ABBOTT ELISA assay.
Methods. (1) A total of 2492 routine blood donor samples were tested. (2) In addition, 51 samples from individuals diagnosed with AIDS/ARC, or with possible exposure to HIV, were used in the comparative evaluation which, also, included Western Blot. (3) Finally, comparative sensitivity was studied in a sample dilution study (a), whereas SERODIA was separately evaluated for reproducibility as well (b).
Results. Study (1) showed a percentage agreement between the two assays of 99.6% on initial testing. Nine samples were ABBOTT positive and SERODIA negative. Upon retesting, all samples were negative by both assays, for an agreement of 100%. Study (2) showed a percentage agreement between the two screening assays of 86.3% on initial testing. After repeat testing, the agreement was 88.2%. The percent agreement for the SERODIA assay on Western Blot positives was 100%. Study (3a) showed SERODIA to be more sensitive than ABBOTT when comparing end point titers of four randomly selected HIV positive samples. Study (3b) showed that two different lots of SERODIA reagents, used on two different days, and on each occasion tested 10 times against three different patient samples, produced remarkable consistency in titer end points.
Conclusion. In our hands, SERODIA HIV methodology performed extremely well, and results appeared to outperform those obtained with ABBOTT reagents available for the study, in some significant respects.

*Fujirebio, Inc.

E.711

A NOVEL METHOD FOR BLINDING ROUTINE BLOOD SAMPLES AND DATA COLLECTION PRIOR TO HUMAN IMMUNODEFICIENCY VIRUS (HIV) ANTIBODY TESTING FOR UNLINKED SEROPREVALENCE SURVEYS

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Objective: To design a system to collect demographic and other data without personal identifiers on routine blood samples for subsequent HIV antibody testing to determine seroprevalence in certain population groups.
Methods: Routine blood samples are submitted to SLI for serologic testing for syphilis (STS). Data from test requisitions including date, name, age, sex, race, residence, indication for testing, information on risk behaviors, and reason for clinic visit are entered into a laboratory computer database. After STS, unused sera are aliquoted into tubes marked only with a sample number in alcohol soluble ink. The sample number permits access to all data entered from the requisition into the laboratory computer database. A computer program extracts only nonidentifying demographic, risk, and reason for visit variables from the database with STS result. This information is encoded in a bar code label which is applied to the tube. The sample number is then removed with alcohol, blinding the specimen. Blinded samples are placed in tube racks in random order, frozen, and batched for HIV antibody testing. When ready for testing, data from the bar code label are read electronically into a separate computer file with a new sample number, to which the HIV antibody result is assigned.
Results and Conclusion: Information on HIV seroprevalence by age, race, sex, area of residence, risk, reason for visit, and STS result is obtained from routine blood samples with maximum preservation of patient confidentiality.

E.712

THE EPIDEMIOLOGICAL SIGNIFICANCE OF OFF-SITE HIV COUNSELING AND ANTIBODY TESTING AMONG STUDENTS ATTENDING AN URBAN STATE UNIVERSITY

Ritchey, Michael, Tripp D., Cincinnati Health Department, Cincinnati, Ohio, United States of America

Objective. To describe HIV infection risk behavior patterns and HIV antibody sero-prevalence rate among students attending a state university having a large urban campus in a city with a moderate HIV infection prevalence rate.
Methods. In cooperation with student campus organizations, free and anonymous HIV antibody counseling and testing was advertised and subsequently made available during a three day period at the University of Cincinnati Student Center. Counseling and testing procedures were identical to those utilized during the past three years at the HIV Counseling & Testing Site, Cincinnati Health Department. HIV risk assessment data was recorded on a standard form. Data was then optically scanned and analyzed using The Medical Information Management System (MIMS), an automated data storage and retrieval program.
Results. A program of off-site HIV antibody counseling and testing can be a successful epidemiological tool in assessing HIV prevalence rates within a well defined population. Although the unprotected sexual activity level is substantial among students on an urban state university campus, HIV prevalence rates reflect moderate nature of this infection prevalence within other community groups.

E.713

ANONYMOUS OR CONFIDENTIAL HIV TESTING AT STD CLINICS

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Objective. Should anonymous or confidential testing be the preferred method of testing for HIV infection in STD clinics.
Methods. Over a 7 month period, 340 patients were seen at the STD clinic of an Inner City neighborhood. Counselled patients were given the choice of confidential or anonymous HIV testing.
Results. 248 patients were counselled. Only 140 patients accepted HIV-Antibody testing. Anonymous testing was chosen by 50% of the patients. In 13 (9%) patients HIV-Antibody was positive. Of the 140 patients tested only 28 (20%) called for results of their test. Due to anonymous testing 7 HIV-Antibody positive patients could not be traced.
Conclusion. The above data demonstrate that in an STD setting, confidential HIV testing is more appropriate than anonymous testing, since field workers would be able to follow up on positive cases and hence assure the necessary medical follow up care for patients.

E.714

SHARING THE NEWS: TRAINING BEGINNING COUNSELORS TO DISCLOSE HIV ANTIBODY TEST RESULTS

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*University of California AIDS Health Project, San Francisco; ** Education Program Associates, Campbell CA; ***California Department of Health Services, Office of AIDS

Objective. To present a training model designed to train beginning HIV antibody counselors how to provide pre- and post-test counseling.

Methods. The UCSF AIDS Health Project, through the alternative test site program in San Francisco, has provided over 40,000 antibody test results. The Project has provided training for approximately 1,500 persons on how to provide antibody test counseling. A three-day *HIV Antibody Counselor Training* course has been developed for this purpose. This presentation will discuss the philosophy of training, share specific training techniques used, outline the strengths of the program and share some of the difficulties encountered.

Results. 15 three-day trainings will be held throughout the state by June, 1989. Preliminary evaluation of the program's success will be offered. The complete training manual will be available for review.

Conclusions. This carefully planned and proven training program for new HIV antibody test counselors will aid in the provision of pre- and post-test counseling services in HIV antibody test settings.

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E.715

WILLINGNESS TO OBTAIN HIV ANTIBODY TESTING IF RESULTS MUST BE REPORTED RATHER THAN CONDUCTED ANONYMOUSLY

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Objective. To examine, among people who are seeking the HIV antibody test, whether changing the conditions under which testing would be conducted would influence the willingness to obtain testing. This was part of a larger study on the consequences of HIV antibody testing.

Methods. All adults seeking testing at an alternative test site (where testing is offered free of charge and anonymously) were asked to participate in the larger study (N = 997) by completing self-administered surveys (participation rate = 96%). A random subset of the larger study participants (N = 158) were asked about the conditions under which they would be willing to be tested.

Results. Thirty-nine percent reported that they would avoid testing if it were conducted confidentially rather than anonymously. Sixty percent said that they would avoid testing if the names of seropositives had to be reported to public health officials, but kept confidential or if seropositives had to be reported and contact-tracing would be conducted. There were no significant differences in the proportions of gay/bisexual men versus heterosexual men and women who would consent to testing under the various conditions (76% of those seeking antibody testing were heterosexual).

Conclusions. Previous research has shown positive effects on risk behavior when people voluntarily seek anonymous antibody testing; these findings indicate that many people who otherwise would have sought testing will avoid it if such testing is no longer conducted anonymously.

E.716

RISK FACTORS AND HIV SEROPREVALENCE IN FEMALE CLIENTS OF SELECTED HEALTH DEPARTMENT CLINICS, HOUSTON, TEXAS

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**Department of Health and Human Services, City of Houston, Texas, U.S.A.

Objective. To determine prevalence of HIV infection and risk factors for its acquisition in women attending selected City Health Department Clinics in Houston, Texas.
Methods. Between 2/29 and 9/30/88, 4,977 women attending Family Planning, Maternity and Sexually Transmitted Disease (STD) clinics completed an anonymous, self-administered risk assessment questionnaire. Of these, 1083 referred themselves for counseling and completed a risk factor interview.
Results. Nine (1.2%) of the 722 women who were tested for HIV were confirmed as seropositive by Western Blot and 12 (1.7%) had equivocal test results. Approximately 20% of the women completing the self-administered risk assessment form reported at least one factor that would have made them eligible for HIV testing including self or partner using IV drugs (5%), STD within the previous 5 years (15%) or bisexual or HIV-infected partner (3%). Only 36% of these women referred themselves for counseling and testing. Of the women who were tested, approximately 10% were considered to be at increased risk of HIV infection by virtue of IV drug use or an ongoing relationship with a high risk partner.
Conclusion. Although HIV seroprevalence is relatively low in this self-selected population, conditions exist for its continued spread. A significant number of women attending these clinics maintain their increased risk.

E.717

FAILURE TO RETURN FOR HIV TEST RESULTS: A SECOND LOOK AT DETERMINANTS

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Centers for Disease Control, Atlanta, Georgia USA

Objective: To assess factors affecting a 50% failure to return rate in an anonymous HIV Counseling and Testing Site(CTS).

Methods: A questionnaire designed to measure the psychosocial, behavioral, and demographic factors found to be predictive of failure to return in past studies, as well as the immediate impact of pre-test counseling, was self-administered by 503 CTS clients in Dekalb County, Georgia.

Results: Respondents were male (57%) and female (43%), white (69.4%) and black (29%), generally single(53.3%) heterosexuals(86.1%). Bivariate and multivariate regression analyses showed race to be the single most independently predictive factor in determining failure to return (Chi square=48.4,p<.001). Additionally, race was also a factor in study participation, although those who didnot participate in the study had the same return rates as those who did. Significant differences between counselors in their clients return rates was also observed (chi square = 34.9, p < .001). Past reasons for failure to return included fear of test results (50%) and a low priority on learning results (50%). Serostatus and risk group membership were not significant predictors of failure to return.

Conclusion: This study suggests failure to return rates are affected by race and counselor variables. Exactly how these variables operate to affect return rates warrants further study.

E.718

MULTI-LAB STUDY RESULTS OF A NEW RECOMBINANT ELISA IMMUNOASSAY FOR ANTIBODIES TO HIV COMPARED AGAINST DUPONT WESTERN BLOT.

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The etiologic agent implicated as the probable cause of Acquired Immunodeficiency Syndrome (AIDS) is the Human Immunodefiency Virus (HIV).

The Beckman ASQ™ HIV Reagent Kit is a semi-quantitative assay for the detection & identification of antibodies in human serum or plasma to proteins representing CORE (p24 and Kp 55), ENV (Kp 41, Kp 120N & Kp 120cc) & POL (Kp 66/31). These antigens are purified recombinant peptides produced by genetic engineering techniques in E. Coli. Individual peptides are presented in a microtiter plate format.

After incubation of diluted sample (1:100) in the microtiter plate, the plate is washed, developed with alkaline phosphatase conjugate/substrate & read at 410/490 nm. Total assay time is less than 4 hours.

The absorbence cutoffs for each peptide was established with 1030 samples. Using the established criteria of positivity for ASQ, 1840 samples were compared against DuPont Western Blot.

		ASQ		
		NEG	INDETER	POS
DWB	NEG	1082	16	0
	INDETER	117	118	126
	POS	0	5	376

Beckman recommends that each evaluator establish their own cutoff & criteria of positivity for this research use only product but found excellent results with the stated criteria in correlation to DuPont Western Blot.

E.719

RAPID, INSTRUMENT-FREE ASSAYS CAN BE USED IN TANDEM FOR SCREENING AND CONFIRMATION OF HIV INFECTION.

F. Spielberg[1]; K. Auditore-Hargreaves[1]; W.L. Heyward[2]; R.W. Ryder[2,3]; T.C. Quinn[4]; Milton R. Tam[1]; *et al.* [1] The DiaTech Program of the Program for Appropriate Technology in Health, Seattle, WA, USA; [2]CDC, Atlanta, GA, USA; [3]Projet SIDA, Kinshasa, Zaire; and [4]NIAID, Bethesda, MD, USA.

Objective. Although alternative methods to blood screening by conventional ELISA exist, to date Western blot (WB) remains the accepted confirmation method. This study was to evaluate performance and cost-effectiveness of rapid, instrument-free assays used in tandem for screening and confirmation.

Methods. 3,078 serum samples (5.5% HIV-1 seroprevalence) were collected and tested on each of five different rapid assays, as well as conventional ELISA and WB in Kinshasa, Zaire. The results were analyzed retrospectively to determine the accuracy of a test method which included neither ELISA nor WB.

Results. A testing hierarchy comprised of duplicate screening assays, followed by confirmation in duplicate of all repeatably reactive specimens, provided perfect accuracy when HIVCHEK (Du Pont) was employed as the screening assay and Serodia-HIV (Fujirebio) as the confirmatory assay. Compared to the standard method of ELISA screening and confirmation by WB, the rapid method resulted in a cost savings of approx. $3.00 per positive specimen identified.

Conclusions. The ability to use one rapid assay to confirm the results of another can be expected to facilitate blood screening in developing country transfusion centers, where highly technique-dependent methods such as WB are not appropriate. While a modest cost savings can be realized without compromising accuracy, the major advantages are in the savings of time and labor, and eliminating dependence on capital equipment. However, despite these considerable advantages, the cost per HIV-positive unit identified is still unrealistically high for the majority of developing countries.

E.720

TB SKIN TESTING: A PROTOCOL FOR IMPROVING HEALTH AND PSYCHOSOCIAL INTERVENTION WITH HIV SEROPOSITIVE INDIVIDUALS

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Dallas County Health Dept., Dallas, TX, USA

Objective. To improve TB screening of HIV antibody positive clients, improve partner notification efforts, improve assessment of client's emotional status, and improve client comprehension and retention of HIV positive counseling messages. Method. Offer TB skin test (PPD) at post test counseling session to all individuals testing HIV positive. For those who accept, another counseling session will be offered in conjunction with the appointment to read the skin test. The counseling session could include any of the following: 1.) Reassessment of client's emotional status including suicidal tendencies, 2.) Assessment of clients knowledge and retention of post-test counseling messages and their reinforcement. 3.) Partner notification counseling to enhance, through roleplay, client's willingness and ability to tell sex and/or needle-sharing partners they may have been exposed to HIV. Health Dept.'s assistance will be offered on a voluntary and anonymous basis when counselor assesses the need for it or the client requests the service. Results. Program will begin February 1, 1989. Results of client acceptance of this program will be presented. Conclusion. Upon learning their HIV seropositive status, clients may be anxious and in shock and thus retain a very small percentage of information from the post test counseling session. Discussion of partner notification can also be inappropriate at that time. The TB test provides a health screening as well as a reason for a return visit for additional counseling and assistance with partner notification.

E.721

POLICY, LEGISLATION AND RESPONSE; MANDATORY HIV TESTING OF U.S. PRISONERS

Kantor, Elizabeth, Medical Director, San Francisco County Jails; University of California, San Francisco, USA

Objective. To consider policies and legislation regarding mandatory HIV antibody testing of US prisoners, and to compare the different responses of health care and prisoner advocacy personnel to essentially similar mandates.

Methods. A review of local policies, popular elections and legislative actions mandating HIV antibody testing of prisoners will be presented.

Results. Health care personnel and prisoner advocates have responded to these mandates with varying degrees of enthusiasm or opposition. Mandatory testing necessarily excludes informed consent, confidentiality of results, and often is not tied to counselling and education. In some jurisdictions, health care personnel are required to provide institutional staff with lists of HIV + or "possibly infected" individuals.

Conclusion. Mandatory HIV testing presents challenges to professional norms, standards of care, and to individual rights.

E.722

STD SCREENING AT ALTERNATE HIV TEST SITES?

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Objective. In 1985 the City Counselling & Screening clinic(CSC) was set up as an alternate HIV test site & has now seen 1718 clients (25% were injection drug users [IDU]). A prospective study was set up to assess the need to screen for sexually transmitted diseases(STD) in clients worried about HIV.

Method. New clients were offered STD screening, their risk factors for HIV & for concurrent STD(nil/low/high) were assessed. Comparison was made with those attending GUM for an HIV test.

Results. Preliminary results on 605 GUM & 110 CSC clients.

	GUM(55 had HIVtest 0+,55-)		CSC (80 had HIV test 5+,75-)			
STD risk	HIV tested	STD +	No seen	STD test	STD Defaults	STD +
Nil	2	0	20	1	0	0
Low	27	9	36	6	4	0
High	26	9	22	6	1	2
Not Known	-	-	2	0	1	0
Total	55	18	80	13	6	2

Conclusion. None of the CSC IDU had STD tests which may imply they do not regard HIV as an STD (one of 2 STD + was a partner of IDU!) Assessed risk of STD was higher in GUM patients(26/55) than CSC (22/80); the STD prevalence in GUM(33%) was twice that of CSC(15%) in those HIV and STD tested. 19/80 (24%) CSC clients wished STD tests other than HIV. Of these 6(32%) defaulted after a negative HIV result. It seems clients' choice of clinic depends on their perceived STD risk. People are resistent to STD testing at CSC, which has important implications for health education regarding HIV spread.

E.723

FACTORS ASSOCIATED WITH SEEKING THE HIV SCREENING TEST

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OBJECTIVE. To determine if those at risk for HIV infection are more likely to obtain a screening test.

METHODS. A statewide anonymous random digit dial telephone survey of 1,323 Massachusetts residents was conducted in October 1987. Information about demographics, attitudes and concerns about AIDS, and risk factors was obtained and examined in relation to whether respondents had been tested or would be willing to be tested for the HIV antibody (AB).

RESULTS. Of 1,323 respondents, 111 (8%) had been tested; all but two had received negative test results. Persons with at least one risk factor were more likely to have received the test than those without risk factors (12.5% v. 7%), ($p<.05$).

RISK FACTOR	NUMBER	% TESTED	% WILLING TO BE TESTED
Gay/bi males + partners	59	14%	61%
IV drug users + partners	79	11%	71% ($p<.05$)
Blood recipients + partners	75	23% ($p<.05$)	47%
Respondents with other sex risks + partners	577	11% ($p<.05$)	60% ($p<.05$)

Persons who had not been tested and had at least one risk factor were more willing than those without risk factors to be tested if the test were free and anonymous. (58% v. 40%), ($p<.05$).

CONCLUSION. Although members of risk groups were more likely to have received the screening test, the proportion of respondents with risk factors who had been tested was relatively low. Of those not yet tested, a majority would be willing to be tested. The use of free and anonymous tests may increase the likelihood that individuals at risk will choose to be tested.

E.724

THE EFFECT OF HIV ANTIBODY TESTING UPON SEXUAL BEHAVIOR, CONCERN ABOUT AIDS AND AIDS RISK COMMUNICATION.

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Objective. We evaluated the effect of a negative HIV antibody test upon sexual behavior, concern and knowledge about AIDS, and communication with sexual partners (SPs) about AIDS risk.

Methods. 256 heterosexuals attending an urban sexually transmitted disease (STD) clinic entered a randomized trial of HIV testing. All subjects received AIDS education and pre-test counselling, completed a questionnaire, and had blood drawn, then 124 received a "TEST" and post-test counselling; 98% tested negative for HIV. The 132 "NO TEST" subjects were informed of alternative test sites. A follow-up survey was completed ~8 weeks later.

Results. Participants had a mean age of 27 years; 66% were male, 84% were black. TEST and NO TEST groups did not differ in baseline number of recent unprotected SPs, in number of inquiries to SPs about AIDS risk or in AIDS knowledge. Follow-up of 70% of subjects revealed a decrease in mean monthly number of unprotected SPs (1.7 to 1.2, $p=0.0001$), but no difference between TEST and NO TEST groups ($p=0.38$). TEST subjects, however, reported that they were more worried about getting AIDS ($p<0.03$) and asked partners more questions about AIDS risk ($p<0.001$). They were more likely to increase questioning of partners about HIV tests ($p=0.004$) and intravenous drug use ($p=0.001$). AIDS knowledge did not differ at follow-up.

Conclusion. In STD clinic subjects who received an educational intervention, HIV testing was associated with increased concern about getting AIDS and more questioning of SPs about AIDS risk, but did not affect knowledge about AIDS or sexual behavior.

E.725

Recruitment of Research Subjects at Risk for AIDS

Authors: Pamela Mailer, R.N.; Barbara Libermen, B.A.; Patricia Walter, B.A.; Lawrence Jacobsberg, M.D., Ph.D.; Samuel Perry, M.D.; Cornell University Medical College, New York, N.Y., U.S.A.

Objective: To test methods for recruiting physically asymptomatic subjects at risk for AIDS into longitudinal psychobehavioral studies. Background: Despite the crucial public health need, limited prospective clinical data are available regarding the psychological and behavioral effects of being at risk for acquiring or transmitting HIV. Because many potential subjects fear breach of confidentiality and see little personal benefit in burdensome studies, findings to date have generally been from self-report measures of select samples of gay/bisexual males. Methods: To reduce concerns about confidentiality, our study was conducted in a private residential setting and with an agreement that no information would be given to any third party; further, careful arrangements were made to preclude subjects seeing one another, and contact for follow-ups was arranged in accord with subjects' specifications. To offset the burden of extensive clinical assessments, we provided free periodic HIV testing and individualized counseling by a psychiatric nurse. Results: Over 18 months, in depth prospective clinical psychobehavioral assessments were obtained on 260 physically asymptomatic subjects who were sociodemographically heterogeneous and represented major risk groups: 145 gay/bisexual males, 34 IVDU, and 81 heterosexuals with suspected or known infected partners. Seropositivity rate was 17%, and attrition at 6 months was 29%. Conclusion: If confidentiality is absolutely protected and supportive care provided, psychobehavioral studies of at-risk populations are feasible; however, in designing and budgeting future studies, researchers should consider the additional demands and cost of meeting special requirements posed by the AIDS epidemic.

E.726

PERCEPTION OF RISK FOR HIV INFECTION AND THE DESIRE FOR HIV TESTING AMONG IV AND NON-IV DRUG USERS

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Objective. Since HIV testing is advocated for high risk behavior groups, we ascertained the perception of risk for HIV infection and the desire for HIV testing among Intravenous [IVDU] and Non-intravenous [Non-IVDU] drug users entering a detoxification facility in NYC.

Methods. A brief survey was administered to 100 substance users applying for detoxification from drugs or alcohol. Information was collected concerning their understanding of HIV testing, their perception of their risk for HIV infection and whether they wanted to be tested for HIV.

Results. N=100, 70 male 30 female, Mean age = 35, 48 Black, 34 Hispanic, 14 White.
63= IVDU's of heroin or cocaine, 37=Non-IVDU (use cocaine, alcohol, or methadone).

	IVDU	Non-IVDU	
1. Aware of the existence of the HIV Test	60%	39%	($p<.05$)
2. Cognizant of spectrum of HIV infection from asymptomatic to AIDS	53%	37%	ns
3. Estimate that their own risk of HIV infection was ≤ 10%	81%	81%	ns
4. Previously HIV tested	44%	19%	($p<.05$)
5. Wanted to HIV testing during this hospitalization	77%	67%	ns

Verification of self expected HIV negative status was the reason given by the majority of those who wanted to be tested.

Conclusion. IVDU's were more likely to know about HIV testing and were more likely to have been tested. However, IVDU's tend to minimize their risk for HIV infection.

E.727

REASONS FOR NOT DISCLOSING HIV-ANTIBODY TEST RESULTS TO OTHERS - DATA FROM A COHORT OF SEROPOSITIVE GAY MEN

R Stempel; J Moulton; P Bacchetti; AR Moss. School of Medicine, University of California, San Francisco; San Francisco, CA, USA.

Objective. To determine the reasons for not disclosing positive HIV-antibody test results to others, in a cohort of gay men.

Methods: 77 seropositive gay men reported reasons why they were concerned about disclosing HIV-ab test results to others at 2 weeks, 3, 6 & 12 months following notification, using a questionnaire developed by Mendel.

Results: Percent Stating Reason as Barrier to Disclosure:

	2 WEEKS POST-NOTIFICATION	1 YEAR POST-NOTIFICATION
Fear of Practical Losses:		
Job	73%	43%
Insurance	63%	07%
Housing	50%	38%
Fear of Relationship Losses:		
Lover	20%	16%
Sex Partners	30%	26%
Family	37%	41%
Friends	22%	05%
Fear Image as 'AIDS Carrier'	70%	05%

Conclusion: Potential loss of (health) insurance, housing and jobs are primary reasons for not wanting to disclose HIV-antibody test results to others. Fears of disturbing close relationships are of less concern. Worries of being perceived as an 'AIDS carrier' diminished over the year.

E.728

HIV TESTING AT AN ALTERNATE TEST SITE IN NEW YORK CITY.

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Objective: To describe the population characteristics of persons presenting for HIV testing at an alternate test site in New York City.

Methods: The Infectious Disease Clinic at Beth Israel Medical Center was designated as an alternate confidential HIV test site in January 1988. Pretest counseling was provided to all persons seeking testing. On all persons tested, clinical and demographic information was obtained. HIV serology was performed using the ELISA and was confirmed by the Western Blot assay. Post-test counseling was offered to all after receipt of Lab results.

Results: Of the 531 persons tested during 1988, 244 were males, 221 were females and 66 were children of high risk mothers. Overall, 105(43%) males, 51(23%) females and 26(39%) children tested were seropositive. Analysis of data according to risk group for adult males and females is tabulated below:

positive/#tested (% positive)

Risk Group:	Gay and Bisexual	IVDU	Transfusion Recipient	Health Care Worker	Heterosexual (Par. Unknown)	Heterosexual (Par. High Risk)
MALES n=244	31/71(44%)	68/89(76%)	0/7(0%)	0/2(0%)	5/60 (8%)	1/15 (7%)
FEMALES n=221	-	31/40(77%)	2/15(13%)	0/11(0%)	4/94(4%)	14/61(23%)

Conclusions: 1) A heterogeneous population sought testing at our alternate test site during 1988. 2) The majority (66%) of men who presented for testing belonged in conventional risk groups (gay,IVDU). 3) In contrast, the majority (70%) of women came for testing because of concerns over their heterosexual relationships.

E.729

DISCLOSURE OF HIV-ANTIBODY TEST RESULTS & REACTIONS OF SEXUAL PARTNERS, FRIENDS, FAMILY & HEALTH PROFESSIONALS

[illegible] J Moulton; P Bacchetti; AR Moss. School of Medicine, University of California, San Francisco; San Francisco, CA, USA.

Objective: To investigate to whom HIV-ab test results are disclosed.
Methods: 107 gay men reported: (1) Persons told results of HIV-ab test and (2) their reactions - at 2 weeks, 3, 6 & 12 months following notification.
Results: Percentages to Whom HIV-ab Test Results Were Disclosed
(Percentage of Those Told Expressing Unfavorable Reactions):

	2 WEEKS POST-NOTIFICATION		1 YEAR POST-NOTIFICATION	
Person	Positives	Negatives	Positives	Negatives
Lover	26% (13)%	43% (20)%	44% (17)%	82% (00)%
SexPartners	10% (00)%	10% (00)%	21% (21)%	22% (00)%
BestFriend	85% (04)%	79% (00)%	72% (06)%	100% (00)%
Mother	15% (17)%	33% (00)%	26% (17)%	37% (00)%
Father	07% (20)%	13% (00)%	15% (14)%	15% (00)%
Physician	23% (13)%	10% (00)%	90% (00)%	45% (00)%
Dentist	22% (30)%	05% (00)%	30% (26)%	15% (00)%

Conclusion: About Half of lovers and nearly a third of new sexual partners were told test results - more quickly by negatives than positives. Friends were almost always told and reacted well. Mothers were more than twice as likely to be told as fathers. Most physicians had been told by one year after notification -- but less than a third of dentists. Negatives had favorable reactions from all; positives experienced their most unfavorable reactions from dentists and sexual partners.

E.730

QUALITY ASSURANCE IN ANTI-HIV TESTING

Hanson, Margaret and Polesky, HF. Memorial Blood Center of Minneapolis, Minnesota, USA.

Objective. To document the high quality of anti-HIV testing performed by laboratories participating in external proficiency testing programs.
Methods. The College of American Pathologists and the American Association of Blood Banks jointly sponsor a proficiency testing program for laboratories testing for antibody to human immunodeficiency virus (anti-HIV). Panels of 5 samples each are mailed quarterly to approximately 1000 subscribers. Participants are provided with a report summarizing results by test method and reagent manufacturer.
Results. Over the past 3 years greater than 98% of laboratories reporting ELISA screening methods have correctly identified anti-HIV reactive samples. Reports from laboratories using Western blot confirmation methods also show greater than 95% agreement on reactive samples. Non-reactive samples were correctly identified by greater than 99% of laboratories reporting confirmatory testing while those using only ELISA screening tests were more likely to report false positive results. Some variability in sensitivity and/or specificity of both ELISA and Western blot test reagents can be documented.
Conclusion. Laboratories participating in external proficiency testing programs maintain a high level of performance. These programs are useful in monitoring lab performance and allow comparison with others using similar methods and reagents.

E.731

PSYCHOLOGICAL IMPACTS OF INDETERMINATE HIV WESTERN BLOTS.

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Objective. Indeterminate results on Western blots pose a problem for both patients and providers due to the lack of information on the epidemiology of indeterminate Western blots (IWB). We conducted an ongoing prospective study to characterize anxiety, depression, coping processes, and specific concerns related to IWB.
Methods. Thirty-seven individuals with positive HIV ELISAs and IWB were referred from diverse HIV testing sites in Washington state (80% from low and 20% from high-risk groups) and voluntarily participated in a prospective study. Standard instruments were used to measure depression (Beck Depression Inventory), anxiety (Symptom Checklist-90), coping (Ways of Coping Checklist), and the psychological impact of IWB.
Results. Seventeen individuals were tested for HIV because of concern over past sexual exposures (4 homosexual,13 heterosexual), 4 because of intravenous drug use, 11 as blood donors, 4 as applicants for life insurance, and 1 in the military reserves. Cases reported considerable anxiety and depression in semi-structured interviews and the Beck and SCL-90 measures. Coping by self-blame and avoidance (denial) were significantly correlated with anxiety (r=.44 and .32, respectively, $p<0.05$). Adverse life events attributed to the IWB included consideration of termination of a first trimester pregnancy, use of the IWB in a custody case, ineligibility for life insurance, marital distress, and the decision to drop out of medical school. Informational needs included explanation of ELISA and Western blot techniques and results, discussion about the low rates of seroconversion in low- risk individuals with IWB, possible etiologies other than HIV, and options for further evaluation.
Conclusions. Counselling of individuals with IWB should include assessment of anxiety, depression, coping processes, the attributed consequences of IWB, and should provide information about HIV testing techniques and options for further evaluation.

E.732

ViRx: A PRIVATE SECTOR MODEL PROGRAM TO PERFORM COMMUNITY BASED CLINICAL DRUG TRIALS

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Objective. To establish a private sector model program for rapidly enrolling HIV seropositive study subjects and conducting clinical trials.
Methods. The combination of an ongoing monitoring program for HIV seropositive patients, a patient registration system for primary care physicians, and direct advertising in target media reaching high HIV prevalence populations was developed to facilitate registration and subsequent enrollment into IRB-approved clinical trials. Startup funding was provided by a venture capital firm with ongoing support from pharmaceutical sponsors.
Results. Use of advertising in target media appears to be most effective in registering patients and filling studies with simple entry criteria. A candida prophylaxis study with 30 patients was 82% subscribed in less than 90 days by such advertising. Ongoing monitoring programs require treatment or primary care as additional patient motivation.
Conclusion. A private sector model program has been established in San Francisco to efficiently conduct sponsored clinical trials. This program augments the current system of university-based programs, Community Research Initiatives and County Consortia, and differs in the use of a dedicated research facility and private funding for startup and ongoing support. Initial response from industry and patients has thus far been favorable.

Médias
Media

E.733

DIGNITY CANADA DIGNITE AIDS PASTORAL CARE PROJECT

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* National Director, Dignity Canada Dignité,** AIDS Committee Chairperson, Dignity Canada Dignité

What is "pastoral care"? Is it relevant to people dealing with AIDS? What forms can it take? Who is qualified to administer it? Who is eligible to receive it? These were the fundamental questions asked by the Dignity Canada Dignité AIDS Pastoral Care Project. Furthermore, the Project was interested in determining the expectations of actual and potential "users" with an eye to indicating the directions for development of more responsive pastoral care initiatives.

Data was collected by means of a self-administered questionnaire made available across Canada in two languages. The tabulated results indicated wide-ranging answers to the Project's fundamental questions. Persons receiving or wanting to receive pastoral care were not to be limited to persons actively ill with AIDS, but included as well the asymptomatic, the family and friends of the presently and potentially ill, and also AIDS caregivers themselves. Those perceived as "givers" of pastoral care were not only the recognizable representatives of organized religion, but again family, friends and caregivers as well. The forms (both experienced and hoped for) of pastoral care related to AIDS ranged from traditional ones like preaching to the development of public policy by religious institutions. The need for persons sensitively informed and specially trained in dealing with AIDS was indicated. And the need for counselling was especially emphasized, with an array of specific "issues" (e.g., pain, suicide, grief) demanding particular focus.

Tous les renseignements sont disponibles en deux langues.

E.734

AIDS AND SPIRITUALITY: LIVING IN THE FACE OF DEATH

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Objective. The AIDS social worker is faced with the dilemma of incorporating spiritual issues into traditional clinical intervention strategies.
Method. This paper is based on clinical observation gained in social work practice with AIDS patients at University Hospital in Newark, N.J. and pastoral counseling as a professional in the Episcopal Church. Most of my patients are IV drug abusers. Some are gay men or have been infected with HIV as a result of heterosexual relations. They are different, yet are open, honest people of faith, courage, and love.
Results. AIDS social workers are in a unique position to address appropriately the needs of a person who presents with a spiritual crisis. This paper examines what is appropriate for the social worker to do, what is not appropriate, and when, to whom, and how to refer. It looks at the positive and negative aspects of spirituality and how social workers can best respond to statements and questions of faith.
Conclusion. It is in that response that we are most able to help patients seek life in the face of death. Social workers are challenged to confront spirituality, strengthen it and use it therapeutically in social work practice with AIDS patients.

E.735

MEDIA MESSAGE (PROTECT YOURSELF AND EACH OTHER)

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Objective. Young adults, not associated with a school or institution are a difficult audience to access with health information. Positive messages about the use of condoms to prevent pregnancy and STD's including AIDS, are particularly important for this age group which has high STD and unwanted pregnancy rates. There are few positive media images on how to use condoms, who purchases them, or how to talk about using them with a partner.

Methods. To promote the messages of **dual responsibility** and need for **dual protection** against pregnancy and STD including AIDS, four Public Service Announcements (PSA's) were developed (30 seconds each) for television.
Results. Approval was received from the telecaster Committee of Canada for use as Public Service Announcements. Four out of five television stations in Calgary area are airing the PSA's. This is the first time a condom has been presented as part of a public health message in Canada.

Conclusion. A small outlay of funds ($15,000.00 Cnd.) produced a top quality product. One of the four spots won the #1 Public Service Announcement in its category in Canada. Innovative, positive (media) messages including modelling of behavior are conducive to enhancing the knowledge base and preventive practices of the young adult.

E.736

NOTES ON MTA POSTERS: WHAT ARE THEY REALLY SAYING?

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Objective: This study examines several recent Mass Transit Authority (NYC) advertisements for the rhetorical expression of ideological developments around AIDS, many of which have been documented by Simon Watney. This paper clarifies the relations between the MTA images and the cultural formations which they, obliquely, refer to. Their use of such tropes as the violation of the 'family,' the femme fatale, danger in unexpected places, etc.,illustrates the widespread psychic displacements occuring, where symbols of fear prevalent aroundAIDS serve in other contexts.
Methodology: The study emplys semiotic analysis to reveal these ads' rhetorical structures, while foregrounding the importance of social context in interpreting representation.
Results: The study found that these advertisements reinforce an underlying climate of unease which reflects displaced phobias around AIDS.

E.737

MEDIA DISTORTIONS OF AIDS: NINE YEARS OF MISPERCEPTION

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Objective. To present a survey of media coverage of the AIDS epidemic and identify inherent biases and misinformation.
Methods. Both television and print media were analyzed; different reports on the same events were compared; points of view that were not mentioned were highlighted.
Results. While coverage of the scientific aspects of AIDS by the world's media has become more accurate over the course of the epidemic, it still lacks any real attempt to provide adequate social perspectives. The views of people with AIDS are rarely if ever taken into account, and most scientific evidence is taken at face value, with insufficient analysis and context provided. Methods have been created to remedy these problems, and to provide a more accurate and more rounded perspective on the global AIDS epidemic and the many complex issues that surround it.
Conclusion. A decade of media coverage of the AIDS epidemic shows that balanced and educated reporting is rare.

E.738

AIDS AND THE MEXICAN PRESS.IS IT USEFUL AS AN EDUCATIONAL MEAN?

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**General Directorate of Epidemiology. Ministry of Health, MEXICO.

Objectives. 1)To analyze the response of the Mexican press to the AIDS epidemic from April to December 1988; 2)to evaluate the role of the Mexican press as an educational mean; 3)to evaluate the public opinion response to the educational campaign against AIDS.
Methods. Notes and articles were collected from the eleven most important national daily newspapers. Each note was considered as an analysis unit, and quantitative variables were captured and analyzed using a SPSS-PC programme. For the qualitative variables content analysis was used. The variables allowed us to know the frecuency and the way the Mexican press is dealing with AIDS.
Results. The most relevant results are: 1) the average number of articles was 9.9 per day; 2) the information flow increased after the AIDS official campaign, because of the public opinion response; 3) the social groups that expressed an opinion related to the campaign were: public organizations 59.7%, social associations 20.6%, civil associations 11.8%, political parties 3.6%, religious institutions 3.6%, and private organizations 0.5%;4) in regard to the article content, 2.6% were about transmission; 4.7% about treatment; 18.2% had epidemiological information; and 40% about the response of the public to the preventive measures the campaign proposed.
Conclusions. Although articles are being published constantly, the press is not acting as an efficient educational mean. Nevertheless, results show that the public opinion has respond significatively, and so we consider that special strategies must be design in order to make the press a useful mean. The social discussion in this medium should be considered by the decision makers to orient the following steps of the campaign.

E.739

AIDS IN SWISS-NEWSPAPERS: REPORTING OF PREVENTIVE EVENTS AND DESIGNING THE IMAGE OF AIDS.

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* Dpt socio. uni. Genève; ** Inst. univ. de méd. sociale et préventive, Lausanne, Suisse.

More than 1500 different newspapers are printed in Switzerland.
Since 1986 the Swiss authorities have launched a multimedia campaign under the slogan STOP-AIDS, associated with an important effort of stimulating multipliers such as regional authorities, schools, social and health professionals.
Objectives. Analyses of the 3776 articles about AIDS printed in 445 newspapers between Jan and Oct 1988 have 3 goals: 1. As a source of information about local actions, political facts or decisions, discriminative reactions in the different part of the country. 2. To describe the image of AIDS designed by press. 3. As a databank.
Results. The main conclusions are :

- AIDS has been treated as any other topic by the press, but appears much more often and more regularly than the others (media report live every events and newness of scientists concerning AIDS).
- The press play a major role in designing popular beliefs about AIDS.
- Most reported events are not directly related to prevention but still have preventive effects.
- Persons with AIDS take a large place and are presented as "usual" patients who need care and compassion.
- Journalists are generally neutral, but don't take much care of contradictions appearing in or between the agencies'news.

E.740

Lakeshore School Board's Comprehensive Aids Model

Mitchell, Margaret; Bolt, William
Lakeshore School Board, Beaconsfield,
Quebec, Canada

Objective. To describe the implementation of a comprehensive plan on AIDS which included the development of a policy, school board plan for high school students, professional development for teachers, a community development strategy and a public awareness component.
Methods. A report will be presented on the results of the Lakeshore School Board's mandate to develop a policy and an educational plan on AIDS. The LSB-AIDS Committee with representation from every group organized fifteen major information sessions, and seventeen large group assemblies using flyers, brochures, informative letters, education kits, videos, and newspaper and television coverage in the undertaking.
Results.Approximately 1200 employees, 1300 parents, and 4000 high school students were given the opportunity to learn about the deadly disease, AIDS. Newspaper and television coverage gave the Lakeshore School Board positive publicity to the importance of this topic. Students' essays and projects offered encouraging feedback to the teachers and parents; comments were most reassuring that the committee must continue its work.
Conclusion. The Lakeshore School Board has proven that a grassroots venture without funding can have a transforming effect on the attitudes of its community members and high school students. The Committee is committed to continue to educate its people about the magnitude of the disease. The AIDS program is being placed in the context of family life/human sexuality curriculum this year. With organized human resources, great strides can be made. These findings will be available for the Congress.

Milieu de travail
Workplace

E.741

SIDA ET MEDIA AU SENEGAL
Desgenais Bernard, Université Laval, Québec, Canada.

Objectif. Connaitre l'image que véhiculaient les médias sur le SIDA au Sénégal au moment du développement du Progamme national à Moyen Terme de lutte contre le SIDA.
Méthode. Analyse des articles parus dans le Soleil de Dakar, au Sénégal, de 1986 à 1988.
Résultats. Entre le moment où le Soleil titrait à la une le 20 février 1986: SIDA: AUCUN CAS AU SENEGAL et l'article du 4 juin 1988 où le Soleil faisait état de 84 cas de SIDA recensés au pays, l'analyse de la couverture de presse nous livre les séquences suivantes:
- Il n'y a pas de SIDA
- Les cas de SIDA viennent d'ailleurs
- Les médias dramatisent
- Le SIDA se développe
- Les premières préoccupations sont d'abord bio-médicales
- Le SIDA n'est pas la seule urgence en matière de santé.
- Il faut combattre le SIDA.
- Les dimensions psycho-sociales de la maladie.

Conclusion: L'étude comparative de la couverture de presse du SIDA en France dans le Nouvel Observateur et au Québec dans le Soleil démontre que le pattern sénégalais se retrouve dans tous les pays qui prennent conscience du développement de la maladie sur leur territoire.

E.742

"Asian women and AIDS - research issues"

submitted by Soon-Young Yoon, PhD anthropologist, INDIA

This paper identifies research issues on "Asian women and AIDS". It points out that current Information/Education for Health strategies used to educate prostitutes and women about AIDS are often oblivious to the main problem of women and health — women's powerlessness . Sex tourism contributes to the vulnerability of women to AIDS, particularly as many prostitutes are children. At home, women are victims of "shame cultures" and double standard values which put them in a communications "purdah" or veil. Even when confronted with health information about sexuality, they are not supposed to acknowledge it with a behavioural change such as asking husbands to wear condoms. Efforts to mobilize women's groups at community level can brighten the picture but these have yet to have widespread support. The paper identifies a number of research/action areas which would help AIDS programmes to support women who are struggling to lift this communications "purdah".

E.743

THE EMOTIONAL IMPACT OF NEEDLESTICK INJURIES ON HEALTH CARE WORKERS
Marrie, T; MacIntosh, N; Streight, R; Schlech, Walter, Dalhousie University, Victoria General Hospital, Halifax, N.S., Canada

Objective. To determine if a needlestick injury has an adverse emotional impact on health care workers (HCW's).
Methods. Self administered questionnaire at the time the employee reported the injury and a supplemental questionnaire was completed two weeks following the injury.
Results. To date 54 HCW's have been enrolled. Seventy-four percent of the injuries involved contaminated needles. Two incidents involved patients with group IV HIV infection and 2 involved patients with hepatitis B. Immediately after the injury 74% felt the risk of developing HIV infection was low. At two weeks following the injury, 49% were worried about developing an infection; 18% had lost sleep due to worry and 9% had a change in appetite. The "feelings" regarding the accident consisted of anxiety - 40%, anger at one's self - 18%, depression - 2%. One person had a decrease in sexual activity and another changed her method of contraception to condoms following the injury. Eighty-two percent discussed the accident with co-workers; 53% with his/her spouse; and 5% with their family physician.
Conclusion. The preliminary results of this study indicate that needlestick injuries have a significant emotional impact on health care workers. Our data suggest that occupational health departments, in addition to programs to prevent such injuries, must recognize and deal with the emotional impact of such injuries.

E.744

TITLE: THE WORKPLACE: LARGE ADVANCES FOR SMALL BUSINESSES
Schwartz, Beverly; Williams, K. R.
U.S. Centers for Disease Control, Atlanta, Georgia, USA

Objective. This paper identifies and discusses leverage points, motivating factors and programs successful in stimulating small businesses to educate employees about the prevention of HIV.

Methods. Needs assessment surveys have been used as the basis for designing education strategies responsive to small business needs and capacities. Professional membership organizations consisting of small business owners were enlisted to assist in the development of program content, structure, and initial implementation of the project's pilot phase.

Results. The programs offered unique perspectives and approaches in identifying applications to a multiplicity of organizational structures. Evaluation methodologies for program usage by employers and impact on employees knowledge level and behavior will be discussed.

Conclusion. The worksite must be acknowledged as a vital target area, and utilized as a primary vehicle for communication of adult Aids education and prevention programs. Indeed, the development of usable programs for this population appears to be a most important step in reaching a large segment of individuals who may effectively be reached only through their place of employment.

E.745

HEALTH PROFESSIONAL'S KNOWLEDGE, EXPERIENCE AND ATTITUDES CONCERNING AIDS IN RELATION TO ANXIETY ABOUT CARING FOR INFECTED PERSONS Durkin, Joan; Albrecht, G.; Cooksey, J.
University of Illinois at Chicago, U.S.A.

Objective. The AIDS epidemic has caused considerable anxiety among health professionals. Areas with high incidence have reported employee loss, avoidance by medical students of certain hospitals and/or specialities, and high employee stress among those who stay. It is important to be able to discriminate those variables associated with anxiety in order to develop effective workplace response to reduce fears, insure quality care, and retain personnel.
Methods. In this study, 536 physicians, nurses and social workers at University of Illinois Medical Center were surveyed and compared to ascertain the relationship between their knowledge attitudes, and experience concerning AIDS in relation to caring for infected persons. Knowledge about AIDS was measured by self-rated knowledge level, and actual accurate knowledge. Experience included frequency, type, and level of contact with infected persons. Attitude variables included willingness to work on an AIDS unit, treating patients on a special unit, and obligation to treat persons with AIDS. Anxiety included by worry and about patients with AIDS, infection through their work, and infecting their families.
Results. Overall, attitudes were stronger indicators of anxiety than were knowledge and/or experience for physicians and social workers. For nurses experience with patients was also significant.
Conclusion. Professional role and responsibility must be addressed in the workplace in conjunction with worries about AIDS in order to facilitate reduced anxiety about caring for patients.

E.746

ATTITUDES OF MEDICAL TECHNOLOGISTS TOWARDS THE ACQUIRED IMMUNODEFICIENCY SYNDROME.
Brown, James W.[''], Feeney, K.B.['], and Gauch, R.[']. Roche Biomedical Laboratories[''], Raritan NJ, Fairleigh Dickenson Public Administration Institute, Rutherford NJ, . U.S.A.

Objective. To assess the degree of concern medical technologists have towards the acquired immunodeficiency syndrome. Methods. We surveyed attendees at the annual meeting of the NJ Society for Medical Technology held in Asbury Park, New Jersey during April 1988. The survey addressed concerns, attitudes, knowledge, and practices of medical technologists with respect to AIDS. Multiple choice questionnaires (283), utilizing a Likert scale, were distributed and a 74.9% response was obtained. Results. Of those surveyed, 85.6% have friends or families who expressed concern about working with HIV positive samples; 25.9% are considering leaving the profession because of their fear and/ or their "significant other's" fear of acquiring HIV in the laboratory; 65.2% would not have chosen the field of medical technology knowing they would be handling HIV positive samples; 72.0% currently wear gloves either most of the time or always when handling samples. Conclusion. We found a high degree of concern about AIDS among technologists. This may be a factor contributing to the current personnel shortage in medical technology.

E.747 AIDS-RELATED KNOWLEDGE ATTITUDES AND PRACTICES OF GREEK DENTISTS

Anastasia,Roumeliotou;Kossyphidou,J.;Konstantinidis,R. and Papaevangelou G.
National Center for AIDS,Athens School of Hygiene,Athens Greece

Objective.To estimate knowledge attitudes behaviour and practices related to AIDS of dentists in Greece and determine responsible factors.
Methods.An anonymous questionnaire was sent my mail to a randomly selected 10% sample among dentists in Athens.Details about their demographic and scientific background, prophylactic measures during their occupation and practical knowledges about AIDS were asked to be completed. Of the 349 who received the questionnaire 71.3% participated in the study.
Results.Of the participated dentists 55.4% were males, 61.5% were less than 40 years old and 18.5% admitted post graduate studies.More female(43.6%)than male(37.0%)dentists always use gloves. The use of gloves and masks was higher in dentists less than 40 years old(48.4% and 34.9% respectively) than in those more than 40(26.3% and 18.7). Of the Greek dentist 64.2% disinfect the high speed hand piece after treatment of every patient.Only 38.5% accept the therapy of HIV infected patients while 80.5% were well informed about AIDS.
Conclusion.High proportion of Greek dentists take precautions for themselves and their patients,are well informed about AIDS but are not willing to therapy HIV infected persons. More education is necessary to improve their practices and behaviour.

E.749 AIDS and Refusal to Work: A Canadian Experience

Regenbrecht, Merlies
Labour Canada, Occupational Safety and Health, Ottawa, Ontario, Canada

Objective. To describe the process of assessing refusals to work because of danger, when the danger consists of a co-worker or client with AIDS.
Methods. Cases of refusal to work,because of a co-worker with AIDS, in the federal jurisdiction are reviewed and the ruling explained. Comparisons are made with cases in other Canadian jurisdictions.
Results. Up till now refusals to work because someone in the workplace has AIDS, have not been upheld.
Conclusion. Fear of contracting AIDS is a potent motivator for refusing to work with someone who has been infected, even when the contact with the infected person is minimal. Dissemination of information about the disease and its spread would prevent many of those incidents.

E.751 RECOMMENDATIONS FOR AN AIDS WORKPLACE POLICY

Katoff, Lew, Gay Men's Health Crisis,
New York, New York, USA

Objective: To provide suggestions for human resource policies for organizations involved in AIDS social services, research and education.
Methods: The role of institutions involved in AIDS services and research in addressing the issues of persons with AIDS in the workplace were considered.
Results: AIDS service and research organizations have the capacity and the responsibility to serve as models for employers in their communities, as well as a responsibility for the well-being of their employees. Demonstrating that persons with AIDS can and do continue to lead productive lives contributes to the creation of communities in which a diagnosed person can live fully. While difficult and costly, attention to AIDS in the workplace has important benefits for affected employees, their co-workers, the organization and the larger community. The involvement of the person with AIDS may enhance the effectiveness and sensitivity of education, research and support services. Most important, fair and effective treatment of HIV-infected employees provides a model of compassion and sensitivity.
Conclusions: Recommendations for establishing a relevant, effective PWA personnel policy include consideration of reasonable accomodations, employee benefits and the availability of support services.

E.748 A MODEL APPROACH FOR LABOR UNIONS AMID THE HIV EPIDEMIC IN ALAMEDA COUNTY, CALIFORNIA

Jefferson, Frances*; Seidel, E.**; Cross, B.***; Labor and Occupational Health Program (LOHP), University of California at Berkeley; East Bay AIDS Response Organization; and Service Employees International Union (SEIU) Local 250
*SEIU Local 616, Oakland, California, USA, **Highland General Hospital (HGH), Oakland, California, USA, ***HIV/AIDS Services Division, Alameda County, California, USA

Objective: To describe a public sector labor union's workplace efforts in directed HIV educational programs and in creating and expanding HIV services in Alameda County, CA.
Methods: SEIU Local 616 has organized a collaborative effort utilizing union, community, and county government resources to educate the county's workforce; to expand HIV clinical services; and to improve access to quality care.
Results: 1) Shop steward training in HIV transmission, occupational safety, and education/prevention. 2) Collaboration with hospital management at Highland General Hospital in training all workers regarding HIV transmission, prevention and workplace safety. 3) Organize a Gay and Lesbian Caucus within Local 616 to address HIV and other issues in the workplace. 4) Political action around HIV funding allocations. 5) Establishment of HIV outpatient services at Highland General Hospital.
Conclusions: Labor unions can organize and reinforce workplace education efforts; lobby local government to support comprehensive HIV services; and provide a focus for important gay and lesbian, minority, and community concerns.

E.750 AIDS EDUCATION IN THE WORKPLACE

Ray-Keil, L.*; Downer, Ann **
*Seattle/King County Department of Public Health, Seattle, Wa., USA; **University of Washington, Seattle, Wa., USA.

Objective. To educate the King County workforce about AIDS, and to evaluate the effectiveness of this training on knowledge and attitudes.
Methods. As part of a county-wide policy on non-discrimination for people with AIDS (PWA) in the workplace, a voluntary AIDS educational was offered to all county employees on work time. The one hour sessions consisted of an oral presentation, a videotape and a question and answer period. A pre and post test was administered to the first 1000 participants.
Results. Approximately half of the 5000 person workforce chose to attend one of the 70 presentations given in 1988. In general, those surveyed showed a high degree of basic knowledge about AIDS. For instance, over 97% answered correctly on the pre test that a person risks infection by sharing intravenous drug equipment, that women can pass the virus to male sexual partners, and that an infected pregnant woman can pass the virus to her unborn baby. Areas in which there was less knowledge included: the ability of bleach to kill HIV, the safety of sharing eating utensils with a PWA, the risk of infection from blood transfusions, and the safety of latex condoms compared to natural skin condoms. An average of 59% correctly answered these questions on the pre test. After the presentation, an average of 89% answered correctly. Those who would not work with a PWA decreased from 40% before to 24% after.
Conclusions. A one hour educational can significantly increase knowledge about AIDS and alter attitudes about working with a person with AIDS.

E.752 FEAR OF AIDS IN THE WORKPLACE

Sy.Francisco;Richter,D;Mathur,S and Addy,C.
University of South Carolina School of Public Health, Columbia, South Carolina, USA

Objective. To determine the level of fear and misconceptions about AIDS in the workplace.
Methods. 990 employees in a major university in southeast U.S. responded to a university-wide AIDS survey. The measurement instrument used was a questionnaire with questions regarding their general knowledge and personal attitudes related to AIDS. Data on demographic information and job position were also collected. A general knowledge score and an attitude score were calculated for each subject.
Results. 32% were 'very concerned' in the situation 'being served in a restaurant by a person infected with the virus'. 30% were 'very concerned' being 'near an infected person while they sneeze or cough'. 24% were'very concerned' in 'using an infected co-worker personal belongings', and 22% from 'drinking from a water fountain used by an infected person'. Staff non-supervisors had a higher level of fear and concerns about AIDS. The irrational fears maybe due to the misconceptions about AIDS and to the fear of contagion, fear of unknown and fear of death.
Conclusion Fear of AIDS in the workplace exists due to various misconceptions about AIDS. Extensive AIDS educational efforts must be conducted to provide facts and to calm down fear and hysteria which may disrupt the workplace.

E.753

HIV/AIDS AND INTERNATIONAL ORGANIZATIONS: A STAFF AND DELEGATE EDUCATION PACK

Breuer, Nancy L. American Red Cross, Los Angeles Chapter,
2700 Wilshire Boulevard, Los Angeles, California 90057, U S A

Objective: To describe the process and present a sample of the result of development of a multicultural HIV/AIDS basic education and anti-discrimination pack for use by international organisations.

Working in the Secretariat of the League of Red Cross and Red Crescent Societies in Geneva, and in cooperation with WHO, the author has involved League staff members and staff from other Geneva-headquartered non-governmental organisations to develop an appropriate educational programme for staff members and field delegates in international service.

Results: The resulting pack includes a self-questionnaire, scripted slide presentation, case studies, exercise on non-discrimination, interviews with persons undergoing the HIV test in Geneva, resource list, workplace HIV bibliography and the newly-developed League HIV/AIDS policy for the workplace.

Conclusion: League of Red Cross and Red Crescent Societies has a tested programme designed to help staff and delegates work appropriately with HIV issues in their workplaces and prevent HIV/AIDS-related discrimination.

E.754

E.755

E.756

It's Your Job: A Three-Part Plan To Control Infectious Disease

Miller, Dr. W. Barry
Director of Education, Fredericton, New Brunswick
Canada

Objective: To explain how a school system has informed employees of the basic public health principles that govern infectious disease control in schools.

Methods: A sixteen page brochure has been prepared for all school board employees. It provides specific direction under such headings as How Should I Deal With AIDS In The Classroom?, How Can I Protect Myself Against AIDS?, What You Don't Have To Worry About.

The document provides a model for any school system that is concerned about providing accurate information to their employees. The publication has been endorsed by the Canadian Public Health Association. The publication will be available in limited quantity.

E.757

THE SAFE HANDLING OF HIV-POSITIVE BIOLOGICAL FLUIDS IN THE ANALYTICAL CHEMISTRY LABORATORY

P.A. Lewis and D.B. Garcia Radian Corporation, U.S.A.

Although biological fluids have long been handled in the analytical chemistry laboratory, official guidances relative to their safe handling have only recently been disseminated by the U.S. Occupational Safety and Health Administration (OSHA). While the possible exposure to etiologic agents has always been present, greater concern has surfaced as a result of the AIDS epidemic. Further, the need for analytical chemistry laboratories to handle biological samples from AIDS clinical research trials presents a special case since all samples are known to be HIV-positive. Presently there is much reluctance by laboratories capable of conducting drug disposition studies to handle known HIV-positive samples and thus we have designed containment facilities and developed standard operating procedures (SOPs) for these activities. The containment laboratory used for this activity operates under negative pressure and is governed by a series of SOPs. The SOPs address the following activities.

- General work practices, policies, and procedures;
- Packaging and transporting of specimens;
- Receipt and transfer of specimens to sample control;
- Sample log-in and storage;
- Laboratory clean-up, decontamination, and disposal;
- Emergency procedures for surface spills and personal contamination; and
- Decontamination of biological waste.

In addition to the general SOPs above, a safety protocol relative to the specific analytical procedure to be performed is formulated. This protocol focuses on possible hazards peculiar to the analytical procedure.

E.758

THE IMPACT OF AN AIDS EDUCATION PROGRAM IN THE WORKPLACE

Sy. Francisco;Richter,D;Mathur,S and Addy,C.
University of South Carolina School of Public Health, Columbia, South Carolina, USA.

Objective. To measure the effectiveness of an AIDS education program for employees in a university workplace.
Methods. A university-wide AIDS education program was implemented in a major university in southeast U.S. from January-May 1988. 990 employees, grouped according to their job positions, attended two-hour AIDS education sessions conducted by a medical epidemiologist and a health educator. Pre and post test questionnaires, consisting of knowledge and attitude questions, were completed by the participants. Pre and post test scores were calculated for each employee. Data were analyzed using the chi-square test, paired t-test, and ANOVA.
Results. Before the educational program, the mean knowledge score was relatively high. There were misconceptions regarding the cause, cure and transmission of AIDS. Many employees were concerned about getting AIDS in low or no risk situations. After the program, there was statistically significant improvement in both knowledge and attitude scores of the employees.
Conclusion. This AIDS education program in the workplace was found to be effective with improvement in both the knowledge and attitudes about AIDS among the employees.

E.759

Blood Control in Brazil

Jurberg, Claudia; Galvão, Bernardo; Silva, Edmilson*
Oswaldo Cruz Foundation, Rio de Janeiro, Brasil

Objective. To realize an analysis, together the brazilian authority government, the population and together the press in general, about aids transfusional brazilian situation. What is the government actuation ? The brazilian press contribued with the elucidation the problem ? And the population have conscience the important of voluntary blood donation ?
methods. It is an work of scientific journalism with objective is, trhough interviw with authority government, cientist, technical science, journalist and the population, establish the blood control situation in Brazil, during a period.
results. A new brazilian constitution, promulgated in 1988, prohibit a blood sale, but any government measure will be realize. The blood have been saling and the brazilian population ignore the danger with blood transfusional.

Prévention et santé publique
Prevention and Public Health

E.760

DRUG REGULATION GONE WRONG: THE SAGA OF GANCICLOVIR

Eigo,James; Long, I.; Harrington, M.; Fornataro, K. AIDS Coalition to Unleash Power, New York, New York, USA.

Objective. To evaluate flaws in the current drug approval process in the U.S. through analysis of the "ganciclovir story".
Methods. An analysis of all the anti-cytomegalovirus (CMV) ganciclovir protocols, of published data on ganciclovir and of the minutes of the Food and Drug Administration (FDA)'s Anti-Infective Drug Advisory Committee and interviews with opthamologists and people who have CMV.
Results. In October 1987, the FDA's Anti-Infective Drug Advisory Committee, ignoring the advice of its two opthamologist members, voted to recommend against marketing approval for ganciclovir to treat CMV retinitis in immune-suppressed people. It did so even though evidence gathered under a "compassionate use" protocol showed ganciclovir to be 80% effective in improving CMV retinitis, which is a severe, progressive disease that leads to blindness in nearly 100% of untreated patients. The vote, in effect, mandated a controlled clinical trial to establish the drug's efficacy. The trial began in January 1989.
Conclusion. Ganciclovir, proven effective against CMV retinitis, should have been approved in October 1989. Efficacy trials for a drug that has been proven effective waste resources, put patients at indefensible risk, and limit access to an effective therapy.

E.761

A MODEL OF COMMUNITY SUPPORT FOR PEOPLE WITH HIV DISEASE

Margolese,E.*; McKenna,P.**; Rohl,M.**; Newman,J.**; Lemire, A.**, Turner,R.**. *Coordinator, AIDS Community Care Montreal (ACCM). ** Administrative Council, ACCM. CANADA

Objective: To provide community based, psychosocial and practical support to people affected by HIV.
Method: Developing, writing and publishing a comprehensive layman's guide to coping with HIV related conditions.Providing one to one support by trained volunteers, counselling, self help support groups, an information library and emergency financial assistance.
Conclusion: This type of support is beneficial and helps people cope both physically and emotionally with HIV related illness.
Results: We maintain an average of twenty clients at a time, indicating a strong need for this type of program.

E.762

SIDA ET SOCIETE: REFLEXIONS SUR LA PRATIQUE ANTHROPOLOGIQUE INTERNATIONALE

Schoepf, Brooke Grundfest
Woods Hole, MA USA

Objectifs. Reflexions sur la pratique des anthropologues répondant à la situation critique causée par l'extension du SIDA.
Méthode. Observation-participante dans des congrès scientifiques, des causeries entre collègues et des recherches sur le terrain en tant qu'individu et chef d'équipe.
Résultats. La crise du SIDA offre aux anthropologues un terrain privilégié pour avancer la production des connaissances. On y mène des recherches sur le processus des changements sociaux, les rapports entre la maladie et la société, l'économie politique et la culture, la persistance des structures et représentations et d'autres thèmes fondamentaux. On pourra y vérifier théories et modèles et tenter de nouvelles approches méthodologiques. Certains entendent contribuer à la recherche des solutions aux problèmes de prévention. Qu'elles soient conçues comme recherche de base ou d'application, les recherches sur le SIDA présentent une série de contradictions qui soulève des problèmes de déontologie et de responsabilité professionnelle.
Conclusion. La pratique de l'anthropologie est une action sociale par excellence qui met les chercheurs devant des choix parfois difficiles et même à des réflexions critiques.
Mots clefs: déontologie, responsabilité, reflexivité, anthropologie

E.763

DIFFERENCES IN AIDS RISK ASSESSMENT (ARA)/COUNSELING BEHAVIORS OF PRIMARY CARE PHYSICIANS IN COSTA RICA AND HARRIS COUNTY, TEXAS

Coverdale, John; Vallbona, C., Laux, L., Aruffo, J., and Thornby, J.
Baylor College of Medicine, Houston, Texas, USA.

Objective: To assess whether there are significant differences in attitudes and ARA/counseling behaviors of Costa Rican and Harris County physicians.
Method: In this study, we obtained responses from 48 Costa Rican physicians at a medical conference to questions we had previously used to assess the ARA/counseling behaviors of physicians in Harris County Community Health Centers. The questionnaire was translated into Spanish by one of the co-authors who attended the meeting. These responses were compared to the responses of 47 primary care physicians from the health centers using the general linear model program of SAS.
Results: Significant differences (p < or = .05) were found on 22 of the 43 questions. Costa Rican physicians report being more comfortable asking patients about their sexual preferences and practices and that they counsel patients on how to reduce their risk of AIDS at a substantially greater rate than Harris County physicians. Costa Rican physicians also report feeling more responsible for ARA/counseling.
Conclusions: There are cultural differences in physician behaviors and attitudes about sexual and drug history taking and counseling which may reflect differences in medical training as well as cultural differences in attitudes about appropriate physician behavior.

E.764

IMPACT OF A SLIDE ASSISTED PRESENTATION ON THE KNOWLEDGE ABOUT HIV-INFECTION IN INSURANCE EMPLOYEES

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Objective. To assess the present knowledge about AIDS in insurance employees and to investigate the effect of a single educational talk..
Methods. A questionnaire with 10 questions concerning AIDS was filled in by 192 insurance employees before and after a slide assisted presentation on relevant items of HIV transmission. The results were compared by χ^2 test.
Results: 190 and 185, respectively, of the questionnaires were returned. The percentage of wrong answers before and after (%/%) the presentation were: 1. You can get AIDS being in the same room with a person with AIDS (1/1) NS. 2. AIDS has been transmitted through sharing office equipment (3/0) NS. 3. The virus which causes AIDS has been transmitted through saliva (52/7) p <0.0001. 4. AIDS is transmitted by sneezing (5/1) p <0.01. 5. AIDS is an easily transmitted disease (21/8) p <0.001. 6. There are reports of casual transmission of AIDS to family members who are not sexual partners of people with AIDS (31/19) p <0.01. 7. People can look and feel healthy and still transmit the virus (5/7) NS. 8. If you inject drugs with your own needle and never share it you cannot get AIDS from shooting drugs (14/7) p <0.025. 9. You can get AIDS from donating blood (46/16) p <0.0001. 10. There is a vaccine to prevent AIDS (1/1) NS.
Conclusion: There is still a considerable lack of information even among educated middle class people. Slide assisted presentations may have a significant impact on the knowledge about HIV transmission.

E.765

AIDS AS A PROCESS

Conde, F.; Coronado, A.*, Arredondo, C.*, Gil, E.*.
Ministery of Health.-Spain.

Objective. AIDS is not a unique and irreversible fact, but rather a process in which society as well as the individual can and should participate.

AIDS is a "relatively controllable process" in which the attitude of the subject and society are the key for combatting and preventing the possible development of the syndrome, and thus "give time" (a variable fundamental in the process) for science to find more efficient solutions than those that already exist.

Conclusion. AIDS as a process allows us to define the stages and aspects of the disease over which science already has knowledge and answers to those others that are still being investigated, which would permit public opinion to regain its confidence in scientific discourse.

E.766

THE DOUBLE CONTAGIOUSNESS PHENOMENON: FROM SEROPOSITIVITY TO PSYCHOPOSITIVITY.

Conde, F.; Coronado, A.*, Arredondo, C.*, Gil, E.*.
Ministery of Health.-Spain.

Objective. As can be seen from the analysis of the attitudes the population carried out by means of representative surveys, we are confronted by a dual "contagiousness", the most important from the point of view of the development of the disease, which must be fought by science and healthy education. But, on the other hand there also exists the "psycho-social-contagiousness" of fear, of irrational attitudes, that lead to segregation and social racism. Eliminating this phenomenon is fundamental to be able to cope with the disease and develop information campaigns (prevention) which upto now have been the only real means of fighting this problem.

Conclusion. The report develops the concept of "psychopositivity" (fear, rejection, isolation...) as one of the major sources of difficulties in the fight against AIDS. Psychopositivity creates "repression", which leads those affected to turn their backs on the health system, to hide themselves to avoid greater complication, to look for parallel solutions, to not take care of themselves, to abandon the system, all of which are negative for themselves as well as for society.

E.767

ACCEPTANCE AS A PRE-CONDITION FOR AIDS-PREVENTION AMONGST I.V. DRUG USERS

Dr. Ingo Michels, Deutsche AIDS-Hilfe e.V., Nestorstraße 8-9,
D - 1000 Berlin 31

There is at the moment no data for the prevalency of HIV that is accurate because the necessary scientific and social network is missing. Also there are no uniform standards for the determination of regional differences in respect of the first appearance of HIV, the methods of application of illegal drugs, different needle-sharing practices, varying levels of availibility of sterile needles and syringes and condoms, inexact information on the sexual behaviour of i.v.d.u. etc. The existing studies amongst groups in prisons, treatment centers and hospitals indicate an increased incidence which threatens to increase if the necessary preventive measures are not provided and carried out expediently. The Deutsche AIDS-Hilfe calls for the de-criminalisation of those affected, the development of low treshold treatment opportunities without therapy and abstinence demands, subsequent professional support with adequate financing, needle-exchange programs and distribution of condoms (also in prisons). Further no forced testing in the granting of places in drug rehabilitation, controlled substances with methadone for those i.v.d.u. at risk of infection along with those already HIV-infected or suffering from AIDS and the incorporation of a care-dimension for HIV-infected and AIDS-diagnosed d.u. into the existing therapy programs including a possible personal care until death. The Deutsche AIDS-Hilfe calls in answer to the often catastrophic state of health of i.v.d.u., estimated between 50.000 and 100.000 of which probably 30% are already infected. A call which must be followed by a sense of humanity which will defend against alienation and stigmatisation.

E.768

E.769

"EDUCATION ABOUT AIDS" COURSES, VICTORIA, AUSTRALIA

Goller, Ian*;Jones,J.**;Houvardis,S.* and Lewis,V.*

*Health Promotion Unit, Health Department Victoria, Melbourne, Victoria Australia,**Social Biology Resources Centre, Melbourne, Victoria, Australia,

Objective. To evaluate the impact and outcomes of a series of 6 day multidisciplinary AIDS education programs designed for health, welfare and educational professionals.

Methods. Various tools have been used to evaluate these courses. These include knowledge and attitudinal questionnaires as well as in depth interviews with selected course participants.

Results. In the period June 1985 to December 1988 16, 6 day "Education About AIDS" courses have been held in both country and metropolitan regions of Victoria. Over 540 people have completed these courses, the participants coming from a wide range of health, welfare, education and community groups. Knowledge about AIDS has been shown to improve significantly during the duration of the course (approximatley 6 weeks) and is maintained at these levels 3 months following completion. Participants report that they are more comfortable and confident in communicating with others on AIDS and issues of sex and sexuality. Course participants have shown skills in undertaking many AIDS initatives e.g. policy development, educational sessions and counselling within their institutional or employment groups. Participants show a positive attitudinal change in relation to many AIDS related issues. e.g. towards people infected with HIV and IV drug use issues.

Conclusions. These educational programs have been shown to have a major impact on AIDS awareness and prevention activities in the state of Victoria.

E.770

EN MATIERE DE PREVENTION

Haddad,Wadad World Health Organization
Regional Office for Europe/Copenhagen-Denmark
Paris. France

-Afin de pouvoir prendre une décision responsable et avertie, nous avons besoin:

. De connaissances sur le comportement sexuel sain qui implique des choix et des responsabilités.

.D'une éducation sexuelle efficace que est saine réaliste, pragmatique, non moraliste, éducation qui valide la sexualtié comme un aspect positif de la vie, qui réduit la peur, donne des informations claires et honnêtes et qui met l'accent sur les pratiques sûres d'être sexuel et offre des comportements alternatifs à considérer,

-Souligner, dans la transmission des messages efficaces pour les relations sexuelles saines, l'importance du langage utilisé, d'attitude réceptive, de qualifications interpersonnelles et de communication.

-Viser dans les programmes d'enseignement des pratiques sexuelles saines dans toute la communauté des différents groupes de la population, utiliser différents types d'information selon le groupe et préparer des solutions éducatives ou de précautions nécessaires afin de limiter le nombre de personnes infectées et de réduire les conséquences de l'infection.

E.771 PROBLEMS IN THE INTERFACE BETWEEN THE MEDICAL TREATING SYSTEM AND THE PATIENT/FAMILY SYSTEM

Patten, John
The Ackerman Institute for Family Therapy, New York, New York, USA

Many medical management problems occur in AIDS patients because of poor relationships between patient/family and the medical system (doctors, social workers, nurses, administrators, etc.). The Ackerman AIDS Project, by using psychotherapeutic and educational techniques with many individuals, couples, and families and members of the medical systems, has been able to show improvement in these relationships.

For instance, many individuals, families, and health care workers believe the equation AIDS=DEATH. This is in spite of AIDS being seen by the writers and by many members of the medical community as behaving more like a chronic illness. When patients' and families' percepts of AIDS has been psychotherapeutically shifted from FATAL to CHRONIC, they feel and act more hopeful, they are likely to be more compliant to treatment protocols and to take better care of themselves. Normal activities of living can be resumed once the illness is seen in a different perspective. Patients and families often feel empowered to ask more questions of the medical treating system and to be less passive about their illness.

To create a shift in perception, we must place emphasis on basic information and education about AIDS. Ignorance and misinformation abound, the stigma, anxiety, isolation, and guilt that surround AIDS make education about everything from testing to treatment essential. It is a time-consuming, repetitive process which requires a high degree of expertise.

E.772 PRIMARY HEALTH CARE FOR HIV-INFECTED PEOPLE

Kirschenbaum, David; Eigo, J. and Long, I. AIDS Coalition to Unleash Power, New York, New York, U.S.A.

Objective. To discuss the availability of primary care (baseline health care) for HIV-infected people.
Methods. We interviewed physicians, researchers and government officials and analyzed data on trial enrollment and epidemiology.
Results. Our research indicates that there is a two-tiered health care system in the U.S. Some patients with economic resources receive primary care consisting of regular medical visits, AZT and PCP prophylaxis. A second group, economically deprived, receives little or inadequate primary care. Participation in clinical trials is generally restricted to those who have received primary care. We will focus on the obstacles to obtaining treatment in New York City as a specific example.
Conclusion. The U.S. government should be meeting a standard of baseline health care for all HIV-infected people, consisting of regular medical visits, AZT and PCP prophylaxis. In addition, the government should rigorously enforce equitable access to trials.

E.773 INNOVATIONS IN AUSTRALIAN NURSING

Nugent, Joy.
Private Palliative Care Services Pty Ltd, Adelaide, South Australia, Australia.

This paper traces the growth of an Australian nursing innovation: a professional service to meet the needs of those suffering a life threatening illness. Private Palliative Care Services Pty Ltd (PPCS) was created to provide a health care option for individuals wishing to live in ways that are personally meaningful and significant. Professional nurses assessed by PPCS practice as private primary nurse practitioners in meeting the physical, intellectual, emotional and spiritual needs of patients. A key feature of their practice is third party reimbursement from a major private health insurer in the form of a Palliative Care Benefit. The development of the Company required considerable effort and expertise. Professional and political lobbying at a range of levels was necessary to ensure a legitimate place in the health care system along side well established public systems. On going education programs provide support for the palliative care nurses as well as necessary revenue to meet office expenses. Details of Company structure, cost effectiveness and the practicalities of establishing a private nurse practice are discussed. It is believed that the PPCS model of practice holds international potential and interest for nurses.

E.774 Culturally Sensitive Care at Minimal Cost Through In-House Health Attedant Care.

Moore, Teri, LPA,MPA,CST*, Madden, Constance**
*California State University, Hayward, California, USA,**San Francisco State University, San Francisco, California, USA

Objective: Providing optimal, culturally sensitive care at minimal cost to People of Color and others with AIDS and ARC.
Methods: Use of in-house, hand-picked and trained home health attendants within a system of comprehensive case management offers cost effective care in a setting whree quality care can be agency-insured. An interdisciplinary Team consisting of program directorr, nurse case manager, social worker, home health coordinator and attendants provides a higher morale and more continuity of care than case management where services are "farmed out." Data collection regarding time and costs can also be monitored more effectively when most services are in-house.
Conclusions: As care for AIDS clients becomes increasingly costly and draining, the in-house home health attendant model adds greatly to team spirit while cutting costs so that more clients may be helped. The HHA program, overseen by an interdisciplinary Team, is very effective in providing quality, culturally sensitive care to minority AIDS/ARC clients.
Results: More clients are seen; costs are minimized; morale is enhanced.

Table of Conferences:	Number of Participants:
1 People of Color Conference, Sacramento, CA	400
2 Life Foundation, Hawaii	450
3 National AIDS Network, Washington, D.C.	1500
4 2nd National Conference on AIDS, San Francisco	1100
5 Centers for Disease Control, Washington, D.C.	1500
6 Montreal	?

E.775 PSYCHOSOCIAL SUPPORT SYSTEM FOR PEOPLE WITH HEAMOPHILIA AND HIV IN THE FEDERAL REPUBLIC OF GERMANY

Ian Schäfer, Norbert Specht, Deutsche AIDS-Hilfe e.V., Nestorstr. 8-9, 1000 Berlin 31, West-Germany

Objective: To develop new and practical educational councelling strategies and support systems for haemophiliacs in the FRG. Methods: In cooperation with the Haemophilia Society, Haemophilia Treatment Centers, Deutsche AIDS-Hilfe and haemophiliacs with HIV regular meetings were held to design a concept for support system. Results: Although 50 % of the estimated 6.000 haemophiliacs in West-Germany are HIV-antibody-positive the lack of a non-doctors controlled support system became evident. There is a need for self help groups to talk about social and sexual problems in an open private atmosphere without a doctor's guidance. Conclusion: The haemophiliac support system should be unlinked from medical treatment centers. The existing network of 80 local AIDS help groups in the Federal Republic can offer the limited number of haemophiliacs the infrastructure for non-therapeutical and therapeutical self-help groups. More data will be presented at the conference.

E.776 DISCRIMINATION OF MALE AND FEMALE PROSTITUTES UNDER THE ASPECTS OF AN INCREASING SOCIAL CONTROL IN THE CONTEXT OF AIDS.

Micaela Riepe, Deutsche AIDS-Hilfe e.V., Nestorstr. 8 - 9, 1000 Berlin 31, West-Germany.

Objective: In order to fight against prejudice prostitution must be presented as a normal profession and the health consciousness amongst prostitutes must be clearly shown.

Methods: The experiences of all organizations of Federal prostitutes are to be taken into consideration including the evaluaton of existing results on voluntary and compulsory HIV-tests as well as the numerical development of sexual transmitted diseases in the years 1985 to 1987.

Results: Prostitutes cannot be considered a relevant group for the transmission of HIV-infections and further sexual transmitted diseases. Male and female i.v. drug users who get their money for drugs by prostitution do have other living conditions.

Conclusion: A Precondition for the stabilization of the health status of prostitutes is the acceptance of prostitution as a profession on one hand and a continous information and education of the male population about the necessity of safer sex on the other hand.

E.777

LE SIDA, UN PROBLEME DE TOUS

Anabitarte, Héctor ; Mompradé, B.
Comité Ciudadano Anti-SIDA de Madrid SPAIN

Objectif. Définir les stratégies des organizations non-gouvernementales et des mouvements sociaux, face à l'information et prévention du SIDA.
Méthodes. Les experiences derivées des activitées quotidiennes du Comité Anti-SIDA de Madrid, à travers les programmes d'information, des conféréncea, des colloques, des soins directs avec les porteurs, malades et sujets que leur comportement rend vulnerables à l'infection à VIH.
Résultats. Compte tenu de l'experience acquise après cinq ans d'existence, on a constaté la pris de conscience de la population, les changements d'habits, des soins sanitaires plus attentives; mais encore on peut resaigner des situations de discrimination et réfus à légard de personnes infectées par le VIH ou soupçonnées de l'être.
Conclusions. Les mouvements sociaux contre le SIDA en Espagne ont joué un rôle très important pour éviter la progression du virus et pour assumer cette maladie comme une simple maladie, sans aucune autre contenue.

E.778

MODEL PROGRAM: COLLABORATION OF PRIVATE AND PUBLIC HEALTH SYSTEMS ON OUTPATIENT SERVICES

Latterman, Nadine M.*; Rosenthal Susan**, Rotenberg, Ellen**, Ernst, Jerome M.D.*, *Bronx-Lebanon Hospital Center, **New York City Department of Health.

Objective. To link two (2) separate health systems centered around AIDS care in the South Bronx.
Methods. The majority of AIDS patients served by Bronx-Lebanon Hospital Center are primarily IVDA's and homeless. The hospital has established an active outpatient center to manage these patients after hospital discharge. The Department of Health New York City has begun an active anonymous counseling and testing program for self-referred clients. A testing center has been established in the same building as the hospital's AIDS clinic. With the opening of this center talks were begun between the Commissioner of Helath's staff and hospitals AIDS Team with the goal of preventing duplication of services and thereby, identify gaps in services and the development of needed services.
Results. Close collaboration with Health Department clients who test positive are immediately seen at the hospital's AIDS Clinic for followup medical care. Clinic patients, referred from hospital outpatient centers are referred to City Site for HIV testing and counseling. This program has functioned over six months. Approximately 100 city referred clinics patients have been seen in the hospital clinic and 50% have been found to have reduced immunity.
Conclusion. Close collation between private and public sector is working in this instance in the South Bronx.

E.779

AIDS PATIENTS AND THE USE OF EXPERIMENTAL HIV DRUG THERAPIES OBTAINED OUTSIDE OF CANADA

Jackson, Lois*and Fanning M.*
Toronto General Hospital, Toronto, Canada

Objective: To examine the relationship between patients' involvement with AIDS community organizations and the use of experimental drug therapies obtained outside of the country.
Method: Semi-structured interviews were carried out with 25 AIDS patients in three major centers in the province of Ontario.
Results: Of the 25 AIDS patients interviewed, 7 are(or have been) involved with obtaining experimental HIV drug therapies from outside of Canada. All 7 patients are gay men but only 4 are (or were) actively involved with AIDS community organizations, and 3 are knowledgeable of the activities of such organizations although they are not actively involved. 6 of the 7 patients indicated that their physicians recommended seeking drug therapies from outside of the country. Seven of the 25 patients interviewed are gay men who are actively involved with AIDS community organizations. Of these only 4 have obtained drug therapies from outside of the country. Two have chosen to be "drug free" against the strong recommendations of their physicians.
Conclusions: There is no necessary relationship between patients' active involvement with AIDS community organizations and obtaining experimental HIV drug therapies from outside of Canada. Preliminary research indicates that a combination of factors including knowledge of AIDS community organizations' activities and physicians' recommendations play a role in determining patients' involvement with such drug therapies.

E.780

THE STOCKHOLM MODEL- INFORMATION STRATEGIES AND CAMPAINS TO SUPPORT THE COMMUNITY INTERVENTION WORK.

Asp, Anna-Karin, Stockholm County Council Aids Prevention Project

Objectives: To let the information unit within an aids prevention project support, facilitate and quicken the work with community intervention. A close collaboration between information service and aids prevention work.

Method: To put an information unit with educated people within a health education project and work close together. The information unit supports the people in the project who work with our four main target groups: young people, health and medical staff, immigrants/refugees and homo- and bisexual men. The information unit keeps the project going by giving service through our information centre to all the 5.000 people that we have educated within the project. We provide them with brochures, videos, books, exhibitions. We run seminars to keep their interest on top. We produce a paper "Insight". We formulate the messages and advertise in newspapers, local papers and we organize public activities.

Results: To let an information unit work directly within a project makes the projecté message more clear and makes the needs of information strategies more clear. The project can very quick get an answer on what is possible to do regarding to information strategy. It also facilites and quickens the long-term work with community intervention work. We have within one and a half year reached 5.000 people which we now provide with all kind of information at our information centre.

E.781

PROGRAMME OF ASSISTANCE TO RELATIVES OF PATIENTS CARRIERS OF HIV

Lima, M.P.S.; Ferreira, R.P.; Mielle, A; Rocha, M.D.C; Tanibata, P.R. - Hospital e Maternidade Celso Pierro da Pontifícia Universidade Católica de Campinas-S.P.-Brasil.

OBJECTIVE: This work consists of a programme of multidisciplinary assistance to relatives of patients carriers of HIV in the Infectious Disease service of HMCP-PUCCAMP.

METHOD: Meeting of groups of relatives with multidisciplinary team that takes part: physicians, nurses, psychologists and religious, aiming to give support and technical and psychosocial explanations.

RESULTS: 1. For the professional team, the confrontation with relatives divided responsabilities and alleviated the anxiety that the problematical AIDS includes. 2. We succeeded refit the patient to the familiar environment, extending the acceptation initially found in the multidisciplinary team. 3. We observed wide interest of the relatives in discussing and assimilating the AIDS question.

CONCLUSION: This meeting results in gains for the relatives, patients and principally for the multidisciplinary team. We think, therefore, that such event could extend to the community in general (Public Health Centers and District Entities).

E.782

Pioneer Prototype, Organizational and the New Shanti

Sandoval, Chris , Shanti Project California, U.S.A.

OBJECTIVE: How to empower human beings with the optimum measure of life while facing life-threatening extinction through AIDS.
METHODS: Shanti Project grew out of the Apollo II mission which put the first man on the moon. In Apollo II individuals worked at peak performance to exceed all notion of human expectation. Both Apollo II and Shanti Project evolved experientially without a prototype. At Shanti the experience of AIDS became the teacher while the caregiver and the cared became the pupils.
CONCLUSIONS: What people learned experientially in their quest to go into outer space gave permission to those same people to go into the inner space of human feelings which peaks in the final stage of human maturation, prior to life transition.
RESULTS: Civilization and its institutions attempt to limit the expression of human emotion with the institutions of family, faith and community. In the final analysis it is human emotion which allows People with AIDS to face the maturation of their lives.

E.783

THE SOCIAL AND ECONOMIC IMPACT OF HIV ON CANADIANS WITH HEMOPHILIA

Mindell, William; O'Neill, R. and French, S.
Canadian Hemophilia Society, Montreal, Quebec, Canada

Objective. To study the social and economic impact of HIV on families with hemophilia in Canada based on a selected set of self-reported parameters.
Methods. A mail survey was conducted on an estimated 10% systematic sample of hemophilia families across Canada.
Results. From a sample of 250 eligible households, 134 questionnaires were returned for a response rate of 54%. Respondents included hemophiliacs, spouses or parents of hemophiliacs. In 74% of the respondent families, the hemophiliac had been tested for HIV antibody and 65% of the respondents knew the test results; 57% of those who knew were HIV+. Thirty percent of HIV+s have experienced HIV-related symptoms. HIV+s had a higher rate of unemployment (33% vs. 5%), a lower average annual income ($17,600 vs. $27,700), a higher rate of separation and divorce (11% vs. 0) and described more stress and other difficulties at work and school. Forty-five percent of all respondents felt they had been refused employment or lost job opportunities because of health-related reasons; 65% were HIV+ and 35% were HIV-. HIV-s had experienced normal work-related increases in income in recent years, while 24% of HIV+s had experienced decreases in household income including the impact on caregiving parents and spouses.
Conclusion. HIV+ hemophilia families have already experienced significant stress, and social and economic repercussions. Hemophiliacs, regardless of their HIV serostatus, feel they are experiencing workplace discrimination as a result of the association of HIV with the hemophilia community.

E.784

LENTIVIRUS INFECTION GIVES RISE TO LENTI-UNDERSTANDING AND THUS TO A 10 YEARS' INCUBATION PERIOD FOR ERRORS IN AIDS POLITICS

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Due to a treacherous gap between what is visible and what is the case in the course of a lentivirus epidemic, society reacts on the situation to that degree as it is obvious in terms of AIDS cases, i. e., a 10-year old situation. The real state of epidemic spread, however, is to be measured by the number and distribution of HIV carriers, mainly hidden for immediate surveillance. Thus certain mistakes are likely to be made and common errors to be withheld for about 10 years, until their consequences are difficult to ignore. We do not perceive continuously growing changes unless their speed exceeds certain threshholds. In the same manner as HIV slips in under the threshhold of our immune system by its "lenti"-qualities, this lentivirus epidemic does not evoke adequate reactions in health politics until late in its course. Bavaria is today rather isolated in health politics. Is that a good measure for truth? Bavarian health politics (vaccination, X-ray screening, teaching venerology) in the good tradition of Max von Pettenkofer and other famous scientists, have in historical time often been criticized by most or all other countries. After 7-20 years the world regularly has followed Bavaria's example, sharing the underlying considerations. Will this happen again in the time of AIDS?

Éducation
Education

E.785

AIDS KNOWLEDGE, ATTITUDES, AND RISK REDUCTION PRACTICES AMONG YOUNG ADULTS IN TWO BRAZILIAN CITIES.

Janowitz, Barbara*, Bastos, V.**, Rodrigues, S.R.**, Vacarelli, J.***, Nakamura, M.***, and Morris, L.****
*Family Health International, Research Triangle Park, North Carolina.
**Federal University of Bahia, Bahia, Brazil; ***Centro Materno-Infantil, Sao Paulo, Brazil; ****Centers for Disease Control, Atlanta, Georgia.

Objective: To compare the knowledge, attitudes and risk reduction strategies concerning AIDS of Brazilian youth in two urban areas, one of which is the center of the AIDS epidemic and the other of which has fewer reported cases and also reflects conditions at an earlier time period.
Methods: Population-based surveys of young adults aged 15-24 have been carried out in Sao Paulo and Salvador, Brazil. These surveys provide information on what they know about AIDS, how they assess risk for various groups and for themselves, and steps taken to reduce risk.
Results: Results from the Salvador survey show that while young adults know about AIDS, and while they consider others to be at high risk, they consider their own risk to be low. While 70% of single sexually active men reported that they had taken action to reduce risk (mostly condom use), only 27% reported that they used condoms du ring their last sexual intercourse (38% for those who reported that they took action). One quarter of the men reported more than one partner in the previous month and condom use was higher for those with one than with more than one partner.

These results will be compared with those from the more recently carried out survey in San Paulo, Brazil.

E.786

E.787

AIDS KAP SURVEY IN METROPOLITAN LIMA-PERU

Luján, Manuel#; Li, Dina##; Foreit, James###; Payne, Alice####.
#Peruvian Health Ministry, Lima, Perú, ##Proyecto SIDA, Lima, Perú, ###Population Council, Lima, Perú, ####The Johns Hopkins University/Population Communication Services, Baltimore, Maryland, USA.

Objective. To provide baseline information for the design and, ultimately, the evaluation of a mass media education campaign.
Methods. A structured questionnaire was applied to 1922 men and women aged 15-44 included in a multistage stratified sample of the low and lower middle class population of the city of Lima.
Results. 97% of the people interviewed have heard about AIDS, and 91% knows AIDS is present in Perú. Most people can correctly cite the main routes of transmission, however, incorrect knowledge about how AIDS is not transmitted is prevalent (66% and 60%, respectively, believe saliva and the use of public toilets can spread AIDS).
A low proportion believes to be personally at risk of acquiring AIDS (28%); 13% admitted to having multiple sexual partners in the last six months, 36% have used a condom at least once and 7% had used it in the last month.
Most interviewees had obtained their AIDS information from the press. 98% thinks the total population should receive information about AIDS via radio and television. Furthermore, a very high proportion thinks a mass media campaign should promote the use of condoms in adults and young people, and 53% extends that to children.
Conclusions. Along with a high level of knowledge, myths and misconceptions about AIDS persist. The population, however, is well predisposed to mass educational activities. Despite the low use of condoms no major prejudices seem to be present for their promotion as a preventative aid.

E.788

E.789

E.790

HOW TO DEFEND RIGHTS IN WORKPLACE: PROBLEMS AND INSTRUMENTS IN ITALY

Tarocchi, Angiolo*; Agnoletto, V.*; Citterio, R.*; Capeoni, F.*; Frigerio, L.* and Tradati, C.*
*L.I.L.A.(Lega Italiana per la Lotta contro l'AIDS), Milan, Italy

Objective. To delineate problems and instruments to defend rights connected to HIV-infection on workplace in Italy.
Methods. Problems and instruments have been evaluated on the grounds of known discriminations on workplace, consultations with workers and trade-unionists, analysis of Italian laws and regulations in force and declaration WHO/ILO (Press Release WHO/24 5.7.88).
Results. A guide-platform has been elaborated. The arguments treated were: rights to work and to anonimity, inutility of HIV/AIDS screenings, overcoming of delay period, health and security on workplace, negotiation of working conditions and organization. Work and health institutions (information, prevention, assistance, etc.), social security. For this last argument a need of quicker bureaucracy has been underlined. The extension to claim-AIDS illness of the benefits provided for tuberculosis (Italian laws No. 1088/14.12.70 and No. 88/4.3.87, has been proposed.
Conclusions. Italian legislation contents instruments to face HIV-related problems on workplace and, if correctly enforced, to defend rights. Nevertheless, some adjustments regarding claim-AIDS illness will be necessary.

E.791

AIDSSAFE: AIDS PREVENTION TRAINING FOR FUNCTIONALLY IMPAIRED ADULTS

A. Houston-Hamilton,* N. Day,* P. Purnell* (*Polaris R &D, San Francisco)

Objective: To describe an effective AIDS prevention program for psychiatrically impaired and developmentally disabled populations
Methods: Patients at St. Elizabeth's Hospital in Washington, D.C participated in 90 minute group training sessions in groups of 10-15. A short video was developed especially for the target populations. Using a cartoon format to avoid overstimulation, the video discussed HIV dissemination via intravenous drug use and sexual contact in explicit terms and described methods for preventing exposure. The video depicted people of all ages, races, body types, and social classes and was followed by a question and answer period. Participants were then required to demonstrate understanding by using non-verbal methods to answer questions on the presentation and to verbally correct misunderstandings on the part of their peers. Sessions concluded with participants completing personal risk assessments based on drug and sexual behaviors in conjunction with the hospital's medical and counseling staff
Results: Over 1300 psychiatric outpatients with a wide range of diagnoses were trained. Comprehension of key points was demonstrated by over 90% of all patients who were not heavily medicated during training sessions. Use of the training program with developmentally disabled, functionally impaired and low literacy populations demonstrated similar results.
Conclusion: AIDS prevention education can be successfully undertaken with a variety of functionally impaired people.

E.792

EVALUATION OF DIFFERENT PREVENTIVE MEASURES

Heckmann, Wolfgang; et al. Sozialpädagogisches Institut Berlin, FRG

Objective: To present first results of different programs to prevent AIDS/HIV in the FRG: outreach work in the gay community and among prostitutes, support system for HIV-exposed children and their families, women-oriented HIV-prevention.
Methods: Evaluation took place by semi-structured interviews, questionnaires and protocol methods.
Results: 1. communicative strategies are potent for HIV-prevention among special target groups,
2. the health care system is - combined with the innovative potential of a special program - able to support children-at-risk,
3. a special program focussed on women's problems with HIV/AIDS can be helpful.
Conclusion: The "model programs", developed by the Federal Minister of Youth, Family, Women and Health are effective and prove the evidence of the psycho-social approach to AIDS prevention.

E.793

AIDS EDUCATION: A COMMUNITY DEVELOPMENT APPROACH

de Negri, Bérengère; Graybill, D. The Institute for Training & Development, Amherst, Mass. USA.

Objective: To present a global AIDS education and training strategy based on community development principles.
Methods: Presenters will outline a comprehensive model for AIDS prevention which: (a) is based upon Primary Health Care (PHC) philosophy and strategy; (b) builds upon existing formal and informal community structures, and (c) emphasizes communication, education and counseling procedures for reaching people directly and within the context of their own cultural traditions.
Results: Based on examples discussed in this paper a prerequisite for ensuring the success of AIDS education is a training program for national, regional, and local AIDS educators in how to plan, implement and evaluate AIDS education campaigns that are culturally appropriate, cost-effective, participatory and community-oriented.
Conclusions: AIDS intervention strategies must start with the support and commitment of the national leadership and then gain the support of local leaders for AIDS education. A participatory community development approach which incorporates nonformal education, the organizing of local community groups and experiential training methodologies are best suited to the implementation of effective AIDS education.

E.794

ADOLESCENTS AND AIDS.

R. Maul Swansea, United Kingdom

Objective: To assess the knowledge, attitudes and beliefs of 14-15 year old secondary schoolchildren, concerning AIDS.

Methods: Questionnaire survey - this involved administering pre-coded, self report questionnaires (completely anonymous and confidential) to a sample of 490 secondary school pupils. The data was analysed with SPSS software.
Results: Knowledge about AIDS among 14-15 year old schoolchildren.

AIDS is a fatal disease	94%
Caused by a virus	86%
Person could be infected and not have signs of AIDS	92%
Use of condom lowers the risk of AIDS	97%
AIDS infection spreads through:	
- sharing needles	98%
- infected blood transfusion	98%
- casual sex	93%

Conclusion: Despite sound knowledge about AIDS, 49% expressed much fear of AIDS and 44% expressed moderate fear. 21% to 28% expressed prejudice. 48% admitted there is strong to moderate pressure to have sex. We recommend that:
1. The attention of the media is focused on the modification of attitudes and behaviour.
2. School health education programmes with emphasis on sex, sexuality and sexually transmitted diseases be developed and implemented.

3. Such programmes are aimed at 12 to 13 age group.

E.795

DEVELOPING A SEXUALITY FRAMEWORK FOR YOUTH
FLUX. A.. FLUX Ray ABSTRACT 7695

'State of Flux' Partnership, Northwood Middlesex UK

Objective: At present, sexuality education which leads to safer behaviour is one major aspect of the defense of individuals and societies against HIV infection and AIDS. Education itself creates enormous potential for value conflict between different groups in society. This programme develops processes and materials which are 'values-sensitive' and lead to positive engagement between groups where conflict may occur.
Method: This is a programme of Action Research which has taken place in Melbourne Australia and Hillingdon Borough UK. It has resulted in two educational resource packs being designed, trialed, introduced and evaluated. Our research in schools and health care management has shown that peer education is a powerful medium for learning where individual choices are at issue and socially sensitive behaviours are sought. Educational materials emphasise information for making healthy choices and skills to enact those choices.
Results: A three-part research project in this area will be described with examples taken from 'Working Around AIDS Together' and the field trial evaluations.
Conclusion: Sexuality Education in British schools presents a major opportunity to retard the spread of HIV infection. Local boards of Governors Parents and Teachers require support, approaches and materials to sensitise their educational approach to the community they serve.

E.796

Audiovisuel
Audiovisual

E.797

TITLE: VIDEO PEER AIDS EDUCATION IN INCARCERATED ADOLESCENTS

AUTHORS: *Roseman, J., *Baker, C.J., *Firpo, R., * Huscroft, S., *Re, O., *Morris, R.
*Juvenile Court Health Services, Los Angeles County, California, USA

OBJECTIVE: To test the concept of peer education for AIDS high risk behavior among adolescents incarcerated within the Juvenile Halls, County of Los Angeles.

METHODS: Four videos were produced by the minors with their active participation in the film-making process as well.

RESULTS: Participation was enthusiastic and motivation was high. The level of knowledge acquired was substantial and sharing of information was adequate for all parameters: Involvement, awareness, dealing with facts and villingness to discuss feelings.

CONCLUSION: The concept of peer education proved to be particularly applicable to incarcerated juveniles as they tend to be alienated from their captors. The videos were an effective tool in education towards minimizing/preventing high risk behavior for AIDS.

E.798

"LE SIDA AU SENEGAL: DOCUMENTS AUDIOVISUELS"
BA O. CHU DAKAR SENEGAL
D'ALMEIDA L. "PLURALE" BP.5356 DAKAR-SENEGAL

OBJECTIFS Il s'agit de: mieux informer le grand publique, sur les modalités de prévention du SIDA; contribuer à une prise de conscience du grand public sur le péril que fait courir le SIDA et sur les responsabilités individuelles et collectives.
METHODES:

Le prétest à la réalisation des documents audiovisuels: réalisation d'une première série de documents puis évaluation sur la base d'un questionnaire auprès de 100 jeunes, 100 professionnels et 100 individus, pour aprécier et mesurer leur niveau d'information et leurs attitudes à la participation. Toute projection de ces documents est suivie de discussions.
RESULTATS:
Réalisation des documents audiovisuels, discussion et analyse des attitudes envisagées par bénéficiaires.

CONCLUSIONS:
Ces documents audiovisuels se conçoivent comme une participation à l'équité sociale: nul ne peut être exclu esd problèmes que pose le SIDA.

E.799

"ROULETTE"-EDUCATIONAL VIDEO ON AIDS
Gerbase,Antonio Carlos;Ferreira,J.;Tomasi,L.;Gerbase,C.
Secretaria da Saúde e do Meio Ambiente do Rio Grande do Sul, BRASIL.

The video presents four paralel stories that exemplify typical situations observed in the brazilian AIDS context. It features the lives of Ferando,a thirty-seven years old,high class homossexual man with multiple partners;Teodoro,a twenty-nine years old,middle class,bissexual man,married,father of one child;Carol,a seventeen year old middle class,drug addict girl; and the members of the AIDS control staff.

The multiple aspects of the problem,the relative risk of transmition,the risk behaviors and the ways to prevent the infection are shown and discussed in a clear and objective language.

The eduactional objectives of the video,wich is part of a kit including also posters,folders,slides ans tapes,is:

1)To reduce the populational neurosis on AIDS.

2)To give usefull information in order to try to change risk behaviors.

3)To motivate health teams to discuss the subject.

DURATION : 45 minutes.

E.800

VIDEO FILM SCREENING — OLGA'S STORY
Ashery, Rebecca S.
National Institute on Drug Abuse, Rockville, Maryland USA

The National Institute on Drug Abuse announces the availability of a video produced by the Latino Consortium/KCET in Los Angeles through a NIDA grant with the Georgetown University Child Development Center. Olga's Story is an interview tih a woman who has AIDS. She talks about her youngest child who also has AIDS and her will to live because of her children. She describes how she got the disease and the rejection by her family and begs whose who use drugs to stop. The videotape is produced in Spanish, however, a "dubbed" English version is available. The tape is 20 minutes long. Drug counselors and health professionals can use the videotape to educate Hispanic women and men who are at risk for AIDS because they are sexual partners of intravenous drug abusers or are drug abusers themselves. The videotape comes with a leader's guide and can be used as a "trigger" film to stimulate discussion about AIDS. The videotape is for adult audiences and is not appropriate for school prevention programs.

E.801

VIDEO FILM SCREENING — ALICIA
Ashery, Rebecca S.
National Institute on Drug Abuse, Rockville, Maryland USA

The National Institute on Drug Abuse announces the availability of a video produced by the Latino Consortium/KCET in Los Angeles through a NIDA grant with the Georgetown University Child Development Center. Alicia is a dramatic portrayal of a woman who learns that she and her child test positive for the human immunodeficiency virus (HIV). In an emotional scene she confronts her husband about his drug using behavior which caused the HIV infection. The meaning of HIV, AIDS, and modes of transmission are described in a clear, concise manner. The videotape is produced in Spanish. Drug counselors and health professionals can use the videotape to educate Hispanic women and men who are at risk for AIDS because they are sexual partners of intravenous drug abusers or are drug abusers themselves. The videotape comes with a leader's guide and can be used as a "trigger" film to stimulate discussion about AIDS. The videotape is for adult audiences and is not appropriate for school prevention programs. The videotape is 20 minutes long.

Divers
Miscellaneous

E.802

POTENTIAL RISKS OF ULTRAVIOLET RADIATION (UVR) IN HIV INFECTION.
FLEGG Peter J, I.D.U., Monsall Hospital, MANCHESTER. U.K.

OBJECTIVE: To determine the differences in recreational UVR exposure and the knowledge of its effects in HIV seropositives and in those not at risk of HIV in the light of reports that both UVA/UVB radiation are immunosuppressive and that UVR can activate HIV expression.
METHODS: Questionnaires were answered by 58 male homosexuals seropositive for HIV (11 with AIDS or ARC) and 61 controls matched for gender but not from an at risk category for HIV infection. Skin type was assessed from reported response to UVR.
RESULTS: Skin type and mean age did not differ between groups (HIV positives. 26.4 years, controls 24.8 years). HIV positives had significantly greater regular sunbed or solaria exposure than controls (20.7% vs 6.5%, $p<0.05$) and greater exposure to natural sunlight sufficient to tan or burn the skin over a 4 year period (11.5 weeks vs 9.5 weeks, $p = 0.06$). Knowledge of and attitudes to the harmful effects of UVR was similarly poor in both groups ("general health improved": 64% vs 57%; "immunity improved": 21% vs 23%). Only 60% of HIV positives and 53% controls thought UVR exposure could cause skin cancer. 65% of HIV positive also thought UVR exposure could improve the outcome of their HIV infection.
CONCLUSION: Knowledge of the harmful (photocarcinogenic and immunosuppressive) effects of UVR is poor. Greater exposure among HIV positives may partly be due to misconceptions that it might improve health and the outcome of HIV infection. HIV positives should be warned to reduce unnecessary UVR exposure in view of the theoretical risks involved.

E.803

INFORMATION, PREVENTION, EDUCATION: ETABLIR UNE THEORIE PREALABLE A L'ETABLISSEMENT DES STRATEGIES DE SANTE PUBLIQUE
Frédéric Edelmann*, JF Mettetal**
*ARCAT-SIDA, CNRS **Hôpital Necker, Paris, France

Objectif: affiner et renforcer les actions et les publications des organisations non gouvernementales.
Méthode: informatisation détaillée des demandes, analyse permanente des données, sondages, interviews.
Résultats: L'analyse de la situation française de 1985 à 1988 révèle assez facilement:
une absence de volonté politique, de moyens et de continuité dans la prévention du SIDA; un système palliatif fondé sur la publicité, sans évaluation préalable, ni évaluation publiée des résultats; une confusion générale entres les contenus des termes information, prévention, publicité, formation, et éducation.
Une évaluation régulière des demandes formulées et des besoins non formulés a conduit à élaborer une stratégie qui distingue clairement d'une part l'information, donnée, ou distribuée selon une hiérarchie verticale (médecin/patient, parents/enfants, professeurs/élèves, journaux/lecteurs, etc.), et d'autre part la prévention, c.à.d. un ensemble de savoirs, de techniques, de comportements, partagés par des individus en situation d'égalité théorique: couples, classes scolaires, membres d'association, groupes sociaux, etc. Dans ce cadre, la formation et l'éducation relèvent du domaine générique de l'information, même si l'éducation peut utiliser des techniques pédagogiques fondées sur l'échange.
Les tentatives de faire passer simultanément des informations, qui contiennent une charge émotive liée à la mort, et des messages de prévention liés à la gestion du plaisir et à la vie, rencontrent de fortes résistances. Elles ralentissent à la fois le passage de l'information, et l'acceptation de comportements de prévention, que la réduction des "campagnes de prévention" à la publicité pour les préservatifs ne favorise pas non plus. La prise en compte de ces difficultés a permis à l'ARCAT-SIDA d'affiner son action. Les demandes se sont depuis précisées, et l'efficacité des documents ou des interventions apparaît renforcée.
Conclusion: la clarification des notions d'information et de prévention semble, en France, être un préalable à toute campagne nationale ou ciblée

E.804

E.805

EDUCATION, INFORMATION, COMMUNICATION

MARY F. OWOR C/O UNICEF UGANDA, P.O. BOX 7047, KAMPALA.

BACKGROUND

AIDS was identified in Uganda in 1982. The National AIDS Control Programme was formed in 1986. In May 1988 the National School Health Education Programme, Ministry of Education, launched a Primary Science Syllabus with UNICEF assistance with AIDS as one of its topics under STD. This syllabus was designed by an Interministerial Panel formed in 1985. Awareness in Secondary Schools was organised because of the great threat of AIDS to young people in Uganda. Doctors and Educators were identified and trained in each District. From March 1988 the trained teams have been going around schools educating children and the community about AIDS.

METHOD

For each session a talk, illustrated with visual aids is given on History, Statistics, Modes of transmission, Social-economic implications, Myths and misconceptions, Available tests and Prevention of AIDS, followed by a question/answer discussion period.

IMPACT AND CONCLUSSION

By face-to-face interaction the teams are able to communicate information that the students had not received through other channels and correct misconceptions. It seems that there is a real break through in the fact that many students and the community feel free to discuss sensitive sexual issues openly. Communication between children and parents in the area of sex education thus seems quite improved. By March 1989 the Programme will have been introduced in all 34 Districts comprising of 7000 Primary and 800 Secondary Schools. Over 1,000,000 people have been made aware. The School AIDS Education Programme is being very well received throughout the country.

E.806

KNOWLEDGE,PERCEPTIONS AND ATTITUDES CONCERNING AIDS AMONG UNIVERSITY STUDENTS:PROPOSISTIONS FOR AN EDUCATIONAL PROGRAM.
Vermelho,Letícia L. *;Simões Barbosa,Regina M.*;Peres,Maurício A.*;
Sarantakos,Georgina*.
*UNIVERSITY HOSPITAL,FEDERAL UNIVERSITY OF RIO DE JANEIRO.

OBJECTIVE: To provide information for health educational programs based on real status of knowledge,perception and behavior related to AIDS among university students.
METHODS: Four hundred students of the Rio de Janeiro Federal University were interviewed and answered 41 questions each one.To analyse the results,simple proportions and higher correlations were infered from these questions with stronger associations.Finally,the epidemiological and psychosocial profile were defined and reported.
RESULTS:The disease etiology,main mechanisms of transmission and prevention were correctly answered by 75% of all students.There was,however,a significant increase of undecided and uninformed answers about the transmission by mosquitoes,saliva,cutlery,cups,water closet and others.Women's transmission is supposed to be associated with lesbianism.Information about the teatment and vaccine are poorly known.Finally,a strong prejudice correlated to homosexualism was observed.
CONCLUSION:Despite university students have a high level of information about AIDS from TV,newspaper,books,scientific reviews and others,the perception of the problem is distorted by prejudice and fear.Being AIDS a disease related to sexuality and death,subjects very difficult to deal with in terms of changing habits and behaviors,new Educational Programs should use new methodology based on these issues.

E.807

ADOPTION OF CHILDREN BORN TO HIV POSITIVE WOMEN

CORLETT Sandy*, K Skinner*, G O'Hara*, S Fowler*, J Mok**.
*Lothian Regional Council Social Work Department, Edinburgh
** Lothian Health Board, Edinburgh

Objective: To describe the placement in adoptive families of children born to HIV positive women.
Methods: Adoptive families were recruited from 2 sources 1) Foster families already caring for a child. All foster parents are informed and prepared to care for a child at risk of HIV, and some volunteered. Their strength of feeling for the child led these families to want to adopt. 2) Adoptive families specifically recruited for children at risk of HIV. All prospective adopters are informed about HIV, and told about children with special needs, including children at risk of HIV. Some families responded.
Results: 4 children have been adopted. All are now HIV negative with good health. Extensive preparation and support after placement includes medical advice, special support group, hygiene advice, practical help, financial subsidy. Issues are: dealing with the uncertainty of caring for a child who may become ill and die; confidentiality; what to tell the child.
Conclusion: Adoptive families have been found without special advertising from foster parents and prospective adopters. Informing all carers about HIV is crucial. Our experiences have informed development of an HIV screening policy for women placing children. Consideration of relatives as adopters of children whose parents die is a future issue.

E.808

SUPPORTED ACCOMMODATION FOR PEOPLE WITH H.I.V. RELATED ILLNESSES OR A.I.D.S. (S.A.T.A.)

Jane McArthur - K. Haughton and P. Davies - Lothian Region Council Social Work Department, Edinburgh.

Objectives
To outline our experience of developing a range of supported accommodation resources within the community.

Methods
Through the use of small Regional and Housing Association properties using a specially negotiated contract between ourselves and the Association. We aim to provide dispersed housing, with support which meets the needs of people with H.I.V./A.I.D.S. Most tenancies to date have been shared by two persons, with single rooms. All are furnished to a high standard. A gay couple able to provide lodgings for someone with H.I.V. have also been assessed and accepted on to our scheme. This development was achieved through advertising. Otherwise, contacts and negotiations have taken place with individual housing associations and housing providers. Contact with housing agencies has had two aims. Firstly, to achieve an element of positive discrimination for people with H.I.V./A.I.D.S. through direct tenancies involving a support agreement and secondly, to raise the issue of H.I.V./A.I.D.S. for housing agencies and promote good practice.

Results
Since October 1987, we have developed 10 such tenancies, and are offering support to 18 people altogether. We are in the process of negotiating further single tenancies and supported accommodation for single parents and their children. We are working in the main with current or ex-I.V. drug users, but in one instance, have a mix of ex-drug user and gay men. The support available is on a visiting basis, and centres on the practical and emotional means by which people with A.I.D.S. can remain in the community.

E.809

A COMMUNITY PROGRAM OF COMPREHENSIVE CARE FOR HIV DISEASE

Payne.F.*;Poretz.D.**;Sharrett.Carol*;Stage.T.***; Goldenberg.R.**;Morrison.A.**,*Fairfax County Health. Dept., Fairfax.Virginia. U.S.A.,**Fairfax Hospital.Fairfax.Virginia.U.S.A.,
***Community Services Board.Fairfax.Virginia.U.S.A.

Objective: To establish an interdisciplinary community based program for staging and case managing HIV infections which will prolong lives and slow the spread of HIV in the community.
Methods: The Fairfax County human services agencies, i.e., Health, Services Board, and Social Services have developed a voluntary program to provide education, continuing medical care, and psycho-social support to asymptomatic individuals infected with HIV. Patient sources are from the County's case finding activities, the substance abuse programs, private medical practitioners and hospitals. This program is linked to Fairfax Hospital's HIV Center to provide the broader range of care required for HIV case management. The program is 2 tiered: tier 1 consists of the County's interagency case management program (CMP) with primarily CDC Groups II and III. CMP provides every 6 months a social service, mental health, and medical evaluation including HIV p24 antigen and $\beta 2$ microglobulin assay. As the disease progresses to CDC Group IV, medical care responsibility shifts to tier 2, the Hospital's HIV Center which also serves the larger medical community.
Results: To date more than 300 cases mostly CDC Group IV have been followed by the medical staff of the Hospital's HIV Center. More than 30 cases have entered CMP during the first 18 months of operation.
Conclusion: We recommend that communities faced with serious drug abuse and/or STD problems consider similar programs.

E.810

The development of community-based AIDS initiatives

ROBIN GORNA, D. CAMPBELL, M. EEDE, D. HARRIS and M. HAZELL. The Terrence Higgins Trust (THT), London. England.

Objective To maintain a strong community base whilst developing, and professionalising the work of non-governmental organisations (NGO's) in responding to the AIDS crisis.
Method THT is the first UK, and the largest European, NGO concerned solely with HIV and AIDS. Services are provided by members of the community for one another. Since 1982, when THT was founded, increasing numbers of community based initatives are developing in the UK to access their own community groups.
Results The most effective health education occurs when community groups provide their own education - this is appropriate to the groups' existing behaviour, acknowledge obstacles to change and presents risk reduction as a positive alternative. This work is based in communities defined by area, institutional groupings or, more commonly, shared characteristics (eg sexuality, gender, age, use of drugs, ethnic groupings). Support services tend to be organised according to the person's medical diagnosis, or relationship to the diagnosed person (eg Buddies for people with ARC/AIDS, HIV+ve support groups, lover's support groups, family support networks). As community based organisations develop in numbers of clients, staff and volunteers, the services (education and support) must be increasingly professional, but not become distanced or lose their community base. These must complement statutory services rather than replace them.
Conclusion Community based organisations work on a level with people and by sharing skills and resources with statutory services we can avoid duplication and use our abilities more fully for a comprehensive response to their health crisis.

E.811

STATE OF THE ART MEDICAL CARE FOR AIDS PRISONERS

Bellin, Eran; SAFYER, S.; BRASLOW, C.; MONTEFIORE MEDICAL CENTER RIKERS ISLAND HEALTH SERVICE. QUEENS, N.Y. USA

Objective. To describe the medical needs of ambulatory AIDS prisoners and the complex policy considerations necessary in managing their care in a prison.
Method. A 40-man open dormitory for prisoners with CDC defined AIDS was organized for the delivery of prophylactic and therapeutic medical and mental health services on Rikers Island NYC. Rikers Island houses NYC inmates awaiting trial or who have been sentenced for periods less than one year.
Results. In the first 2.5 months 61 patients were cared for with a median age of 33 and median duration of diagnosis of AIDS prior to incarceration of 2 months (0,62). Major diseases experienced historically by our patients included: 50 PCP, 4 CNS TOXO, 3 large cell lymphoma, 1 B cell lymphoma, 2 extrapulmonary TB, 1 PML, and 1 cryptococcus meningitis. 8 patients were discharged to the hospital and did not return as of December 15. 7 patients had a history of TB and an additional 10 were PPD positive.10 had evidence of syphilis by history or screening blood test. A maximal temperature greater than 102 F was observed 3 times per 100 patient-days.

The treatment of AIDS patients in prison is fraught with conflicting objectives. The prison is a place of confinement and punishment while the physician's role is to heal and to relieve pain. The patient wants to improve his medical condition but also may benefit from appearing debilitated when considered for compassionate judicial release. Physicians wish to relieve legitimate pain even if pathology is not demonstrable; but they resist behavior perceived as purely drug seeking in nature.
Conclusion. AIDS patients can receive state of the art care in prison. One group's approach to the many challenges of prison AIDS care will be reviewed.

E.812

UNE APPROCHE INTERPERSONNELLE A LA REDUCTION DES RISQUES ADAPTEE A L'AFRIQUE CENTRALE

Payanzo Ntsomo, Walu Engundu, Rukarangira wa Nkera et Brooke G. Schoepf, Projet CONNAISSIDA, Kinshasa, Zaire.

La population adulte de Kinshasa, dans sa grande majorité, savait déjà en mi-1987, que le SIDA était une maladie fatale, transmise en grande partie par relations sexuelles avec des partenaires infectés. Néanmoins, peu de gens à risque changèrent les comportements qui rendent susceptibles à l'infection et beaucoup nièrent leur vulnérabilité. Cette communication résume les contraintes socioéconomiques, culturelles, cognitives et psychologiques. Elle présente une stratégie qui peut amener différents groupes parmi la population à prendre conscience de la nécessité de changement.

Basés sur les résultats des recherches ethnographiques, des ateliers furent organisés employant des méthodes d'enseignement actif. Les expériences structurées aident les participants à analyser leur situation et à se soutenir mutuellement dans les mesures à prendre. Cette méthode de communication interpersonnelle peut être utilisée par des organismes gouvernementaux, des réseaux informels, des services de santé et des écoles en conjonction avec des campagnes de communication de masse.

E.813

Tittle: Trends in prevalence of HIV infection among populations at high risk at Madrid.

E. Estebanez, F. Babin, MV. Zunzunegui*, C. Ortiz, , I. Pascual, C. Colomo, Madrid Council, *EASP Granada.

Objective: To study changes in HIV prevalence and coverage of the AIDS prevention and control program of the Center for Health Promotion located in the inner city of Madrid, during 1986-1988. Methods: 1504 IVDUs, 831 homosexuals, 94 IVDU prostitutes, 150 non-IVDUs street walkers, 338 sexual partners of high risk individuals, attending the Center. Prevalence, sociodemographic characteristics, high risk practices were studied among these high risk groups in each semester of the three years. Results: Prevalence of HIV among IVDUs remains around 60% during 1986-1987, decreasing slightly during 1988 to 55%. Prevalence of HIV infection among homosexuals started aaround 14%, increased to 26% and decreased to 12% in 1988. Among IVDU prostitutes, prevalence of HIV stays around 60%. Among the street walkers who are not IV drug users, there is only one seropositive, who is partner of a IVDU. In sexual partners of high risk individuals, prevalence varies around 8%. Coverage among IVDUs increases during 1987 in 100%. Among homosexuals, IVDU prostitutes and non-IVDU street walkers, coverage remains stable. Among sexual partners of high risk individuals coverage increases in 327% during 1987. Risk factors for HIV infection and sociodemographic characteristics associated with coverage will be presented. Conclusion: Prevalence of HIV infection remains stable among risk groups, without significant diferences. Coverage of the program increases during 1987, coinciding with national campaigns.

E.814

AIDS AND ITALIAN LEGISLATION IN WORKPLACE. PROBLEMS AND PERSPECTIVES.

Tarocchi Angiolo*; Agnoletto,V.*; Citterio,R.*; Caponi,F.*; Frigerio,L.* and Tradati,C.*
*L.I.L.A.(Lega Italiana per la Lotta contro l'AIDS),Milan,Italy.

Objective.To delineate problems and instruments to defend civil rights and right to work, in connection with HIV-infection in workplaces in Italy.
Methods.Problems and istruments have been evaluated on the grounds of known discriminations on workplace, consultations with workers and trade-union personnel, analysis of italian laws and regulations in force.
Results. A guide-platform has been elaborated, whose contents are: rights to work and to anonimity, uselessness of HIV/AIDS screenings, overcoming of delay period, health and safety on workplace, negotiation of work conditions and organization, work and health institutions (information, prevention, assistance etc.), social security.
Conclusions. Italian legislation contains instruments to face HIV-related problems on workplace and, if correctly enforced, defend rights, while putting in action aimed and detailed programs of information, prevention, counselling and requalification. Nevertheless, some adjustments regarding manifest-AIDS illness will be necessary. For these cases LILA has recently presented to the Italian Parliament a law for the non-dismissability, a monthly allowance and the validity of the period of illness for the pension.

SECTION F

Droit et éthique

Ethics and Law

Vue d'ensemble de la législation sur le SIDA
Global Survey of AIDS Legislation

M.F.0.1 THE HUMAN RIGHTS CONTEXT OF AIDS LAW

Justice Michael Kirly. Member, Global Commission on AIDS), Sydney, Australia.

In this paper, the speaker will stress the context of developing human rights jurisprudence within which national and subnatioal legislation dealing with AIDS and HIV must be developed. This is necessary not only because derogations from such norms diminish the effectiveness of such laws as measures for individual behaviour modification. It is also necessary because such norms are often legally binding on states and are morally binding as providing basic rules to be respected because of the very humanness of the person affected and his or her family and friends. The Global Commission on AIDS in its first report emphasised the necessity for WHO and national programmes and laws on AIDS to be developed with full knowledge of and compliance with universal human rights norms. These include rights to privacy, to establish a family, to move freely in international travel etc. Derogations from such basic rights must be provided by law, be proportional to the risk and limited strictly to what is necessary to prevent the spread of the HIV infection. Measures for public health do not provide a blanket exemption from compliance with basic rules of human rights.

M.F.0.3 STATE AIDS LEGISLATIVE AND POLICY TRENDS: 1983-1988

Rowe, Mona; Merritt, D.M.; Ryan, C.C.; Bridgeham, B.; and Bowleg, L.
AIDS Policy Center, Intergovernmental Health Policy Project, The George Washington University, Washington, DC. U.S.A.

Objective. To describe the response of state legislatures to the epidemic from 1983-1988 and to analyze the evolution of state AIDS policy on key issues affecting confidentiality, discrimination and prevention and the delivery of services. Method. All bills and laws were collected from all state legislatures from 1983-1988. They were analyzed by category, frequency and content from both a legislative and health policy perspective. Results. Since 1983, more than 1,456 bills and 314 laws have been passed by state legislatures. Categories reviewed include: testing, discrimination, confidentiality, health care services, financing, education and public health measures. More legislation has been introduced and passed regarding HIV testing than in any other area with related activity in areas of confidentiality and required disclosure. States are using AIDS to update their public health laws in terms of managing communicable, infectious and sexually transmitted disease. State handicapped laws and new provisions are being used to protect patients and providers from AIDS-related discrimination. Some states are taking a comprehensive approach to managing AIDS through omnibus legislation. A wide range of provisions including criminal penalties, due process for existing quarantine provisions, protections for anonymous testing and for health care providers are being added. Conclusion. Almost all states have passed AIDS legislation. Level of legislative activity does not always correlate with case incidence. Overall, final state actions evidence a measured, balanced, non-partisan response.

M.F.0.2 IMPLEMENTING HIV/AIDS LEGISLATIVE POLICY FOCUSING ON ETHICAL ISSUES IN A NATIONAL HEALTH CARE SYSTEM

Peterson, Marvelu*; Mather, S.H.*; Shelp, E.**; Stout, N.*; Sverha, S.*; Allen, R.*
*Department of Veterans Affairs, Washington, D.C., USA, **Foundation for Interfaith Research and Ministry, BelAire, Texas, USA.

Objective: To implement model Federal AIDS legislation focusing on significant ethical issues in the largest health care system in the USA.
Methods: In May 1988, the President signed Congressional legislation specific to the care of veterans with HIV infection/AIDS in the Veterans Administration. This legislation addresses significant ethical issues still subject to diverse opinion such as privacy and confidentiality of medical records; nondiscrimination in admission and treatment; self-determination and a voluntary testing program which incorporates the principle of justice and resource distribution. Broad policy direction including a system wide consent form has been sent to all health care facilities. A national training program on HIV/AIDS counseling and prevention education has been used as a forum to standardize the information process.
Results: Two counselors/educators from each facility in the system attend the course. The application of policy is discussed within the framework of ethical considerations every counselor should think about, such as mutual respect within moral pluralism, personal morality and professional limitations, professional duties, honesty in presentation of information; autonomy and consent and confidentiality and the thorny issue of spouse/sexual partner notification.
Conclusion: Despite a lack of moral consensus on some issues, legislation based on ethical issues can be implemented on a national scale.

M.F.0.4 THE LIMITS AND PROSPECTS OF AIDS LEGISLATION IN ANGLOPHONE AFRICA

AKAWASI AIDOO IDRC,DAKAR, SENEGAL.

OBJECTIVE: To survey and analyse the effectiveness of existing AIDS legislation in Anglophone Africa.
METHOD. Content analysis of existing health laws and AIDS legislation.

RESULTS: In most Anglophone African countries, specific legal instruments for dealing with AIDS prevention are lacking. Where AIDS-related health laws exist their application to the epidemic of AIDS is weak. The greatest potential for appropriate (i.e. humane) and effective AIDS legislation seems to be in those countries with better organized public health services, greater public awareness of the epidemic, legal sensitivity to the epidemic, and a tradition of human reghts legislation.
CONCLUSION: There is an urgent need for effective and appropriate legislation to deal with the prevention of AIDS in Anglophone Africa. Fulfilment of this need will help to significantly reduce the social stigma and criminalization of AIDS and HIV victims.

M.F.0.5 AIDS IN COURT: IMPORTANT QUEBEC DEVELOPMENTS

Letellier de St.-Just, Louis. Montreal, Quebec Canada

M.F.0.6 A GLOBAL SURVEY OF AIDS LEGISLATION

Gostin, Lawrence O. Harvard University, School of Public Health, Boston, [illegible] USA

Vue d'ensemble de la législation sur le SIDA
Global Survey of AIDS Legislation

M.F.O.7 A GLOBAL SURVEY OF AIDS LEGISLATION

Curran, William J. Harvard University, School of Public Health, Boston, MA. USA.

Points de controverse dans les rapports sur les politiques relatives au SIDA
Points of Controversy between Policy Reports on AIDS

M.F.O.8 POINTS OF CONTROVERSY BETWEEN POLICY REPORTS ON AIDS (INTRODUCTION).
Chrétien, Michel, Montréal, Quebec, Canada.

M.F.O.9 POINTS OF CONTROVERSY BETWEEN POLICY REPORTS ON AIDS
Pompidou Alain, Paris, France

M.F.O.10 POINTS OF CONTROVERSY BETWEEN POLICY REPORTS ON AIDS
Osborn, June, Ann Arbor, Michigan, USA

M.F.O.11 POINTS OF CONTROVERSY BETWEEN POLICY REPORTS ON AIDS
Nathanson, Vivienne, London, United Kingdom

M.F.O.12 POINTS OF CONTROVERSY BETWEEN POLICY REPORTS ON AIDS
A representative of the WHO, Geneva, Switzerland

M.F.O.13 POINTS OF CONTROVERSY BETWEEN REPORTS ON AIDS
Martin, Jean, Lauzanne, Switzerland

M.F.O.13.A POINTS OF CONTROVERSY BETWEEN POLICY REPORTS ON AIDS
Gilmore, Norbert, Montreal, Quebec, Canada

Éthique et injustice sur le plan international
Ethics and international inequity

M.F.0.14 THE ETHICS OF INTERNATIONAL INEQUITY (OVERVIEW)

Koucher, Bernard. Paris, France.

M.F.0.15 INTERNATIONAL CODES OF RESEARCH ETHICS: SHOULD NUREMBERG AND HELSINKI BE SUSPENDED DURING THE AIDS EPIDEMIC?

Annas, George J. Law, Medicine & Ethics Program, Boston University Schools of Medicine and Public Health, Boston, Mass., USA

Objective: To establish the basis of international codes of research ethics and their relevance to AIDS drug and vaccine research today.

Methods: The basis for the Nuremberg Code and the Helsinki Code will be examined with a view toward establishing the universal principles contained in these Codes are their applicability to research conducted during an epidemic, and research conducted in countries that had not participated in the formulation of these Codes.

Results: Based on this analysis, it is possible to explain the legal and ethical bases of existing international codes of research ethics, including their "natural law" basis which would mandate their universal applicability. Special attention is properly focused on the principles of self-determination (autonomy) to be safeguarded by informed consent; nonmaleficence, to be safeguarded by adherence to reasonable scientific principles in research design and execution; and justice, to be safeguarded by fairly distributing the risks and benefits of the research.

Conclusion: The AIDS epidemic does not justify a suspension of the codes that safeguard human rights in medical research.

M.F.0.16 LIMITED RESOURCES FOR AIDS

N'Galy, Bosenge. Kinshasa, USA.

M.F.0.17 THE DEARTH OF THERAPEUTIC AGENTS IN DEVELOPING COUNTRIES

de Sweemer, Cécile. International Development Research Centre, Dakar, Sénégal.

M.F.0.18 OVERCOMING THE NIMBY SYNDROME FOR FACILITIES TO CARE FOR HIV INFECTED PEOPLE

Stein, Robert E. Evironmental Mediation International, Washington, D.C. USA.

M.F.0.19 A FOCUS ON LATIN AMERICA

Connor, Susan S. Washington, DC, USA

M.F.O.19.A ETHICS AND INEQUITY

Sabbatier, Renée. London, UK

La confidentialité et ses limites
Confidentiality and Its Limits

T.F.0.1

CONFIDENTIALITY AND ITS LIMITS: OVERVIEW OF THE ISSUES.

Closen, Michael L. Chicago, Illinois, USA.

T.F.0.2

X v Y (1988); WHEN IS CONFIDENTIALITY A LEGAL RIGHT? Harris, Dai; Legal Officer, The Terrence Higgins Trust Legal Centre. UNITED KINGDOM

Objective: To review the legal right of confidentiality to see when it is overriden by the public interest exceptions either to protect others or the freedom of the press.
Methods: When is information legally confidential as opposed to just private ? Examination of legislation and case law in the UK. Clinical information identifying people with AIDS in confidential (viz, NHS ((Regs)) 1974, and the case of X v Y (1988)). There is a primary duty to the patient to keep medical information confidential which may only be overriden by a doctor when it is in the public interest. Rarely, is it legally advisable to breach confidentiality to serve the wider public interest of protecting others. Only when there was a clear infection risk could a doctor be legally liable for failure to disclose.
Conclusion: X v Y (1988) 2 All ER 648, was a English court case concerning two doctors who had AIDS. A newspaper obtained the confidential hospital records identifying the doctors but the court granted an injunction restraining publication. The judge said that the confidentiality of the hospital records was more important that protecting the public from theoretical risks posed by the doctors, and the freedom of the press to publish such information.

T.F.0.3

THE STIGMA OF AIDS ON THE DEATH CERTIFICATE

King, Michael, B.

Institute of Psychiatry, De Crespigny Park, London SE5, U.K.

Death registration became constitutional law in England and Wales in 1836 and physicians have been urged ever since to accurately record the cause of death. Until the advent of AIDS, more liberal attitudes in society had reduced the stigma of most causes of death as an obstacle to their accurate certification. AIDS or HIV infection will usually appear on the Death Certificate as the condition leading to death or as another associated condition. This has major ramifications for the bereaved and may have particular implications for surviving family members with regard to placement of children in foster homes.

For historical reasons death records in most countries of the world are public documents and provide no safeguard for the privacy of sufferers after death. Patients with AIDS encounter many social and psychological problems and thus the importance of confidentiality has been established in guidelines provided by bodies such as the American and British Medical Associations. In the USA there have been calls to adopt a two part death certificate, mainly for purposes of reducing delay for relatives pending further clinical or autopsy information. However greater privacy would also result with a two part certificate, one of which, without stating cause of death, could be used for the legal and civil necessities after death.

T.F.0.4

AIDS AND PRIVACY: RETAINING, RESTRUCTURING OR ABANDONING MEDICAL CONFIDENTIALITY?
Glenn, H. Patrick*; Morissette, Y.-M.*; Gilmore, N.*; Somerville, M.*
*Centre for Medicine, Ethics and Law, McGill University, Montreal, Quebec, Canada.

Confidentiality of HIV/AIDS-related personal information (HIVARPI) has suffered from: (i) increasingly vacuous concept of medical confidentiality in era of institutional medical care; (ii) inability of formal law to control effectively flow of personal information. Further legislative regulation of medical confidentiality therefore unlikely to produce greater protection. Reliance should be placed on increasingly articulate soft law (guidelines, policy, protocols) to formulate precise measure of protection accorded particular category of HIVARPI. Measures proposed are known; systemic potential not been exploited. Each embodies inherent degree of protection. Measures of protection are: (i) unlinked, providing absolute protection; (ii) anonymous, allowing control exclusively by subject of information; (iii) coded, allowing control by designated individuals only; (iv) nominal, necessarily accompanied by stated further measures of protection. Mandatory, exclusive use of these measures of protection in all institutional settings will: concentrate attention on HIVARPI; prevent reliance on ineffective concept of confidentiality; provide courts with precise standards to measure alleged breaches of privacy and damages. Paper suggests application of measures to number of categories of HIVARPI. Method capable of extension to all personal medical information

T.F.0.5

AIDS AND THE CANADIAN PRIVACY ACT

Grace, John; Privacy Commissioner of Canada, Ottawa, Ontario, Canada

Significance of the Study. The study describes the impact of Canada's Privacy Act on the collection, use and disclosure of AIDS-related information about individuals. The level of confidentiality afforded this information may affect the degree of discrimination experienced by HIV-infected persons and may also affect the rate of spread of HIV infection. The study seeks to strike a balance between individual privacy and the legitimate needs of government to collect, use and disclose some types of AIDS-related personal information.
Methods. The study reviews Canadian government policies and practices for dealing with AIDS-related information about government employees, the general public and government clients (such as immigrants or penitentiary inmates). These policies and practices are assessed against the requirements of the Privacy Act about handling personal information. They are also assessed against the practical need to use some types of AIDS-related personal information to understand the syndrome and to combat the spread of HIV infection. It also addresses privacy concerns relating to HIV antibody testing.
Results. The study recommends measures to regulate the collection, use and disclosure of AIDS-related personal information. The recommendations will be useful for other jurisdictions attempting to strike an appropriate policy on the treatment of AIDS-related personal information.

T.F.0.6

MEDICAL PRIVACY FOR THE HIV-INFECTED INDIVIDUAL
Hockenberry, Clint, Administrator, AIDS Legal Referral Panel, San Francisco, CA, USA.

Partial Listing of 1988 Conferences

I.	National AIDSLaw Conf., S.F.	400 Participants
II.	Nev. Public Health Assoc., Las Vegas	100 Participants
III.	University of California, S.F.	1,000 Participants
IV.	Concern for Dying, N.Y.	50 Participants

Objective. To explore the lack of confidentiality protections for persons with HIV infection and generally to describe the decline of medical privacy.
Methods. Review of the concept of confidentiality within the physician/patient relationship. Examination of AIDS Legal Referral Panel case studies of health care providers' violation of Calif. confidentiality laws that resulted in injury to the patient. Analysis of limited exceptions to the general rule against disclosure of private medical information, including disclosure (1) after patient waiver, (2) to institutional staff, (3) to hospital visitors, (4) to a foreseeable victim of serious harm (Tarasoff), and (5) to others where health laws require.
Results. Despite the strongest confidentiality protections of any U.S. state, examination of pre-1989 California legal cases indicates erosion of medical privacy for HIV infected persons.
Conclusion. Communications between patient and care provider can no longer be considered confidential.

La confidentialité et ses limites
Confidentiality and its Limits

T.F.0.7

SIDA : LE SECRET MEDICAL BOUSCULE

M.P. LARHER*, J. CHARREL*, P. ENEL*, C. MANUEL*, J.L. SAN MARCO*

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Aux Etats-Unis, il est prévu 200.000 cas de SIDA pour 1991. Les études épidémiologiques confirment les éléments déjà connus. Le SIDA atteint tous les continents et le nombre de cas est en augmentation constante.

Quel est le phénomène nouveau lié au SIDA qui bouscule les institutions juridiques de la santé ?
Les dispositions du code de déontologie médicale en France imposent au médecin le secret professionnel. Au corps médical incombe la lourde responsabilité de limiter le danger épidémiologique pour le groupe social et de respecter le contrat moral du secret qui le lie à ses patients sidéens.
Sur la base des codes de déontologie en application en France, en Grande-Bretagne, en R.F.A., et aux U.S.A. nous nous proposons d'étudier ce que prévoit la loi et ce qui se fait en pratique pour limiter un problème de Santé Publique qui s'aggrave.

T.F.0.8

MARTIN HEBERT, lawyer, Montreal, Quebec, Canada
AIDS, A SOURCE OF CONFLICT BETWEEN FUNDAMENTAL RIGHTS-
A COMMENTARY

No matter how fundamental they are, human rights do not have an absolute bearing and unconditional application. To respect the human autonomy, integrity, and dignity in enshrining confidentiality as a fundamental right in order that personal information be not disclosed to a third party without the consent of the patient is a matter. To give priority to the respect of confidentiality to the extent of jeopardizing the integrity and security of someone else is another matter. In certain exceptional circumstances, disclosing confidential information, or breaking professional secrecy may, in the last resort, prove to be justifiable.
After having attempted to make the sero-positive person responsible, after having failed in that effort of persuasion, after having attempted in vain by all possible means to protect the third party or parties truly threatened, in other words before a clear absence of alternatives, it may happen that one must ultimately choose between the respect of confidentiality of someone and the integrity of someone else.
The first purpose of the respect of confidentiality is not to jeopardize someone else. What confers solemnity to professional secrecy, is not the blessing it may give to a behaviour not only irresponsible but also objectively threatening. Hence when respecting confidentiality leads to such results, doesn't it amount to divert confidentiality from its purpose? If one must beforehand and unconditionally assure the patient of the respect of confidentiality in all circumstances, this does not only amount to a relation of trust that one wants to maintain but also a relation of complicity that one could built.

T.F.0.9

COMMENTARY

Marshall, T. David, Ottawa, Canada

Éthique clinique
Clinical Ethics

T.F.0.10

Overview of the Issues
David J. Roy, Director, Center for Bioethics
Clinical Research Institute of Montreal, Canada

The most difficult clinical, ethical, and legal issues arise when we ask whether or when it is justified to withhold or discontinue aggressive life support to allow persons with seriously debilitating or with end-stage disease to die. The attempt to resolve these issues may generate conflict between the principles of philosophical and medical ethics, the current state of the law and jurisprudence, the maxims of clinical experience, and the variant moral persuasions and perceptions of people in societies as highly pluralistic as our own.

However, these issues arise in the care of patients afflicted with many kinds of conditions and diseases. They are not distinctive to AIDS. Moreover, these issues are not new. Attention here will be given to those issues that are distinctive to the treatment and care of AIDS patients. Some of these issues are: the physician's duty to treat; the attitude of professionals towards persons with AIDS; conflicts over confidentiality; the resuscitation of suicide attempts; how to manage requests for rapid, painless death.

T.F.0.11

"PHYSICIANS, ETHICS AND AIDS": A FRAMEWORK FOR ETHICAL ANALYSIS OF HIV/AIDS.
Somerville, Margaret A*, Gilmore, N*, and Canadian Medical Association**.
*McGill Centre for Medicine, Ethics and Law, McGill University, Montreal, Quebec, and **Ottawa, Ontario, Canada

Objective To develop a comprehensive framework within which: ethical issues relating to physicians and HIV/AIDS can be identified, defined and analyzed; relevant general principles and, second, any exceptions to these principles can be articulated; and recommendations indicating ethically responsible professional conduct relating to HIV/AIDS can be formulated.
Methods The principles adopted in developing this framework include: respect for persons; non-maleficence; beneficence; and justice. The framework has been based upon the presumption that HIV/AIDS should not be treated in isolation from other health and social issues, and that it should identify both the responsibilities and the rights of physicians relating to HIV/AIDS.
Results The ethical issues relating to physicians and HIV/AIDS can be usefully divided into three categories: 1) the generation and recording of information relating to HIV/AIDS; 2) the communication of such information; and 3) the allocation and provision of health services relating to HIV/AIDS. Thus, the framework includes:
1. GENERATION OF INFORMATION RELATING TO HIV/AIDS: includes issues raised by HIV antibody testing and screening of patients and of physicians, and the secondary generation of information from medical records and other documents;
2. COMMUNICATION OF INFORMATION RELATING TO HIV/AIDS: includes issues raised by communication to patients (informed consent, notification, and counselling), communication to others (confidentiality, reporting, and contact tracing), communication to health care professionals, and education of physicians and the community;
3. HEALTH CARE SERVICES RELATING TO HIV/AIDS: includes issues of rights to care (resource allocation, access to services, refusal to care or treat, research, and novel therapies), rights in care (standards of care and referral of patients) and specific services (e.g autologous transfusions).
Conclusion Ethical issues relating to HIV/AIDS must be examined within a framework that enables them to be comprehensively and thoroughly analyzed and connected with wider health and social issues. This framework will assist in accomplishing this aim.

T.F.0.12

THE ETHICAL DUTY OF HEALTH PROFESSIONALS TO CARE FOR PERSONS WITH AIDS AND HIV INFECTIONS

Jonsen, Albert R.; University of Washington, Seattle, Washington, U.S.A.

Objective. To review the ethical arguments in support of the obligation of health professionals to provide those medical services to HIV infected persons that would be provided to non-infected patients with similar medical needs.
Method. Critical review of the relevant published American literature on this subject.
Conclusion. There is a strong obligation to treat HIV infected persons equally with non-infected patients, even at risk to the provider. Exceptions to this duty are few.

T.F.0.13

HIV SCREENING FOR EARLY THERAPEUTIC INTERVENTION: AN ETHICAL ANALYSIS
Levine, Carol*, Bayer, R.**
*Citizens Commission on AIDS for New York City and Northern New Jersey, New York, NY, USA; **School of Public Health, Columbia University, NY, NY, USA

There is a growing sense among clinicians and patients, supported by early but incomplete research evidence, that early treatment of asymptomatic HIV infection is beneficial. In an ethical analysis of potential screening programs for clinical purposes, it is important to distinguish these purposes from other potential justifications for screening such as prevention of transmission, infection control, or epidemiologic surveillance. Early therapeutic intervention has both benefits and risks. Treatment is as yet unproven, costly, and with significant potential side effects. But AIDS is still ultimately a fatal disease, and early intervention offers both the potential of prolonging life and psychological benefits. Considering both benefits and risks, we conclude: (1) There is no justification for mandatory screening on the grounds of therapeutic benefit, for competent adults or for newborns. (2) There are now clinical grounds for routinely offering confidential or anonymous, voluntary HIV antibody testing to all those who may have been infected with HIV. (3) Testing of competent adults should be based on explicit informed consent. (4) High-quality laboratory services must be used. (5) HIV-infected individuals should be protected against discrimination. (6) Screening programs to identify asymptomatic individuals which do not at the same time plan for appropriate follow-up services fail to meet the ethical standards of justice or beneficence.

T.F.0.14

T.F.0.15

LE MéDECIN DIFFICILE
ROBERT,Jean. Département de Santé communautaire, Hôpital Saint-Luc,Montréal,Québec.Canada

Il est impossible au médecin et au soignant de ne pas réagir même émotivement devant un agent agresseur nouveau, une maladie jusqu'à récemment inconnue et surtout devant l'impuissance de la médecine à guérir. Pour plusieurs il s'agit de «la maladie du désespoir». Comme partie de la société bien pensante il éprouve de grands malaises à être confronté avec la sexualité, les sexualités et sa sexualité. Il se reconnait en terme de tranche d'âge, de groupe d'appartenance, chez ses malades sidéens, séropositifs ou tout simplement inquiets. Lui aussi manifeste de la négation (il refuse des soins), il manipule facilement (chantage thérapeutique), il agresse souvent à son insu (moralise sur la situation). Plusieurs se dépriment, décompensent, modifient ou cessent leur pratique. Sur le plan personnel certains paniquent, s'auto-prélèvent sous pseudonyme, et obtiennent des résultats préliminaires non encore confirmés. La pratique nous a confrontés avec des médecins toxicomanes, homosexuels/les, et aussi avec des médecins séropositifs ou sidéens. Le médecin peut, lui aussi, présenter des difficultés de comportement.

Éthique clinique
Clinical Ethics

T.F.0.16

OLIVIER Dr CLEMENT
CLINIQUE MEDICALE L'ACTUEL, MONTREAL
QUEBEC, CANADA

LE PATIENT DIFFICILE

Cinq prototypes de réactions des patients au diagnostic de séropositivité au VIH ou de SIDA sont abordés. La négation, la manipulation, l'agressivité, la dépression et la panique sont des réactions auxquelles les médecins ont à faire face. La dynamique patient-médecin engendrée par ces réactions est nouvelle à cause en partie du caractère imprévisible de l'évolution des aspects cliniques, psychosociaux et scientifiques reliés au VIH.

Ces réactions forcent désormais à une nouvelle approche du médecin qu'il est urgent de définir pour la survie du médecin et du patient devant l'intolérance sans cesse croissante d'une partie de la société et d'une partie du corps médical face au SIDA.

Devant l'absence de vaccin et de traitement efficaces, la confiance aveugle de la société envers les médecins s'estompe progressivement et tant que les médecins persisteront à se protéger derrière leurs armes thérapeutiques, le regard critique posé sur eux par la société s'accentuera.

Infection par le VIH, reproduction et fonction parentale
HIV Infection, Reproduction and Parenthood

T.F.0.17 Overview of the Issues

Bernard M. Dickens, Faculty of Law and Faculty of Medicine, University of Toronto, Canada M5S 2C5

Key ethical issues in HIV infection and reproduction arise at different stages of pregnancy. They include:

1. **Initiation of Pregnancy:** Counseling of the HIV-positive woman about risks of pregnancy to her health-directive or non-directive; advice about risks of HIV transmission *in utero*; access to reproductive assistance - gamete donation, *in vitro* fertilization, etc; screening donated gametes/donors for HIV; access to/supply of contraceptive means/sterilization.

2. **Maintenance of pregnancy:** Access to health services, pre-natal care, etc. for the HIV-positive woman; counseling on continuation/termination of pregnancy.

3. **Termination of pregnancy:** Access to abortion services and counseling; health care during and after delivery; risk to uninfected child of natural delivery - risk of infection by passage through birth canal/court-ordered cesarean delivery; post-natal care of HIV-infected child.

4. **Post-natal Issues:** Prohibition of breast feeding uninfected child - child abuse; foster parent/adoptive parent of infected/uninfected child-confidentiality and the (parental) right to know.

T.F.0.18 ETHICAL DILEMMAS IN PEDIATRIC AND MATERNAL AIDS

Willoughby, Anne, Wright, A. and Novello, A.

National Institute of Child Health and Human Development,
National Institutes of Health, Bethesda, Maryland, USA.

Objectives. To describe ethical dilemmas which are specific to pediatric and maternal human immunodeficiency virus (HIV) infection and disease.

Methods. The Secretary of the U.S. Department of Health and Human Services commissioned a major initiative to examine issues pertaining to pediatric and maternal AIDS in the U.S. The departmental experts who participated in this six-month long project identified a number of ethical concerns in this area.

Results. Areas of concern identified included: (1) the participation of infants and children in clinical trials; (2) the participation of wards of the state in clinical trials; (3) the risks to pregnant women of screening for infection; (4) confidentiality issues in testing and treating adolescents; (5) the conduct of clinical trials in pregnant women; (6) delivery of care to hard-to reach populations.

Conclusion. The AIDS epidemic has generated a number of problems unique to this disease entity.

T.F.0.19 SHOULD HIV POSITIVE WOMEN HAVE CHILDREN? AN ETHICAL PERSPECTIVE.

Arras, John D., Montefiore Medical Center - Albert Einstein College of Medicine, Bronx, New York, USA

In order to halt the perinatal transmission of HIV, advocates of a "public health" model of counselling contend that infected women should be strongly urged not to have children. Advocates of a "genetic counselling" model, on the other hand, argue on moral and practical grounds for a supportive, "non-directive" approach. This paper provides an ethical analysis of these competing claims and perspectives, and offers an alternative counselling model described as "respectful confrontation."

The ethical core of the debate turns on the question whether perinatal transmission of HIV constitutes a "harm" or "wrong" to the infected child. This question is approached through an application of the "wrongful life" argument and analogies with other devastating (genetic) diseases (Tay Sachs, cystic fibrosis). Then the factor of risk and uncertainty is addressed. Is a 25-30% chance of infecting one's child with a potentially lethal virus an unreasonable or irresponsible risk? While acknowledging much cultural diversity in perceptions of childbearing and risk, I note that society need not confirm such minority perspectives if the well-being of children is threatened.

Finally, the implications of these moral analyses for counselling are explored. I argue that if perinatal infection with HIV constitutes a harm or wrong to the child, and if the risk of transmission is judged to be very high, then "directive counselling" is not necessarily coercive or unethical. However, cultural differences separating counsellor from counsellee might subvert this approach. In order to spare future infants from undue suffering while paying heed to cultural differences, I advocate counselling that contests an infected women's initial preferences for childbearing, that compells her at least to see the problem as a genuine moral dilemma, before supporting her final decision.

T.F.0.20 UNINFECTED CHILDREN OF INFECTED WOMEN - THE HIDDEN PEDIATRIC EPIDEMIC

Landesman, S. - SUNY Health Science Center at Brooklyn-Brooklyn, New York

HIV infection in women creates a disease of the family. Not only is the women infected, but her newborn is potentially infected, her husband often ill with HIV disease and her healthy offspring suffer severely as a consequence of her illness. As infected women become ill, require hospitalization or die, the necessity of caring for their uninfected children will increase the burden on society and increase the risk of emotional and developmental damage to these children.

This problem will be most severe in cities where infected male IVDA's are numerous (e.g. Newark, NYC, Jersey City, Washington D.C., Boston); these men serve as the reservoir for infection of women. New York City has an estimated 35,000 infected women each with average of 2 children/women (at time then HIV infection is first diagnosed). This means that over the next several years 70,000 children will be at risk of losing their parent. Often these children become orphans and end up in foster care because they live in single parent homes or the father has already died of AIDS. The foster care system of NYC currently cares for 21,000 children. How the potential addition of thousands or tens of thousands of new children into the foster care system will be handled remains unanswered. The problem is further complicated by social doctrines that place the highest priority on the biological mother's rights over her child and the foster care concept of making decisions "in the best interest of the child". In the social milieu wherein HIV disease is most common these doctrines are often in conflict.

More attention must be focused on the care of uninfected children of infected women if the social and human damage of the epidemic are to be minimized.

T.F.0.21 AIDS AND REPRODUCTIVE HEALTH IN THE AFRICAN SETTING

Temu, Dorothy. Tanzania.

T.F.0.21.A ETHICAL IMPLICATIONS OF HIV/AIDS AMONG MOTHERS AND CHILDREN IN KENYA.

Onyango, Philista. Nairobi, Kenya.

T.F.0.22

HIV INFECTED CHILDREN IN THE COMMUNITY: ETHICAL PROBLEMS

Macklin, Ruth.

Albert Einstein College of Medicine, Bronx, New York, USA

Objective. To offer an ethical analysis of emerging problems regarding children with HIV infection in the community.

Methods. Cases are presented that pose ethical issues of confidentiality, school and pre-school placement, parental rights, and needs of children. Cases are drawn from the ongoing work of a multidisciplinary team established to deliver services to HIV-infected children and their families.

Results. Special problems arise when the need to preserve confidentiality conflicts with the "best interest" of children. Despite negative consequences of "labeling" children with AIDS, identification may be necessary in order for children to be eligible for special services or entitlements. Several potentially conflicting rights are identified: rights of the biological mother, of foster parents, of the HIV-infected child.

Conclusion. The chief ethical value should be "the best interest of the child," thus requiring subordination, when necessary, of competing values such as confidentiality of HIV information.

Recherche de traitements et de vaccins
Research for Treatments and Vaccines

W.F.0.1

ETHICIST'S ROLE

Robert J. Levine, Yale University School of Medicine, New Haven, CT, USA

The randomized clinical trial (RCT) is the gold stnadard for establishing the validity of medical therapies. RCTs must be conducted in accord with established ethical norms including: There should be a) sound scientific design, b) competent investigators, c) a reasonable balance of risks and benefits, d) informed consent, and e) equitable selection of subjects. This presentation is an overview of some of the more difficult ethical problems encountered by clinical trialists. Must subjects be informed that their therapy has been selected by chance? What should they be told about preliminary data and about alternatives to participation in the RCT? What is the role of the null hypothesis (or clinical equipoise) in the ethical justification of the RCT? Are placebo controls justified when subjects have lethal diseases? Is participation in a RCT a burden or a benefit? Should vulnerable populations be protected from the burdens of participation or assured access to the benefits of participation in RCTs? In what circumstances should alternative designs -- e.g., historical controls -- be considered? Satisfactory answers to such questions require careful consideration of the relevant facts about particular RCTs and prospective subject populations.

W.F.0.2

ETHICAL ASPECTS OF THE INTERNATIONAL AIDS RESEARCH AGENDA

Christakis, Nicholas A. Hospital of the University of Pennsylvania, Department of Internal Medicine, Cambridge Massachusetts, USA.

W.F.0.3

W.F.0.4

VACCINE TRIALS AND TRIBULATIONS: REGULATORY DISCRETION AND ETHICAL CHOICES IN TESTING CANDIDATE VACCINES

Mariner, Wendy K., J.D., LL.M., M.P.H.
Boston University Schools of Public Health and Medicine, Boston, Massachusetts, U.S.A.

The role of regulatory agencies in expediting vaccine testing will be analyzed in light of tension between the need for rapid worldwide distribution and the protection of human subjects. Most regulatory systems for licensing new vaccines were designed to maximize vaccine safety and efficacy, with less regard for the rapid development the AIDS epidemic requires. Yet such agencies have considerable discretion to determine what constitutes sufficient evidence to permit approval of a new vaccine. The way in which regulatory agencies exercise their discretion will strongly affect whether essential vaccines can be tested expeditiously without sacrificing public safety. Ethical principles applicable to research with human beings are difficult to satisfy in AIDS vaccine clinical trials, in part because the subjects are healthy people. Compliance with ethical principles may make the study design more inefficient and prolong testing. Proposals for testing vaccines in third world countries raise special questions about obligations to distribute affordable vaccines to subject populations and those at risk.

W.F.0.5

ETHICAL POINTS ON PLACEBO AND TREATMENT CONTROLS IN HIV DRUG TRIALS

Freedman, Benjamin; McGill University and the Jewish General Hospital, Montreal, Canada

Prominent proposals for changes in the drug approval process (e.g., the US FDA's treatment IND exemption) with respect to the treatment of HIV disease rely upon or entail the view that it is unethical and/or scientifically unnecessary to conduct controlled trials (the control arm using a placebo or a current therapy). Early understandings of the ethics of controlled trials presumed that each arm must be in a state of theoretical equipoise vis-a-vis each alternative arm, a state only satisfied when the evidence favouring any treatment arm was exactly as weighty of that favouring each alternative. A contrasting normative approach, clinical equipoise, has been developed by the author as a formal method of analyzing this ethical issue. Equipoise within the clinical community depends upon the known elements of the therapeutic index of the novel treatment in question (including etiologic rationale, functional/clinical effects, undesired side-effects, and exogenous factors relative to compliance, availability, mode of administration, and cost). As applied to AIDS drugs in particular, it is argued that control arms, though not necessarily placebos, should commonly be maintained, and that proposals presuming the contrary should be rejected.

W.F.0.6

THE ETHICS OF PLACEBO-CONTROLLED TRIALS OF THERAPY FOR HIV INFECTION

Kathleen Nolan, The Hastings Center, Briarcliff, NY, USA

To justify placing human subjects of research at more than minimal risk requires two separate ethical appraisals: one weighing risks against possible benefits to the individual subjects, and another weighing this first result against possible benefits to society.

Arguments about the legitimacy of placebo-controlled clinical trials often conflate these two separate appraisals. For example, a valid null hypothesis ("H_0") is often posited as the major ethical requirement for randomization in such trials, but hypothesizing therapeutic equivalence between an investigational agent ("X") and an inert substance ("P") addresses only the issue of whether the study design is sound and therefore likely to yield scientific (i.e., social) benefit. An equally important and often suppressed premise is needed to address the weighing of individual risks and anticipated benefits. This premise requires that a valid H_0 also attain between "P" and any alternative clinical intervention ("A"), especially in trials designed to treat serious or lethal conditions. If a superior alternative exists, then the highly unfavorable balance of risks to possible benefits for individuals in a trial of "X" vs. "P" outweighs even substantial benefit to society. In such circumstances, the substitution of "A" for "P" is ethically required. In addition, if the administration of "P" itself poses substantial risks to subjects (e.g., a control requiring repeated placebo infusions for immunocompromised children in a trial of IV gamma globulin), then alternative comparison groups and methods of blinding must be designed.

Recherche de traitements et de vaccins
Research for Treatments and Vaccines

W.F.O.7 SPECIAL PROBLEMS IN IRB REVIEW OF COMMUNITY-BASED AIDS RESEARCH

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*City University of New York Law School, New York, NY, USA;
**Citizens Commission on AIDS for New York City and Northern New Jersey, New York, NY, USA;
***Community Research Initiative, New York, NY, USA

Institutional Review Boards (IRBs) that review community-based AIDS research, like their counterparts in hospital-based or academic settings, are charged with protecting the rights and welfare of subjects. Fulfilling this charge presents all the challenges that face other IRBs, but with the added urgency of issues particular to the disease and the community setting. The IRB of New York City's Community Research Initiative is addressing these issues, among others:

1. Research design, especially the use of control groups. When, if ever, is a placebo trial acceptable? Under what circumstances are other options--dose-comparison, open-label, historical controls, or others--scientifically valid and ethically acceptable?
2. The relationship between scientific objectives and exclusion and inclusion criteria. Community-based AIDS research organizations are committed to the broadest possible access to promising AIDS treatments but some experts in research design believe that maximum homogeneity of subject population is optimal for generating valid data. Should an IRB adopt a broad or narrow approach to exclusion and inclusion criteria?
3. The acceptability of including subjects capable of reproducing in research protocols that may present risks of adverse reproductive outcomes. Should men or women be denied the opportunity to serve as research subjects in Phase II studies because of concern about risk to potential offspring?
4. The use of concomitant medications and alternative therapies. The "cleanest" study design is one in which subjects receive only the study drug or therapy, but many potential subjects believe strongly in the value of various nonvalidated alternative therapies. How should these views be accommodated in study design, and what level of compliance is it reasonable and ethically acceptable to ask from research subjects?

W.F.O.8 COMMENTARY

Levine, Carole. New York, N.Y. USA.

Prévenir la transmission du VIH : les conflits religieux en matière de santé publique
Preventing HIV Transmission: Religious Conflicts in Public Health

W.F.0.9 PREVENTING HIV TRANSMISSION: RELIGIOUS DIVERSITY, CONTROVERSY, AND PUBLIC HEALTH

Shelp, Earl E.
Foundation for Interfaith Research and Ministry, Houston, Texas, U.S.A.

The scope and severity of the HIV crisis suggest that religious traditions and institutions cannot escape addressing the multiple challenges that it poses. The diverse responses predictably have reflected the beliefs and moral commitments of particular traditions within a religious pluralism. The defining features of each tradition distinguish them from each other and provide bases for controversy and competition within and between them. General disagreements about how to respond to the HIV crisis tend to be based on differing understandings of deity's relation to the world, moral judgment and moral obligation, and the respective missions of religious and secular institutions. Efforts to prevent and decrease the transmission of HIV may be facilitated or impeded by how these basic issues of religious concern are interpreted, particularly in societies and cultures where religious institutions and authorities are influential. More specifically, the type and content of risk reduction activities and the relative emphasis placed on modifying individual conduct and social conditions will be affected.

W.F.0.10 A ROMAN CATHOLIC PERSPECTIVE

Baum, Gregory. Faculty of Religious Studies, McGill University, Montreal,Quebec, Canada

W.F.0.11 A VIEW FROM SCOTLAND

McLullich, Archie. MacIver House, Glasgow, Scotland, United Kingdom.

W.F.0.12

W.F.0.13

W.F.0.14 "AIDS AND INDIAN ETHICAL VALUES"

Dr.D.V.P. RAJA, M.A.,D.S.S.A., Ph.D.,
General Secretary, Assn.of Schools of Social Work in India
&
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Madurai 625002 Tamil Nadu INDIA

AIDS, a deadly disease poses a threat not only to developed countries but also an approaching danger to developing countries The WHO estimates that 5 to 10 million people are now infected worldwide with the AIDS Virus - and most do not know it. Eight years have passed and a cure or vaccine for HIV infection is not found. When the disease becomes intractable, the only hope is to effect a change in the sexual behaviour and to improve the moral fabric of the society at large. When there are a number of ways to prevent the spread of AIDS, another effective means is by way of Indian traditional sexual conservatism. In India, the philosophy of traditional sexual conservatism has been voiced by Hinduism, Jainism and Buddism which propagate the sexual ethics of "stick to one partner" "self control", and abstinence. The Indian epics bring out ample evidences to this. The author suggests that wider acceptance of Indian traditional sexual conservatism by the Western World would serve as an indicator for combating the disease. Many concepts and philosophies concerning the above approach have been evolved which are versified in the religious and ethical books in India.

Prévenir la transmission du VIH : les conflits religieux en matière de santé publique
Preventing HIV Transmission: Religious Conflicts in Public Health

W.F.O.15 "SAVING LIFE AS AN OVERRIDING DEMAND" (A JEWISH PERSPECTIVE)

W. Gunther Plaut, Toronto, Ontario, Canada

Jews see the source of their moral demands as springing from their relationship with God. While not all Jews agree on what this relationship betokens, there are some common views which may be applied to the subject of the Conference on AIDS:

Life is precious and must be preserved under all circumstances and at all costs. While ordinarily the ends do not sanctify the means and the religious law must not be infringed for otherwise desirable purposes, it is different when it comes to the preservation of life and, by implication, the prevention of pandemic disease.

Prevention of HIV transmission may involve providing means for sexual activity which in itself is frowned upon by much of Jewish tradition. The liberal view (taken by the presenter) holds that the preservation of life must be tantamount, and that all possible support must be given to programs which will prevent people from becoming infected and from infecting others.

W.F.O.17 COMMENTARY

de Sweemer, Cécile. International Development Research Centre, Dakar, Sénégal.

W.F.O.16 COMMENTARY

Hallman, David. The United Church of Canada, Toronto, Ontario, Canada

Coercition ou volontarisme? Analyse critique internationale
Coercion or Voluntarism: An International Critical Review

W.F.O.18 COERCION OR VOLUNTARIM: AN INTERNATIONAL CRITICAL REVIEW

Gostin, Lawrence, O. Harvard University, School of Public Health, Boston, MA. USA.

W.F.O.19 COERCION OR VOLUNTARISM: AN INTERNATIONAL CRITICAL REVIEW

Terry-Molinet, Hector. Ministry of Public Health, Havana, Cuba.

W.F.O.20 BAVARIA. A REVIEW
SYMPOSIUM - COERCION OR VOLUNTARISM: AN INTERNATIONAL CRITICAL REVIEW.

Jäger Hans.
AIDS Study Group, Schwabinger Krankenhaus, Munich, FRG.

Of the total of about 3 300 CDC AIDS cases in West Germany 17 % have been diagnosed and treated in Bavaria, one of eleven West German states ("Länder").
During the first months of 1987 a package of anti-AIDS regulations ("Bayerischer Maßnahmenkatalog") was decided by the catholic conservative majority within the Bavarian state parliament. Since then Bavaria has had a political and legislative AIDS position that - more in theory than in its practical consequences - contrasted sharply with the other 10 German states, with federal policies, with WHO recommendations and in part with scientific knowledge.
HIV testing in foreigners from non EC countries as well as in civil servants and judges to be hired, coercive steps against IVDU and male and female prostitutes and a 96 % (voluntary) testing rate within prisons were introduced.
Counceling, psychosocial treatment facilities and free anonymous testing in every private doctor's office were made available. No mandatory testing or reporting, no large scale screenings were organized. Several cases of criminal justice against HIV positive individuals rose concerns within human right groups in Bavaria and abroad. Homosexual men and many patients from other risk groups were unnecessarily frightened. Growing mistrust in public health authorities was noted.
No major exodus of AIDS patients was observed. Because of high standard basic research and clinical care especially in Munich, some patients are coming from other states as well as other countries to get treatment here.

W.F.O.21

Sweden: A Review on compulsive treatment, Gunnar Ågren, County Council of Stockholm, Stockholm, Sweden.

Swedish HIV-positive patients can be submitted to compulsive treatment if they don't follow the advice from the chief medical officer in the county. This is in accord with the law on control of infectious diseases. The law is, however, very seldom used. In Stockholm a special hospital department with two beds is used for this purpose.

HIV-infected drug addicts are more often treated according to a special law which permits compulsory care of alcohol and drug abusers for a time period up to 6 months. There is a number of special institutions for this kind of treatment. A cohort of 152 compulsory treated drug addicts, 58 of them HIV-positive, has recently been followed up. The results are not encouraging.

W.F.O.22 ETHICAL AND LEGAL ISSUES OF AIDS IN SOUTH AFRICA.

Knobel, Gideon J.
University of Cape Town, South Africa.

Objective. To analyze existing laws and effects on preventive, educational and health care programmes within an ethical framework.
Methods. Amongst others the Health Act, Sexual Offences Act, Admission of Persons to the Republic of South Africa Act, Media Act, the Medical, Dental and Supplementary Health Services Professions Act were analyzed.
Results. The Sexual Offences Act have a potentially counterproductive effect on homosexuals and prostitutes; regarding sexual contact with minors it has the inherent danger of a homophobic backlash and blackmail by male prostitutes over sixteen but under nineteen years of age. Listing AIDS and HIV infection as a communicable disease may dissuade persons with HIV infection or AIDS to seek medical help; it has the positive aspect of empowering the Medical Officer of a Local Authority to take action against a known infected person who persists with irresponsible behaviour. Declaring any foreign passport-holder with AIDS or HIV infection a prohibited person have potentially serious consequences for individuals. Existing health and education laws cause fragmentation of preventive, educational and health care programmes. The Medical, Dental and Supplementary Health Services Professions Act provide mechanisms for investigation of unprofessional conduct by Health Care Workers and the Media Act for investigation of improper media reporting.
Conclusion. Homosexuality and prostitution should be decriminalized; regulations on foreign passports-holders and HIV infection as communicable disease should be reviewed; the identities of persons taking legal action against breach of confidentiality and media exposure should be protected.

W.F.O.23 A HUMAN RIGHTS PERSPECTIVE

Justice Michael Kirby, (Member, Global Commission AIDS), Sydney, Australia.

Law is traditionally bound to a particular territorial jurisdiction. It typically reflects local cultural norms and historical institutions. But AIDS/HIV is international in character. Its global dimension provides an international context for the measures of response. National, subnational and international responses must be considered in the light of the developing jurisprudence of human rights. Not only does this require consideration of local constitutional or other guarantees now typically found in the laws of most societies. It requires compliance with developing international human rights law. This includes law declared by the Universal Declaration of Human Rights and established by such international instruments as the International Covenant on Civil and Political Rights. One function of WHO - and the Global Commission on AIDS - may be to remind member countries of the provisions of international law on human rights as it affects local responses to the epidemic. As the sorry history of past epidemics demonstrates, human rights are often the first casualties of a challenge such as AIDS. The thesis of the author is that this time we should do better. Not only is compliance with human rights a legal obligation and a moral requirement. It is also likely to be the only effective way of securing the cooperation of persons and groups most affected by the epidemic.

W.F.O.24 Voir/See page 1050

Séance thématique
Specialty Session

Droit et ethique
Ethics and Law

Discrimination et droits de la personne
Discrimination and Human Rights

Th.F.0.1

DISCRIMINATION: THE ISSUES
ANAND, RAJ, CHIEF COMMISSIONER;
ONTARIO HUMAN RIGHTS COMMISSION

All persons with AIDS/ARC and/or testing positive for HIV are entitled to the full protection of the guarantees of equal treatment in respect of employment, housing, contracts, and the provision of goods, services, and facilities, as set out in Part 1 of the Ontario Human Rights Code.

The Code also protects persons perceived to have AIDS-related conditions or to be at high risk because of being members of certain groups. With particular reference to the erroneous perception of AIDS as a "gay disease," additional protection is provided through the explicit prohibition of discrimination on the group of "sexual orientation."

The Code provides that "a right under Part 1 is infringed where the discrimination is because of a relationship, association, or dealings with a person or persons identified by a prohibited ground of discrimination."

The Code sets out a broad duty to accommodate the needs of persons with handicaps, and may be of particular value to persons with AIDS/ARC/HIV.

Persons responsible for accommodating the needs of persons with handicaps may be relieved of their duty only if it can be demonstrated that the accommodation would cause undue hardship based on cost, outside sources of funding, if any, and health and safety requirements, if any.

Specific issues focus on testing for AIDS/ARC/HIV; infection control techniques; confidentiality; public education; and complaint handling.

Th.F.0.2

LEGAL SERVICES FOR PERSONS WITH AIDS (PWAs) OF PREDOMINANTLY HETEROSEXUAL, POOR, MINORITY BACKGROUND
Herb, Alice; LaGamma, D. Montefiore Medical Center, Bronx, New York, U.S.A.

Objective. To describe an innovative hospital based legal services program for PWAs from a poor inner city community.
Methods. Attorneys saw PWAs on weekly bed rounds; created policy and documents relating to health care decision making and child placement and custody; and integrated legal services into an AIDS interdisciplinary care team.
Results. PWAs at our center include 60% intravenous drug users (IVDUs), 25% homosexual men, 10% sex partners of IVDUs, 5% others. 25% are women. From 1/88 through 1/89, 65 PWAs requested legal counsel for 87 legal problems. Advance directives (living wills, durable powers of attorney & Do Not Resuscitate orders) and issues of child care and custody emerged as the principal legal concerns of PWAs at our Center. 43 PWAs discussed advance directives and were assisted in documenting preferences. There were 28 child related legal problems, most presented by parents (19 women, 9 men) living in non-traditional family settings without appropriate existing legal mechanisms. Preliminary data show that unemployed male IVDU were least interested in exercising legal rights and making choices for the future whereas women with children were most interested in legal assistance.
Conclusion. Legal services are an important part of interdisciplinary AIDS team care. PWAs and caregivers can be sensitized to the need for decisions on future health care and child custody.

Th.F.0.3

ANTI-DISCRIMINATION LAW & AIDS-RELATED DISCRIMINATION: A PHILOSOPHICAL ANALYSIS
Ducharme, Todd *; Hathaway, J.**
*Faculty of Law, University of Alberta, Edmonton, Alberta, Canada, **Osgoode Hall Law School, Toronto, Ontario, Canada

Objective: AIDS-related discrimination (ARD) has become an increasingly pervasive social problem. Almost universally, the legal response to ARD has been to attempt to protect the victims of such discrimination by using existing anti-discrimination law. However, ARD presents unique challenges as it involves fear of death and, in many cases, the "unclean" and "unknown". The authors wish to determine if conventional anti-discrimination law is capable of dealing with these dynamics.
Methodology: Human rights instruments and jurisprudence, both domestic and international, will be examined in order to identify the philosophical underpinnings of anti-discrimination law.
Results: The basic premise of anti-discrimination law is that the treatment of individuals should be based on relevant criteria and, in particular, that difference per se does not justify differential treatment. ARD occurs most often in circumstances where the fact that a person is HIV seropositive, has an HIV-related disorder or has AIDS is not a relevant concern. Thus, ARD can be understood as an unjustifiable response to difference.
Conclusion: Efforts to use conventional anti-discrimination law to combat ARD are justifiable. Difficulties arising with this approach are the result, not of any inadequacies in the law, but rather of an incomplete understanding of its theoretical framework.

Th.F.0.4

AIDS IN THE U.S. WORKPLACE: THE EVOLUTION OF AIDS LITIGATION, LEGISLATION, AND REGULATION
Heslund, Verla S. and Matthews, G.W.
Office of the General Counsel, Centers for Disease Control, Atlanta, Georgia, U.S.A.

Objective. To describe the progression from traditional public health AIDS recommendations to legislation and regulation relating to the workplace, and to analyze trends in AIDS-workplace litigation.
Methods. Reviewed all reported AIDS legal actions, summaries of federal and state legislation, and federal regulatory issuances.
Results. Some of the earliest AIDS litigation involved the workplace and employment-related legal issues. These cases continue to comprise a significant portion of all AIDS-related litigation. The majority of these employment cases also continue to resolve in favor of plaintiffs. The public health response to workplace issues began as published recommendations, initially focusing on the health-care workplace but later expanding to other work settings. These recommendations have frequently been introduced in legal actions and have been argued to have regulatory effect. In addition to recommendations, however, both federal and state governments more recently have responded with legislation designed to prevent transmission in the workplace. Workplace inspections and federal enforcement actions have also begun within the past year, and are expected to increase.
Conclusion. There has been a shift from reliance on recommendations to inclusion of the authority of statutes and regulations as a means to prevent transmission of HIV in the workplace.

Th.F.0.5

Th.F.0.6

VIH1 ET TOXICOMANIE : ASPECTS ETHIQUES
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** Hopital de Bicêtre78, rue du Gl Leclerc 94270 Le Kremlin

INTRODUCTION : la forte contamination par le VIH des toxicomanes IV, les problèmes sociaux liés à la drogue, à l'infection par le VIH incitent à analyser si les règles éthiques sont respectées à l'égard de cette population ainsi que le retentissement de l'infection dans l'entourage.
OBJECTIFS -METHODES: 150 toxicomanes incarcérés connaissant leur séropositivité depuis plus de 3 mois seront inclus dans l'étude. Conditions : consentement, confidentialité, anonymat. Etude des circonstances du dépistage, de la transmission de l'information (séropositivité) à la famille, aux partenaires sexuelles, aux surveillants, avocats, magistrats... Y-a-t-il une différence entre ceux qui ont appris leur séropositivité en prison et à l'extérieur - Le projet d'étude a reçu l'accord du Comité National d'Ethique, de l'Ordre des Médecins, de la Commission nationale informatique et liberté.
RESULTATS PRELIMINAIRES : (validation du questionnaire) Dépistage : 70% des cas en prison, 30% dans les hopitaux ou par les médecins généralistes - Test réalisé à l'insu du patient : 30% en prison, 30% à l'extérieur - Confidentialité respectée lors de l'annonce - Partenaire sexuel occasionnel jamais informé du résultat - Partenaire sexuel régulier : non incarcéré il informe sa(s) partenaire(s), en prison retard de l'information, attente de la libération, rupture du couple - Pas d'information de la famille, de l'employeur des codétenus - Surveillants informés :30% des cas - Demande de certificat 20% Avocat informé 30%, Magistrat au courant de la séropositivité : 40%

Discrimination et droits de la personne
Discrimination and Human Rights

Th.F.O.7 DISCRIMINATION REFLECTED IN THE LANGUAGE AND DIAGNOSES OF TARGET HIV CLIENT BY PHYSICIANS

Norton, Robert*; Schwartzbaum**, J. & Wheat**, J. *Memphis State University, Memphis, Tennessee, United States, **University of Tennessee, Memphis, Tennessee, United States.

The object of this research was to see whether the language of physicians covaried with the type of diagnosis they would make for somebody who has been described as having the HIV virus. In addition to questions about how they talked about AIDS, each physician randomly received a one case study vignette. The only difference across vignettes was whether the patient was described as male or female, homosexual, or heterosexual, or white or black. Six hundred physicians were randomly sampled.

It was found that physicians discriminated in terms of diagnosis across vignettes. Also, how they talked about AIDS reflected biases. The language of physicians often reflected ethical biases relating to the AIDS problem. For example, out of two hundred and thirty two metaphors reported by general physicians in answer to the question, "AIDS is like ____________," some physicians responded with extremely judgmental replies: *"AIDS is the wrath of God." "AIDS is the plague brought to us by a minority of aberrant individuals,"* and *"AIDS is poetic justice, almost."*

This information is being used to craft educational programs which sensitize physicians and residents to ethical issues inextricably related to AIDS issues.

Th.F.O.8 COMMENTARY

Connor, Susan S. Pan American Health Organization World Health Organization, Washington, D.C. USA.

Vue d'ensemble de la législation sur le SIDA
Global Survey of AIDS Legislation

M.F.P.1 LEGAL PROTECTIONS AGAINST HIV-RELATED DISCRIMINATION IN THE USA: A FIFTY-STATE ANALYSIS

Schatz, Benjamin*
* National Gay Rights Advocates, San Francisco, California, USA

Objective. To determine extent to which U.S. state handicap discrimination laws prohibit HIV-related discrimination in employment, housing, public accomodations, and other areas.
Method. Survey of state human rights agencies in 50 states and Wash., D.C.
Results. Clear majority of state agencies interpret state handicap laws to prohibit discrimination against people with AIDS, ARC, and asymtomatic HIV infection, although minority differ (see table below.) Majority also prohibit discrimination against uninfected persons considered "high risk." In addition to differences in statutory interpretation, other gaps exist in protection: 2 states have no handicap discrimination statutes, 3 state laws exclude "communicable diseases" from protection, 2 states prohibit only government discrimination. Although all state laws govern employment, only 38 cover public accomodations, 37 cover housing and 21 cover credit.

State Laws Protects:	Yes	No	Undecide
persons with AIDS	78%	8%	14%
persons with ARC	69%	8%	24%
asymptomatic HIV+ persons	65%	12%	24%
uninfected persons considered "high risk"	55%	18%	27%

Conclusion. Many people with HIV infection are unprotected from discrimination in the USA as a result of inconsistent state laws and policies. Nevertheless, consensus is developing that state handicap discrimination laws prohibit discrimination against people with AIDS, ARC, HIV infection, and others perceived to be at "high risk" for AIDS.

M.F.P.2 LEGAL AUTHORITY FOR HIV TESTING OF ADOLESCENTS

North, Richard, Associate Professor, University of Maryland School of Law, Baltimore, Maryland, USA.

Objective. To describe the risk of HIV infection in adolescents in the United states and to unravel the myriad laws in each state to allow for the voluntary HIV testing and counseling of adolescents without parental consent or notice to parents.
Methods. Analysis of the statutes in each state concerning medical care for minors, venereal and sexually transmitted diseases, emancipation and HIV infection. Analysis of case and constitutional law and the law relating to parental rights.
Results. Evidence in a number of studies points to the potential for a new wave of infection among adolescents in some areas of the United States. Little attention has been devoted to the risk to adolescents in the U.S. and the new laws designed to contain the infection ignore the special problems of adolescents.
Conclusion. Legal authority exists in all jurisdictions in the U.S. for the voluntary testing and counseling of minors but that authority is usually not found in venereal or sexually transmissible disease statutes. The sources of authority differ from state to state as do the requirements of confidentiality and notice to the parents of minor patients. A chart describing the sources of authority and confidentiality requirements in each state is offered.

M.F.P.3 IMPACT OF THE SANITARY LEGISLATION ON HIV TRANSMISSION IN BLOOD DONATIONS IN GUADALAJARA, MEXICO.

Vázquez-Valls, Eduardo*; Torres-Mendoza, B.*; Jauregui-Rios, ML.* and Soto-Sánchez, E.*
*Instituto de Patología Infecciosa y Experimental "Dr. Fco. Ruiz Sánchez" de la Universidad de Guadalajara, Guadalajara, Jalisco, México.

In México, since May 1986, the mandatory detection of antibodies anti HIV in blood and it is derivates for the use in humans was legislated, one year later the prohibition of blood trade took effect.
Objective. To compare the impact of the sanitary legislation to mandate screening for HIV antibodies in blood donations in Guadalajara, México.
Methods. An aleatory sample was taken from 5228 sera of donors of six public and privates blood banks in Guadalajara, between June 1986 and June 1988; 4020 in the first year and 1208 after mandatory; in all the samples the presence of anti HIV antibodies was determined by the ELISA assay and positive ones were confirmed by indirect immunofluorescence and/or western blot.
Results. During the first, year, the seroprevalence fluctuated between 2.01 and 30.15% depending on different factors, compared to the second year where the seroprevalence was 0.17%.
Conclusion. It is concluded that the mandatory detection of antibodies anti HIV and the prohibition of blood trade, have been definitive factors in decreasing the incidence of HIV in blood donors in Guadalajara, México.

M.F.P.4 PHYSICIAN BREACH OF PATIENT CONFIDENTIALITY AMONG INDIVIDUALS WITH HIV INFECTION: A PRELIMINARY INVESTIGATION OF RACISM, SEXISM, AND HOMOPHOBIA.

Judith Schwartzbaum* John Whear*, Robert Norton**
*University of Tennessee, Memphis, Tennessee, USA, **Memphis State University, Memphis, Tennessee, USA

To determine whether the sex, race, or sexual preference of an HIV infected patient influences a physician's decision to breach patient confidentiality, 222 Tennessee primary care physicians were each mailed a questionnaire containing a case study in which an HIV infected patient presented a risk to a third party. Eight different descriptions of the sex, race, and sexual preference of the hypothetical patient were distributed equally among the physicians who were asked to decide whether to maintain confidentiality, notify the health department or inform the patient's partner. Physicians said they would report a black male heterosexual to the health department 16.1 (1.7, 150.3) times more often than they said they would a black female homosexual. Physicians with increased knowledge of AIDS were 50.4 (2.8, 888.0) time more likely to say they would inform the partners of black heterosexuals than those of black homosexuals. These physicians were also significantly more likely to report male heterosexuals to the health department than they were female homosexuals. Physicians reporting confidence in their knowledge of AIDS also said they would report male heterosexuals to the health department with greater frequency (odds ratio 59.2 [6.0, 581.9]) than they would female homosexuals. These physicians were 9.6 (1.8, 50.8) times more likely to say they would inform the partners of black males than they would those of white males. When physicians decide to protect a third party by breaching an HIV infected patient's confidentiality, they consider the race, sex, and sexual preference of the patient.

M.F.P.5 CURRENT ISSUES IN DRUG REGULATION IN THE U.S.A.

Smith, Stephen C., Human Rights Campaign Fund, Washington, D.C., USA

Objective. To identify and analyse key issues raised by current proposals to reform the legal regulation in the United States of the sale of drugs for medical treatment.
Methods. The author is an attorney and lobbyist concerned with AIDS policy in the USA, has read a number of legislative and regulatory proposals to this end, reviewed the literature, and attended conferences where these proposals have been discussed.
Results. Current proposals for legal reform of drug regulation have attained new urgency in the public debate as a result of the AIDS crisis. It has been proposed that medical drugs be "de-regulated" by eliminating the efficacy requirement, or the requirement of a doctor's prescription, and related rules of civil liability. It has been proposed that the governmental role of reviewing and certifying drug tests be either eliminated or made purely advisory. It is claimed that de-regulation will make effective drugs more widely available to patients and enhance individual choice. The strongest objection to this claim is that competitive pressures will result in "bad" drugs driving "good" drugs out of the market.
Conclusion. Empiric research is needed to establish the benefits and costs of a legal requirement that medical drugs be proven effective before sale.

M.F.P.6 TRENDS IN AIDS LITIGATION IN THE UNITED STATES - 1983 TO 1988

Matthews, Gene W. and Neslund, V.S.
Office of the General Counsel, Centers for Disease Control, Atlanta, Georgia, U.S.A.

Objective. To review published cases involving AIDS litigation to identify current legal trends.
Methods. Over 300 legal actions occurring in the past 6 years (1983 through 1988) were reviewed and categorized. Comparisons were made by category between the earlier cases (1983 to 1986) and the more recent cases (1987 to 1988).
Results. Within certain categories, litigation patterns established prior to 1987 have continued over the last two years, including a significant number of legal actions involving prison-related AIDS, employment discrimination, and sanctions against recalcitrant HIV transmitters. However, new patterns have also emerged since 1986, such as decisions involving appropriate uses of the HIV test and decisions disclosing the names of blood donors to transfusion AIDS plaintiffs.
Conclusion. During the past 2 years the number of reported AIDS legal actions has more than doubled the total that were reported during the preceding 4 year interval of 1983-86. Within this rapidly expanding framework, a significant body of AIDS law is now taking shape.

M.F.P.7

AIDS AND THE COURTS: COMPELLING AND PROTECTING THE DISCLOSURE OF AIDS STATUS

Morissette, Yves-Marie; Glenn, H. Patrick; McGill Center for Medicine, Ethics and Law, Montréal, Canada.

Court proceedings, whether civil or criminal, require under certain conditions the compulsory collection and the public disclosure of medical information. An AIDS patient may thus be forced to divulge his status in order to bring or to defend an action, including one not directly related to his illness. This paper discusses the competing legal policies which favour the confidentiality or the disclosure of a person's AIDS status in adversarial systems of procedure. Bearing in mind the desirability of protecting the privacy of AIDS patients, the authors examine (i) basic evidentiary principles, such as relevance, privilege and confidentiality, (ii) forms of compulsory discovery, including physical examinations and access to medical records, and (iii) the extent to which judicial proceedings and court records are and must remain open to the public. The idea of proportionality is central in this analysis. In most jurisdictions which adopt an adversarial model of procedure, legal rules already in existence allow for a satisfactory resolution of the conflict between the privacy of AIDS patients and the public nature of court proceedings.

M.F.P.9

SIDA : PROBLEMES ETHIQUES POSES PAR LA PROTECTION DES DONS DE SANG

D.REVIRON, C.MANUEL, M.P. LARHER, J.CHARREL, P.ENEL, J.L.SAN MARCO*

* Laboratoire Santé Publique, Faculté de Médecine de Marseille, FRANCE

A partir d'une méta-analyse qualitative concernant les aspects éthiques du SIDA, et portant sur 400 articles, notre réflexion s'est arrêtée aux problèmes particuliers posés aux Centres de Transfusion Sanguine.

Les questions ont été soulevées dès 1983, avec des mesures d'exclusion pour les donneurs présumés à risques ; nous faisons une revue des Législations des différents pays, en suivant leur évolution depuis l'apparition des tests de dépistage.

Toutes les questions éthiques posées par un dépistage systématique des donneurs sont analysées : anonymat, consentement éclairé, confidentialité en ce qui concerne les résultats des tests, information des donneurs sur ces résultats.. D'autres points concernent la responsabilité des banques de sang en cas de contamination. L'information des receveurs sur les dangers d'une transfusion les dons de sang "dirigés", les dons d'organes ou de tissus.....

M.F.P.11

AIDS--ETHICAL, LEGAL, SOCIAL, AND ECONOMIC PROBLEMS

Joseph F. Lisa
New York City Council Health Committee Chairman
City Hall, New York, NY, U.S.A.

Objective. Examine the roles of ethics, health law, social and economic factors relating to the HIV epidemic.
Methods. Discussion of knowledge and truth as they pertain to communicable diseases and laws relating thereto and data collection as it relates to present and future social and economic stability.
Results. The need for public education on the ethical, legal, social, and economic scope of this problem. Our failure to accurately predict the future size, magnitude, and changes in the pattern of the AIDS epidemic may result in the risk of total collapse of the health care system. Without a specific model to predict the future, we are placing our fiscal integrity in jeopardy for if we underestimate the size of the epidemic, we will guarantee that the result will be uncompassionate care to all affected by the epidemic.
Conclusion. The establishment of a North American international AIDS (HIV) data base center would facilitate the collection, analysis, and distribution of HIV data that will encourage close collaborations between modelers and epidemiologists and assist the governments of Canada and the United States in taking the most appropriate actions to stem the HIV epidemic.

M.F.P.8

THE CONSEQUENCE OF LEGALISATION OF PROSTITUTION IN VICTORIA

Overs, Cheryl*
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The objective is to explain and analyse the relationship between recent reforms to prostitution legislation in Victoria and changes to the structure of the sex industry with reference to HIV susceptability of sex workers and clients.
Method The following structural features of both the legal and illegal sections of the sex industry will be discussed and compared: demography of participants; testing patterns, results and policy; industrial health and injury compensation; mechanisms for safe work practices and negotiation; policing; health; tax; planning and other regulatory activity. Conclusion Selective criminalisation and regulation of the sex industry may exacerbate the risks it aims to reduce where it simply reworks mistaken contextual understandings of sex work from old criminal law into modern administrative provisions.

M.F.P.10

COMPULSORY HIV/AIDS CASE-REPORTING: DOES IT PROMOTE OR INHIBIT PUBLIC HEALTH?

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Objective: To consider whether compulsory case-reporting of HIV/AIDS facilitates the collection of useful epidemiological data and the implementation of effective public health measures to control HIV transmission.
Methodology: A comparative analysis of case-reporting requirements in public health legislation in Canada, the United States, Australia and Great Britain.
Results: (1) In the jurisdictions studied, which all have a similar pattern of HIV infection, HIV/AIDS case-reporting requirements vary enormously in their scope and content; (2) Most HIV/AIDS reporting requirements have been added to already-existing disease-reporting requirements under public health legislation; (3) This traditional approach does not always achieve the desired objectives in the context of HIV/AIDS. It can be too narrow (the provisions do not meet the specific requirements of public health measures) or too broad (the provisions are more restrictive of rights than is necessary for public health purposes); (4) There is often little or no statutory protection for the confidentiality of information reported.
Conclusions: (1) The lack of uniformity in case-reporting requirements indicates uncertainty about the benefits and harms of case-reporting in achieving the aims of reducing the spread of HIV and obtaining necessary epidemiological data.

(2) Compulsory case-reporting can defeat these aims and cause other harm by: (a) discouraging voluntary testing and treatment; and (b) distorting epidemiological data if inappropriately-worded and non-uniform provisions are used.

(3) Some of the aims sought to be achieved by compulsory case-reporting may be better achieved by other, less harmful, means, eg. unlinked testing of population groups, encouraging voluntary behaviour changes.

(4) Respect for individual rights demands that case-reporting requirements be drafted as narrowly as possible while still achieving the desired public health objective; the majority of requirements studied do not meet this test.

(5) There is an urgent need for HIV/AIDS case-reporting requirements to be re-evaluated: (a) to ensure collection of accurate and uniform data; (b) to protect individual rights to the greatest extent possible; and (c) to avoid obstructing and to maximise the effect of efforts to reduce the spread of HIV.

M.F.P.12

THE IMPACT OF LAW AND POLICY ON NEEDLE EXCHANGE PROGRAMMES IN CANADA

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Objective. To evaluate policy and law as factors impeding public health initiatives aimed at preventing the spread of HIV amongst intravenous drug users in Canada.
Method. Analysis of Canadian policy and legislative approaches to illicit drug use and their impact on the distribution of needles and syringes to those who cannot or will not stop such use.
Results. The response to illicit drug use in Canada, mirrored and influenced by that of the U.S., has generally been crimino-legal. Opiate use was criminalized in 1908 as an indirect result of anti-Asiatic riots. Subsequent legislation was also fuelled by demands for stronger control of illicit drug markets which criminalization had helped to create. Canadian narcotic legislation since 1961 imposes harsh penalties for possession, trafficking, importation and exportation, but notably none for use. Treatment modalities have received little emphasis. The general climate is one of harsh societal disapproval of illicit drug use and drug users.

In contrast to the U.S., there are no specific laws in Canada prohibiting the possession of needles and syringes or their supply to intravenous drug users. (A recent Bill criminalizing possession, sale and distribution of "drug paraphernalia" failed to become law.) Government advisories and other factors have acted to dissuade pharmacists from selling "works" to intravenous drug users. At least one licensing authority has told physicians that the provision of needles and syringes to intravenous drug users is unethical and/or illegal. Those proposing programmes for the distribution of needles and syringes have expressed fear of criminal liability. Legislators have expressed fear of being perceived as encouraging illicit drug use, and funding programmes that apparently contradict historical responses to drug use.
Conclusion. The climate surrounding illicit drugs in Canada is a substantial obstacle to urgently-needed public health programmes to prevent the spread of HIV. Socio-politico-legal factors have frustrated distribution of syringes and needles to intravenous drug users in Canada; only one pilot programme has been established (Feb. 1989). A conflict is perceived between the urgent need for measures to prevent the spread of HIV and demands to suppress drug use. Increased efforts are required to persuade legislators and the public that these two goals are not incompatible, and that needle and syringe distribution appear not to encourage drug use.

M.F.P.13

STATE/LOCAL STRATEGIES TO PREVENT AND RESOLVE HIV-RELATED DISCRIMINATION: FIVE CASE STUDIES

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Objective: To identify successful processes for preventing and resolving complaints of HIV-related discrimination, and program features affecting replicability.
Methods: Five programs were selected for the study based on the existence of a relevant discrimination statute, availability of program documentation, and program experience. The project team visited all 5 sites (Los Angeles, CA; San Francisco, CA; New York City, NY; Philadelphia, PA; and, Olympia, WA), prepared case-study reports, and a final summary report.
Results: Litigation is rarely necessary to resolve complaints. Most often, discrimination occurs out of fear or ignorance, and interventions utilizing educational, mediation, and advocacy strategies are sufficient and timely. In addition, the programs' enforcement efforts appear to prevent some additional complaints. The programs may also provide technical assistance to persons seeking advice on their rights or obligations under the law.
Conclusion: The wide variety of site features suggests that the essential processes of these programs can be successfully adapted in many milieus. Further, the programs' successes in keeping persons in their homes and/or jobs tends to promote private sector involvement in the AIDS issue, and may limit the burden of the AIDS epidemic which is shifted to the public sector.

M.F.P.14

M.F.P.15

La confidentialité et ses limites
Confidentiality and its Limits

T.F.P.1 TRIAL OF CHEMO-PROPHYLAXIS OF HIV INFECTION AND THE HEALTH-CARE WORKER'S RIGHT-TO-KNOW VIS-A-VIS THE PATIENT'S RIGHT TO CONFIDENTIALITY

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Objective. To evaluate health-care worker's (HCW) rights vis-a-vis patients' rights in relation to possible chemo-prophylaxis of HIV infection in HCW after exposure in the workplace (WP) to HIV infective blood and body fluids (BBF).
Methods. The Burroughs Welcome Co., makers of zidovudine (AZT), is sponsoring a double-blind, placebo-controlled trial of AZT in the prevention of HIV infection in HCW after WP exposure to BBF of HIV antibody (Ab) positive patients. Animal studies suggest that early AZT treatment is most effective. A rapid reliable slide test is now available to detect HIV Ab in serum.
Results. HCW may join the trial after exposure to known HIV Ab positive BBF by phoning 1-800-HIV-STIK. However, if the Ab status of the patient is unknown, informed consent, to protect patient confidentiality, must be obtained to test the patient's blood for HIV Ab. If consent is denied, and HIV Ab status of the patient is unknown, the HCW may be excluded from the trial.
Conclusion. After exposure of a HCW in the WP, patients who's HIV Ab status is unknown should be tested with the rapid slide test, with or without the patient's consent, since HCW right-to-know of a potentially lethal hazard in the WP and possible subsequent exclusion from the AZT trial supercedes the patient's desire for confidentiality of results of HIV Ab testing.

T.F.P.2 CONFIDENTIALITY AND AIDS: A CANADIAN PERSPECTIVE

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Objective: To explore legal, ethical and public health issues related to balancing the interests of the individual with respect to privacy of personal information, with that of protecting the health of the public.

Methods: The presentation will report the results of inter-provincial consultation and collaboration on such areas as: 1. control of HIV testing facilities; 2. reporting requirements; 3. collection of epidemiological data; 4. contact tracing and counselling; 5. under which circumstances should information be disclosed and to whom. Information will include the results of an invitational conference for providers, patients and the public on these same issues as well as the results of a formal inter-provincial working group.

Results: The consultation has resulted in national agreement on definitions, general principles for HIV testing, basic data to be collected for testing, the role of public health authorities and primary care physicians, and guidelines for the following: i. disclosure of information to protect the interests of the HIV positive person; ii. disclosure to protect sexual or other contacts; iii, disclosure to protect the public; disclosure to protect patients of HIV positive physicians and iv. disclosure to and employer

T.F.P.3 CONFIDENTIALITE ET SIDA. UTILISATION D'UN CODAGE IRREVERSIBLE DE L'IDENTITE

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Objectif. Respecter le strict anonymat des patients tout en permettant les études épidémiologiques et économiques nécessitées par le SIDA.
Méthode. Utilisation d'un numéro d'anonymat : celui-ci est le résultat d'une formule de calcul irréversible. Il est impossible à partir de ce code de retrouver l'identité qui a servi au codage. Pourtant la formule de codage est publique et ne nécessite aucune clef.
Résultats. Validation de la non reversibilité du codage par le Service Central de la Sécurité des Systèmes d'Information.

Utilisation de ce numéro d'anonymat par les différents centres d'information et de Soins (CISIH), de même que par l'organisation responsable de la distribution des produits actifs contre le virus.
Conclusion. Cette méthode est opérationnelle et contribue à la protection de ces données médicales particulièrement confidentielles.

T.F.P.4 ETHICAL THEORIES APPLIED TO CONFIDENTIALITY IN HIV+ MALES

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Objective. Protection of confidentiality and prevention of further disease through an institutional policy.
Methods. Use of various established theories and models applied to the problems of the protection and limitation of confidentiality for persons with Acquired Immunodeficiency Syndrome (AIDS), AIDS Related Complex (ARC), or Human Immunodeficiency Virus (HIV). Application of these theories and models to the conflict between the medical tradition of absolute confidentiality between clinician and patient and the tradition of disclosing infectivity status to others at risk (if the presenting patient refuses), allowing these others to make autonomous changes.
This debate, while important for patients who are openly homosexual or intravenous drug abusers, is even more key for the bisexual male, often married, and with children or planning children, whose bisexual preference is not known to his family..
For medical practitioners and the ethicists who work with them, the dilemma is unavoidable. Often these patients belong to a family practice organization. Hence, their wives and children are patients of the same group of practitioners, balancing the value of confidentiality for the presenting patient against the value of protecting the health of the other patients also known to the practitioner. Yet, if a physician or group inform their other patients, will the presenting patients disappear, thereby losing any chance of their clinicians serving them and affecting their behavior?
The paper will include a sample protocol that attempts to apply ethical theories to these problems.
Results. With sustained counseling, most infected patients will voluntarily inform their contacts where they have not done so. Where physicians have done so, these patients have generally not been lost to treatment. There have been some notable and unfortunate exceptions.
Conclusion. Under certain circumstances, it is ethically permissible to break confidentiality, when the direct and immediate result is the probable prevention of disease, and there are no other means to accomplish this goal.

Éthique clinique
Clinical Ethics

T.F.P.5 "PERCEPTIONS AND ATTITUDES OF HEALTH CARE WORKERS ON ETHICAL AND SOCIAL ASPECTS OF AIDS IN A DEVELOPING COUNTRY."

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Despite the guidelines, AIDS has raised several controversial and unresolved ethical, social and legal issues in the health care profession.

In order to assess the perceptions and attitudes of Jamaican health care workers (HCW) on ethical and social aspects of AIDS, we conducted a survey in 4 Jamaican hospitals between July-August, 1988. 502 Questionnaires were sent to randomly selected HCW of which 379 were returned before the cut off date, a response rate of 75%. The affirmative responses (%) were tabulated for each category of HCW.

QUESTIONS	Doctors (n=140)	Nurses (n=112)	M.Techs. (n=44)	Radiographers (n=48)	M.Studs (n=35)
1. Confidentiality	20	8	9	11	23
2. Routine screening	33	78	55	63	51
3. Identity card	78	84	86	83	83
4. Special isolation hospital for AIDS patients	40	57	59	50	40
5. Sharing waiting room/toilet facilities	70	63	53	52	62
6. Extensive lab tests for opportunistic inf.	90	59	57	54	71

Our survey demonstrated that HCW do not differ in their perceptions and attitudes as compared with general public. Hence, HCW of developing countries need to be further educated themselves before they can educate the public.

T.F.P.6 A MODEL FOR FACILITATING PHYSICIANS' ACCEPTANCE OF RISK WHEN TREATING PATIENTS WITH AIDS

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The refusal of physicians to treat patients with AIDS because of fear of infection is a recognized problem. Recently ethicists have proposed models based on altruism to encourage physicians to treat patients with AIDS. It is argued that these models will not have a wide enough appeal and that additional models that recognize physicians' self-interest are needed.

Physicians have always shown a mixture of altruism and self-interest, the proportions varying not only from individual to individual, but from one historical era to another. The period when all appropriately qualified physicians treated the contagious, a standard that is generally held today, lasted only a century (c 1850-1950). This was also a period when a high degree of paternalism was inherent in the physician's role and it is argued that the benefits of the paternalism, e.g. power, self-esteem, and admiration, compensated in part for the risk of infection.

Police officers and fire-fighters are respected and derive self-esteem because they risk their lives daily in the service of others. When a police officer or fire-fighter is injured or dies in the line of duty, he or she is considered a "hero" because the injury or death resulted from the willingness to assume the risks of the job. Seeing themselves, and being seen by others as heroes might provide additional gratification to some physicians to help compensate for the risk of infection. The first step in making physicians heroes is unequivocal support, emotional and financial, for anyone who seroconverts in the line of duty. Specific proposals to implement such a model and implications for other health-care workers will be presented.

T.F.P.7

CHUL* BIOETHICS COMMITTEE AND THE ANTI-HIV SCREENING TEST

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Within 16 months, three requests for opinion concerning the use of anti-HIV screening tests were submitted to the CHUL Bioethics Committee by health-care professionals. The first request dealt with accidental infection with HIV among the surgical block staff (1988-02). The second request dealt with routine screening of anti-HIV for all patients undergoing surgery (1988-07). The third request was related to the management of fresh semen vs frozen semen stocks for the purpose of heterologous insemination (1988-04).
Objectives: To present (a) the positions adopted by the Committee, (b) the scientific, legal and ethical considerations that justified these positions, (c) the outcome of these requests for opinion submitted to the Committee.
Method: The method adopted by the Bioethics Committee is as follows: (a) creation of a multidisciplinary task-force (medicine, ethics and law) upon reception of the request for opinion; (b) submission of a preliminary paper to the Committee; (c) discussion of and modification to the preliminary paper by the Committee; (d) issue of a unanimous opinion by the Committee.
Result: These opinions are now part of CHUL internal policies regarding the use of the anti-HIV screening test.
Conclusions: 1. The fear of possible accidental contamination by HIV among health-care professionals is very high. 2. Health-care professionals are aware of the ethical dimension in the use of the anti-HIV screening test.

T.F.P.8

A LEGAL OR ETHICAL DUTY TO WARN: ONE LAST TIME

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Objective. To reconcile the moral, institutional, public health and legal principals bearing upon the existence of a duty owed by professionals to warn unsuspecting third parties that a patient or client knowingly places that third party at risk of HIV infection.
Method. Reviewed the medical, ethical, and legal literature concerning the "duty to warn" and summarized the arguments. Evaluated the many proposals for legislation or for legal clarification of the moral dilemma.
Results. There are three primary values or goals competing in the debate: confidentiality, the public desire to block the spread of infection and the personal desire to avoid legal liability. These values are irreconcilable in some extraordinary factual circumstances. Law does not resolve these tensions nor should it be relied upon to do so.
Conclusions. Professionals are traditionally entrusted by society to make difficult decisions, distinguishing them from other occupations. On a case-by-case basis, professionals must determine if a warning (or other action) to a person at risk of infection is the highest "good." We propose a framework for making that decision which includes consideration of a professional's risk of legal liability.

T.F.P.9

ETHICAL STANDARDS IN THE CONTEXT OF HIV INFECTION

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Objective: To determine ethical standards for obtaining medical data.
Methods: The Deutsche AIDS-Hilfe performed several seminars on ethical standards. Participants were people with HIV and AIDS, doctors, health care workers, philosophers etc.
Results: It was found that there is a lack of ethical standards in treatment, counselling and research with people with HIV and AIDS. An ongoing irrational fear of contracting HIV and AIDS is one of the main factors that substain people from dealing with HIV infection and AIDS in an objective way. The lack of ethical standards in collecting medical data leads to the suspicion of people with HIV and AIDS that their personal data could be misused and that treatment research is more for the benefit of the researcher and not for the person with HIV and AIDS. Conclusion: There is desperate need for national and international ethical standards for counselling and research. Specific proposals will be presented at the conference.

T.F.P.10

SIDA : LES DROITS DES MALADES

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Les réactions de peur et de rejet engendrées par le SIDA représentent un danger éthique par la remise en question des droits du malade qui régissent la relation médecin-patient : droit à la confidentialité, à l'information et aux soins.

Les défenseurs de la confidentialité présentent ce droit comme l'unique moyen d'entreprendre une prévention de la transmission, tout en respectant la dignité des malades.

Les opposants estiment que la levée du secret médical est le seul moyen de protéger la santé des contacts en palliant l'irresponsabilité de la plupart de ces malades.

Au sujet du droit du malade à l'information, les avis s'opposent sur quatre points principaux : l'accord du sujet pour la pratique du test de dépistage, la révélation de son affection au malade, l'obtention du consentement aux traitements et les modalités d'application des essais thérapeutiques dans le cadre du SIDA.

Quant au droit aux soins, il a pu être remis en cause par le SIDA, à tel point que les Assemblées Médicales se sont vues contraintes de rappeler solennellement ce principe d'éthique.

Un dialogue de sourds s'est souvent instauré entre défenseurs et détracteurs des droits du malade, entraînant parfois des prises de position excessives.
Au fil des années le monde commence cependant à apprendre à vivre avec le SIDA, et les problèmes peuvent être abordés de façon plus constructive.

T.F.P.11

APPROCHE ETHIQUE DU PHENOMENE SIDA : REVUE BIBLIOGRAPHIQUE

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Objectif et méthodes : L'étude bibliographique proposée a débuté par l'interrogation de quatre banques de données : Medline, CNRS, Bioéthics et AIDS, avec les mots clef suivants (associés au mot SIDA) : Ethique, Droits de l'homme, Confidentialité, Législation, jurisprudence. Un total de 412 références ont été listées de 1983 à fin 1987.

Résultats : Après lecture et analyse des publications disponibles et de langue courante (355), les législations adoptées dans les différents pays, ainsi que les principales opinions rencontrées dans les articles ont été répatoriées par thèmes et commentées.
La classification que nous proposons est la suivante :
1 - MESURES DESTINEES A PROTEGER LA SOCIETE
Avec en partant des plus coercitives : quarantaine et isolement, mesures discriminatoires contre certains groupes, levée du secret médical, application du code criminel, dépistages, déclarations obligatoires et Registres, protection des dons du sang, vaccins et médicaments nouveaux, essais thérapeutiques, information, éducation.

2 - MESURES DESTINEES A PROTEGER L'INDIVIDU
Droits fondamentaux du malade : droit à la confidentialité, à l'information et aux soins.
Droits civiques : liberté, droit à l'éducation, au travail, etc...
Droits de l'individu non malade : droits des contacts, sécurité du personnel soignant, des receveurs de sang, etc...

T.F.P.12

INFLUENCE OF HIV STATUS ON DECISION MAKING FOR NEWBORNS

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Objective. To describe the impact of maternal/infant HIV seropositivity on decision making for newborns.

It is clear that current HIV testing in the newborn does not yield results that allow for differentiation between maternal and fetal seropositivity. Newborn HIV status, however, is used by some physicians and nurses to justify treatment/management decisions. It is not always clear that alteration of the management plan based on HIV status is warranted. In addition, parents and parental surrogates (ie foster parents) may alter their decisions based on the HIV status.
Methods. Questionnaires administered to physicians and nurses in three metropolitan New York City neonatal ICUs and interviews with social service administrators.
Results/Conclusions. Preliminary data (both formal and anecdotal) indicate a newborn's HIV status influences decision making.

T.F.P.13

T.F.P.14

T.F.P.15

Recherche de traitements et de vaccins
Research for Treatments and Vaccines

W.F.P.1

THE TRIAL GIVETH, THE TRIAL TAKETH AWAY: THE EMOTIONAL COST OF STOPPING AN HIV TREATMENT TRIAL

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Objective. To demonstrate the emotional cost of offering participation in drug treatment or other research protocols to people with HIV infection or AIDS deserves closer scrutiny.
Methods. Six months following discontinuation of an HIV active immunotherapy research trial, a number of volunteers (16/57) were randomly contacted by telephone and sampled by questionnaire regarding their perception of their own emotional status and well-being prior to learning about the study, during their participation as potential study subjects, and upon cancellation of the study.
Results. Both positive and negative responses were noted with our cohort. Positive effects associated with entering the study included increase in social activities, optimism about their future, perceived enhancement of well-being, and development of bonding among cohort members. Negative emotions noted prior to entry in the study disappeared with selection for the study, but returned following study discontinuation. These included feeling socially isolated, depressed, and discouraged along with feelings of being "let down", "abandoned" and "panicked". Many volunteered with the hope of not only participating and receiving benefit from the most current research, but also, by volunteering, of helping someone else, even if not themselves.
Conclusions. Having reviewed the results of the random sampling of our cohort, we feel that intensive efforts need to be made to minimize potential negative effects of treatment studies on the emotional well-being of future study volunteers, including those not selected for participation.

W.F.P.2

ETHICAL AND CLINICAL CONCERNS IN HIV RESEARCH DESIGN

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Objective. To design a naturalistic follow-up study of HIV positive and HIV negative gay and bisexual men incorporating ethical, clinical, and pragmatic concerns and insuring high levels of subject satisfaction and return.
Method. Study policies were devised to balance naturalistic design with subjects' need for medical feedback and counseling, as needed; a method was established to share research findings with an eager and well informed cohort without biasing future data; and guidelines were created to protect subject confidentiality while allowing access to research data useful to individual subjects' ongoing medical care.
Results. Subjects evaluating initial study visit (N=204) reported high rates of relative satisfaction with their visit (203, 99.5%), perception that confidentiality had been handled well (199, 97.5%), and satisfaction with feedback from study internists (202, 99%) and neurologists (196, 96%). Of the 96 seropositive subjects scheduled to return for the 2nd study visit, 89 have returned; all 30 seronegative subjects scheduled to date for the 2nd study visit have returned.
Conclusion. HIV research can consider ethical, clinical, and practical issues in study design and achieve high rates of subject satisfaction and return.

W.F.P.3

ETHICAL AND LEGAL ISSUES IN CLINICAL TRIALS FOR HIV-INFECTED CHILDREN

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Objective: To explore methods of dealing with the complex issues of clinical trials in children with HIV infection.
Methods: We surveyed investigators at more than 40 centers across the USA, state and city social service agencies, ethicists and philosophers on issues of informed consent, ethics of placebo controlled trials, access to new treatments, impact of foster care.
Results: In the USA, pediatric AIDS has been concentrated in a few states, but the number of cases is growing in many urban areas. More than 30 centers are capable of offering experimental therapies and this number is also growing rapidly. In some areas up to 30% of HIV-infected children are in foster care. Only a few states have established procedures for enrolling these children in clinical trials.
There is wide diversity of opinion concerning criteria for deciding when use of placebo is appropriate.
Conclusion: Clear and uniform guidelines are needed to ensure that all children with HIV infection have equal access to new treatments, while at the same time, rights of the children and their guardians are protected. More communication is needed among all concerned with these issues.

W.F.P.4

LES PROBLES ETHIQUES POSES PAR LA VACCINATION ANTI HIV

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INTRODUCTION : Actuellement, le monde entier s'interroge sur la menace que représente l'épidémie de SIDA: la mise au point d'un vaccin anti-HIV devient urgente, mais pose divers problèmes difficiles à résoudre. En particulier, il existe une opposition entre la Santé de l'individu et la Santé Publique. Le premier but de la thérapeutique, c'est le bénéfice réalisé par le patient et pas forcément par la société. Quant il s'agit d'un nouveau traitement ou vaccin, les aspects éthiques prédominent.

Méthode : Notre équipe, formée de médecins de Santé Publique, a réalisé une recherche bibliographique portant sur 600 articles, abordant le thème de l'éthique face au SIDA. Nous nous sommes intéressés plus particulièrement aux aspects éthiques et légaux concernant la recherche d'un vaccin anti HIV.
Résultats : Ces problèmes se répartissent en trois domaines : les essais cliniques, la fabrication et la distribution du vaccin. Ils ne sont pas particulier au SIDA, c'est le contexte qui les aggrave : il existe une accélération des plans de recherche, une diffusion rapide et médiatique des résultats, et des pressions politiques, sociales et financières importantes.
CONCLUSION : Les essais thérapeutiques doivent faite l'objet d'un consensus rigoureux, soumis à des directives ou des avis internationaux. Les problèmes posés par la fabrication future du vaccin doivent être posés et résolus dès-à-présent. Quant à la distribution du vaccin dans la population, il semble qu'elle doive se faire sur une base générale (tous les individus et pas seulement les groupes à risque), plus ou moins volontaire.

Prévenir la transmission du VIH : les conflits religieux en matière de santé publique
Preventing HIV Transmission: Religious Conflicts in Public Health

W.F.P.5

MEETING THE MORAL CHALLENGE OF HIGH-RISK LIFESTYLES: AIDS AND EDUCATION

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Objective - To propose and apply criteria for the moral evaluation of education programs designed to change high-risk behaviour for the transmission of HIV. Such education programs have been strongly endorsed by ethicists, policy-makers, and lawyers as the most effective and ethical means for slowing the spread of HIV. Extensive research has been done supporting the claim that education programs are an effective way of changing high-risk behaviour. But education programs designed to modify behaviour have yet to be evaluated using the conceptual tools of ethical analysis to see how they fare from an ethical perspective. It has been almost universally assumed that education programs are either morally neutral or morally praiseworthy.
Method- Development of a concept of "autonomy" which can be used in the evaluative principle of "respect for individual autonomy" and application of the moral principle "respect individual autonomy" to AIDS education programs - (This is the methodology of applied ethics).
Results - The concept of "autonomy" adopted for the purpose of evaluating AIDS education programs emphasizes the centrality of awareness on the part of those targeted by education programs, about the means used to influence behaviour change. The methods of influence used to modify behaviour must be such that persons who respect their own autonomy would agree to have their behaviour influenced/ modified in these ways.
Conclusion - AIDS education programs which rely heavily on fear and peer pressure to modify high-risk behaviour do not satisfy the moral principle, "respect individual autonomy".

W.F.P.6

THE ETHICS OF INCREASING ACCESS TO STERILE SYRINGES AS AN APPROACH TO REDUCING PERINATAL HIV TRANSMISSION

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Ethical debate over efforts to reduce perinatal HIV transmission have focused primarily on three approaches: 1) influencing procreative decisionmaking; 2) notifying or counseling pregnant HIV-infected women regarding the risk of perinatal infection; and 3) intervening perinatally (e.g., through administration of AZT). Dissatisfaction with these approaches stems either from their lack of proven efficacy or the poor reception they receive from at-risk populations, combined with their threat to individual liberties if imposed in a coercive fashion.

Attempting to decrease the incidence of HIV infection by increasing access to sterile injection equipment is a more pragmatic approach, but it has been poorly accepted in the US, despite evidence that over 80 percent of infected infants are born to drug-using women and their partners. The major ethical objection to this approach is that it seems to send "the wrong moral message," symbolically making an inappropriate statement about drug use. Yet the emergence of HIV infection as a health risk to drug-users, and to their offspring, enormously magnifies the cost of avoiding the appearance of social sanction. Since the benefit to be achieved by social policies must be proportionate to the harms imposed on individuals affected by them, prohibiting access to sterile needles and syringes no longer withstands ethical scrutiny. Not to act to reduce lethal risks inherent in socially undesirable activities requires special ethical justification, especially when the risks extend to individuals not participating in the censured behavior.

W.F.P.7 Promoting Safer Sex

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The Dutch Foundation for STD Control, co-sponsored by WHO, organized an "International workshop on the PREVENTION of Sexual Transmission of AIDS and onther STD" from April 30 - May 3, 1989. For this meeting 250 experts from the industrialized world were invited to debate the state of the art in promoting safer sex. Policy makers, executives and researchers exchanged information, discussed bottlenecks and future plans in 10 different workshops:

1. Men with homosexual contacts
2. IVDU
3. Prostitutes and their clients
4. Ethnic minority groups
5. Adolescents in and outside school
6. Std-patients
7. Women
8. General public
9. Policy makers
10. Condoms

The outcome of these workshops as well as the meeting as a whole will be presented.

W.F.P.9 JUSTESSE ET JUSTICE DU TRAITEMENT DU SIDA

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Le phénomène SIDA a bouleversé nos représentations sur la vie et la mort, l'espace public et privé, l'éthique médicale et le droit. Il a créé une situation de double incertitude, tant scientifique que juridique, dans laquelle décideurs politiques, acteurs du monde médical, patients et leur entourage doivent prendre des décisions inédites, chargées de sens à long terme. Prévention ou traitement? Tandis que l'opinion publique, informée par une presse dont l'histoire sera juge, vacille entre l'indifférence, le rejet et la peur et ne réagit guère aux campagnes de prévention, les patients séropositifs luttent pour l'espoir. Les succès de la recherche ont été spectaculaires, sans pourtant résoudre ni la question de la prévention ni celle du traitement. A partir d'une recherche en cours sur le développement, la recherche clinique et la commercialisation d'un nouveau médicament, l'AZT lequel, sans pouvoir-guérir réussit au moins à prolonger la vie de certains malades pour un temps encore indéterminé, nous chercherons à répondre aux questions de justesse (technique) et justice (politique et civique) que les mesures prises au Canada dans le traitement de la maladie et des malades posent.

W.F.P.8 FEMALE PROSTITUTION IN GLASGOW: HISTORICAL STUDIES

ST Green, DJ Goldberg, FA Green: Ruchill Hosp, Glasgow, U.K.

Prostitution was first recorded in the U.K. after Rome's Conquest (A.D. 43). Although illegal, it thrived throughout Medieval, Tudor and Elizabethan times. King James II and VII (r. 1685-8) owned his own brothel. Diarists Pepys (C17th) and Boswell (C18th) used prostitutes; Boswell noted the association with venereal diseases (VD). In Glasgow in 1841 (popn. 28 x 10^4), Police Superintendent H Miller knew of 1,475 female prostitutes, aged 15-20 years; many abused alcohol and drugs. Venereologist Dr W Logan estimated in 1842 that Glasgow's 1,800 female prostitutes served 36,000 clients weekly and generated £514,800 p.a. (1989 equivalent £25,740,000 or US$45,370,000); 300 girls died annually. In 1871, local newspapers identified 200+ brothels in a tiny area of the city; Dr Manney blamed it on "*drink, dress and the Glasgow Fair*". Dr A Patterson (1870-80) noted that the age of hospitalised female prostitutes with VD averaged 18-19 years, most having worked for 1 year or less. He observed that syphilitic prostitutes were reservoirs of infection which could disseminate into the wider population. Bidding to retard VD spread throughout the Armed Forces, the *Contagious Diseases Acts (1864, 66, 69)* provided for registration of female prostitutes: these laws were abandoned and replaced by the *Criminal Law Amendment Act (1885)*, which further criminalised prostitution, driving it underground. The *Glasgow Police Act (1883)*, an anti-vice initiative, was widely condemned as ultra-repressive. Laws tended to discriminate against women. Prostitution continues in C20th Glasgow: in 1988 Green and Goldberg identified 55 prostituting women. Repressive laws still form society's only official approach. AIDS, a 1980s phenomenon, has, like syphilis before it, strongly emphasised the need to study prostitution.

W.F.P.10 PRACTICAL AND ETHICAL INADEQUACIES OF PARTNER RESTRICTION AS A METHOD OF AIDS PREVENTION

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Objective. To evaluate the efficacy, practicality, and ethics of partner restriction as a method of AIDS prevention in light of current knowledge regarding the transmission of HIV.
Methods. AIDS prevention strategies, presented in publications produced by governmental agencies and gay advocacy groups, were reviewed with regard to current research on transmission and prevention. Empirical and theoretical justifications were sought in the literature for the strategies advocated.
Conclusions. The strategy of partner restriction, either by absolute number of partners, sexual history, relative risk of infection, or antibody test results, may slow the spread of AIDS in a population but it cannot stop it. Under certain theoretical conditions, simple partner restriction, without sexual behavior change, can even increase the risk to an individual. Partner restriction does not guarantee that the reduced partner pool will be free of infection. Attempts to determine the serostatus of a partner have inherent practical problems of honesty, accuracy, and incompleteness. Further, the recommendation of partner restriction raises striking ethical issues including discrimination against infected or at-risk individuals. Finally, an unwarranted sense of security may be felt by those who reduce their number of sexual partners to the exclusion of practicing safer-sex.

W.F.P.11

W.F.P.12

W.F.P.13

W.F.P.14

W.F.P.15

Discrimination et droits de la personne
Discrimination and Human Rights

Th.F.P.1 AIDS AND ETHICS

Levi, Guido Carlos* & Barros, Antonio Osório Leme de **
* Hospital do Servidor Público Estadual, São Paulo, Brasil
** Health State Secretary, São Paulo, Brasil

Objective. The authors prepared for the São Paulo Medical Council and the Brazilian Federal Medical Council a resolution regarding many ethical aspects on AIDS. Approved in 1988, it is now the official guideline for Brazilian medical doctors on this matter.

Methods. The subject was divided into six parts: introduction, AIDS and discrimination, relationship between doctors and patients (including patient refusal, respect towards the patient, patient's abandon and confidentiality), AIDS and institutions (including hospitals, blood banks and prisons), AIDS and Occupational Medicine and AIDS and medical research.

Results. A short resume of each of these topics will be presented.

Th.F.P.2 L'ETHIQUE DANS LES GROUPES COMMUNAUTAIRES

Sourdif, Isabelle
Comité sida aide Montréal, Montréal, Québec, Canada

Objectif. Décrire l'organisation d'un groupe de travail sur les aspects éthiques dans un organisme communautaire et les priorités à traiter.
Méthodes. Etude des besoins. Présentation des problèmes d'ordre éthique pouvant surgir dans un organisme communautaire. Quelles priorités établir? Actions à entreprendre? Objectifs? Qui doit faire partie de ce groupe? Critères? Structure? Fonctionnement?
Résultats. Elaboration de procédures d'acceptation des projets de recherche. Code d'éthique interne. Code d'éthique des professionnels et des bénévoles. Positions officielles de l'organisme. Confidentialité.
Conclusion. Nécessité de ce groupe de travail pour protéger les droits des personnes affectées par le virus. Voit au respect des individus (personnes atteintes, séropositives, bénévoles, permanents). Capacité de regarder objectivement un problème. Travail-réflexion.

Th.F.P.3 STATE/LOCAL STRATEGIES TO PREVENT AND RESOLVE HIV-RELATED DISCRIMINATION: FIVE CASE STUDIES

Guthrie, Anne M.*, Sherwood-Fabre, L.*, Steele, R.J.**, Karsten, S.E.**, Lorenz, B.F.**, Ritter, J.L.**. *Office of the Assistant Secretary for Health, U.S. Public Health Service, Washington, D.C., **Birch and Davis Associates, Inc., Silver Spring, MD. U.S.A.

Objective: To identify successful processes for preventing and resolving complaints of HIV-related discrimination, and program features affecting replicability.
Methods: Five programs were selected for the study based on the existence of a relevant discrimination statute, availability of program documentation, and program experience. The project team visited all 5 sites (Los Angeles, CA; San Francisco, CA; New York City, NY; Philadelphia, PA; and, Olympia, WA) prepared case-study reports, and a final summary report.
Results: Litigation is rarely necessary to resolve complaints. Most often, discrimination occurs out of fear or ignorance, and interventions utilizing educational, mediation, and advocacy strategies are sufficient and timely. In addition, the programs' enforcement efforts appear to prevent some additional complaints. The programs may also provide technical assistance to persons seeking advice on their rights or obligations under the law.
Conclusion: The wide variety of site features suggests that the essential processes of these programs can be successfully adapted in many milieus. Further, the programs' successes in keeping persons in their homes and/or jobs tends to promote private sector involvement in the AIDS issue, and may limit the burden of the AIDS epidemic which is shifted to the public sector.

Th.F.P.4 EQUALITY RIGHTS FOR PEOPLE WITH AIDS: MANDATORY REPORTING OF HIV INFECTION AND CONTACT TRACING IN ONTARIO

Flanagan, William F., B.A., LL.B. (Toronto), D.E.A. (Paris I), LL.M. (Columbia); Columbia University School of Law, New York, New York, U.S.A.

Objective: To examine the public health rationale and constitutional implications of (1) the mandatory reporting of HIV infection with identifiers and (2) an active contact tracing program supervised by public health officials (as is the present practice in the Province of Ontario).
Method: Examination of the equality rights provision under s.15 of the Canadian Charter. I present the view that protection for the physically disabled under s.15 extends to HIV infected individuals. I then examine whether the Ontario program, which prejudically effects the interests of the physically disabled, can withstand Charter review.
Conclusion: Because of concerns for confidentiality, the mandatory reporting of HIV infection with identifiers seriously discourages voluntary HIV testing, an essential element in preventing the spread of HIV. Mandatory reporting does not therefore serve the public health objective of controlling HIV. Although mandatory reporting does permit public health officials to enforce a contact tracing program, contact tracing is better performed by private physicians (where warranted) rather than public health officials. Physician- conducted contact tracing (even without the patient's consent) less seriously threatens the need for confidentiality because no state records of HIV infected individuals are maintained. Third parties at risk for HIV infection are thus notified without seriously discouraging individuals from seeking voluntary HIV tests.

Th.F.P.5 GOVERNMENTS' DUTY TO PROVIDE FINANCIAL ASSISTANCE AND COMPENSATION TO PERSONS WHO HAVE BECOME INFECTED WITH HIV THROUGH BLOOD TRANSFUSIONS AND BLOOD PRODUCTS.

Jacques J.M. Shore, Heenan Blaikie Law Firm, Montreal, Que.CANADA

Objective: I To review Governments' response to the demands for compensation by individuals who have contracted AIDS through the use of blood provided to them during routine medical/surgical procedures or by the injection of Factor VIII in treating hemophilia. II To identify legal principles and moral arguments to guide Governments in their decision to provide compensation or financial assistance.
Method: In addition to a brief review of the early history of AIDS, a glance at legal issues and relevant Canada/U.S. case law is made so as to predict the potential for success by utilizing legal methods for redress. Reference to international legal principles and domestic constitutional documents are made to support arguments. Compensation schemes in other countries and their legal bases are also identified. Results: The author explains that since certain Governments and their bureaucracies responded too slowly at the outset to the warnings that the infection was transmittable by blood, they now have a moral, if not legal, duty to those unsuspecting individuals who contracted the disease from contaminated blood.
Concl.: Those Governments which displayed little interest in the purity of blood supplies in its system or ignored the early danger signals breached the most elementary responsibility in the field of human rights; the right to life and the protection thereof. Such Governments have the duty to compensate hemophiliacs and blood transfusion recipients infected by HIV/AIDS.

Th.F.P.6 PROVIDING HIGH QUALITY, LOW COST LEGAL SERVICES TO PEOPLE WITH AIDS: A DISCRIMINATION LAW PROJECT

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People with AIDS or HIV infection, as well as persons only perceived to have AIDS or HIV infection, have experienced severe discrimination in employment, housing, access to health care and insurance. At the same time, because of indigence or near-indigence due to medical expenses, persons with AIDS have had very limited access to high quality legal help for their discrimination problems. In September 1988, the Columbia University School of Law opened an AIDS Law Clinic, staffed by two full-time faculty and sixteen students, each of whom devoted half their academic time to the Clinic and received one-half of a semester's course credit for their work. Operating under a special practice order from the local court system that allowed the students to function as formal legal representatives, the Clinic accepted referrals from local AIDS service organizations, local human rights agencies and public interest attorneys. The Clinic provided free legal services to its clients, and by February 1989, it had accepted representation in approximately thirty discrimination cases, with several cases already resolved in favor of clients who otherwise would have lacked any private legal counsel. By using law students as legal representatives, the Clinic has provided high quality, low cost legal services to an underserved population. It has also given law students valuable experience in the representation of clients and training in important policy issues. The AIDS Law Clinic can serve as a model for similar clinics at other professional schools.

Th.F.P.7 AIDS POLICIES OF CANADIAN UNIVERSITIES

Savage, Donald C.*; Blanchette, M.**

*Canadian Association of University Teachers, Ottawa, Canada,
**Canadian Association of University Teachers, Ottawa, Canada.

Objective: A study of the administrative and ethical policies on AIDS of Canadian universities in regard to their faculty, students and support staff

Method: By questionnaire and telephone follow-up with university administrations and the local representatives of faculty, students and support staff.

Results: Universities normally regard themselves as leaders in their communities. This research tests whether Canadian universities are acting as leaders in this area. It examines and analyses on a comparative basis the extent to which Canadian universities have developed policies both to deal with AIDS on the university campus and to educate the university community about AIDS. This involves in the first category such ethical and administrative matters as policies on confidentiality, restriction of access to some or all university facilities and programs, access to insurance programs, etc., and in the second category the type of program for educating staff and students and the investment therein.

Th.F.P.8 FORUM FOR CIVIL AND HUMAN RIGHTS BODIES ACTIVE IN AIDS WORK

The B.C. Civil Liberties Association
B.C., CANADA

Objective. To make possible a sharing of information and expertise in the specific areas of concern to governmental and non-governmental bodies concerned with the recognition and protection of individual rights in connection with AIDS.

Methods. To inform most of the Human and Civil Rights bodies in the world - including all Ombudsmen of every government - of the special focus of the 1989 International Conference on both social and scientific issues, and to encourage their participation in a special forum for rights bodies. The physical planning for such a forum can be organized on the basis of the response received to the correspondence with these bodies undertaken by the B.C. Civil Liberties Association.

Results. We suspect that many rights bodies would welcome an opportunity to explore together, in the supportive expert context provided by the International Conference, the special difficulties posed for individual rights by AIDS. Regulatory authorities would capitalize on an opportunity to sensitize rights advocates to the substantial public interests that policy makers must responsibly secure as they respond to the special plights of the AIDS person.

Conclusion. The Rights Forum, organized under the aegis of the International Conference, is an important step towards reconciliation of the perspectives of AIDS persons, their advocates, and the governmental authorities who must adjudicate their demands.

Th.F.P.9 HIV ANTI-BODY TESTING; is consent the legal issue?

Harris Dai; Legal Officer, The Terrence Higgins Trust Legal Centre.U.K.

Objective: To analyse the legal importance of patient consent, and to ask whether it ensures the proper use of the antibody test.

Method: Consent is important ethically and professionally. Testing without consent would undermine confidence in public health. Whereas voluntary testing is extremely useful. Positive or negative people can be advised to have safer sex directly by the doctor or clinic. Consent is required under UK law before a patient's blood is tested. Without expressed or implied consent there is no defence to the charge of assualt. People tested positive without consent can sue if, as a result, they lose their insurance, job or accommodation.

Conclusion Consent is an important legal issue in ensuring the proper administration of the antibody test. How the test is used may be the more important social and legal issue. Agreeing to take a test is fast becoming a standard pre-condition to be considered for insurance, a job or work permit in some countries.

This requirement is legal in the UK, should it be?

Th.F.P.10 A BILL OF RIGHTS FOR PERSONS WITH AIDS

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*Issues Committee, ACT UP, N.Y., U.S.A.

The objective of this abstract is to describe the establishing of a Bill of Rights for Persons living with AIDS. Above all else, the medical, political and social rights of Persons with AIDS must be secured in the treatment of this disease. To ensure this objective, a Bill of Rights for PWAs must be drafted, discussed, ratified and promulgated. It will be developed primarily by Persons with AIDS, defined as anyone who is HIV seropositive and/or living with AIDS or ARC. This Bill of Rights will serve as a model to be presented to national legislative bodies, and to the United Nations General Assembly and the World Health Organization; it will contain recommendations for laws that will place the health and care of PWAs in the forefront of setting national and world policies on AIDS. Medical, moral, economic, political nd social principles effecting all aspects of AIDS (including but not limited to research, treatment, health care and pulbic policy) will be derived from what is beneficial for persons most effected by AIDS--those having the disease. Any and all claims, be they political, medical, economic, scientific, proprietary or social, conflicting with the principles in the Bill of Rights will be subordinated to the fundamental rights of Persons with AIDS.

Th.F.P.11 CATASTROPHIC RIGHTS

Dixon, John President, B.C. Civil Liberties Association, Vancouver, British Columbia, Canada

Objective. To define and explore the limits of a special instance of patients' rights in the context of catastrophic illness.

Method. To bring the disciplinary tools of Philosophy and Law to bear on the task of analysing the conflicting claims of the catastrophically ill and public health authorities in connection with the specific issue of access to experimental therapies, and the general issue of therapeutic self-determination.

Result. Considerable merit is discovered in the argument of public health policy-makers that important public interests are served by the social control of therapies. In opposition to this result, it is discovered that there exists a well-grounded claim, on the part of the catastrophically ill, to an to an enhanced right to therapeutic self-determination. Specifically, a symmetry between the right to refuse medical treatment (one of the most well-established rights of patients) and the right of the catastrophically ill to access experimental therapies is discovered and explored. When catastrophic rights are carefully balanced against the public interest sought through the governmental control of therapies, it is discovered that they have real, but limited scope.

Conclusion. Regulatory authorities should respond to catastrophic rights by carefully liberalizing access to some experimental therapies.

Th.F.P.12 THE INFLUENCE OF AIDS ON INDIVIDUAL RIGHTS AND THE DIGNITY OF PEOPLE.

Arredondo, C.; Conde, F. , Coronado, A.*, Gil, E.*,
Ministery of Health,-Spain.

Objective. The influence that AIDS is having on the rights of individuals and the dignity of people, what the social conception of it is, and the form in which different social groups learn about it has been studied. This has taken into account the fact that the repercussions of AIDS go far beyond daily social affairs, and that within society it is reflected as a Contagious-Incurable-Sole-Mortal-Fact that causes the inevitable physical deterioration and ensuing death, as well as inevitable social segregation.

Conclusion. This report presents research carried out by means of a representative survey of the Spanish population and has clearly shown that information and rational reasoning alone when dealing with AIDS are insufficient to undertake this problem which is strongly rooted in deeper "social fears".

Th.F.P.13 DEVELOPMENT OF COMMUNITY-BASED LEGAL SERVICES FOR PERSONS WITH HIV INFECTION

Hockenberry, Clint* and Savos, Michele**
*Administrator, AIDS Legal Referral Panel, San Francisco, CA, USA; **Consultant, American Bar Association's AIDS Legal Services Project, Washington, DC, USA.

Objective. To examine the need for free and low cost legal services for persons with HIV infection.
Methods. Examine the collaborative efforts of health providers and legal professionals in providing free and low cost legal services to persons with HIV infection. Analyze the special legal needs of U.S. citizens with HIV infection, including testamentary documents (e.g., Wills-on-Wheels programs for hospital and housebound clients), government entitlements, employment, insurance, bankruptcy, family problems and criminal representation. Review the legal profession's pro-bono response to the AIDS epidemic since the formation of the first AIDS legal service in 1982. Survey existing and planned AIDS legal services throughout the United States.
Results. AIDS service organizations, minority lawyers and local bar associations increasingly offer a legal component in the delivery of essential services to persons with HIV infection.
Conclusions. Free and low cost AIDS legal services are an essential component of community-based programs for persons with HIV infection.

Th.F.P.14 LEGAL NEEDS ASSESSMENT OF HIV-INFECTED MEN AND WOMEN

Saltzman, Brian R., Perlman DC, Clayton J, Colligan-Levine P, Lane C, Comeau L, et al.
Beth Israel Medical Center, Mount Sinai School of Medicine, New York, NY, USA

Objective: To determine the legal needs of HIV-infected men and women.
Methods: Hospitalized patients (pts) with known or suspected HIV-related disease were administered a standardized questionnaire, including mini-mental status examination, by trained personnel in an ongoing study to assess knowledge of legal issues, and the need to provide for child custody, wills, living wills, general and medical powers of attorney.
Results: Of the first 55 pts surveyed, 9 were unable to answer, 1 refused. 45 pts were available for analysis. 36 (80%) were male; 9 (20%) female. 21 (46%) were Hispanic; 20 (45%) White, 4 (9%) Black. 20 (45%) were intravenous drug users (IVDU), 18 (40%) homo/bisexual men, 4 (9%) had no identified risk, 2 (4%) homo/bisexual IVDU, 1 (2%) heterosexual partner of a person at risk. 37/45 (82%) needed wills for child custody or reasons of distribution of property. Only 8/37 who needed wills had them. Of those who needed wills, IVDU were less likely than non-IVDU to have made them ($p<0.02$). 20/45 (44%) had minor children. 10/20 (including 8/9 women) with minor children expressed a wish to have the children cared for by someone other than the child's other biologic parent. Only 3/10 had made custody arrangements for the children in the event of the pt's death. 13/45 (29%) knew what power of attorney was; 5 of 13 (all homo/bisexual men) had designated power of attorney. 5/45 (11%) knew what a living will was; 4/5 had a living will (all homo/bisexual men).
Conclusions: 1. HIV-infected patients have multiple legal issues which need to be addressed. 2. Women with AIDS frequently have child custody issues. 3. IVDU were less likely to have attended to their legal needs. 4. Persons with HIV-infection require education regarding and assistance in attending to a wide variety of legal needs. 5. Legal issues should be addressed early, while the patient is still capable of decision making.

Th.F.P.15 HIV ANTIBODY TESTING OF "CANADA WORLD YOUTH" (CWY) APPLICANTS

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*Hotel Dieu de Montréal, **Clinical Research Institute of Montreal; ***Canada World Youth, Montreal, Canada

Applicants accepted for "Canada World Youth" (CWY) projects are sent to 18 countries for four months. CWY youth in foreign countries are usually grouped into three cohorts of 12 youths each and located in three communities that may be anywhere from 50 to 125 miles distant from each other. CWY has an emergency blood transfusion programme within which CWY youth, in the event of an accident or emergency, serve as blood donors for their CWY colleagues.
Two questions have been asked. Is it ethically justifiable for CWY to require all Canadian applicants to submit to HIV antibody testing as a condition for acceptance into CWY projects? Is CWY ethically justified in using confirmed seropositive results of HIV antibody testing as a criteria for excluding applicants from its projects?
This paper will present the analysis and arguments to support each of the following answers to the above questions:
Answer to question 1: Canada World Youth would seem ethically justified in requiring HIV antibody testing of applicants as a condition for their admission into its projects. Adequate counseling and protection of confidentiality remain essential conditions for the ethical justifiability of such a testing policy.
Answer to question 2: Exclusion of asymptomatic HIV seropositive applicants from Canada World Youth projects is not necessarily unjustly discriminatory and ethically unjustified. There are good and sound reasons for such exclusion, and a policy excluding asymptomatic HIV seropositive candidates could satisfy the five conditions (necessary, effective, sensitive, specific, and proportionate) for ethically justifiable mandatory policies in specific contexts. It is essential, however, that confidentiality be protected and that exclusion from CWY projects not itself lead to public identification of which candidates are HIV seropositive and which are not. Provision of adequate counseling is an ethically essential component of such a policy.

SECTION G

Implications internationales

International Issues

Le sérodiagnostic
Serodiagnosis

M.G.0.1

EVALUATION OF THE PROGRAM FOR PREVENTION AND CONTROL OF BLOOD TRANSMISSION OF HIV (PPCBT) IN MEXICO.

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*Directorate of Epidemiology, Ministry of Health. Mexico,
**National Center of Blood Transfusion.

Objectives: Evaluation of the Program for Prevention and Control of Blood Transmission of HIV (PPCBT) in Mexico.
Method: To design a strategy for the evaluation of donors, blood products and recipients, to measure the impact at short, medium and long term of PPCBT.
Results: The PPCBT in Mexico has been functioning for two years. Infrastructure, legal modifications and political will were required. The initial legal modifications based on a seroprevalence of 7% in paid donors, were mandatory detection of donors and prohibition of blood commerce. A national network of laboratories (NNL) was created. At present, seroprevalence in donors is 0.01 to 0.8%; 700,000 units of blood are transfused yearly. Main coverage problems are located in rural areas and small hospitals in urban areas. Measures taken to face this problem include the adoption of quick tests and the expansion of the NNL. Cases associated to transfusion increased from 2.5% in March, 87 to 11.2% in January, 89.
Conclusion: In those countries where the transmission of HIV associated to transfusion of blood products is important, it constitutes a bridge towards heterosexual and perinatal transmission. Measures to ensure the quality of blood should be extremed, including the prohibition of blood commercialization. The medium term evaluation shows that the measures adopted are still insufficient. It is expected that cases associated to transfusion continue to increase for some years. The adoption of quick techniques and consolidated purchases of reagents will allow the optimization of resources.

M.G.0.2

A regional perspective of HIV antibody testing in the Americas

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F. Zacarias[2], M. Ritchie[1]
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The Federal Centre for AIDS, Health and Welfare Canada, and the Pan American Health Organization co-sponsored the first international meeting of directors of national AIDS reference laboratories, Americas Region. The meeting, intended to assist countries in developing and strengthening the operational and scientific aspects of national HIV screening programs, was held in Touraine, Quebec, in August 1988 and was attended by representatives from 24 countries in the Americas. The meeting was preceded by four workshops at which small groups drafted position papers on: quality assurance, regional serum panels, standardization of the immunoblot and indirect immunofluorescence tests and laboratory networks. The papers were considered by the group as a whole, and consensus was achieved around the 4 topic areas.

Laboratory needs, practices and human resource requirements were assessed by questionnaire. The analyses indicate resource allocation, laboratory facilities, scientific expertise and testing protocols are highly variable within the region. Infrastructure analysis and the resulting adoption of an appropriate network could lead to improved service with a minimum of expenditure within any given region. Development and implementation of a model laboratory network is in progress.

M.G.0.3

DETERMINATION OF HIV-1 SEROPREVALENCE IN A COHORT OF 8000 INDIVIDUALS IN KINSHASA ZAIRE USING POOLED SERA COMPARED TO TESTING OF INDIVIDUAL SERA

Behets, F.*; Kasai, M.*; Ndilu, M.*; Brown, C.*; Ryder, R.*; Quinn, T.C.**. *Projet SIDA, Kinshasa, Zaire; **NIAID, NIH, Bethesda, Maryland.

Objective. To determine the accuracy and cost-effectiveness of testing pooled sera samples compared to testing individual sera samples in establishing seroprevalence of HIV-1 infection in an African population.
Methods. Serum samples from 8000 persons were tested by ELISA (Organon) and repeatedly reactive samples were analyzed by Western blot (DuPont). 800 pooled samples were made from this population, each containing 100 microliters from 10 different individuals. Pooled samples which were repeatedly reactive by ELISA were considered positive.
Results. The seroprevalence as determined by testing 8000 individual sera was 2.44% compared to 2.41% (95% CI=2.05 - 2.77%) as determined by testing 800 pooled samples. Of the pooled samples that tested negative (n=627), none contained any positive individual samples. Of the positive pooled samples (n=173), 146 contained 1 positive sample, 16 contained 2 positive samples, 2 contained 3 positive samples and 9 had 1 indeterminate sample. 8208 ELISA tests were required to determine seroprevalence using individual sera compared to 973 ELISA tests using pooled sera. To identify each individual positive sample within each positive pool, a total of 2906 tests would be required.
Conclusions. For determination of HIV-1 seroprevalence rates in large population-based surveys, testing of pooled samples appears to be cost-effective, practical and highly accurate.

M.G.0.4

A Simple, Rapid, Practical HIV Screening Assay for Developing Country Manufacturing and Use.
DEVELOPING COUNTRY MANUFACTURE AND USE.

Herrick, M., Coulter, M., Schaeffler, Barbara A., Spielberg, F., and Tam, M.R. Program for Appropriate Technology in Health, Seattle, Washington, USA.

Objective: To develop a simple, rapid, inexpensive HIV assay, which can be produced in and used by developing countries. Goals for such a test include a relatively short assay time, reagent stability, equipment independence, and an easily interpretable endpoint.
Methods: HIV gp41 peptide was immobilized onto polystyrene strips, and incubated with neat sera or whole blood. After a wash step, any bound antibody was detected by exposure to protein A-colloidal gold. The total assay time was less than twenty minutes.
Results: Preliminary data was generated using a panel of 110 specimens. The rapid test was positive on 34/34 Western blot-confirmed HIV^+ sera (sensitivity 100%), but detected only 1/77 normal and WB^- sera (specificity 98.7%). A positive result could easily be interpreted by a dark red dot of color on the plastic strip. Although the numbers of specimens at present are small, the test method is also accurate when assayed on samples of whole blood. A cost analysis indicated that the expense of materials is very low (less than US $0.10 per assay).
Conclusions: We have developed an HIV screening assay which appears to be accurate, affordable, and practical. Transfer of this technology for the manufacturing of assay kits in areas proximal to their use will allow many developing countries to extend their screening capability to transfusion centers, primary health care centers, or other areas of urgent need.

M.G.0.5

THE USE OF DILUTION TECHNIQUES IN SCREENING FOR HIV-1 AND 2 ANTIBODIES IN WEST AFRICA.

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Objective. To demonstrate the potential usefulness of a dilution technique in HIV-1 and 2 screening in West Africa.
Methods. Using a combination of 2 'screening' tests (either an ELISA and a particle agglutination test for HIV-1 or 2 different ELISA's for HIV-2) and Western Blotting, tested sera were categorised as either true HIV positives or HIV false positives. These sera were then diluted with HIV negative serum to 1/100 and retested using competitive ELISA's for HIV-1 and 2.
Results. 56 sera considered HIV positive were tested at dilution (5 HIV-1; 51 HIV-2) and 55 remained strongly positive. 59 sera considered to be HIV false positives were tested at dilution (4 HIV-1; 55 HIV-2) and all were found to be negative.
Conclusion. In areas where false positive HIV tests are problematic and where financial and technical resources may be limited, retesting initial ELISA positive sera at dilution may give a reliable indicator of true HIV positivity.

M.G.0.6

POOLING OF SERA TO REDUCE COSTS OF HIV-ANTIBODY SCREENING IN BLOOD BANK DONORS FROM BOGOTA, COLOMBIA, SOUTH AMERICA

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Objective. Because Colombia is a country with a relatively low prevalence of HIV antibodies among blood donors (0,009%) we saught to determine weather donated blood samples could be pooled and then tested in a simple assay without a loss of sensitivity.

Methods. A single pool consisting of five serum samples was assayed using six different commercially available antibody kits. One HIV-1 positive specimen taken from a group of self-made serum samples with different graded Abbott Recombinant EIA reactivities was included in each pool.

Results. We report on our findings using pools of five specimens and compare them with those from individual specimen screening. We assayed 196 polls of 900 serum samples. From 1% to 30% of pools containing low absorbance values positive specimens were missed.

Conclusion. We discourage the pooling of samples by this procedure in order to reduce costs of HIV-screening among blood donors. The best resultas indicate that 1% or 1.5% of the low-positive reacting sera will be missed, a figure still unacceptable, even in countries where economical resources are badly needed.

Aspects culturels et sociaux de la sexualité
Cultural and Social Perspectives of Sexuality

M.G.0.7 CULTURE, SEX AND SCIENCE: ANTHROPOLOGICAL PERSPECTIVES FOR AIDS PREVENTION AND CARE

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The predominance of sexual HIV transmission world-wide has led scientists from diverse disciplines and countries to probe the determinants and measures of sexual attitudes and norms. A scientific approach is crucial, because neither investigators nor subjects are free from bias: Culturally based assumptions and values shape personal sexual behavior, and color representations of and responses to the presumed behavior of others. This paper contrasts anthropological with epidemiological approaches to the scientific study of sexual risk behavior. It highlights theory and methods for mapping and evaluating determinants of sexual conduct in particular sociocultural settings. Determinants include observable realities (e.g., economic, social and health conditions), and unobservable realities such as motivations, emotions, values, self-concept and social meaning, all of which are culturally constructed, systematically interrelated, and which often vary by age, gender and social position.

Moreover, sexual risk-reduction strategies prescribe changes in behavior for medical reasons. That is, they intersect at least two highly-charged and culturally variable domains: those of sexuality and illness. Since AIDS prevention relies upon voluntary changes in behavior, accounting for experience, concepts and meanings in both domains are essential tasks for prevention-relevant research and effective interventions. To exclude such factors in the name of science is unjustified, and it distracts from the real challenges of strengthening culturally-grounded empirical work.

M.G.0.8 CULTURAL, SEXUAL AND SOCIAL PERSPECTIVES OF AIDS IN BRAZIL

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Brazil, with 140 million inhabitants and US$ 140 billion in external debt, is a country of contrasts. The State of Sao Paulo (33 million) contributes 41% of the gross national product and boasts a per capita income of US$ 3000. Nevertheless, 1.287.686 families (avge. 4 members) earn less than US$ 60 a month. 18% of the state population is illiterate, 35:1000 is the mortality rate for children under the age of 5, 50% of public elementary school children are malnourished, and the maternal mortality rate is 1:16 for women between the ages of 15 and40. Despite of being a rich state, 39.000 cases of Hansen's disease and 16.000 cases of tuberculosis were notified in 1986. As of 1988, 65.4% of the AIDS cases in the nation were from São Paulo (more than 75% from the city of Sao Paulo). Brazil is the largest Roman Catholic country in the world. However, it has the largest concentration of spiritualism and the city of Sao Paulo is considered the world capital of Pentecostalism. Afro-Brazilian cults are deeply seeded in the culture. Although Brazil gives a touristic image of a sexually permissive country, it is essentially a very conservative one. Sex is still a taboo subject and, even though it may be a source of pleasure, for many it is a way of survival.

M.G.0.9 ADOLESCENT SEXUALITY IN EUROPE

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M.G.0.10 AIDS AND THE SOUTH AFRICAN CULTURE

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THE AIDS CENTRE, SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH (SAIMR), JOHANNESBURG, SOUTH AFRICA

OBJECTIVE To describe how the South African Culture influences the AIDS epidemic. METHOD An action research methodology was used. Data was collected over a sixteen month period from people seeking services from the AIDS Centre (SAIMR). The multi-cultural population consisted of male and female, adolescents and adults, from major cities and towns throughout South Africa, as well as dependent and independent homelands. RESULTS Two broad aspects of South African culture have been recognised for their influence on AIDS. Firstly, the ideology and practise of apartheid and secondly, that services such as education and counselling are generally imported,decontextualised,non-African and therefore inappropriate for Third World clients. South Africa is a culturally diverse society that requires multicultural rather than monocultural practises. CONCLUSION The apartheid system together with a eurocentric theory of human behaviour severely restricts the control and prevention of AIDS in South Africa. It is incumbent on helping professionals to be aware of the structural determinants of problems, and also to revolutionise the delivery of AIDS services so as to benefit people from a variety of cultural backgrounds.

M.G.0.11 "Sexuality in Africa: The Role of Cultural Beliefs and Behaviour".

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Abstract.

In this paper sexuality is defined according to age and sex of the participants. Sexuality for whom and when?

Examples from a selection of ethnic groups are used to illustrate beliefs and expected behaviour. Population discussed include adolescents in schools, colleges and places of work. Spouse both young and not too young are also included.

The influence of social change as that which is brought about by formal education, christianity and the mass media is considered.

Discussions are centred on the role that a return to traditional beliefs could play to avoid risk behaviour in sexuality.

M.G.0.12 CULTURAL DETERMINANTS OF SEXUALITY IN THE SUDAN

Asma, L. University of Khartoum, Faculty of Medicine, Khartoum, Sudan.

M.G.0.12.A SUMMATION

Campagnolo, Iona. McMaster International Centre for International Health, Hamilton, Ontario, Canada

Information et comportement sexuel
Knowledge and Sexual Behaviour

M.G.0.13

KNOWLEDGE ABOUT AIDS IN RURAL UGANDA.

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Objectives: To assess the degree of awareness about AIDS in the Community so as to design a relevant health education program and to establish a baseline for evaluation.

Methods: A community based survey was conducted in Mpigi District of Uganda. Trained interviewers enrolled 4000 adults from 200 clusters of 20 people each. Each participant responded to a questionnaire in private.

Results: It was found that 5% had never heard about AIDS, 75% knew at least 1 symptom of AIDS and 88% were aware that the infection can be passed on from one person to another. When several possible methods of transmission were proposed, various proportions selected the following: sex 60%, sharing clothes 70%, insects 37%, witchcraft 22% and drinking contaminated water 22%. AIDS is regarded as shameful by 71% but 55% agreed that AIDS victims can be safely nursed at home. Only 62% were aware that AIDS is incurable.

Conclusion: The need for a health education program was ascertained since the general level of knowledge about AIDS was low.

M.G.0.14

AN ASSESSMENT OF AIDS RELATED KNOWLEDGE, ATTITUDES, AND PRACTICES (KAP) IN RAKAI DISTRICT, UGANDA.

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OBJECTIVE: To assess AIDS related KAP of the generally rural population of Rakai District, a high prevalence area in Uganda.
METHODS: The Ugandan AIDS Control Programme has launched a longitudinal serological and behavioral study in Rakai, which will also assess the effects of AIDS prevention programs. 840 households in 21 randomly selected clusters (9 in trading centers and 12 rural) were censused. The household cohort consists of 3200 persons. For the baseline, consenting persons were interviewed and bled.
RESULTS: Preliminary results show that 69% of the cohort participated in the baseline survey. (9% declined, 24% were absent). 98% of adults knew of AIDS, 93% knew of sexual transmission. 90% indicated that changes in behavior could be protective. 82% stated they had made behavioral changes. Whereas 47% indicated having multiple sexual partners in the last 5 years, only 9% indicated multiple partners for the last year. Condom use was reported by less than 3%. The most common reason given for nonuse was lack of information. On multiple questions, males had 6 to 32% higher correct response rates.
CONCLUSION: A high proportion of the adult population of Rakai has at least some correct information on AIDS, and reports changes in behavior. However, gaps in knowledge exist and KAP results will be considered in designing education programs.

M.G.0.15

IMPACT OF AIDS ON RURAL AND URBAN BEHAVIOUR IN UGANDA

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Objective: The WHO intercountry protocols are pretested to develop instruments for a national socio behavioral survey and insights and guidelines for the national AIDS program in Uganda.
Mehtods: A random sample development for the Westing house/Ministry of Health Demographic and Health Survey was adopted to provide the technical and matrix base to execute surveys of three rural and one urban district. WHO KABP and Partner Relations questionnaire were introduced to general populations simultaneously with a third instrument that examined both KABP and Partner Relations and included culturally specific content.
Results: Preliminary pretest finds shown on
a) increased awareness o' AIDS in rural and urban populations:
b) sexual contact along with injections and vertical transmission seen as major forms:
c) new behaviors emerging, including reduction in numbers of sexual partners:
d) little comprehension of etiology of the disease:
e) attitudes toward treatment tend towards punitive measures, especially in rural communities:
f) care giving viewed as personal and family, then governmental responsibility rather than communal:
g) national AIDS control program known to urban populations but with limited impact in rural areas.

Conclusion: A national survey is indicated by the success of the pretest to improve the efficacy of the AIDS Control Program efforts in rural Uganda.

M.G.0.16

KNOWLEDGE AND BEHAVIOR RELATED TO AIDS: A STUDY OF 3500 ZAIRIAN HEALTH WORKERS

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Objective. To describe knowledge and behavior of health workers (HW) in order to target AIDS education programs.
Methods. We surveyed 3462 physicians, nurses, health facility workers, community HW and traditional healers.
Results. A total of 14% in 1987 and 36% in 1988 consider AIDS curable, this increase following announcement of a potential cure; 96% in 1987 and 86% in 1988 considered AIDS preventable ($p<10^{-6}$). A mean of 2.6 (of 4) correct sources of transmission in Zaire were cited spontaneously, and 3.6 were cited with prompting. Also, a mean of 3.6 (of a possible 5) incorrect sources of transmission were affirmed by the respondents, particularly non-medical personnel. Only 57% of the respondents would like to be serotested themselves; physicians were the least interested in being tested (p=.000034).
Conclusions. (1) Most Zairian HW know about AIDS and its transmission, though significant misconceptions persist. (2) The significant drop in those considering AIDS preventable may reflect increasing pessimism among Zairian HWs. (3) These data should be used to plan AIDS educational programs.

M.G.0.17

AN HIV SEROSURVEY IN THE GENERAL POPULATION OF KINSHASA APPEARS FEASIBLE

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Objectives. To determine if a large HIV serosurvey of the general population of Kinshasa with pre- and post-test counselling is feasible and to concurrently evaluate the use of maternal blood collected at delivery as a sentinel HIV seroprevalence monitoring system.
Methods. Five of the 24 Kinshasa zones (administrative subdivisions) were randomly selected for a 1988 pilot study of a planned systematic population-based serosurvey of Kinshasa. One "quartier" was randomly chosen from each of the 5 zones. Within the selected "quartiers", one "parcelle" or home unit was randomly selected, and the consenting occupants aged 2 years and more of this and the most adjacent parcelles were invited to participate until a total of 100 individuals were included. During the same period maternal blood samples were obtained from maternities in 4 of the 5 zones.
Results. Of the 86 families visited, 76 (88.4%) agreed to participate. A total of 470 participants (52% females, 48% males aged 2 to 75 years) were enrolled of whom 14 (3.0%) were HIV(+). Twenty-six persons (5.5%) consented to be tested for HIV but did not wish to be informed of their serostatus. The HIV seroprevalence among the 1052 parturients at the 4 maternities was 5.5% compared with an HIV prevalence of 7.5% in the 106 similarly-aged women included in the pilot community survey.
Conclusion. An HIV serosurvey of the general population of Kinshasa with pre- and post-test counselling appears feasible. Such a survey is required to establish a firm baseline for subsequently evaluating the recently established national HIV control and prevention program. The willingness of the majority of the participants to be informed about their serostatus gives a basis for starting a counselling programme for HIV(+) individuals in Kinshasa. Testing maternal blood which can be easily collected may be one way of monitoring HIV prevalence in women of child-bearing age but the validity of this methodology needs to be further evaluated.

M.G.0.18

KNOWLEDGE OF HIV/AIDS AND SEXUAL PRACTICES IN SRI LANKA

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Objective. To relate the knowledge, attitudes and beliefs (KABP) about HIV/AIDS and other STDs to the sexual orientation and practices among a Sri Lankan sample population with high levels of involvement in sexual tourism, self-reported homosexuality and previous experience of STDs.

Method. In 1988 a multi-stage sample was drawn from the general population of Sri Lanka. A core questionnaire on KABP (WHO model) relating to HIV and other STDs was used. Primary analysis focused on the relationship between the demographic and socioeconomic characteristics and the sexual orientation and behaviour of the respondents.

Results. Whilst some sexual orientations and practices were associated with economic stress (not being employed, low income levels), others were not. There was no significant relationship between sexual orientation and knowledge of the causes and prevention of HIV infection. Consequently, persons with risk behaviour did not show a greater adoption of prophylactic practices than those without self reported risk behaviours.

Conclusion. Much greater effort will be needed to raise the awareness of this population about the unique nature of HIV/AIDS infection vis-à-vis other STDs and the steps that can be taken to ensure protection from HIV.

Les nourrissons à risque : Le point de vue africain
Infants at Risk: An African Perspective

M.G.0.19 INFANT MORBIDITY & MORTALITY IN UGANDA

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OBJECTIVES: To review the causes and rates of infant morbidity & mortality in Uganda from 1983-1988 and to determine the impact of HIV infection on the infant morbidity & mortality rates in Uganda.

METHODS: A review of literature (data) on the causes and rates of infant morbidity and mortality 1983-1988 in Uganda was made with special reference to a study on the HIV impact.

RESULTS :

Year	1983	1984	1985	1986	1987	1988
IMR	110	105	108	140	133	98

The leading causes of infant morbidity & mortality still remain mainly infective and preventable diseases as illustrated in a district mortality survey in 1986—respiratory tract infections (RTI) 18% of all deaths, diarrhoea 15%, malaria 12%, measles 10%. In the follow-up study 12.6% of the infants born of HIV positive mothers died before their first birth day as opposed to only 2% of a comparable group of infants of HIV-ve mothers. The causes of mortality among the HIV positive group were failure to thrive 45%, Diarrhoea 18%, measles 18%, RTI 9%, meningitis 9%. The only infant who died in the control group died of RTI.

CONCLUSION: 1. The causes of morbidity and mortality in Uganda remain the same i.e. preventable & mainly infective diseases. 2. In recent years the IMR in Uganda has generally been declining. 3.HIV infected infants had higher morbidity & mortality rates but overall the HIV infection has not increased the IMR in the country.

M.G.0.20 INFANT MORBIDITY AND MORTALITY IN NAIROBI.

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OBJECTIVE: To assess morbidity and mortality in infants of HIV+ mothers.
METHODS: Systematic followup from birth of infants of HIV+ (study) and HIV- (control) mothers.
RESULTS: One hundred and fifty-five study infants and 253 controls have been follwed for a mean of 10 (range 0.5 to 30) months. Study infants had more episodes (per 100 infant months of followup) of febrile illnesses (18 vs 13,p=.01), diarrhoea (10 vs 8, p=.04), cough(28 vs 23,p=.025), pneumonia (3 vs 1.6, p=.01), and otitis media (1.8 vs .6, p=.001).Failure to thrive(FTT) occured in 31/155(20%) study infants versus 27/253(11%) controls (p=.01,RR=2, 95%CI=1.2-3.8). Measles developed prior to immunization in 7/70(10%) study infants and 1/101(1%) control (p=.01,RR=11, 95%CI=1.3-81), and despite vaccination in 1 of 61 study and 2 of 98 control infants. 2 infants from each group had chickenpox. Infant mortality (IM) was higher in the study group:12/155 (7.7%) vs 6/253(2.4%),p=.01. Infants of HIV+ mothers with more advandeced HIV disease or subsequent death had higher IM, FTT and OM than infants with asymptomatic mothers.
CONCLUSION: Infants of HIV+ mothers have repeated and severe childhood illness leading to FTT or death. Infants of HIV+ symptomatic mothers are at greater risk of dying, FTT or frequent illness.

M.G.0.21 RISK FACTORS FOR MATERNAL-INFANT TRANSMISSION IN ZAIRE

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M.G.0.22 BREAST MILK AS A RISK FACTOR FOR HIV-1 TRANSMISSION.

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HIV-1 may be transmitted from an infected mother to her fetus during pregnancy or childbirth or immediate post-partum period. Although virus isolation from cell-free breast milk has been documented, the contribution of breast feeding in latter modality of transmission of HIV-1 has been questioned. There are, however, at least 8 case reports of HIV-1 seronegative women at the time of delivery, who during immediate post-partum period (usually through receipt of HIV-1 infected blood transfusion or drug abuse) got infected. These mothers and their breast-fed children seroconverted. While other routes of transmission could not be excluded in some cases, it was suggested that children were infected through breast milk. In Lusaka, we prospectively followed 16 maternal incident cases and their children for 2 years (mothers and children were p24 and antibodies negative at labor). Mothers acquired HIV-1 through heterosexual route. Subsequently, 3 mothers infected their children who seroconverted at 18, 20,and 22 months of age, respectively. No risk factcrs other than breast milk were identified.
Conclusion. The sequential seroconversion of mothers and children is suggestive of possible transmission of the virus through breast milk. Since advantages of breast feeding outweigh the possible risk of HIV-1 transmission, breast feeding may not be discouraged till more information is available.

M.G.0.23 SAFETY AND EFFICACY OF IMMUNIZATIONS WITH LIVE VACCINES.

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Objective. To review the safety and efficacy of live oral and bacterial vaccines given to children of HIV+ mothers.
Methods. Review of vaccination complications following BCG, oral polio vaccine (OPV) and measles vaccine used in the perinatal HIV transmission study in Kenya.
Results. BCG: Although 6 HIV-infected infants have been reported with respiratory disease and/or lymphadenitis following BCG vaccination, neither have occurred in 120 infants of HIV+ mothers given BCG in this study. Failure to respond to PPD testing occurred in 28/40 (70%) study vs 28/62 (45%) control infants (p=0.02; OR=2.83; 95%CI=1.13-7.19). OPV: Polio did not develop in either infant or family members following administration to 137 infants of HIV+ mothers. Short and long term anti-polio antibody testing is not yet completed. Measles: 61 infants of HIV+ mothers have received measles vaccine without sequelae; 7/8 had protective antibody production vs 10/15 controls tested to date. Measles developed in 7/70 (10%) study infants vs 1/101 (1%) controls (p=0.008; OR=11.1; 95%CI=1.3-81.0) prior to vaccination. One of 61 study and 2/98 control infants developed measles despite vaccination.
Conclusion. Complications of live vaccines are rare in infants of HIV+ mothers. Continued BCG use should be reserved for areas of high tuberculosis risk. In developing countries, OPV is not contraindicated. Significant HIV presence in an area may hamper existing control measures. A more efficacious measles vaccine which can be safely given to infants prior to 9 months of age is needed.

M.G.0.24

Séance thématique
Specialty Session

Implications internationales
International Issues

Prévalence (partie 1)
Prevalence (Part 1)

M.G.0.25 THE WAVE-LIKE PROGRESSION OF AIDS IN THE DOMINICAN REPUBLIC

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Objective. To describe and analyze the progression of the AIDS epidemic by sex, age, risk factor, occupation and geographical distribution from 1983 to January 1989 in the Dominican Republic.

Methods. Analysis of national AIDS epidemiological surveillance data broken-down by relevant variables. Growth rates by semester are calculated. Changes in male: female ratios and their implications are analyzed.

Results. As of January 1989, 855 AIDS cases have been notified to PROCETS. Despite the sustained increase in cases from 1983 to January 1989, the growth rates curve by semester has already described two complete waves with periods of high and low acceleration. Introduction of the virus to new population groups and high infectivity of cases in the acute phase seem to be responsible for this trend. Male: female ratios have varied from 9.0 (1983-84) to 3.6:1 (1985-86) and 2.2:1 (1987-88).

Conclusion. The wave-like progression of AIDS in the Dominican Republic - suggests that a high transmissibility of HIV infection occurs shortly after the introduction of the virus to new population groups.

M.G.0.26 TREND ANALYSIS OF AIDS CASES REPORTED IN BRAZIL, 1982-1988

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Objective. To describe temporal and geographical trends for AIDS patients, as well as risk factors and related disease for AIDS cases, reported to the National Surveillance System of Brazil, from 1982 to December/1988.

Methods. Cases reported on a routine basis to the Ministry of Health were evaluated in terms of rates, ratios and proportions over time.

Results. The overall AIDS incidence rate increased from 0.05 in 1982 to 14.00 per million population, in 1988. The proportion of cases reported from the cities of Rio de Janeiro and São Paulo, in 1984, decreased from 83% to 49%, in 1988. In 1988, 43% of the reported cases came from other cities than the five biggest metropolitan areas. The male/female ratio changed from 30:1 in 1985 to 8:1 considering the cases reported in 1988. Seventy nine percent of the cases reported from 1982 to 1985 were classified as having a high level of education. In 1988, this rate was only 33%. The proportion of AIDS cases aged 30 - 44 years decreased from 55% in 1985 to 48% in 1988. The first 8 pediatric cases occurred in 1984, and in 1988 they represent 4% of the total reported cases. In 1985, 7% of the pediatric patients were infected by perinatal transmission, however, this proportion reached 45% in 1988. The proportion of homo/bisexual AIDS cases decreased from 79% in 1985 to 55% in 1986. Among IVDU(s), the male/female ratio changed from 5:1 in 1986 to 3:1 in 1988. The proportion of recipients of blood/haemophiliacs which was considerably high in 1986, despite its decreasing (7% in 1988) still remains above the observed rate in Western countries. The proportion of IVDU(s) which was 1% in the span of time between 1982 and 1985, increased to 11% during 1986 to 1988.

As far as associated diseases are concerned, it was observed that the relative frequency of Candidiasis remained constant over time. The proportion of Tuberculosis increased from 8% (1982-1984), considering the first 150 cases, to 22% in 1988, and Kaposi's Sarcoma decreased from 23% in 1984 to 9% in 1988.

Conclusions. During the six years of the epidemic of AIDS in Brazil, some very important changes occurred over time. The proportion of IVDU(s) AIDS cases, the proportion of female patients as well as perinatal transmission cases, of heterosexual patients and Tuberculosis as an opportunistic disease, are increasing. On the other hand there is a slight decrease in the proportion of haemophiliacs/recipients of blood and components AIDS cases although it remains above the rate observed in Western countries.

M.G.0.27 HIV EPIDEMIOLOGICAL PATTERNS AND TRENDS IN MEXICO: AN UP-DATE

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Objective: To up-date the characteristics of the HIV-1 epidemic pattern and its future trends in Mexico.

Methods: An analysis of AIDS cases, serosurveys, trends of cases by category of transmission, estimation of infected people and projection of cases.

Results: Mexico occupies the fourth place in number of AIDS cases in America with 2,013 cases (up to January, 1989). The men/women rate is 9 to 1, with a more accelerated trend in women. 3.7% of cases occur in children. In male adults, cases are distributed as follows: 54% homosexuals, 27% bisexuals and 12% heterosexuals, with an accelerated growth in heterosexual transmission. In women, 69% of cases are through blood transfusion and 31% due to heterosexual contacts. The cases in IVD users is less than 0.4%. The sentinel seroepidemiological surveys show the following prevalence: homosexual and bisexual males: 3% to 35%; users of HIV detection centers : 7.8% (men) 0-3.5% (women); haemophiliacs: 33% - 66%; female prostitutes: 1-35%; male prostitutes: 5-16%; voluntary blood donors: <0.1%. The estimations of HIV-1 infected ranges from 31,600 to 97,700 for 85 million inhabitants. The growth of cases continues to be exponential; nevertheless, a decrease has been observed in the growth of cases particularly in homosexual men in urban areas; however, the number of expected cases for the next five years is more than 20,000 cases.

Conclusions: The epidemiological patterns of HIV-1 in Mexico shows similar characteristics to Latinamerican countries where transmission through bisexual men and blood transfusion is creating a rapid growth of heterosexual transmission. This pattern has intermediate characteristics between occidental and African patterns.

M.G.0.28 HIV INFECTION IN ECUADOR

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Objective. To determine the prevalence of HIV infection in Ecuador.

Methods. Survey of various groups with low- and high-risk behaviors using ELISA and microELISA with confirmation by Western Blot.

Results.

Group	City	Test date	Total patients	Positive on ELISA	Positive on W.Blot
Homosexuals	Quito	11/88	14	6 (43%)	4 (29%)
	Esmeraldas	4/88	20	0	-
Female sexual partners of one male AIDS pt	Quito	1986	16	2 (12.5%)	1 (6.2%)
Prostitutes	Sto.Domingo	1987	105	5 (4.8%)	0
	Esmeraldas	4/88	64	1 (1.6%)	(damaged)
	Quinindé	4/88	100	0	-
Prisoners	Quito	2/88	662	0	-
	Esmeraldas	4/88	422	0	-
Volunteer(Low-risk): military cadets	Quito	1987	487	0	-
Voluntary blood donors:					
Red Cross	Quito	1987	16,978	52 (0.3%)	0
other blood banks	Quito	1987	955	2 (0.2%)	0
Red Cross	Quito	1988	17,884	9 (0.05%)	0
other blood banks	Quito	1988	1,429	2 (0.1%)	0

Conclusion. Ecuador presents a distinct epidemiologic picture, with extremely few infected persons among those with no high-risk behavior, and a high percentage infected in at least one group of homosexuals.

M.G.0.29 HIV-INFECTION IN VOLUNTARY BLOOD DONORS IN ARGENTINA

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Objective. A multicentric study to estimate the prevalence of HIV antibody (Ab) in blood donations countrywide.

Methods. A total of 111,641 blood units was tested for HIV-1 Ab as from 1986 in 4 different centers in the country; 94,189 were tested using Abbott EIA and 17,452 (Córdoba) units, with ENI and Organon EIA. W.B.(Dupont,Sorin), IF and ENV/CORE (Abbott) were used as confirmatory methods.

Results

City	1986 stu./Pos	% +	1987 stu./Pos	% +	1988 stu./Pos	% +	Total stu./Pos	% +
Buenos Aires 1	1651/3	.18	7250/3	.04	8450/20	.24	17351/26	.14
Buenos Aires 2			3594/5	.14	7058/19	.26	10652/24	.22
Rosario	3546/1	.03	14960/10	.07	47680/87	.18	66186/98	.14
Córdoba			8992/2	.02	8460/5	.06	17452/7	.04
Total	5197/4	.07	34796/20	.06	71648/131	.18	111641/115	.13

Conclusion. The prevalence of HIV+ donors has increased since 1987 countrywide. The percentage of positive samples has increased about 300% in the 1987-1988 period. We found different prevalence in the HIV+ percentage in different areas of the country.

M.G.0.30 A CRITIQUE OF THE CUMULATIVE RATE OF AIDS IN THE CARIBBEAN

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** The Caribbean Epidemiology Centre, Port of Spain, Trinidad
***State University of New York Health Science Centre, Brooklyn, U.S.A.

Worldwide statistics of the cumulative rate of AIDS per 100,000 population show that certain English speaking Caribbean islands have the highest rates and giving the impression that the epidemic is more prevalent in the Caribbean Basin. Whereas, for example, up to June 1988 the cumulative rate in the U.S. was 26 per 100,000, Bermuda (pop 59,400) had a cumulative rate of 126, the Bahamas (pop 235,000) 91, Trinidad and Tobago (pop 1.2 million) 25 and Barbados (pop 256,000) 24. Analysis of these figures do not take into account the fact that a large percentage of these populations reside in urban areas and in Trinidad, for example, out of 310 cases of AIDS up to June 1988, 242 were reported from the capital city of Port of Spain and its suburban areas with a population of 404,800 (cum. rate 60/100,000). In the much larger area of the rest of the island with just over half of the population (627,600) there were only 68 cases (cum. rate 10.8/100,000). On the other hand, in New York City with a population of 7 million, more than the total population of the English speaking Caribbean (6 million), there were 14,296 cases (204.2/100,000) as opposed to the total number of cases in the English speaking Caribbean islands - 822 (cum.rate 13.6/100,000). Moreover, in the U.S. (pop 240 million) over one third of the cases of AIDS are reported from the States of New York and San Fransisco (pop 44 million) and as opposed to these small islands there is a significantly larger population outside of these two states with, as yet, little viral incursion. This may be termed the "dilution factor". Further examples from the Caribbean will be cited to demonstrate this point.

Atelier régional : Afrique orientale
Regional Workshop: East Africa

M.G.0.31

IMPACT ON THE HEALTH CARE SYSTEM

Over, Mead. Washington, D.C. USA

M.G.0.32

CASE STUDY: SOCIAL ECONOMIC IMPACT OF AIDS IN A HOME

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In July 1987 a young man in his early twenties went abroad for higher learning. He had been tested for HIV antibodies before departure and found negative. Ten months later he came back with AIDS and was hosptalized, improved and discharged home. Parent (mother) took compassionate leave to care for him. This presentation sets to show the changes the family had to make and how they coped with effects of the young man in that community.

The young man stayed at home for about a month where I visited him twice a week. Counselling was seen as an element of support. He was then readmitted and died a week after admission.

This case study would have been impossible without kind permission and inherent co-operation from the parent (names and photographs withheld on request).

M.G.0.33

The Impact of HIV on the Laboratory in Developing Countries

John Shao - Muhimbili Medical Centre, Dar es Salaam, Tanzania

Most blood tests currently available in the markets for AIDS screening in the laboratory measure antibiodies against human immunodeficiency virus (HIV). There are no tests so far developed that are one hundred percent perfect. Under ideal laboratory conditions both ELISA and Western blot are capable of achieving greater than 99% sensitivity and specificity. Screening of blood samples in Africa have caused problems concerning false and negative results. Besides there is a burning issue of stability of testing materials under difficult conditions. Further more the tests must be easy to perform and read without high and expensive technology unaffordable by mostlaboratories in developing countries. There is an urgent need to evaluate the performance of tests in field conditions.

M.G.0.34

AIDS AND COMMUNITY BASED CARE

Kaleeba, Noerine. Kampala, Uganda

M.G.0.35

M.G.0.36

Sérodiagnostics rentables
Cost Effective Serodiagnosis

T.G.0.1

HIV-2 TESTING

Bariu, Francis. Laboratoire de Virologie, Université de Tours, Tours, France.

T.G.0.2

EVALUATION OF HIV TESTING

Piot, Peter. Département de Microbiologie, WHO Collaborating Centre on AIDS, Institut de médecine tropicale Belgium.

T.G.0.3

CONSIDERATIONS FOR RETROVIRAL SERODIAGNOSIS
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Boston, Massachusetts, USA

The development of a cost-effective retroviral serodiagnosis program is dependent on a number of different factors. The major purpose or setting for serodiagnosis, such as clinical setting, population surveillance or blood banks, for example, may significantly alter how retroviral testing algorithms may be developed. In the absence of highly sensitive and specific tests that are cost-effective for developing countries, setting-specific serodiagnostic algorithms will be the most cost-effective. In addition, consideration of projected seroprevalence for a given retrovirus may be a determinant in whether single or multiple retroviruses should be tested for. Finally, field evaluation of various methodologies on representative samples from these various settings should be a prerequisite to establishment of a given serodiagnosis program.

T.G.0.4

SITUATION DE HIV1 ET DE HIV2 EN AFRIQUE DE L'OUEST ET SES CONSEQUENCES SUR LES COUTS DE DEPISTAGE.

Sankalé Jean-Louis, Mboup S., et Convention interuniversitaire (Dakar-Tours-Limoges-Boston)

Objectif : Montrer que la situation épidémiologique particulière de l'Afrique de l'Ouest impose des contraintes dans le dépistage des HIV.
Méthodes : Décrire à partir des données de la littérature l'épidémiologie des HIV en Afrique de l'Ouest, caractérisée par une circulation simultanée de HIV1 et de HIV2 avec dans la plupart des pays une prédominance du HIV2 ; et tirer les conclusions quant aux coûts de dépistage engendrés par cette situation
Résultats : Les taux de prévalence en Afrique de l'Ouest sont hétérogènes

	Population étudiée	HIV2(%)	HIV1(%)	HIV1+HIV2(%)
Sénégal	Donneurs de sang	0,57	0,02	0
	Prostituées	15,80	0,79	0,33
Bissau	Donneurs de sang	8,4	0	0
	Prostituées	46,6	0	0
Ouagadougou	Prostituées	2,4	15,4	3,2
Cotonou	Prostituées	3,7	4,5	0

Le HIV2 apparaît nettement endémique en Afrique de l'Ouest alors qu'il semble se répandre sur un mode épidémique au reste du continent. Par contre le HIV1 connaît une situation opposée. Cependant les deux virus sont retrouvés en des proportions variables dans tous les pays de la sous-région. Il faut noter qu'il existe des zones "tampons" entre les deux grandes zones de prédominance de HIV1 et de HIV2, où l'on rencontre dans des proportions semblables les deux virus.
Conclusion : Cette situation rend absolument nécessaire dans tous les pays de l'Afrique de l'Ouest, mais aussi dans les pays avoisinants et les pays connaissant une situation épidémiologique semblable, le dépistage simultané des deux virus. Ceci entraîne des coûts supplémentaires (en réactifs, en temps, en personnel, etc) qui peuvent être partiellement réduits en utilisant des tests combinés qui détectent les deux virus

T.G.0.5

HIV-TESTING CRITERIA FOR AFRICA.

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Testing for HIV-infections must mean nowadays testing for HIV-1 as well as for HIV-2. The possibilities for identification of infected individuals has increased since the first test was approved in early 1985. It seems advantageous to centralize as much as possible the screening for HIV, and even more important to establish one reference laboratory for confirmatory testing in each country.

Confirmatory test systems as well as screening assays need to be specially looked at with respect to its applications in Africa. The different formats of screening assays like Enzyme Immunoassay (EIA), Haemagglutinationtests, Self-performing quick tests (Testpack, Dipstick-tests) and their potential for being used in Africa will be presented. A comparison of the different test formats is done with respect to equipment required, test performance, time to result and need for training.

In summary it seems to be important to find a way of testing for HIV in Africa that may be different from that in Europe but meets the needs of this continent in order to prevent a further dramatic spread of HIV-infections.

T.G.0.6

Risques et prévention
Risks and Prevention

T.G.0.7

SOME CORRELATES OF PERCEIVED VULNERABILITY TO HIV INFECTION IN SRI LANKA

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Objective. To investigate factors of potential bearing on perceived vulnerability to HIV infection by providing an answer to the following question: what are the socio-demographic, knowledge, attitude and practice variables that differentiate the minority of respondents who regard themselves as highly likely to get AIDS from those who do not?

thod. Using the data obtained through a large-scale KABP survey in Sri Lanka, some 13 per cent of respondents were found to be concerned about their personal vulnerability to HIV infection. These were compared with those respondents who, despite some knowledge about AIDS, did not consider themselves as particularly at risk. The two groups were compared on a number of socio-demographic (age, sex, residential status, religion, education, marital status) and AIDS-related knowledge, attitudes, beliefs and practices.

Results. Of the large number of variables considered only a few indicated statistically significant differences between the two groups. While some of the observed differences are in the expected direction, many others are not. Thus, perceived personal vulnerability seems to be only partially related to such objective measures of risk exposure as age, sex, residential status and sexual activity.

Conclusion. These findings should be taken into account in developing IEC campaigns on AIDS

T.G.0.8

THE CHALLENGE OF MODIFYING RISKY PRACTICES IN WELL INFORMED GAY MEN.

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Objective: To describe the process of production of graphic educational material, and its possible impact for the promotion of condom use in gay and bisexual men with a high level of knowledge about AIDS in Mexico. Method: With knowledge, attitudes and practices data about AIDS and its preventive measures in gay and bisexual men from Guadalajara City, Mexico (Set. '87 and May '88), a sociodemographic and educative needs profiles were done. Different concepts were tested through focus groups in this population. With the chosen concepts, 2 posters, 2 condom wallets and 1 comic were done and distributed in july '88, in centers where gay men meet (discos, bars, etc) by staff members with the collaboration of gay community. Another survey was carried out after the distribution of this material in August. The mesages included in the condom wallet are that AIDS is an STD, promotion and erotization of condom and addresses of reference centers. These messages were directed towards two different practices: 1) to causal contacts and 2) to stable couples, according to the selected designs. Results: Since the first survey, an appropriate level of knowledge of the principal variables was higher than 90%; messages of knowledge were not included, although there are still some myths about transmission. The prevalence of condom use was increased secularly, where it is noted that the change is higher between the second and third survey when controlled by having received this graphic material:

Prevalence of condom use 1987 - 1988

	Set 87	May 88	Aug 88	p
Last month	29	49	41	<0.01
Last 4 months	38	49	62	<0.001

Condom use by reception of material

	saw	not saw	p	OR
Last month	43%	22%	<0.01	2.7(1.3,6.0)
Last four months	64%	55%	NS	1.4(0.8,2.9)
Last intercouse	32%	16%	0.02	2.8(1.2,6.7)

Conclusion: It is particularly complex the design of educational material for well informed groups with adequate attitudes towards prevention but with high prevalence of risk practices. The challenge in gay and bisexual men is exactly the case. Perhaps the only way to modify high risk practices is with the combination of the design of focused educational material with adequate channels of distribution.

T.G.0.9

MASSIVE CAMPAIGN FOR AIDS EDUCATION, ACHIEVEMENTS AND PROBLEMS

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*Directorate of Epidemiology, Ministry of Health, MEXICO.
**Population Council

Objective: To describe the principal achievements and problems of the mass media AIDS prevention campaign.

Method: The educational campaign through mass media in Mexico began in April 1987. In September, 1987 and May, 1988, surveys to determine the knowledge about AIDS in general population were carried out in 6 cities in Mexico. Simultaneously, an analysis of press contents was undertaken.

Results: The first and second surveys showed 91% and 95% identification of sexual transmission mechanisms (tm), 90% and 94% identified blood tm, and 86% and 89% perinatal tm. 72% and 73% identified AIDS as a disease to which everybody is susceptible; 81% and 80% identified it as an infectious disease and 73% and 80% identified AIDS as preventable. Myths about transmission are still frequent, although there is a descendent trend; e.g. 39% and 31% think HIV can be transmitted through casual contact. Condom use was stable, 29% and 32% referred having ever used a condom. The knowledge of AIDS prevention through the use of condoms increased from 61% to 77%.

Critiques arising from different groups condemned the use of the word "condom" believing that the "promotion of condom would increase sexual freedom, promiscuity, prostitution and male homosexuality". Some other groups requested that the campaign "should be more aggressive" in their contents. This discussion, however, positioned the condom on the top of people's mind.

Conclusion.- Mass media campaigns directed to general population, do not modify practices (nor risky nor preventive); however, they are useful to create proper perception of the magnitude of AIDS and decrease myths and stigmatization . These campaigns may influence decision-makers to support programs for AIDS prevention.

T.G.0.10

AN INTERNATIONALLY ADAPTABLE AIDS PREVENTION PROGRAM FOR YOUTH

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*Adolescent Alliance, Los Angeles, CA. USA. **Association Jeunes" Contre le SIDA (AJCS), Paris, France, *** Association des Artistes Contre le SIDA, Paris, France.

Objective: To set up a volunteer-based AIDS education program where trained young people speak directly to their peers in academic settings about AIDS transmission and prevention. Methods: Adolescents and young adults are recruited through announcements on national television shows and publications targeting the youth. After an intense training on basic AIDS information and communication skills, the young speakers lead small group discussions with comparably aged youth. The issues of how HIV is transmitted and how to protect oneself from HIV exposure are emphasized. All AIDS-related concerns are addressed. Results: With the use of video films and AIDS informational brochures targeting teenagers and parents, thousands of junior and senior high school students in France have shown an increase in AIDS knowledge and prevention as evaluated by a pre/post-test questionnaire. Parents have an active role in the educational program as well. Conclusions: The AJCS program, adapted from the Adolescent Alliance Peer Education Program in the USA, is culturally sensitive to the needs and AIDS-associated concerns of youth in France and can be applied to other countries in the world. The international model is inexpensive and easy to implement and evaluate.

T.G.0.11

ADOPTION OF SAFER SEXUAL BEHAVIOUR BY AN HIV HIGH RISK GROUP OF BAR AND RESTAURANT WORKERS IN DAR ES SALAAM, TANZANIA

Fred Mhalu*, Hokin C,** Sange P,** Shao J,* Bredberg Raden U.*** Biberfeld G*** et al
*Muhimbili Medical Centre, Dar es Salaam, Tanzania, **Dar es Salaam City Council, Dar es Salaam, Tanzania, National Bacteriology Laboratory, Stockholm, Sweden.

Objective: To study the adoption of safer sexual behaviour by a group of bar and restaurant workers at high risk of HIV infection in Dar es Salaam, Tanzania.

Methods: After recognising the rapid rise in HIV infection among restaurant and bar workers in Dar es Salaam where the prevalence rates among female workers increased from 29.0% in 1986 to 42.4% in 1988 (prevalences in males were 8% in 1986 and 9.1% in 1988) efforts were made to impart health education, individualised counselling and free provision of condoms to the group.

Results: 398 workers (156 male and 242 females) out of 617 (249 male, 368 females) originally enrolled in the study were available for followup after 3 months. 26(6.6%) of the workers had not adopted any sexual behaviour change due to the threat of AIDS, 191(48.5%) had had only one sex partner, 13(3.3%) had stopped having sex, 42(10.7%) were using condoms all the time and 122(30.9%) had reduced the frequency of changing sex partners. The prevalence of utilisation of condoms increased from 19.1% to 67.1% during the 3 months of followup. 243(63.4%) of the workers considered a supply of 3 condoms per week to be adequate, 96(25.1%) required no condoms at all while 44(11.5%) required 12 condoms per week.

Conclusion: Intensive health education and counselling with provision of condoms have a good chance of success in reducing the rapid spread of HIV infection among groups of individuals engaging in high risk sexual behaviour in developing countries.

T.G.0.12

THEORY AND PRACTICE IN PROCUREMENT OF SAFE BLOOD IN KAMPALA, UGANDA.

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Nakasero Blood Bank, Ministry of Health, Uganda.

Objective. For the past two years, it has been policy to screen all donated blood for anti-HIV before transfusion. In November 1988, the Ministry of Health and European Development Fund joint project of an all volunteer blood bank in Kampala started operation.

Methods. Prospective donors get information, both verbal and written, concerning the transmission of HIV-1. Blood is given anonymously, but one week later the donor can use a code to request the test results. Each sample is tested by a first generation EIA method (Vironostika, Organon). Positives are confirmed by a competitive inhibition EIA (Uniform Anti-HIV-1, Organon). Negative sera are retested by EIA using synthetic peptides as antigen (Biochrom. Inc.). Donors with confirmed positive tests have a second sample checked before getting a definitive result.

Results. During the first three months we have found: 1. Positive results in 9% of donors. 2. Donors informed of positive results, with accurate information and sensitive counseling, made appropriate behaviour decisions. 3. Some donated blood solely to obtain an HIV-1 antibody test.

Conclusion. The implications for blood bank policy in Uganda will be discussed.

Compassion et soins communautaires dans les pays en voie de développement
Community Compassion and Care in the Developing World

T.G.0.13

TASO'S COUNSELLING EXPERIENCE

Ssebbenjae, Peter. Kampala, Uganda

T.G.0.14

COUNSELLING & EDUCATION IN THE TOWNSHIPS

ALFRED S MACHELA: *A Myeki** T Payne ***Rifilue
TOWNSHIP AIDS PROJECT (SOWETO)

OBJECTIVE: To develop an ongoing Comprehensive Progreve Primary health care programme for (a@ H.IV infection and other sexually trasmitted diseases in the Townships.
(b) Develop an HIV counselling programme (Pre, post.test and support group counselling, with trained educators for the community.
METHODS: Organising workshops, house meetings and using educational pamphlets which are relevent to a person living in a township and involving clinical and non clinical person who have credibility in their area and trusfed by the people.
RESULTS: Due to the fact, that the project involves people from the townships, education and the usage of contraseptives has not been a problem, determing people's level of understanding of Aids, Clarifying the Myths surrounding Aids.
CONCLUSION: Informal group sessions, individualised counselling and explanation of the condition and its transmission. Frank discussions about safer sex and care must be taken not to scare people and problems with measures taken by the state.

T.G.0.15

AIDS MESSAGES AND HELP TO WOMEN IN THE THAI SEX INDUSTRY

Apisook, Chantawipa. Bangkok, Thailand.

T.G.0.16

COUNSELLING IN MEXICO CITY

Rosalina Plascencia, CONASIDA, Mexico City, Mexico.

Objective. The main object is to corroborate the great importance of counselling when working with patients in high risk practices.

Method. Using the open interview technique we can obtain relevant information on high risk practices, while at the same time taking into account the affective dimension—and the guilt—involved in a possible positive test.

Results. One of the benefits of counselling is that it brings the client to decide to take the test, and prepares her/him to handle the anguish and confront the results, whatever they may be. In subsequent interviews, we observed a change in sexual conduct and in relationships with partners, which we link to the information given through counselling and psychological support.

Discussion. Our recommendation to persons wanting to undergo the detection test is to contact a counsellor who will then evaluate the problem before entering into the process.

T.G.0.17

COUNSELLING IN BOGOTA

Velancia, Manuel. The Panos Institute, London United Kingdom.

T.G.0.18

Prévalence (partie 2)
Prevalence (Part 2)

T.G.0.19

PROGRESSIVE INCREASE IN HIV-1 SEROPREVALENCE IN PREGNANT HAITIAN WOMEN: 1986 THROUGH 1988

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*Centers for Health and Development, Port-au-Prince, Haiti;
**Johns Hopkins University, Baltimore, MD, USA

Objective. To determine changes in HIV-1 seroprevalence in pregnant Haitian women residing in a periurban slum.
Methods. Sera from pregnant women attending prenatal clinics in a periurban slum were screened by HIV-1 ELISA and confirmed by WB. Prior studies have demonstrated that heterosexual contact is the predominant mode of transmission.
Results.

	1986	1987	1988	Total
Number Screened	1245	2009	1074	4328
% HIV-1 Positive	8.8%	9.9%	10.5%	9.7%

Increases were most notable in the 20 to 34 year age groups. 1988 seroprevalence by age: 14-19 yrs (5.9%), 20-24 yrs (13.5%), 25-29 yrs (11.3%), 30-34 yrs (9.1%), 35-39 yrs (4.0%), 40+ yrs (5.3%). The highest prevalence rate (16.7%) in 1988 was in women in their third pregnancy, but 6% or more of women pregnant for the first time were HIV-1 seropositive each year.
Conclusions. Many women are becoming infected soon after becoming sexually active and transmission rates remain high. A control program is urgently needed.

T.G.0.20

HIV-1 IN HOSPITALIZED HAITIAN PEDIATRIC AND ADULT PATIENTS

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*Centers for Health and Development, Port-au-Prince, Haiti,
**Johns Hopkins University, Baltimore, MD, USA.

Objective. To determine the HIV-1 seropositivity rate and related symptoms of hospitalized patients in an urban primary care hospital.
Methods. All patients admitted to the general pediatric and adult wards were screened anonymously for HIV-1.
Results. Of 117 adult admissions, 27(23%) were HIV-1 seropositive. Of 372 pediatric admissions, 44(11.8%) had HIV-1 antibodies in their sera and 45(13.5%) of 333 of their mothers were HIV-1 seropositive. Although higher rates of HIV-1 seropositivity were observed in children with gastroenteritis (12.2%), weight loss (12.9%), and/or rash (18.2%), significant ($p<0.05$) associations with HIV-1 seropositivity were observed only with cough and pneumonia (29.2%). Since 71% of the children were < 1 year of age, the presence of maternal antibodies could not be ruled out. Two HIV-1 seropositive children 11 and 13 years of age who had not had transfusions were identified.
Conclusions. A high percentage of pediatric and adult patients requiring hospitalization in this population are infected with HIV-1 or have a mother with HIV-1 infection. Pneumonia may be a predictor of HIV-1 seropositivity.

T.G.0.21

PREVALENCE OF HIV-1 AND HTLV-1 IN GONAIVES, HAITI

Boulos, Reginald*; Bonhomme, M.**; Quinn, T.***; Fortney, J.**; Labrun F.*; Halsey, N.***; et al.
Centre pour le Developpement et la Sante, Port-au-Prince, Haiti **Family Health International, Research Triangle Park, NC, USA *** Johns Hopkins University, Baltimore, MD, USA

Objective. To determine the prevalence of HIV-1 and HTLV-1 infection in a semi-urban area outside of Port-au-Prince.
Methods. Between April and November 1988 a total of 1865 men and women aged 15-45 obtaining medical services at two health centers in Gonaives, Haiti, were recruited to participate in this study. Serum specimens were collected from each participant and information on demographic characteristics and selected risk factors for HIV-1 and HTLV-1 infection was obtained using a brief structured questionnaire. Serum specimens were tested for antibody to HIV-1 and HTLV-1 by ELISA, and repeatedly positive samples were confirmed by Western blot.
Results. Preliminary results indicate the prevalence of Western blot confirmed HIV-1 antibody to be 9%. Additional results on the prevalence of HTLV-1 infection and on the prevalence of co-infection will be presented.
Conclusions. Few seroprevalence studies have been conducted outside of Port-au-Prince, the capital. These results indicate that the prevalence of HIV-1 infection is high in Gonaives, a semi-urban area northeast of Port-au-Prince. Appropriate educational interventions to reduce the spread of HIV-1 infection and additional research to better define risk factors important in this population are needed.

Key words: HIV-1; HTLV-1; Haiti; prevalence; risk factors

T.G.0.22

RISING PREVALENCE OF ANTIBODIES AGAINST HUMAN IMMUNO-DEFICIENCY VIRUS (HIV-1) IN WESTERN MAHARASHTRA, INDIA.

K. Banerjee, National Institute of Virology, Pune, India.

Until recently HIV infection was considered a rare event in India. In 1982, 3/855 paid blood donors from Pune were seropositive and in 1988, 5/495 were positive. From Bombay a single serum was positive in the 4th quarter of 1987, since then 33 have been found positive. All were males. From a STD clinic in Pune, a single sample of blood was positive in 1987, while in 1988 there were 28 seropositives. From Bombay, a single sample was positive in 1st quarter of 1987, by the end of 1988 there were 56 positives, 46 being males and 10 females. Of the 449 sera collected from female prostitutes in Pune between 1985-87, only two were seropositive. From Bombay 5 were found positive in the 2nd half of 1986, by the end of 1988, there were 78 positives, 62 in the last quarter. Among hospitalized patients (other than STD) in a Pune hospital, only one of 863 tested was positive, which was from a group of 292 patients of tuberculosis. From Bombay, 1 out of 19 thalassadimc and 2 out of 70 cases of chronic renal failure were seropositive, obviously due to transfusion. The limited serosurveys from Bombay, Pune and some other cities in Western India indicate that the HIV infection is spreading rapidly in the urban areas among the prostitutes and their clients (as evidenced by the progressive rise in seropositivity in STD clinics) and paid blood donors. The current status warrants wider serosurveys to assess the spread of infection and immediate implementation of anti-epidemic measures.

T.G.0.23

SECOND SEROPREVALENCE SURVEY AMONG BANGKOK'S INTRAVENOUS DRUG ADDICTS(IVDA).

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Objective. To (1)determine prevalence,and(2)risk factors for HIV infection,and(3)measure recent behavioral change in an estimated population of 15,000 registered drug abusers in Bangkok.
Methods. At each of 18 clinics on a selected day in Sept.1988,a 100% sample of detoxificants was asked to consent to an interview with a social worker and give a blood sample.
Results. Among the 1,811 subjects(almost no one refused),44% were HIV+,up from 16% in February.Significant risk factors emerging from multivariate analysis were equipment sharing,OR1.6(95CL1.1-2.4)and hx of being arrested in 1988,OR2.0(95CL1.5-2.8).We examined responses to behavior one month before interview compared to 4 months before that.Equipment sharing declined from 66to 60% (sharing with 4+people from 23 to 18%).Condom use among those sexually active was low (7%) and unchanged.While most IVDA claimed to clean their equipment,the methods they used remained ineffective.
Conclusions. HIV infection has been increasing 5points per month among Thai IVDA in 1988.Widespread injection equipment sharing is a key risk factor.There is no sign in mid-1988 that IVDA are changing their sharing,cleaning,or condom using behavior in response to intervention programs.

T.G.0.24

AIDS IN PAPUA NEW GUINEA - HETEROSEXUAL TRANSMISSION AND SOME IMPORTANT LOCAL CONSIDERATIONS.

Malau, Clement, Currie, B., Mondia, P. and Pyakalyia, T. Department of Health Papua New Guinea.

The first positive HIV antibody result reported to the Department of Health in Papua New Guinea (PNG) was from June 1987. The first confirmed AIDS case was reported in April 1988. By the end of 1988 there were 7 confirmed AIDS cases reported. Two cases were expatriate males with P.carinii pneumonia, 1 homosexual, 1 bisexual. The other 5 were PNG nationals, aged 18-27 years, and all had died by late 1988. Of these 5 there were 3 females and 1 male who had had multiple heterosexual partners,and 1 other male who was bisexual. Four cases fulfilled the criteria for HIV wasting syndrome ("slim disease"), and 1 had extrapulmonary M. tuberculosis as the indicator disease. Candidiasis and skin lesions were also evident in some cases. HIV infection was documented in the regular female sexual partners of the 2 male nationals.
Intravenous drug abuse is virtually unknown in PNG, but the reported incidence of STD has risen alarmingly in the last 10 years. In particular ulcerative disease from syphilis and donovanosis is common. The importance of traditional tattooing and scarification remains unclear, as does that of ritual homosexuality which is confined to limited areas. Multiple use of single syringes still occurs throughout the country. Our preliminary data together with the high prevalence of tuberculosis suggest that the PNG AIDS epidemic is likely to follow the African pattern, with heterosexual spread and patients presenting with wasting and tuberculosis.

Atelier régional : Asie
Regional Workshop: Asia

T.G.0.25

HIV TRANSMISSION AMONG INTRAVENOUS DRUG ABUSERS

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HIV infection among Thai intravenous drug abusers (IVDA) is a relatively new event. HIV infection rate among IVDA in Bangkok increased abruptly from 1% in late 1987 to 15% and 43% in March and August 1988 respectively. The impact of the widespread HIV infection among IVDA is tremendous. Many of their wives were also infected and some were connected with sex trades. Pediatric AIDS is a potential problem. In addition, the threat to general public is intensified by the fact that up to 73% of the IVDA has ever donated blood.

No immediate effective solution for Thailand's estimated 100,000 drug addicts can be easily derived. Almost all of the Thai IVDA share needles, particularly during the early phase of practising IV injection. Syringe exchange and methadone maintenance programs are unlikely to be successful. Effective drug dependence treatment programs, health education including safe injection practice; and strict law enforcement may offer some hope to slow down the HIV epidemic among IVDA. In parallel, mass distribution of free condoms and vaginal spermicides to all IVDA irrespective of their HIV status offers the hope to prevent HIV transmission to their spouses and offsprings. It is anticipated that the lesson learned in Thailand will help in AIDS prevention strategies among IVDA of other Asian countries where this problem has not yet emerged.

T.G.0.26

HIV TRANSMISSION THROUGH BLOOD/BLOOD PRODUCTS IN INDIA: DIFFICULTIES IN CONTROL AND SUGGESTED STRATEGIES

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Objectives: To present data on blood donors including professional donors used by manufacturers of blood products. To present difficulties in implementation or screening and control programmes and to suggest some strategies.
Methods. The very first AIDS case recorded in May 1986 in India was in a person who received blood transfusion in the U.S. in June 1980. Since then, there have been 33 AIDS cases. Two of these (6.6%, associated with indigenous blood/blood product. Overall rates of HIV infection in blood donors range from 0-0.35% with a higher rate (0.15-7%) for paid donors. Only two States - one each from Western and Southern India have recorded seropositivity among blood donors. These have also reported one case of AIDS each in recipients of blood/blood products. Some marketed products have shown HIV antibodies but no evidence of HIV antigen Subsequently, a spurt in seropositivity was noted in commercial donors. This spurred a Governmental ban on all blood products and production, irrespective of whether it is human albumin or Factor VIII. Simultaneously, there is a hectic activity to enforce mandatory screening of all blood donors, at least in the two States. Yet in another State, a solitary positive Indian blood donor fell a victim to a law meant to incarcerate HIV-infected foreigners. These and other difficulties in screening are discussed and some strategies suggested.
Conclusion. Nations like individuals prefer to learn only from their own mistakes.

T.G.0.27

HEALTH EDUCATION STRATEGIES IN CONTROL

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All India Institute of Medical Sciences, New Delhi, India.

T.G.0.28

S. Pattanayak, WHO. Strategies for Regional and International Cooperation.

Objectives - To have effective control of HIV and AIDS through a well coordinated programme at the global, regional and country level.

Methods - Considering the situation of AIDS in South-East Asian countries the Regional plan of action was formulated in 1987 which comprises of S E B - Surveillance, Education and Information on AIDS, Blood and Blood Products and its safe use. This strategy are in order of priority. With the active coordination and participation, prevention and control activity against AIDS are in progress in all the countries of the Region.

Results - All the countries have initiated short-term plan of action for prevention and control of AIDS and Medium-term plan of action have been initiated in four out of eleven countries of the Region. Health Education and information activities have been intensified. Some countries have initiated screening of blood donations for prevention of AIDS through transmission from blood. The collaborative effort of global, regional and country level will be discussed during the presentation.

Conclusion - The countries have shown their interest in undertaking AIDS control activities for which plan of action have been developed and are being implemented.

T.G.0.29

T.G.0.30

Le VIH en pédiatrie
HIV in Pediatrics

W.G.0.1 INABILITY TO DEMONSTRATE A DOSE-RESPONSE EFFECT BETWEEN RECEIPT OF MOTHER'S MILK AND PERINATALLY-ACQUIRED INFECTION (PI) IN A COHORT OF 114 INFANTS BORN TO HIV(+) MOTHERS

Manzila, Tarande*; Baende, E.*; Kabagabo, U.*; Paquot, E**; Colebunders, R.*/***; Ryder, R.*/***. *Projet SIDA, Kinshasa, Zaire; **Clinique Ngaliema, Kinshasa; ***CDC, Atlanta, GA.

Objective. To determine the incidence of PI in a cohort of breastfed infants born to HIV(+) mothers at a maternity in Kinshasa, Zaire.
Methods. At a maternity for the more economically well-off children in Kinshasa, Zaire, infants of 114 HIV(+) mothers have been followed since birth for evidence of PI (HIV IgG at age 12/18 months or clinical AIDS). Relative amounts of artificial(AM) and mother's milk(MM) consumed since birth were calculated/3 month period.
Results. Twenty one (18%) of the 114 infants developed PI. All study infants were delivered vaginally. The nonsignificant association between infant milk source during the first 3 months of life and PI is shown in the following table:

	AM only(n=16)	AM+MM(n=65)	MM only(n=33)
Infected (PI)(n=21)	4 (25%)	11 (17%)	6 (18%)
Non-infected (n=93)	12	54	27
Relative Risk	1.0	0.6	0.7 (P=NS)

Similar comparisons between PI and milk source at 6, 9 and 12 months of life also failed to demonstrate a significant dose-response effect for consumption of MM and PI.
Conclusions. The presence of mixed infant feeding practices at a Kinshasa clinic where mothers have an increasing tendency to not breast feed their children provided us with an opportunity to evaluate the risk of PI to an infant born to an HIV(+) mother. The low infectiousness of MM is suggested by the finding that 17% of the 98 infants receiving BM and 25% of 16 infants receiving AM developed PI(P=NS). Our study supports current WHO recommendations that nearly all HIV-positive mothers in Africa, because of socioeconomic and ecologic environmental constraints, should exclusively breast feed their children until weaning.

W.G.0.2 Symptomatic Children with Perinatally Acquired HIV Infection in Puerto Rico:The San Juan City Hospital and University Pediatric Hospital

Clemente Dìaz MD, E.Jimènez MD, L.Lòpez MD,R.Lòpez-Correa MD M.Carrer MD,J.M Garcìa MD;et al.The University of Puerto Rico School of Medicine, Puerto Rico, U.S.A.

OBJECTIVE: To describe demographic,clinical and outcome features of symptomatic children with perinatal HIV infection.
METHODS:Symptomatic children (CDC.Class2) with perinatal HIV infection were followed from 1984 to 1988.Demographic,clinical and outcome variables were uniformly abstracted in each center.
RESULTS: Of 89 symptomatic children (50 boys,39 girls) 54 (60%) were alive up to December 1988; 8 (10%) had been lost to follow-up. Median age of survivors,46 mo. (range 1-120 mos.) with symptoms related to HIV appearing from 2 wks. to 34 mo. of age. A history of IVDU was present in one, both parents or mother's previous sex partner in 93% of families. Predominant signs and symptoms included hepatosplenomegaly (84%) diffuse adenopathy (76%), lymphoid interstitial pneumonia (38%) and growth failure(65%). Patients who died (27/81=30%: 16 boys. 11 girls) had significantly lower median age at onset of symptoms (12 mo.) and age at diagnosis (9 mo.) than survivors ($p < .01$). Mean survival time from diagnosis to death in girls was significantly less than boys (4.6 mos.vs.9.8, $p < .05$).
CONCLUSIONS:Children with perinatal HIV infection who died had a lower median age at onset of symptoms; mean survival time from diagnosis to death in girls was less than in boys.

W.G.0.3 COMPLICATIONS LOCO-REGIONALES DE LA VACCINATION PAR LE BCG CHEZ DES ENFANTS NES DE MERE POSITIVE POUR ANTI-HIV1 : Etude cas-témoins à Brazzaville (R.P.CONGO)

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Objectifs : Comparer la fréquence des complications loco-régionales de la vaccination précoce par le BCG chez des enfants nés respectivement de mère positive et négative pour anti-HIV1.
Méthodes : Dans le cadre d'une étude prospective et longitudinale sur la transmission maternelle d'HIV1 les complications loco-régionales du BCG ont été recherchées au 3ème, 6ème et 9ème mois chez 59 enfants nés de mère anti-HIV+ et 123 enfants nés de mère anti-HIV1-. Le BCG (Pasteur; 0,05 ml intradermique, face externe du bras gauche), avait été administré au cours du premier mois, dans le cadre du Programme Elargi de Vaccination. Toute adénopathie axillaire et/ou sus-claviculaire gauche isolée de plus de 1 cm de diamètre (en l'absence d'une autre cause infectieuse locale) a été considérée comme liée au BCG.
Résultats : Aucune ulcération n'a été observée au site d'injection; la fréquence et l'évolution des adénopathies liées au BCG a été identique dans les 2 groupes.

	Enfants nés de mère HIV+	Enfants nés de mère HIV-	
Adénopathie +	10 (16,9%)	20 (16,3%)	
Adénopathie -	49 (83,1%)	103 (83,7%)	X2=0.02 N.S
	59 (100%)	123 (100%)	

.Conclusion : Les complications loco-régionales du BCG ne sont pas plus fréquentes chez les enfants nés de mère anti-HIV1+. L'intégration du BCG au Programme Elargi de Vaccination (OMS) ne semble pas devoir être remise en cause dans des régions telles que l'Afrique centrale.

W.G.0.4 CAUSE-SPECIFIC MORBIDITY IN THE FIRST 18 MONTHS OF LIFE IN 477 INFANTS BORN TO SEROPOSITIVE MOTHERS IN ZAIRE.

Nsa, Wato*; Manzila, T.*; Mvula, M.*; Matela, B.*; Hassig, S.*; Ryder, R.*/**. *Projet SIDA, Kinshasa, Zaire; **CDC, Atlanta, GA. U.S.A.

Objectives. To describe the causes of morbidity and their incidence in children with perinatal HIV infection(PI) in Kinshasa, Zaire.
Methods. Through the age of 18 months, all episodes of illness in 120 children(Group I) with HIV(+) mothers and PI (HIV IgG at age 12/18 months or clinical AIDS), 357 children(Group II) with HIV(+) mothers but without PI, and 590 control children(Group III) of HIV(-) mothers have been observed monthly for a total of 1,380 child-years. The lost to follow-up rate at 18 months was 4%.
Results. Episodes of illness/child-year by infant HIV infection status

Illness	Gp I	Gp II (p)	Gp III (p)
Fever >15 days	.559	.078 (<.01)	.077 (<.01)
Diarrhea >15 days	.398	.092 (<.01)	.122 (<.01)
Pneumonia	.782	.322 (<.01)	.386 (<.01)
Oral thrush	.617	.117 (<.01)	.088 (<.01)
Papular dermatitis	.539	.266 (<.01)	.180 (<.01)
Meningitis	.027	.021 (NS)	.004 (<.05)
Purulent otitis media	.505	.247 (<.05)	.121 (<.05)
Herpes zoster	.000	.000 (NS)	.000 (NS)
Measles	.074	.033 (<.05)	.037 (<.05)

(p values compare incidence in Gp I with Gp II and Gp I with Gp III
The cumulative incidence of AIDS in children born to seropositive mothers was 115/1000 HIV(+) mothers at age one year and 159/1000 at age 18 months.
Conclusions. Excluding herpes zoster, Gp I children experienced two to five-fold higher incidence rates of illness than Gp II or Gp III children. Over one half of Gp I children experienced fever, pneumonia, oral thrush, and purulent otitis media during the 18 month observation period.

W.G.0.5 HIV DISEASE IN INFANTS AND CHILDREN: 22 MONTHS PROSPECTIVE STUDY

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University Teaching Hospital, Lusaka, Zambia.

OBJECTIVE: To determine the short and long term sequelae of HIV Disease in infants and children over the period of twenty-two months study.
METHODS: A total of 405 suspected in-patients and their mothers were screened for anti-HIV antibodies using ELISA (Abbott or Wellcozyme). Ninety-four children diagnosed as having HIV disease were followed monthly, out of which 53 cases with whom we started the study were followed for a complete 22 months period, and the remaining 41 cases were recruited during the study, to determine the pattern of illness occurring in them as a result of their HIV disease.
RESULTS: Of 405 screened, 94 (23.2%) were seropositive. The age range was 2 months to 52 months (peak: 1 - 2 years). Male/Femal ratio was 1.1:1. Eighty-eight were born to seropositive mothers. The 53 patients followed for 22 months required readmissions on average between 4 - 6 times. The spectrum of diseases occurring in the 94 cases at time of presentation, review or readmission (most had more than one disease at each presentation), were failure to thrive with severe malnutrition in 79 (84.0%), acute gastroenteritis in 58 (61.7%), deteriorating or reactivated pulmonary tuberculosis in 37 (39.3%), pneumonia in 21 (22.3%), cancrum oris in 19 (20.2%), proved malaria in 19 (20.2%), severe anaemia in 18 (19.1%), suppurative otitis media in 9 (9.6%), Kaposi's Sarcoma in 5 (5.3%), pyogenic meningitis in 3 (3.2%), and measles in 3 (3.2%). Out of 94, 33 died, and of 53 cases followed for 22 months 23 died.
CONCLUSION: HIV Disease in infants and children is a very aggressive disease carrying very high morbidity and mortality. The majority of patients presented with failure to thrive and diarrhoeal disease.

W.G.0.6 BIOLOGICAL MARKERS ASSOCIATED WITH PROLONGED SURVIVAL IN HIV-INFECTED CHILDREN.

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* Programme National de Lutte contre le SIDA, Kigali, Rwanda and ** Department of Pediatrics, Centre Hospitalier de Kigali, Kigali, Rwanda.

Objective: To identify biological markers associated with long survival in HIV-infected African children.
Methods: Sixteen HIV-seropositive children (P.), aged 5 to 12 years (9 girls, 7 boys; mean age, 6.5 yrs) who were born to HIV-infected mothers were enrolled and compared with 16 age and sex matched HIV-seronegative controls and with 16 consecutive pediatric AIDS patients (8 girls, 8 boys; mean age 1 yr). Two serum samples at 7 month intervals were available in 11/16 P. They were all tested for HIV IgG by WB (Biotech), for HIV IgM by WB after precipitation of Rheumatoid Factor, for T-lymphocytes subpopulations, and for serum IgG, IgM, and IgA by radial immunodiffusion (Behring).
Results:

	P.	controls	pediatric Aids
WB IgG anti-p17	16/16*	0/16	9/16
anti-p24	16/16	0/16	16/16
WB IgM	14/16*	0/16	2/16
Mean serum Ig, g/l			
IgG	40.8*	16.9	22.3*
IgM	3.4	2.2	3.4
IgA	3.0	2.4	2.1
Lymph. subsets, %			
OKT4+	13.5*	39.5 *	ND
OKT4A+	13.7*	38.1 *	ND
OKT8+	50.3*	22.3 *	ND
Ia+	25.0*	14.5 *	ND

* p< 0.01

HIV IgM in the P. were directed to gag-encoded proteins only in 3/14 P. and to gag-and env-encoded proteins in 11/14 P. The HIV IgM detection was neutralized after pre-incubation of the serum samples with mouse anti-human mu-chain diluted 1:5.
Conclusions: A persistent IgM response to a wide range of HIV proteins and a persistent IgG response to HIV p17 are associated with a prolonged course of pediatric HIV infection. If confirmed, these results should be considered as arguments for selective passive immuno-therapy trials of pediatric HIV infection.

Infections parasitaires tropicales : impact du VIH
Tropical Diseases: The Impact of HIV

W.G.0.7 STUDIES OF THE RELATIONSHIP BETWEEN PLASMODIUM FALCIPARUM MALARIA AND HIV INFECTION IN AFRICA

Greenberg, Alan E.*, *AIDS Program and Malaria Branch, Centers for Disease Control, Atlanta, Georgia, USA.

The epidemic of HIV-related disease in areas of Africa where *Plasmodium falciparum* (PF) malaria is endemic has generated serious concerns about potential interactions between the two infections. To address these issues, a series of epidemiologic investigations have been conducted at Mama Yemo Hospital in Kinshasa, Zaire since 1986. Multiple cross-sectional studies among hospitalized pediatric, pediatric emergency ward, adult emergency ward, healthy adult, and obstetric populations have failed to detect a positive association between PF infection and HIV seropositivity, although a small number of HIV+ adults with severe malaria have been identified. In 1986, studies revealed that children with profound anemia associated with acute and severe malarial infections were being treated with blood transfusions that were unscreened for HIV antibodies, and were consequently being infected with HIV; these results contributed to the establishment of an effective HIV blood screening program at Mama Yemo Hospital. An ongoing, longitudinal cohort study of children born to HIV+ and HIV- mothers revealed no differences in the incidence, severity, or response to anti-malarial therapy of PF malaria after six months of clinical follow-up; data collected during the first year of follow-up of these children will be presented.

W.G.0.8 LEISHMANIASIS AND LEPROSY

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W.G.0.9 ISOPORA BELLI AND OTHER SPOROZOA

Pape, Jean. Department of Medicine, Cornell University Medical Center, New York, N.Y. USA.

W.G.0.10

MICROSPORIDIOSIS AND ARC

CALI, ANN* and OWEN, ROBERT L.**
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Microsporida are obligate intracellular protozoa which are ubiquitous throughout the animal kingdom and characterized by spores containing coiled polar tubules which evert and penetrate host cells into which the spore contents are extruded. Prior to HIV infections, microsporidiosis was only reported from immune incompetent individuals or immune priviledged sites in otherwise normal individuals. Four microsporidian genera have been identified in man but only one seems to be repeatedly associated with the HIV-ARC, *Enterocytozoon bieneusi*. This microsporidian is associated with diarrhea and malabsorption and can only be diagnosed by histological examination of endoscopic biopsies taken from the duodeno-jejunal and ileal mucosa. Histopathological changes include villus atrophy, mild inflamitory infiltrate and round to oval basophilic bodies in villus enterocytes. Electron microscopical observation of spores containing the coiled polar tubule confirm a microsporidian diagnosis.

W.G.0.11 HIV: ITS POTENTIAL TO ALTER THE EPIDEMIOLOGY OF PARASITIC DISEASES

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W.G.0.12

Perspectives mondiales
Global Perspectives

W.G.0.13

AIDS AND RESTRICTIONS ON IMMIGRATION AND TRAVEL: U.S. POLICY AND ITS RAMIFICATIONS.

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**Boston University and Tufts New England Medical Center, Boston, Mass., U.S.A.

Objective. To evaluate the efficacy of the U.S. government's policy of excluding immigrants with AIDS and HIV infection.
Methods. WHO data on AIDS were used to obtain estimates of the prevalence of HIV infection for those countries reporting in February, 1988. These estimates, along with data on the volume (and country of origin) of immigrants entering the U.S., were used to examine the outcome of mass HIV antibody testing of applicants for immigrant status. The study assesses the adequacy of ELISA and Western Blot tests as measures of HIV infection, particularly with a view to border controls as a means of controlling the spread of AIDS.
Results. The proportion of test results that are false varies according to the prevalence of HIV infection in the population being tested. Thus, applicants from "high-risk" areas are more likely to produce false negative results, while those from "low-risk" areas are more likely to produce false positive results.The policy of excluding seropositives from the U.S. will therefore be inconsistent, and will affect applicants from certain areas more severely than others.
Conclusion. Attempts to contain the AIDS epidemic in the U.S. by exercising border controls will not only be ineffective, but also counter-productive, as other countries will respond by imposing controls upon U.S. citizens.

W.G.0.14

COMPARISON OF NATIONAL AIDS STRATEGIES IN AUSTRALIA AND CANADA

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OBJECTIVE - To delineate a policy framework and examine the development and implementation of National AIDS strategies in Australia and Canada with attention to consultation, policy directions, resource allocation, time frame, consistency and comprehensiveness.
METHOD- A review of the evolving social, political and legal positions dealing with HIV infection in Australia and Canada based on interviews and published reports.
RESULTS - Issues include:1) The accepted basic principles which underlie the process of policy formulation.
2) The areas and limits of responsibility that are drawn.
3) The ethical issues that are addressed, both overtly and covertly.
4) The identification of those groups whose input is seen as crucial.
5) The guidelines adopted for resource allocation.
6) Financing arrangements.
7) Research priorities in biomedical, behavioural and social research.
8) The homogeneity of the national response.
Conclusion - Despite similar health care systems and national disease profiles, critical distinctions between the two countries have occurred in the timing of the response, the extent of involvement of all relevant groups, the emphasis on and effect of prevention strategies and the extent to which national policies have addressed ethical issues. The characteristics of a recommended national strategy are outlined, drawing on the strengths, and weaknesses of the two countries.

W.G.0.15

THE EPIDEMIOLOGICAL SURVEILLANCE SYSTEM FOR AIDS IN BRAZIL - CRITICAL ASSESSMENT

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Objective. To present methodological and operational aspects of the National AIDS Epidemiological Surveillance System. Critical assessment of the components of the System and presentation of the new epidemiological notification card, applied nationwide.
Methods. Qualitative and quantitative evaluation of the National AIDS Epidemiological Surveillance System using the current report form, standardized nationwide, which contain demographic data, on opportunistic diseases, results of laboratory tests and risk factors.
Results. The National AIDS Epidemiological Surveillance System was implemented in 1985 and since then has been progressively expanding in coverage and operational capacity. It is organized hierarchically, and its various levels of activities are defined. The data is organized and processed by epidemiological work, generating monthly feedback by means of national and state epidemiological bulletins. The reported form currently used may be considered satisfactory, nevertheless it needs some modifications. The new form to be presented will allow for the proposed new case definition based on the nosological profile observed in research carried out by the National Division of STD/AIDS with the support of CDC-USA, and operational observations. The flow and quality of the data may be improved by the mechanisms proposed in this paper. The under-reported cases can be reduced by its quantification, identification of bottlenecks, and the motivation and training of professionals.
Conclusions. The National Epidemiological Surveillance System is wide-ranging and is in the implementation phase. The retrospective retrieval of occurrences even from periods prior to its setting-up has been an important aspect in the development of the epidemiological profile of AIDS in Brazil. The proposed new form is expected to make the System more operationally responsive and enable better knowledge of the nosological profile of AIDS. The flow of data, can be optimized and consequently lead to an improvement in the processing and feedback of the System. In addition, this study will generate guidelines for evaluation of the National Surveillance System.

W.G.0.16

FUNCTIONAL AND DYSFUNCTIONAL AIDS PREVENTION PROGRAMS IN LATIN AMERICA AND THE CARIBBEAN

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Global Programme on AIDS, World Health Organization, Geneva, Switzerland

Objective: To assess the functional/dysfunctional status of AIDS prevention programs in Latin America and the Caribbean (LAC) from a managerial perspective.
Methods: Following WHO guidelines, we assessed the structure of national AIDS programs as well as their efficiency or capacity to implement planned activities (activities completed/activities programmed).
Results: As of 1 January 1989 all of the 36 PAHO Member Countries had a national AIDS prevention focus. However, the structure and functions of the national AIDS prevention programs varied greatly among countries at comparable stages of the epidemic. For example, of the twenty Latin American national programs ten were considered to be using resources more rapidly and more efficiently than the rest. Eight of these ten countries had a full-time manager devoted exclusively to the AIDS/STD program. These countries showed evidence of "strong" governmental political and financial commitment to the AIDS prevention effort (e.g. composition of the AIDS commission, internal funding, legislation, and active search for external bilateral or multilateral support). In contrast, these two factors were present in only two of the ten less active programs.
Conclusions: Our preliminary data seem to indicate that certain program characteristic may predict the efficiency with which national programs are implemented.

W.G.0.17

STRATEGIES OF THE EEC'S AIDS PROGRAMME FOR DEVELOPING COUNTRIES TO CONTROL SEXUALLY TRANSMITTED HIV INFECTIONS. DISCUSSION OF PROGRAMME IMPLEMENTATION AND MAIN ISSUES.

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European Economic Community - AIDS Control Programme/Developing Countries.

Sexual transmission is by far the most important way for HIV infection to spread. All STDs are behaviourally correlated and follow the same high risk behaviour pattern, namely multiple or infected sexual partners. Risk markers permit focusing of intervention efforts. Therefore the basic approach of the EEC's AIDS Programme has been to place AIDS within the context of other STDs. Main activities and issues are : focused information campaigns, organisation of adequate training, confidentiality, use of STDs as indicators as well as for evaluation of intervention, adequate management of genital ulcers and other STDs and strengthening of STD and AIDS programmes. All activities have been undertaken in collaboration with WHO. Against this background we will present the first results of programme implementation, operational research and evaluation. A quick assessment method for STDs and AIDS has been developed. Cost and cost recovery issues and resources availability have been analysed and discussed in view of sustainability and resource allocation. Applicability, feasability and impact will be analysed for a few examples of interventions in specialised STD clinics or integrated in primary health care facilities.

W.G.0.18

NATIONAL AIDS PROGRAMMES. PROGRESS ACHIEVED AND OPPORTUNITIES FOR FURTHER DEVELOPMENT

Tarantola, Daniel; Mann, Jonathan. World Health Organization, Global Programme on AIDS. SWITZERLAND

The global mobilization against AIDS increased considerably in 1988 as Governments were gradually responding to the worldwide spread of the HIV epidemic by establishing policies and undertaking aggressive programmes. Of 187 countries and territories in the world, 163 had, as of 1 February 1989, sought a technical collaboration with the World Health Organization's Global Programme on AIDS, of which 152 had already received a technical visit. Of those, 118 countries had completed or were implementing a short-term prevention and control plan, while 51 had embarked on a 3- to 5-year medium-term programme. Of those, 27 were able to mobilise resources through pledging meetings (Table 1). The status of the global reaction to AIDS will be reviewed. Collaboration and cooperation within and between countries will be summarized and current issues encountered in improving programme performances will be discussed.

TABLE 1

WHO GLOBAL PROGRAMME ON AIDS - NATIONAL PROGRAMME SUPPORT - 1 FEBRUARY 1989

WHO Region	Countries/ Areas	Collaboration Requests	Technical Visits	Short-term Prog.	Medium-term Prog.	Resource Mobilisation
Africa	45	44	44	44	30	14
Americas	42	42	42	30	19	13
S.E. Asia	11	11	11	10	1	-
East. Med.	23	20	17	16	-	-
Europe	31	20	20	4	-	-
West. Pac.	35	26	18	14	1	-
TOTAL	187	163	152	118	51	27

Transmission hétérosexuelle et rôle des MTS
Heterosexual Transmission and the Role of STDs

W.G.0.19 Health Education among Commercial Sex Workers in Zimbabwe, Africa.

David Wilson, Babusi Sibanda, Lilian Mboyi, Sheila Msimanga and Godwin Dube, Department of Psychology, University of Zimbabwe, Zimbabwe, Africa.

Commercial sex workers and their clients in Africa are at risk for HIV infection. One hundred and fifteen commercial sex workers (CSWs) were interviewed in Bulawayo, Zimbabwe. The average educational level of the CSWs was low. Unemployment and divorce were cited as the major reasons for engaging in commercial sex work. Most CSWs cited fear of STDs as the worst aspect of their work. Most CSWs had heard of AIDS and most considered themselves to be at high risk for the disease. However, their knowledge of the transmission and prevention of HIV was very limited. Few CSWs regularly used condoms and most stated that this was due to a resistence to condoms on the part of their clients. Nearly all CSWs accepted condoms from the interviewers, wanted more information on AIDS and were willing to take part in a condom promotion intervention and this intervention has been established. It is concluded that while further education is important among CSWs, it is also vital to change their clients' attitudes to condoms.

W.G.0.20 SURVEILLANCE- EDUCATION SANITAIRE DES PROSTITUEES AU SENEGAL

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OBJECTIF : Sensibiliser une population à activité à risque pour rompre la chaîne de transmission du HIV et des autres MST
METHODES: Au Sénégal, 15 % des prostituées sont porteuses d'Ac anti-HIV contre 0,6% dans la population de contrôle. Au cours des visites sanitaires périodiques instituées grâce à la réglementation de la prostitution, 1700 prostituées ont profité des séances d'éducation et d'information où modes de contamination, manifestations cliniques , moyens de prévention des MST et du SIDA sont débattus.
RESULTATS:De plus en plus, nous notons qu'un climat de prise de conscience commence à se répandre parmi elles (souvent en possession de préservatifs, prélèvements vaginaux pathologiques en régression). Mais, le refus des clients d'user de préservatifs, les raisons d'ordre économique qui les poussent à enfreindre les mesures de prévention, le nombre élevé de prostituees clandestines ... sont autant de facteurs qui rendent cet apprentissage difficile.
CONCLUSION: Une information permanente et soutenue, une stratégie permettant de cibler les clandestines, des préservatifs de qualité, peu onéreux et à portée de main contribueront à diminuer considérablement la dissémination du HIV et des autres MST au SENEGAL.

W.G.0.21 PROSTITUTES AS HEALTH EDUCATORS FOR THEIR PEERS IN YAOUNDE: CHANGES IN KNOWLEDGE,ATTITUDES AND PRACTICES.

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Objective.To demonstrate that prostitues can be effective in AIDS education for their peers in Africa.
Methods.KAP surveys were conducted among prostitutes in Yaounde:125 in January 1988, 79 of the 125 in July and 87 of the 125 in December.Simultaneously an educational campaign was carried out for them by 11 leaders-prostitues selected and trained on STDs and AIDS and safer sex practices.

Results.	January 1988	December 1988
Do not know that AIDS is spread by sex	11,2%(14/125)	3,4%(3/87)
Do not.know that AIDS is spread by blood	18,4%(23/125)	8% (7/87)
Think that it is by shaking hands	28% (35/125)	10,3%(9/87)
Think that it is by kissing	49,6%(62/125)	13,7%(12/87)
Do not know a healthy person can spread	36% (45/125)	17,2%(15/87)
Could not name any symptom of AIDS	25,6%(35/125)	9,2%(8/87)

In January 20% had never heard of condoms and 60% had never used them;when asked to list possible practices to reduce their own risk: 44% said they could use condoms,23% spermicides and 21% reduce their number of partners.

Behavior changes:	January 1988	July 1988	December 1988
Use of condoms(at least ½the time)	28% (35/125)	95% (75/79)	72,4%(63/87)
Use of spermicides	16% (20/125)	59,4%(47/79)	85% (74/87)
Reduce or select clients	28,8%(36/125)	39,2%(31/79)	42,5%(37/87)
No change	22,4%(28/125)	17,7%(14/79)	12,6%(11/87)

Conclusion.The peer education is an effective method for prostitutes in Africa.

W.G.0.22 SOCIAL CHARACTERISTICS AND SEXUAL BEHAVIOUR OF WOMEN IN THE HIGH RISK BEHAVIOUR CATEGORY

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General Objective To define the seroprevalence of HIV infection and related social characteristics among Kenyan women in the high risk category.
METHODS This is a report of a pilot study in preparation for the main study which was designed to cover all the major urban areas of Kenya. The study was conducted on a sample of 47 women of high risk behaviour category in one of the urban areas. The 47 women were interviewed individually for information related to their social characteristics and sexual behaviour.
RESULTS Occupation: 43(91%) of them were bar attendants. Education: 65% had had 1-4 years of formal primary education. Marital Status: 95% were either not married or were divorced, and all of them had at least one child. Sexual behaviour: Apart from one woman who practiced anal sex, the rest practised vaginal sex. 53% charged for sex. Opinions on condom use and number of sexual partners differed. The implications of this pilot study will be discussed.

CONCLUSIONS The women lacked knowledge of the advantages of condom use. Given the very goodresponse rate, deeper investigations into the choice of the particular profession should be included.

W.G.0.23 AIDS PREVENTION AMONG BRAZILIAN PROSTITUTES: A PILOT PROJECT

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A pilot project for AIDS information and education was conducted among registered prostitutes in the city of Fortaleza – Northeast Brazil. The project was implemented by the Ceará State Health Department with the technical and financial assistance of Impact/INTERAIDE.

Objective: To provide acceptable information to prostitutes, in order to change their high risk behaviors.

Methods: A total of 214 registered prostitutes was enrolled in the project. Their clients were also enrolled. Information was provided to prostitutes by individuals selected from senior medical, nursing and social work students. The students were trained in communications skills, then teamed by two and assigned to visit the brothels included in the program weekly.
Medical check-ups and contact tracing were also done

Conclusion: This approch was well accepted by the community, the cost was low, resulted in bidirectional communication, and proved to be effective in promoting the use of condoms and in avoiding discrimination and moral judgment.

W.G.0.24 SEXUAL PRACTICES AND HIV.INFECTION OF FEMALE PROSTITUTES IN NIGERIA.

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Objective: To determine the sexual practices of female prostitutes in Nigeria which may affect their risk of HIV infection.
Methods: A questionnaire was administered to consenting female prostitutes residing in hotels or compounds in Calabar metropolis. HIV testing was performed by ELISA and RIPA.
Results: Data from 67 prostitutes, 15-55 years old showed that: The mean number of paying clients seen daily per prostitute was 4.4 (range 2-10), as well as keeping between 1-5 non paying clients. All prostitutes within the same premises frequently interchanged paying clients. 56/67 (83.6%) reported previous use of condoms, though infrequent. Higher charge for condom use was admitted by 26/56 (46.4%) condom users. Vaginal intercourse was exclusively practised. 20/67 (29.9%) of prostitutes received clients during menstruation. 35/67(52.2%) admitted to sexual contact with foreign clients. A mean of 8.9 clients (range 0-40) per month were refused intercourse by each prostitute on suspicion of STD. A focus group reported vaginal use of ground tobacco leaves by older prostitutes as prophylaxis for STD. Of 55 prostitutes tested, antibodies to HIV-1 were undetected, while 1(1.8%) person was confirmed positive for HIV-2.
Conclusion: Female prostitutes in Nigeria must be educated on safer sexual practices and provided with regular and cheap supply of condoms to reduce their risk of HIV infection.

Prévalence (partie 3)
Prevalence (Part 3)

W.G.0.25 THE USE OF HIV SURVEILLANCE DATA FOR GUIDING NATIONAL AIDS PROGRAMME DECISIONS

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Objective: To review and discuss how HIV surveillance data can be used to guide National AIDS Programme decisions.

Methods: Analysis of the specific HIV data needs for various AIDS programme decisions.

Results: As the HIV pandemic spreads to new areas and populations, there is an urgent need to further expand the public health monitoring of HIV seroprevalence to direct public health programmes. A variety of data sources are currently available regarding HIV seroprevalence in different population groups. Many national AIDS control programmes have selected a system of sentinel serosurveillance as the basis of their HIV surveillance programme. This is a simplified method of regular sampling at pre-determined sites, in which the sampling occurs according to pre-determined methods and schedules. This presentation will review the current status of public health surveillance systems in developing countries with specific emphasis on what surveillance data, with what precision and frequency are needed to guide public health programme decisions.

Conclusion: A logical framework to guide HIV/AIDS programme policy decisions can be developed utilizing data collected by HIV sentinel surveillance systems.

W.G.0.26 SUGGESTION OF A STABILIZATION OF HIV INFECTION IN SELECTED POPULATIONS IN ZAIRE BETWEEN 1986 AND 1989

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Objective. To describe the trends of HIV infection in selected populations of convenience in Zaire between 1986-1989.

Methods. Between 1986 and 1989, serial cross-sectional prevalence surveys of similar population groups have been carried out in Kinshasa (KIN) and in selected rural areas of Zaire. In addition, HIV incidence has been determined in 2 longitudinal cohort studies involving 9,886 person-years of follow-up. One study has involved 2193 KIN hospital workers while the second has involved 5500 employees and their wives at a KIN textile factory.

Results

		Prevalence(%) 1986	1987	1988	1989
Blood donors	KIN	9.0	7.7	4.8	Pending(P)
	Rural	-	1.5	1.0	P
Pregnant women	KIN	7.1	6.7	3.4	5.3
	Rural	3.0	-	2.2	P
Female prostitutes	KIN	27	-	40	P
	Rural	11	-	-	P
General population	KIN	-	3.0	3.8	2.9
	Rural	0.8	-	1.0	P
		Yearly Incidence(%)			
Factory workers	KIN	-	-	0.6	P
Hospital workers	KIN	1.6	-	-	P

Conclusion. Our data reflect HIV infection in only the populations we sampled and should not be used to assess the overall HIV situation in Zaire. Except for a progressive increase in seroprevalence in KIN prostitutes, the continuing occurrence of incident cases of infection in the face of a relatively stable seroprevalence suggests the possible emergence of a steady state of HIV infection in the groups studied. Additional explanations for the apparently stable HIV prevalence need to be pursued. A large urban/rural difference in infection rates continues.

W.G.0.27 SENTINEL SITE SURVEILLANCE FOR AIDS IN ABIDJAN, COTE D'IVOIRE

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Objective. To characterize patients with AIDS, to determine the frequency of HIV-1 and HIV-2 infections in AIDS patients, and to estimate the minimum incidence of AIDS in Abidjan.

Methods. Consecutive adult medical admissions to Abidjan's two largest hospitals, HA and HB, were assessed (clinically and serologically for HIV-1 and HIV-2 infections) over periods of 84 (HA) and 38 days (HB), respectively. Patients were diagnosed as AIDS if HIV+ and meeting the WHO or CDC case definition. Hospital and mortuary records were examined in HA to assess mortality. Extrapolations were made from rates observed to calculate minimum AIDS incidence by age, sex and district.

Results. 269 HIV confirmed AIDS cases were identified among 1501 patients. The M:F ratio of AIDS cases was 4.6:1, increasing from 1.5:1 (15-19 years), to 18.5:1 (50 years +). AIDS accounted for 20% and 7% respectively of medical admissions to HA and HB, and for 33% of medical deaths in HA. Minimum incidence for AIDS in men in Abidjan is 1414 cases/million/year, and in women 353 cases/million/year. Highest rates are found in men aged 30+ years (>2000/million/year) and in women 30-39 years (769 cases/million/year). In 4/10 districts, minimum AIDS incidence is >1200 cases/million/year. Peptide ELISA and Western blot results for HIV-1 and HIV-2 show that HIV-1 is the predominant cause of AIDS in Abidjan.

Conclusion. AIDS is epidemic in this West African city and a significant cause of mortality.

W.G.0.28 LES ASPECTS EPIDEMIOLOGIQUES DES AFFECTIONS LIEES AUX VIH1 ET 2 EN REPUBLIQUE CENTRAFRICAINE.

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La situation de la République Centrafricaine dans une sous-région où sévit avec acuité le SIDA nécessite de la part des autorités du pays et des organes de lutte contre le SIDA une surveillance épidémiologique soutenue. Les données qui sont rapportées concernent essentiellement la capitale (Bangui) et proviennent du Laboratoire National de Biologie Clinique, de la Banque de sang, de l'Institut Pasteur de Bangui, de la Faculté de Médecine et du Bureau de Coordination du Projet SIDA. Le nombre déclaré de cas de SIDA est passé de 432 en Juin 1988 à 521 (520 VIH1, 1 VIH2) en Décembre 1988. Il s'agit presque exclusivement d'affections à VIH1.

La séroprevalence chez les donneurs de sang est de 8% pour VIH1 et de 0% pour VIH2. VIH2 a été mis en évidence chez 5 sujets seulement (1 SIDA, 4 porteurs sains). La prévalence chez les femmes enceintes est de 5,5% ± 0,8% . Des enquêtes non randomisées menées chez les prostituées ont montré un taux de séropositivé VIH1 de 25% sans séropositivité VIH2. Les enquêtes épidémiologiques au sein de la population générale agée de 15 à 45 ans à Bangui ont montré une évolution de la prévalence (porteurs sains) de VIH1 de 2,3% en 1985, à 4,02% en 1986 et à 7,8% en 1987.

W.G.0.29 COMPARISON OF THE AGE DISTRIBUTION OF ANTI-HIV-1 AND ANTI-HBc IN AN URBAN POPULATION FROM MALAWI

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*** Gesellschaft für technische Zusammenarbeit, Eschborn, FRG

Objective. Comparing the prevalence of HIV to Hepatitis B Virus (HBV) in different age groups and different years we tried to determine the time of introduction of HIV in Malawi.

Methods. Anti-HIV was determined by ELISA, immunofluorescence and immunoblot. Anti-HBc was determined by RIA.

Patients. Antenatal women and patients from the medical wards of two hospitals in Blantyre and Lilongwe.

Results. Numbers and percentages are given in the table. Males were more affected.

	1987			1988		
Age	anti-HIV	anti-HBc	no. of patients	anti-HIV	anti-HBc	no. of patients
0-19	14 %	41 %	102	18 %	44 %	39
20-39	26 %	57 %	203	28 %	52 %	221
40-49	14 %	58 %	35	4 %	63 %	27
>50	6 %	72 %	68	16 %	85 %	39

Conclusion. In contrast to the prevalence of anti-HBc which increased continuously with age, anti-HIV was only present in few individuals of 40 years or older. This cannot be explained solely by the mortality of the HIV-infection but rather indicates that HIV was introduced only recently.

W.G.0.30 HIV, HTLV-I and HBV INFECTION IN PREGNANT WOMEN FROM AN URBAN POPULATION IN ZAIRE

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HIV and HBV infections are endemic in some urban populations of Zaire. We have investigated the HBV, HIV and HTLV-I status of pregnant women attending an ante-natal clinic of the Kinshasa University Hospital (KUH), for evidence of maternal-child transmission of these viruses.

Methods: 508 pregnant women who attended the KUH during a six month period (June to December 1988) were analyzed for HIV, HBV and HTLV-I infection. Serum samples were collected from all pregnant women who did not have symptoms suggestive of AIDS or related conditions were tested for HIV-1, HIV-2 and HTLV-I by Western blot. HBV markers were tested in 223 women. HBsAg, anti-HBs and anti-HBc antibodies were determined by commercial ELISA (Abbott).

Results: Of 508 women tested for HIV infection, 19 (3.76%) were positive for HIV-1 and none were positive for either HIV-2 or HTLV-I (0%). Of 223 women tested for HBV infection, 158 (70.85%) had at least one HBV marker. HBs was found in 46 individuals (20.62%) in association with other HBV markers or alone (50%). In 28.3% of cases, HBs was found in association with anti-HBc. Anti-HBs was detected in 50% of the women. Anti-HBc was detected in 65% of the women and anti-HBc alone in 10.71% of cases.

Conclusions: It appears that only 3.76% of pregnant women attending our hospital have antibodies to HIV-1 this is in contrast to 18% of pregnant women reported previously at Mama Yemo Hospital. The discrepancy is marked and indicates local variations in HIV prevalence rates in individuals as well as hospitals from the same city. Unlike HIV, HBV infection is very common and the HBs seroprevalence exceeds that of the general population (20.62% vs. 5.7%, p<0.01). Therefore, screening programs for HBV are strongly recommended to reduce the risk of perinatal transmission.

Atelier régional : Afrique occidentale
Regional Workshop: West Africa

W.G.0.31

THE HIV PROBLEMS IN WEST AFRICA FEMI SOYINKA, OBAFEMI AWOLOWO UNIVERSITY, ILE-IFE, NIGERIA.

Various studies in West Africa have shown that the prevalence of HIV and AIDS vary signiffcantly from country to country. Eventhough data arising from countries are inadequate there are indications that HIV posses a threat to West Africa. The most frequently studied groups are prostitutes, STD patients and blood donors where prevalence rates are high. Perinatal transmission of HIV is also reaching alarming dimension. Blood Transfussion induced AIDS - especially among sicklers, cultural related HIV transmission (e.g. medicinal tattoos, traditional blood letting, and polygamous practices) have not been adequately addressed in West Africa. The emergence of HIV-2 in West Africa around 1985 has generated a lot of scientific and political controversies. HIV-2 may be more prevalent in many West African countries than hitherto recorded. A better understanding of the clinical and immunological implication of infection through HIV-2 is needed through systematic epidemiological and clinico-pathological research. Clinical cases of HIV-1 infection do not differ much in West Africa, from other countries. The prevalence of particular pathogens might make for the differences. Clinical oriented surveillance is more needed in African countries where lack of laboratory facilities, and financial limitations prevail. Operational problems in respect of HIV research include scarce resources, and inadequate flow of information among African researchers. International effort can maintain the information flow to developing countries. AIDS programme should be integrated into existing health care organisations such as the MCH, PHC and STD. What is essentially important about AIDS in Africa is the enormity of the problems and the failure to accept this.

W.G.0.32

POVERTY, WOMEN AND AIDS

Twumasi, Patrick A. Department of Sociology, University of Ghana, Legon, Ghana

W.G.0.33

PEDIATRIC AIDS

Neequayee, Janet. Department of Child Health University of Ghana Medical School, Accra, Ghana.

W.G.0.34

AIDS AND OTHER STDs

Kapita, Bila. Département de médecine interne, Hôpital Mama Yemo, Kinshasa, Zaire.

W.G.0.35

PROSTITUTION AND AIDS

Seck, Moussa. Dakar, Sénégal.

W.G.0.36

BLOOD BANK SERVICE AND AIDS

Diakhote, Lamina. Centre National de Transfusion Sanguine, Dakar Fann, Sénégal.

Déplacements internationaux et SIDA
International Travel and AIDS: A Perspective

W.G.0.37

AIDS AND TOURISM

Taitt, Branford. Ministry of Health, St. Michael, Barbados.

W.G.0.38

FREEDOM OF INTERNATIONAL TRAVEL. MOONEY, Terry, WHO Global Programme on AIDS, World Health Organization, Geneva, Switzerland.

Objective: To describe the detrimental consequences of mis-guided attempts to stop the spread of HIV infection by restricting the freedom of international travel, and to explain the public health and human rights rationale of the endorsement of freedom of movement in the Global AIDS Strategy.
Methods: Three criteria are applied to analyse restrictions on international travel. the first one is the public health rationale, where restrictions are evaluated against the requirements for the promotion and protection of public health. The second criterion is international human rights law. This necessitates the assessment of compatibility of restrictions on international travel with the principle of freedom of movement, and with detailed provisions concerning the rights of seamen, refugees, migrant workers; aliens, migrants and travellers in general. The third criterion is cost/benefit analysis. Firstly, the financial implication of the implementation of various restrictions is analysed to determine the justifiability of restrictions from the viewpoint of resource allocation in the AIDS strategy. Secondly, the opportunity cost - both financial and social - is added.
Results: It is shown that restrictions on international travel are not effective in the prevention of the spread of infection, nor consistent with international human rights law, nor justified by the criterion of financial an opportunity cost these restrictions involve.
Conclusion: Alternatives to the ineffective, unnecessary and unjust restrictions are not only possible in theory but have proved feasible in practice. Examples include information and education programmes developed by international development agencies, trade unions and also ministries of health. AIDS strategies which are consistent with both public health and human rights rationale has also demonstrated good financial and social cost/benefit ratio.

W.G.0.39

LE SIDA ET LES VOYAGEURS: PERSPECTIVES EN SANTE PUBLIQUE
Michel CAYEMITTES, MD / Institut Haitien de l'Enfance

Sil etait concevable au debut de l'epidemie du SIDA que certains pays non encore touches aient voulu proteger leur territoire contre la penetration du virus par le controle des voyageurs, il apparait que ceci est actuellement un leurre, compte tenu des caracteristiques actuels de l'epidemie.

En effet quasiment tous les pays ont chacun leur foyer epidemique susceptible de favoriser "in situ" la propagation de la maladie. Par ailleurs la negativite des tests de depistage des voyageurs penetrant un nouveau territoire ne garantit pas que certains ne sont pas contamines, de plus ce depistage necessiterait une mobilisation enorme de ressources et est complexe a bien des points de vue. Ce depistage systematique n'est pas necessairement conforme a l'ethique medicale.

Avec le caractere explosif de la pandemie du SIDA et le brassage des populations du globe il est fort probable neanmoins que le nombre de voyageurs porteurs du virus VIH augmentera avec le temps. Face a cette perspective il est necessaire que les agences de voyage, les transporteurs internationaux s'engagent fermement dans une campagne continue d'information education des voyageurs sur la prevention du SIDA. De meme tous les points d'arrivee et les hotels devraient avoir des centres d'information et de distribution de materiel de prevention a l'intention des voyageurs.

W.G.0.40

SIDA: CONSEILS AUX VOYAGEURS
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Plusieurs voyageurs s'inquiètent des risques de transmission du virus HIV durant leur voyage ou séjour à l'étranger. Plusieurs autres ne s'en préoccupent même pas, mais peut-être le devraient-ils?Le virus est présent partout dans le monde et les modes de transmission sont toujours les mêmes. En voyage c'est le comportement qui change à l'occasion du dépaysement...on peut voyager dans son propre pays et voir ses bonnes intentions fondre au soleil. Quatre volets nous concernent: A) les pays qui, pour des raisons politico-sanitaires ont, des exigences quant à la séro-négativité HIV ou interdisent l'entrée de médicaments; B) les voyageurs séro-négatifs ou présumés tels; C) les personnes séro-positives ou présumées telles; D) les personnes sidéennes en période de rémission. Il sera question des mesures vaccinales, de la chimioprophylaxie, des règles complémentaires d'hygiène, d'une éventuelle discrimination ou de certaines limites dans les lieux et les types de voyage.

W.G.0.41

W.G.0.42

SIDA et tuberculose
AIDS and Tuberculosis

Th.G.0.1

AIDS AND TUBERCULOSIS (TB) IN THE USA

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Centers for Disease Control (CDC), Atlanta, GA, USA

Objective. To compare AIDS patients with and without TB and identify risk factors for TB in AIDS patients.
Methods. Using logistic regression, we analyzed all AIDS cases reported to CDC from September 1, 1987 (when the CDC AIDS case definition was revised to include extrapulmonary TB with lab evidence for HIV) through January 9, 1989.
Results. Of 40,366 AIDS cases, 1001 (2.5%) had extrapulmonary TB. TB was diagnosed definitively in 893, presumptively in 108. AIDS patients with TB (AIDS/TB) did not differ by age from AIDS patients without TB. AIDS/TB comprised 3.1% of female AIDS patients vs 2.4% for males (p=.003). TB was reported in 1.3% of whites with AIDS, 4.7% of blacks, and 2.6% of hispanics (p<.001). Of AIDS patients, 771 (2.3%) of US origin had TB, compared to 20 (7.3%) Mexicans, and 71 (13.0%) Haitians (p<.001). TB was reported in 4.4% of heterosexual intravenous drug users with AIDS, 1.4% of homo/bisexual men, and 5.4% of those with heterosexual contact as their AIDS risk factor (p<.001). In 55% of AIDS/TB patients, TB was the sole opportunistic infection (OI) reported; the most common additional OI was *Pneumocystis carinii* pneumonia.
Conclusion. The 2.5% rate of TB in US AIDS patients should be considered an underestimate, because pulmonary TB is not counted in the case definition and because diseases occurring after the initial diagnosis of AIDS may not be reported. Significant variations in TB rates are associated with sex, race, national origin, and risk group. TB needs to be considered in all AIDS patients, particularly those with pneumonia.

Th.G.0.2

EFFECT OF TUBERCULOSIS INFECTION AS A NEW AIDS DEFINITION CRITERIA ON SURVEILLANCE DATA

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Objectives : 1.- To quantify possible changes on the prevalence and incidence of AIDS due to the introduction of the new CDC definition criteria in the catalan surveillance system. 2.- To identify the more frequent condition among the new definition criteria. 3.- To describe the subpopulation more sensitive to the new definition.
Methods: Data from the population-based AIDS registry of Catalonia were used. The registry systematically collects information on all patients with AIDS diagnosed in Catalonia, covering a population of about 6 million hab. and using a hospital based active surveillance system. The 1987 CDC case definition criteria were introduced for surveillance purposes in January 1988.
Results: Up to december the 31st of 1988, 555 cases meeting the old definition criteria and 209 meeting the new definition were reported. The use of the new definition increased the cumulative period prevalence from 92.5 to 127.3 per million hab. (37.6% increment), and it increased the incidence during 1988 from 34.3 to 63.0 per million hab. and year (79% increment). Among cases meeting the new definition criteria 85 (40.7%) presented with some clinical form of extrapulmonar M. tuberculosis infection (E.Tbc.) as the only inclusion criteria, 48 (23%) with an E.Tbc. in association with another opportunistic disease and 76 (36.3%) had inclusion criteria other than tuberculosis. Table 1 shows the transmission categorie distribution of each group.

TABLE 1:

TRANSMISSION GROUP	ALL CASES (764)	NEW DEFINITION CASES (209)	M TUBERCULOSIS ONLY (85)
IVDU	462 (60.5%)	158 (75.5%)	73 (85.8%)
Homosexual men	221 (28.9%)	30 (14.3%)	10 (11.7%)
Heterosexual	22 (2.8%)	7 (3.3%)	2 (2.3%)
Transfusional	5 (0.7%)	2 (0.9%)	-
Blood products	20 (2.6%)	4 (1.9%)	-
Vertical	19 (2.5%)	5 (2.3%)	-
Transplant	1 (0.1%)	-	-
Unknown	14 (1.8%)	3 (1.4%)	-

Conclusions: To evaluate the impact of the new definition criteria it is necessary to use incidence vs. prevalence data. In our population extrapulmonar tuberculosis account for the majority of cases reported because the new definition. New criteria will probably be more sensitive to IVDU men between 25 and 35 years old.

Th.G.0.3

TUBERCULOSIS AND AIDS: OUR EXPERIENCE.

Dres. Benetucci J, Astarloa L, Gonzalez Montaner J, Abbate E, da Bouza J, Compagnucci A, Corti M and Bases O.
AIDS Unit and Tisiology Division. Hospital F.J.Muñiz. Buenos Aires. Argentina.

OBJECTIVE: Underline the frecuency of the TB as an opportunistic infection, the seriosness of the injuries and the low incidence of the atypical mycobacteria in patients with HIV infections in Argentine.
METHODS: Between January 1986 and July 1988 we studied 17 patients with TB among 81 patients with AIDS (16 were males and 1 was female). Age rank 15 to 48 years. There were 5 heterosexual IVDA, 9 homosexual, 4 bisexual and 1 was an hemophilic A with multiple blood transfusions. All of them were HIV serology by ELISA and WESTERN-BLOT positive. RESULTS: In 2 patients there were diffuse pulmonary infiltrates, 7 with pulmonary cavities, 4 with pleural effusions (1 of them with ascitis), 3 with peripheral adenopathies (1 of them mediastinal involvement) and 1 genitourinary and meningeal involvement. In 14 we obtain culture positive for M. tuberculosis (9 from sputum, 1 from adenopathy, 1 bronchial washing, 1 pleural effusion and 1 blood culture) and in 3 we have histophatological result compatible (2 adenopathies biopsies and 1 pleural biopsy) Nine patients responded to specific treatment (2HRSZ, 7HR), 5 died and 3 are in treatment. We have not had atypical mycobacteria. The TB lesions in our patients are of customary characteristic but of greater extension and cavitation than with non-AIDS patients.
CONCLUSION: TB were founded in 21% of AIDS patients as an opportunistic infection. We have not had atypical mycobacteria. In this context of whatever specimen of acid-fast bacilli must be considered as tuberculosis and treated as such. The TB lesions are greater extension and cavitation than with non-AIDS patients.

Th.G.0.4

THE IMPACT OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) ON TUBERCULOSIS IN ZAMBIA: A CROSS-SECTIONAL STUDY.

Elliott, Alison*; Luo N*; Tembo G*; Steenbergen, G**; Nunn, P***; McAdam K*** et al.
*University Teaching Hospital, Lusaka, Zambia. **Ministry of Health, Lusaka, Zambia ***London School of Hygiene and Tropical Medicine, London, UK

Objective To study the impact of HIV on tuberculosis in Zambia.
Methods From November 1988 to January 1989 we have carried out a study of 300 outpatients on anti-tuberculous therapy in Lusaka, to be compared with smaller samples from 2 rural centres. The prevalence of HIV antibody, detected by Wellcozyme ELISA and confirmed by Dupont, among these patients is compared with that found in age- and sex-matched blood donors.
Results Preliminary results on the first 190 patients are as follows

Site of tuberculosis	number of patients	seropositivity (%)
Confirmed pulmonary	69	39 %
Suspected pulmonary	64	59 %
Pleural	31	81 %
Pericardial	8	88 %
Lymph node	8	88 %
Other	8	50 %

When the study code is broken further data analyses will be available.
Discussion Tuberculosis is emerging as the major bacterial pathogen in patients infected with HIV in Central Africa. It is both common and treatable. But new questions arise regarding the management of tuberculosis when it occurs in association with HIV. Current data from this study will be presented directed at guiding further investigation of these issues.

Th.G.0.5

A STUDY OF HIV INFECTION IN ASSOCIATION WITH TUBERCULOSIS PATIENTS SEEN IN INFECTIOUS DISEASES HOSPITAL (IDH) NAIROBI

DANIEL K. KIBUGA*, S.M. Gathua**, P. Nunn***
*Senior Medical Officer, IDH, **Chest Physician, IDH,
***Physician, London School of Tropical Medicine & Hygiene.
¶INFECTIOUS DISEASES HOSPITAL, NAIROBI, KENYA

Objective: Assess prevalence of HIV infection and associated complications in TB patients seen in I.D.H. between January 1987 - June 1988.
Method: A total of 656 patients were HIV screened mainly by organon technique and western blot confirmation when available and various aspects of HIV positive patients compared with randomly selected seronegatives marched by age and sex.
Results: 105 HIV seropositives were seen. Extrapulmonary disease was 17% in HIV +ve against 5.5% in HIV -ve and mortality despite effective chemotherapy was threefold in seropositives by the end of the 3rd month of treatment. There was no association between HIV positivity and drug resistant strains. The incidence of severe drug reaction in HIV seropositives was about five fold.

HIV Related complications	+ve	-ve	HIV related complications	+ve	-ve
Diarrhoea	39	1	Herpes zoster	3	0
Wt. loss on chemotherapy	56	8	Mental confusion	4	0
Oral thrush	28	1	Scabies	3	0
Pleuritic dermatitis	17	1	Karposis sarcoma	1	0
Generalised lymphadenopathy	14	1	Chicken Pox	1	0
Allergic drug reaction	27	5			

Conclusion: Tuberculosis control programme in Kenya is facing serious challenge due to rising HIV infection.

Th.G.0.6

ASSOCIATION OF TUBERCULOSIS AND HIV INFECTION IN ZIMBABWE

*Legg, William; Mahari M; Houston S; Neill P; Ray C S; Marowa, E. *City Health Department, Harare, Zimbabwe.

RATIONALE: Tuberculosis (TB), a common, treatable, and transmissable complication of HIV infection, is presently increasing in Zimbabwe.
OBJECTIVES: 1) To determine the seroprevalence of HIV in TB patients. 2) To compare the features of TB in seropositive and seronegative patients.
METHODS: From July to December 1988, all patients diagnosed as TB in the Harare City TB Unit were studied. Full clinical assessment and HIV testing using ELISA, in some cases confirmed by Western Blot, was performed.
RESULTS: Total TB diagnoses 447; 252 proven bacteriologically or histologically, 195 diagnosed clinically. HIV serology was obtained in 403 (90%).

Seropositivity by age group:

≤2yrs.	3-15 years	16-40 years	40 years	Total
52% (n=29)	*12% (n=17)	43% (n=243)	17% (n=114)	33.7% (n=403)

*both 15 year old females

HIV-positivity by sex in 16-40 age group: Men 43% (n=173), Women 43% (n=70)
Significant (p<.01) differences between HIV + and HIV - TB patients (16-40)

	Mantoux ≤5mm	≥2 organs	sputum AFB+	Adenitis	Hilar LN	Cavities
HIV +	35 (43%)	17 (16%)	50 (54%)	10 (9.5%)	18 (19%)	30 (32%)
HIV -	25 (23%)	4 (2%)	97 (75%)	1 (0.6%)	9 (6.9%)	69 (53%)

No significant difference: symptom duration, previous TB history, pleural TB, extrapulmonary TB other than adenitis. Too few cases to assess significant difference: miliary TB (10), TB Pericarditis (6), TB meningitis (2).

Of seropositive patients, 82 (78%) had other clinical feature of HIV infection (chronic diarrhoea, PGL, oral thrush, or zoster),

Recherches sur la sexualité humaine
Human Sexuality Research

Th.G.0.7 "Reliability and Validity Issues in the Assessment of Sexual Behavior."

Catania, Joseph A., Ph.D.
University of California, San Francisco
San Francisco, California, USA

An unprecedented number of human sexuality studies have been initiated in response to the AIDS epidemic. Unfortunately, methodological developments in the field of sex research have been slow in meeting the demands of AIDS investigations focusing on the diverse populations at risk for HIV (e.g., adolescents, gay men, IV-drug users, ethnic minorities, elderly transfusees). This paper reviews and integrates literature on response bias in sex research. The relevance of past methodological findings for AIDS behavioral research is discussed and recommendations are made to guide future investigations on sexual behavior in the area of AIDS.

Th.G.0.8

SEXUALITY RESEARCH IN ZAIRE

Lusakulira, Namagosi, Kinshsa, Zaire

Th.G.0.9 SEXUALITY RESEARCH CONCERNING STD AND AIDS IN THAILAND

Verasit Sittitrai, Jean Barry
Chulalongkorn University, Bangkok, Thailand

Object To examine status of research on sexuality concerning sexually transmitted diseases and AIDS in Thailand and recommend areas of research needs.
Method Compilation of bibliography. Review of available literature and existing data.
Results Systematic research on human sexuality in Thailand was primarily carried out during the past two decades. Most of earlier research was done in relation to contraceptives and birth control. Later, clinical STD research and research on premarital sex of adolescents received most attention. Research efforts have covered areas: sexual behaviours, marriage, sex education, knowledge, attitude and beliefs concerning sex and sexual health. Inquiry of KAP among adolescents on sexual experience and STDs is rather thorough, however, among adults is limited and fragmented.
Conclusion sexual research in Thailand covers vast areas but not indepth. Needed are psychosocial studies on sexuality including description of sexual behaviours and cultural traditions among various groups of the total population.

Th.G.0.10 SEXUALITY RESEARCH IN BRAZIL

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Brazil is usually associated to Carnival (Mardi-Gras), music, Latin lovers and half-naked "mulatas" that crowd the beaches in Copacabana. But the true Brazil is more than the apparent sexual permissiveness of less than 10% of the population. Its size, as well as, its economic situation and mixed racial and cultural origins, bring about a unique and complex country of fascinating contrasts. "Active" and "passive" sexual behavior have a greater significance in the general population than the concepts of heterosexuality, bisexuality and homosexuality . Sex plays an important role in the Afro-Brazilian cults that are widely practiced by Brazilians. Women are expected to be submissive to men. Transvestite prostitution is an important form of prostitution. Homosexuality is still considered a form of disease or a sin. Sex can be practiced for procreation, recreation or survival. Research in sexuality has to have the flexibility to to distinguish the difference between sexual and sensuous behavior which, in Brazil, have distinct meanings.

Th.G.0.11 RESEARCH ON HUMAN SEXUALITY IN SUB SAHARAN AFRICA

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Objective: The presentation provides a sociocultural framework within which African sexuality and the risk of HIV infection can be investigated.
Method: Ethnographic materials and some preliminary findings from WHO-supported national studies are presented. A life cycle approach is adopted in the discussion to reflect variations by age, sex and social status.
Results: There is greater structural control of female than of male sexuality. Lactational abstinence remains the most effective control on marital sexuality. Marriage and sexual intercourse are ruled out between a large proportion of adults. However, marital instability exposes the reproductive sexual network to the wider recreational network. The concepts of beauty, erotism and sexual obligations are passed on from one generation to another within the framework of puberty rites and at fertility-related festivals. Sexuality in old age is influenced by the socio-economic independence of both sexes at the end of the female reproductive cycle and tends to involve younger persons. Education, migration and urbanization erode traditional sexual mores. Clustering of young adults, mostly males, in urban centers and on plantations produces a compensatory inflow of females who provide them with a range of domestic, commercial and sexual services on a regular or ad hoc basis. Implications for HIV transmission are stressed.
Conclusion: A systematic research agenda is needed to increase our understanding of the social dynamics of heterosexual transmission and control of HIV/AIDS in Africa.

Th.G.0.12

Les femmes à risque
Women at Risk

Th.G.0.13

HETEROSEXUAL TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS: THE PAST AND THE FUTURE. J.O. NDINYA-ACHOLA, UNIVER. NAIROBI.

OBJECTIVES: To review the history of heterosexual transmission of HIV in Africa and the rest of the world; to assess the current status of heterosexually transmitted HIV, the woemn at risk, and the morbidity and mortality associated; and to review options available for protecting the women at risk.

Human Immunodeficiency virus has been circulating in various world populations since the seventies. Although clinical illness was only recognised at the beginning of the eighties decade, varying number of individuals were infected in mid to late seventies but were assymptomatic.

Heterosexual transmission first recognised in Africa and the Carribean where M:F ratio of HIV infected individuals was approximately 1:1 is an important mode of transmission of HIV throughout pattern 2 countries. It is increasing in pattern 1 countries and is likely to take root in pattern 3 countries.

In Africa high rates of infection (30-90%) has been demonstrated in highly promiscous groups of women (prostitutes). Heterosexual transmission has also been associated with women in the age group 20-40 years who are either living with their infected husbands or have had multiple marriages. Infection rate among teenage girls is still low(less than 1%).

Apart from mortality associated with HIV infection, studies also indicate that HIV infection leads to poor obstetric outcome (low birthweight, prematurity intra-uterine death. Risk of transmission to the foetus is about 25-30%.

CONCLUSION: It is proposed that in countries where heterosexual transmission is high health education targetted at the identified women at risk should be stepped up. Condom promotion activites along with change in sexual behaviour and attitudes should be part of the message. Research in locally acting virucidal agents for use during sexual intercourse should be intensified.

Th.G.0.15

WOMEN AT RISK - RESEARCH NEEDS AND PRIORITIES

LATIF A.S. UNIVERSITY OF ZIMBABWE MEDICAL SCHOOL, HARARE, ZIMBABWE

Sexual intercourse between men and women is the chief mode of transmission of HIV in Africa. Other modes of transmission include the infusion of infected blood and blood products, vertical transmission between mother and foetus, parenteral drug abuse, unprotected sexual intercourse between homosexual men. The role of biting insects in the transmission of HIV has not been reported. Other possible modes of transmission include ritual practices involving shart instruments used for scarification and circumcision and the ingestion of infected breast milk by neonates. Distribution by age of subjects with HIV infection in Africa shows a brimodal pattern with a peak below the age of 5 years and another in the group aged between 25 and 40 years. Prostitution and prostitute contact are well recognised as risk factors for HIV seropositivity. The role of genital ulcers in the acquisition and transmission of HIV have been demonstrated in some studies.

Studies need to be carried out to elucidate the following points:-
The role of breast milk in the transmission of HIV, the role of pregnancy in worsening the clinical progress of women with HIV infection, the role of male circumcision in the acquisition and transmission of HIV, and the role of intervention programmes among high risk groups in the reduction of the spread of HIV infection. Other socio-behavioural studies need also to be carried out.

Th.G.0.17

PROGRAMMATIC IMPLICATIONS

Meheus, André. Organisation Mondiale de la Santé Genève, Suisse.

Th.G.0.14

POPULATION ATTRIBUTABLE RISK OF SEXUALLY TRANSMITTED DISEASES (STDs) IN HIV INFECTION

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The presence of STDs have been consistently associated with an increased risk of HIV transmission in studies that control for potential confounding. In selected populations, relative risks for HIV infection have ranged between 1.5-20 in persons with STDs, particularly genital ulcers, compared to persons without. Such strong associations, however, give little information as to the public health significance of this interaction for the population. A risk factor which is associated with a high relative risk but which is relatively rare, may play only a small role in community transmission of the infection. Population attributable risk (PAR) is a measure both of strength of association and risk factor prevalence and theoretically defines the fraction of disease that would be eliminated if the risk factor could be removed from the population. Prospective studies in high risk groups in Africa have shown attributable risks for various STDs of 0.2-0.3; population based surveys with retrospective self-reported STD data have suggested lower PARs. As STDs are hyperendemic in many parts of Africa, STD control may play an important role in reducing HIV transmission. Further population based studies are necessary to define the PAR of the HIV/STD interaction to understand the potential impact of STD control in halting the spread of the HIV epidemic

Th.G.0.16

A DESCRIPTION OF NATIONAL STD CONTROL PROGRAM

Hira, Subhash
University Teaching Hospital, Lusaka, Zambia.

In Zambia, 5.0% of all outpatient attendances are related to sexually transmitted diseases (STD) and is third common cause for patient attendances at health institutions. Zambia is the only sub-saharan African nation with a national STD control program. It was launched in 1980 with following main objectives: 1. to assess extent and nature of STD; 2. to improve management of STD so as to reduce its complications; 3. establishemnt of network of STD clinics at provincial and district levels; 4. increase public awareness; 5. coordinate research, treatment and preventive activities to reduce the incidence. The program has expanded to include 38 STD clinics providing standardized treatment, contact tracing, counselling and surveillance. The male:female attendance ratio has improved from 5:1 in 1980 to 2:1 in 1987. The prenatal syphilis screening and treatment program introduced in 1984 has reduced seroprevalence of syphilis in pregnant women in Lusaka from 12.8% in 1983 to 8.0% in 1987.

With high seroprevalence of HIV-1 among STD attendees, it is single, easily assessable target population for education for prevention and condom promotion. Also, these clinics will now function as outpatient service units for HIV-infected patients.

Conclusion. Other nations can benefit from this model program.

Th.G.0.18

Défis posés par la gestion de programmes
Challenge of Programme Management

Th.G.O.19

THE WHO'S CONCEPT OF NATIONAL AIDS PROGRAMME MANAGEMENT

Tarantola, Dr D., World Health Organization, Switzerland.

As the World Health Organization extended its cooperation to over 118 national AIDS programmes in 1987-1989, and as the resources available for these programmes and the number of participating groups and individuals grew, the WHO's concept of AIDS programme design and management adapted itself to the fast evolving environment. The sequence of programme development steps had to be altered so as to create opportunities for other participants, both from government sectors and NGOs, to play an active role in the creation, implementation and evaluation of national programmes. This, in turn, enabled WHO to gradually focus its technical and financial collaboration with countries. Critical issues faced today, which will be addressed in this presentation, include programme sustainability, the challenge of coordination, the need for many countries to create or strengthen medical and social support to those affected, the compelling necessity to keep AIDS programmes fully integrated with other existing health and social institutions, the critical involvement of NGOs/PVOs in national programmes and the concurrent process of decentralization of activities, resources and responsibilities. Developing countries which embarked on large scale programmes in 1987-1988 are now assessing their performance. An account of the main outcome of these evaluation activities will be given.

Th.G.O.20

A NON-GOVERNMENTAL INDEPENDENT PERSPECTIVE

Viravaidhya, Meechai. Harvard Institute of International Development, Cambridge, MA, USA.

Th.G.O.21

Th.G.O.22

Th.G.O.23

Th.G.O.24

MTS et facteurs de risque
STD and Risk Factors

Th.G.0.25 PROSPECTIVE STUDIES ON HIV INFECTION OF PROSTITUTES IN THE PHILIPPINES

Hayes, Curtis*; Manaloto, C.*; Padre, L.*; Basaca-Sevilla, V**; Andrada, A.***; Espinosa, G.***; et al.
*U.S. Naval Medical Research Unit #2, Manila;**Philippine Department of Health, Manila; and ***The City Health Office, Olongapo, Republic of the Philippines.

Objective. Describe the epidemiology of new HIV infections occurring in prostitutes over a 4-year period.
Methods. Hospitality girls working in bars and night clubs frequently engage in prostitution in the Philippines. We have prospectively sampled populations of these women in several towns to determine HIV incidence based on seroconversions. In addition, other women who entered the study populations and started working between bleeding intervals were tested. HIV positive women have been interviewed and examined clinically at 3-month intervals since their diagnosis.
Results. HIV seroconversions have been documented in 14 of 12,615 prostitutes for an incidence rate of 0.9/1000 person years. An additional 22 HIV positives were detected among 25,473 women who entered the target populations between bleedings. The number of new HIV positives detected each year appears to be decreasing. Only minor signs and symptoms that are probably HIV related have been detected after an average follow-up of 17 months.
Conclusion. This study documents a low rate of HIV spread among the prostitute populations sampled. Based on interview data, this may be attributable to certain sexual behavior characteristics and to the absence of IV drug use.

Th.G.0.27 MALE CIRCUMCISION IN EASTERN AND SOUTHERN AFRICA: ASSOCIATION WITH HIV SEROPREVALENCE

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*International Development Research Centre, Nairobi, Kenya; **University of Nairobi, Nairobi, Kenya; ***University of Manitoba, Winnipeg, Canada.

OBJECTIVE: To investigate the association between male circumcision and the geographical pattern of HIV infection in eastern and southern Africa.
METHOD: Several cross-sectional and prospective studies have shown uncircumcised men to be at higher risk of HIV infection compared to circumcised men. We searched an anthropological data base to ascertain the practice of male circumcision among major ethnic groups in eastern and southern Africa, and reviewed population-based HIV seroprevalence data.
RESULTS: Approximately 15% of the male population in Kenya (2 major ethnic groups/30) is uncircumcised, as compared to 60% in Tanzania (13/28), 80% in Zambia (7/9), 90% in Uganda (12/13), and 90% in Zimbabwe (8/9). A preliminary review of published and unpublished data yielded population-based HIV seroprevalence data from over 30 areas in the region, which were divided into low, moderate and high HIV prevalence. Ethnic groups in high and moderate prevalence areas were more likely to be uncircumcised compared to those groups in low prevalence areas.
CONCLUSION: Preliminary findings suggest that the geographical patterns of HIV seroprevalence are consistent with the hypothesis that uncircumcised men are at higher risk of acquiring HIV infection. Further studies examining the relationship between male circumcision and the risk of acquiring HIV infection are recommended.

Th.G.0.29 CONDOM USE AND KNOWLEDGE IN GENERAL POPULATION, FEMALE PROSTITUTES AND GAY AND BISEXUAL MEN.

Izazola JA*, Pineda L*, Valdespino JL*, Sepulveda J.*
*Directorate of Epidemiology. Ministry of Health. Mexico

Objective. To compare knowledge and use of condom in general population, prostitutes and homo and bisexual men.
Method. A survey was done in 6 cities in Mexico during May,1988. A questionnaire was applied individually to general population (n=631), female prostitutes (n=796) and homo and bisexual men (n=716); a condom was shown to investigate visual recognition and condom use practices.
Results.

Knowledge and use of condom.

	Knows	Used last m.	Used last 6m.
Gen.pop.	78%	8%	10%
Homo.	96%	25%	43%
Prost.	94%	53%	58%

Frequency of use of condom during the last 6 months

	Always	Half of the time	Never
Gen. pop.	5%	5%	90%
Homo.	29%	14%	57%
Prost.	38%	20%	42%

A significant difference existed between every group.
Conclusion. The use of condom is less frequent in gay men than in prostitutes although their knowledge is similar. The use of condom is more frequent in gay men than in general population which is explained by their risky practices.

Th.G.0.26 STATUT SEROLOGIQUE D'UNE POPULATION DE PROSTITUEES DOUBLEMENT EXPOSEES AUX HIV1 ET HIV2 AU BURKINA EASO.

Sangaré, Lassana *; Kanki, P.***; Soudré, R.**; Tiendrebéogo, H. **; M'Boup, S. *; Essex, M. ***, et al.
* Hopital A. Le Dantec, Dakar, Sénégal; ** Hopital Yalgado Ouédrago, Ouagadougou, Burkina Faso; *** Harvard School of Public Health, Boston, Massachusetts, Etats-Unis.

Objectif. Déterminer l'évolution de la séroprévalence dans une population de prostituées doublement exposées à HIV1 et à HIV2.
Méthodes. En 1986, une première étude séroépidémiologique a permis de rechercher par Western Blot et RIPA, la présence d'Ac anti-HIV1 et anti-HIV2 dans 303 sérums de prostituées.
En 1987, une étude similaire a porté sur 261 sérums de prostituées. Parmi celles-ci, certaines de la première enquête ont été retrouvées.
Résultats. Les séroprévalences rapportées ont été respectivement de:

Année	Total testé	HIV1	HIV2	HIV1 /HIV2
1986	308	8.8%	14.6%	5.8%
1987	268	14.9%	5.6%	4.8%

Parmi les prostituées retestées lors de la seconde enquête (N=14), nous avons observé 35,7% de séroconversion avec 21,4% pour le HIV1 et 14,3% pour le HIV2. Par ailleurs, dans ce même groupe nous avons noté l'apparition de double profil chez 7,0% des prostituées antérieurement infectées par le HIV2.
Conclusion. Ces différents résultats montrent une importante circulation du HIV1 qui tend à se substituer au HIV2. La poursuite de ce travail permettra de préciser les conditions de survenue des cas de double infection à HIV1 et HIV2.

Th.G.0.28 FACTORS ASSOCIATED WITH PREVALENT HIV-1 INFECTION IN PREGNANT WOMEN IN MALAWI.

Chiphangwi J. Ndovi E. Dallabetta G. Miotti P. Liomba NG. Alfred J. Saah.
The Queen Elizabeth Central Hospital. Blantyre. Malawi. and The Johns Hopkins School of Hygiene and Public Health. Baltimore. MD. USA.

Objective. To determine factors associated with prevalent HIV-1 infection in pregnant women in Malawi.
Methods. 247 consecutive women who presented to the antenatal clinic at the QECH during December 1988 were tested for HIV-1 antibody and had their charts reviewed. Antibody testing was done by ELISA with Western blot confirmation. Informed consent was obtained from each participant. Variables that were examined included age. trimester at presentation. gravidity. occupation. VDRL. history of: TB. STD. transfusions. spontaneous abortion. still birth. prematurity. and neonatal death.
Results. 46 of the 247 (19%) women were seropositive for HIV-1. Reactive VDRL was significantly associated with HIV-1 seropositive status (15% vs 5%. p=0.02). 37 of the 204 women who had had prior pregnancies were HIV-1 seropositive. History of spontaneous abortion in this group was of borderline significance (27% vs 14%. p=0.06). None of the other variables was significantly associated with HIV-1 infection.
Conclusion. This cross-sectional analysis shows that reactive VDRL should raise one's index of suspicion regarding HIV-1 seroreactivity. Also. HIV-1 infection may play a role in fetal wastage.

Th.G.0.30 COMPARISON BETEWEN RISKY PRACTICES IN FEMALE PROSTITUTES AND GAY AND BISEXUAL MEN.

Izazola JA*, Romero C*, Valdespino JL*, Sepulveda, J.*
Directorate of Epidemiology, Ministry of Health. Mexico.

Objective. To determine the prevalence of risky sexual practices in female prostitutes and gay and bisexual men in Mexico.
Method. A survey was done in Guadalajara, Tijuana, Monterrey, Acapulco, Merida, and Mexico City in May, 1988, in female prostitutes and gay and bisexual men, investigating the frequency of risky sexual practices.
Results:

	Prostitutes				Gay and bisexual men		
Sexual techniques	Always	Half of the time	Never	Sexual techniques	Always	Half of the time	Never
1	91%	1%	8%	a	28%	18%	53%
2	0.6%	0.5%	97%	b	30%	17%	49%
3	7%	5%	88%	c	25%	15%	58%

1:Vaginal coitus, 2: Anal Receptive, 3: Fellatio   a: Anal Insertive, b: Anal Receptive c: Fellatio

Frequency of semen deposit in prostitutes was: vaginal: 60% always, 15% half of the time, 23% never; anal: 30% always, 1% half of the time, 46% never; and oral: 35%. In gay and bisexual men, frequency of semen deposit was: insertives: 49% always, 12% half of the times, 35% never; receptives: 42% always, 18% half of the time and 37% never: oral receptives: 9% always, 95% half of the time, and 78% never.
Conclusion. Although HIV prevalence in gay and bisexual men ranges from 2% to 30% and is less than 1% in prostitutes, the high level of risk in sexual practices alerts on the need of strengthening educative efforts directed to these groups.

Aspects cliniques
Clinical

Th.G.O.31

ROLE DU CENTRE DE LUTTE CONTRE LES MST DANS LA PREVENTION DE L'INFECTION A VIH. "L'EXPERIENCE DU SENEGAL".

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*Bureau National MST.Dakar.Sénégal.**Université Seikh Anta Diop. Dakar. Sénégal.***Ministère de la Santé Publique.DHPS. Dakar. Sénégal.

Objectif. Montrer les avantages du centre MST dans la collecte des données de l'infection à VIH, le suivi et la prise en charge des populations à risque sur le plan clinique, biologique, curatif et social.
Méthode. Une équipe pluri-disciplinaire de cliniciens, biologistes et assistants sociaux est responsable pour la prise en charge des patients symptomatiques et le dépistage périodique de prostituées.
Resultats.2 à 3% des consultants en MST sont séropositifs en VIH.

- 12% des 1165 prostituées suivies régulièrement sont séropositifs (10,8% VIH-2; 0,9% VIH-1; 0,2% VIH1/VIH2).
- 15% des contacts sexuels des consultants MST, infectés par VIH sont retrouvés et pris en charge.
- Le taux de séroconversion est lent en comparaison avec des études de groupes comparables dans des autres pays africains.
- La consommation de préservatifs dans le centre MST a doublée depuis la détection des premiers cas de SIDA au Sénégal.

Conclusion. Les centres MST jouent un rôle important dans le dépistage et la prise en charge de personnes infectées et dans le suivi de contacts sexuels. L'intégration de la lutte contre le SIDA dans les activités de ces centres est une stratégie efficace et efficiente pour influencer le comportement sexuel de groupes à risque et est indispensable pour une collecte de données plus fiable et un suivi plus aisée des populations les plus affectées.

Th.G.O.32

PATHOLOGY OF HIV INFECTION IN ZAIRE

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Objective: To define the pathology of HIV infection in Zaire.
Methods: Biopsy and autopsy material from urban and rural areas of Zaire were studied by routine gross and microscopic examination including special stains for microorganisms. Criteria for inclusion was a positive HIV serology or clinical evidence of HIV infection.
Results: Preliminary results are available from 87 biopsies and 8 autopsies. Males and females were equally represented in the series; the ages ranged from 8 mos to 60 yrs. The most common biopsy sites were lymph node(LN) (27) and skin(17). Kaposi's sarcoma (KS) was identified in 17 cases from a variety of sites: skin, lymph node, conjunctiva and gastrointestinal mucosa (M:F=3:1). 65% of the LN biopsies revealed a typical HIV associated lymphadenopathy, predominantly the hyperplastic type. All the autopsies and 25% of the biopsies revealed an infectious pathology; the most common being tuberculosis (n=8). No cases of Pneumocystis carinii were identified in our series. Only two of six cases of clinically suspected tuberculosis were proven by autopsy, the rest were other opportunistic infections such as nocardiosis and histoplasmosis. No significant differences were seen between urban and rural cases.
Conclusions: (1) Infections, especially tuberculosis, and KS, both cutaneous and visceral, are frequent histopathologic findings in Zaire (2) An increased rate of autopsies is essential to better define the pathology of HIV infection in our country.

Th.G.O.33

CLINICAL FINDINGS IN 201 SYMPTOMATIC CHILDREN WITH AIDS

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Objective: To define the clinical findings in symptomatic children with AIDS.
Methods: Recognizing that there is a paucity of information on symptomatic infants and children with AIDS, we investigated 201 symptomatic cases admitted to the Department of Pediatrics at Mama Yemo Hospital. Diagnosis of each patient was confirmed by HIV ELISA and Western Blot tests.
Results: 86 infants, 1-24 months, and 115 children, 2-12 years, were studied. All were symptomatic at the time of admission. 195 (97%) presented with severe weight loss (160 (85%) weighing less than 3rd percentile weight for age), 171 (85%) with fever of one month duration, 136 (68%) with asthenia, 127 (62%) with diarrhea of more than 4 weeks duration, 127 (63%) with opportunistic infections, 122 (61%) with respiratory infections, 105 (52%) with hepatomegaly, 82 (41%) with anorexia, 56 (28%) with splenomegaly, 50 (25%) with vomiting, 49 (24%) with generalized lymphadenopathy, 37 (18%) with neurological complications and 37 (18%) with abdominal pain.
Conclusion: The most dramatic finding in both age groups was profound weight loss. Chronic fever, opportunistic infections, respiratory infections and lymphadenopathy were more common in older children whereas asthenia, chronic diarrhea and anorexia were more prevalent in infants. Our data suggests that the clinical presentation of AIDS varies in the infant age group from older children.

Th.G.O.34

VALIDATION OF A CASE DEFINITION FOR PERINATALLY ACQUIRED AIDS IN AFRICA

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Objective. To validate a provisional WHO clinical case-definition for pediatric AIDS acquired via perinatally-acquired HIV infection (PI).
Methods. Three groups of children born to HIV(+) mothers have been followed monthly since birth. Group I consisted of 71 infected children with lab evidence of PI (cord blood culture and/or HIV IgG at age 12/18 months). Group II had 281 children with HIV(+) mothers but without PI. Group III consisted of 560 control children born to HIV(-) mothers. To validate the case-definition we compared the prevalence of selected criteria in Group I with Group II children and calculated sensitivity (SENS), specificity(SPEC) and positive-predictive value(PPV) of the definition. Criteria for HIV infection were quantified with 3 points given for a major(Maj) sign and 2 for a minor(Min) sign. A score of)10 was defined as clinical AIDS.
Results

Criteria	Sign	Criteria Prevalence(%) GpI	GpII	GpIII	SENS	SPEC	PPV
Fever)15 days	Maj	35%	15%	9%	35	86	39
Diarrhea)15 days	Maj	48	16	15	38	84	39
Failure-to-thrive	Maj	76	48	39	69	51	26
Generalized lymphaden.	Min	77	41	22	72	61	32
Thrush after age 6 mos.	Min	30	11	8	28	90	42
Pneumonia	Min	48	35	36	44	65	25
Papular dermatitis	Min	48	32	24	40	68	23
Fulfilled AIDS case definition		37	7	5	37	93	59

Conclusions. The provisional pediatric case-definition for AIDS has a high specificity but its lack of sensitivity will limit its usefulness in surveillance.

Th.G.O.35

CLINICAL FINDINGS AMONG HIV-INFECTED INDIVIDUALS ATTENDING THE DERMATO-VENEREOLOGY CLINICS

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Objective: To obtain clinical data on HIV seropositive patients attending the clinics.

Methodology: During a two-months period, all patients attending the clinics were interviewed about presenting symptoms, socio-medical history and sexual history. They were examined and blood was drawn for HIV serology and VDRL.

Results: Among 97 patients, posterior cervical adenopathy and herpes zoster were significantly co-related with seropositivity. Seborrhoeic dermatitis, prurigo, pyoderma, urticaria and other drug eruptions, Kaposi Sarcoma skin lesions, aggressive scabies, psoriasis, tinea versicolor and other fungus skin infections, as well as hair and nail changes were more common among HIV positive cases. 16 out of 47 patients with STD were seropositive. Chancroid occured among 79% of seropositive patients compared to 42% among seronegative ones. No difference was noted with respect to urethritis.

Conclusion: STD/Skin clinics have a big reservoir of HIV-infected people. Unexplained posterior cervical adenopathy and herpes zoster should be included among major criteria. Various skin lesions are highly predictive of HIV infection. Genital ulcer disease is both a manifestation of and a risk factor for HIV infection.

Th.G.O.36

EVALUATION OF CLINICAL ILLNESS AND TIMING OF SEROCONVERSION IN SEXUALLY TRANSMITTED ACUTE HIV-1 INFECTION.

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Univ. Nairobi, Nairobi City Commission, Nairobi, Univ. Manitoba, Winnipeg. CANADA

Objective. To time seroconversion from sexual exposure and characterize clinical illness in acute HIV-1 infection.
Methods. In a longitudinal HIV-1 seroincidence study, 19 seroconverting men were clinically evaluated within 8 weeks of seroconversion, and matched with 72 men remaining seronegative 16 weeks from high-risk contact. Six seroconversions in 73 men followed 13 + 15 (2 - 71) weeks were timed from recent, isolated high risk sexual contact.
Results. Four of 19 (21%) seroconverters had no signs or symptoms. Fever in 10 (53%), itching in 9 (47%), headache in 7 (37%) and generalised lymphadenopathy in 12 (63%) seroconverters was detected. All illness was mild. Generalised lymphadenopathy was significantly more frequent in seroconverters (63%) than in controls (30%, $p = 0.02$). Six seroconversions occurred at a mean + SD (range) of 5.9 + 2.6 (2.9 to 10.1) weeks from a single high risk sexual contact.
Conclusions. Illness associated with acute HIV-1 infection and seroconversion is clinically subtle. Seroconversions were seen between 2 and 12 weeks of sexual exposure.

Atelier régional : Amérique Latine
Regional Workshop: Latin America

Th.G.O.37

MEXICAN EXPERIENCE ON INTERRELATIONSHIP BETWEEN EPIDEMIOLOGY AND EDUCATION ON AIDS

Valdespino, José-Luis. Mexico.

Th.G.O.38

CLINICAL-EPIDEMIOLOGICAL CHARACTERISTICS OF AIDS CASES IN ARGENTINA

Cahn, Pedro. Hospital Fernandez, Buenos Aires Argentina.

Th.G.O.39

DEVELOPMENT OF AIDS PROGRAMMES FOR HISPANIC COMMUNITIES IN THE USA

Pinel, Arletty. Centre for Reference and Training in AIDS, Sao Paulo, Brazil.

Th.G.O.40

AIDS EDUCATIONAL PROGRAMMES IN SAO PAULO, BRAZIL

Lemos Fernandes,Maria Eugenia. State Department of Health, Sao Paulo, Brazil.

Th.G.O.41

AIDS IN PROSTITUTES: EXPERIENCE IN THE DOMINICAN REPUBLIC

Guerrero, Ernesto. AIDS and STD Control Programme (PROCETS), Santo Domingo, Dominican Republic.

Th.G.O.42

AIDS: A CARIBBEAN PERSPECTIVE

Narain, Jai P. Caribbean Epidemiology Centre, Port of Spain, Trinidad, W.I.

Atelier régional : Antilles
Regional Workshop: Caribbean

Th.G.0.43

EPIDEMIOLOGY OF AIDS IN THE BAHAMAS AUG 1985 - MAR 1989

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Ministry of Health, Nassau Bahamas.

OBJECTIVE To describe the AIDS epidemic in The Bahamas during the period August 1985 - March 1989.

METHODS Information from notifications of AIDS patients and contact tracing HIV testing and blood donor screening were analyzed.

RESULTS Three hundred and eight cases of AIDS were reported over a period of 44 months. The incidence rate per 100,000 rose from 16 in 1985 to 38 in 1988. Ten of the 24 inhabited islands have been affected. Fifty-five (17.8%) cases occured in children. The proportion of cases due to perinatal transmission has varied from 27.7% in 1985 to 7.7% in 1989. Heterosexual transmission accounts for 59% of cases, homosexual 2%, bisexual 6%. Among the adults 34% were free base cocaine abusers, (not IV users). The fatality rate is 50.6%. The number of HIV infected individuals identified has increased from 20 in 1985 to 419 in 1988 with a cumulative total of 910. Of the 10,369 units of blood screened during this period, 48 (0.46%) were found to be positive for HIV infection.

CONCLUSION There has been a rapid increase of AIDS and HIV infection in The Bahamas. The proportion due to perinatal transmission though high, has shown a significant decrease. The predominant mode of transmission is heterosexual. Cocaine abuse has contributed to the spread of HIV infection.

Th.G.0.44

AIDS IN THE DOMINICAN REPUBLIC: INTERVENTIONS AMONG PERSONS WITH HIGH-RISK BEHAVIOUR

Guerrero, Ernesto. Santo Domingo, Republica Dominicana.

Th.G.0.45

SITUATION EPIDEMIOLOGIQUE DU SIDA EN GUYANE FRANCAISE -

Dr VIENNE - D.D.A.S.S. de-Cayenne - Médecin Inspecteur de la Santé.
avec la collaboration des membres du Comité SIDA Guyane.

131 cas de SIDA ont été recensés entre 1982 et 1988 dans une population estimée à environ 100.000 habitants.

Dans ce département français la transmission hétérosexuelle du VIH est prédominante.

14 cas pédiatriques cumulés montrent la transmission materno foetale correspond à plus de 10% des patients atteints du SIDA.

Les infections opportunistes sont majoritaires dans les manifestations cliniques alors que le sarcome de kaposi n'a été retrouvé que chez deux patients.

96 de ces malades sont à ce jour décédés.

Th.G.0.46

STRATEGIES FOR PREVENTION AND CONTROL OF AIDS IN HAITI

Timothée, Gabriel. CARE PWR Haiti, Port-au-Prince Haiti.

Th.G.0.47

AIDS EDUCATIONAL STRATEGIES AND ETHNIC DIVERSITY IN SURINAME

del Prado, Ruben F.
"National AIDS Program" of the Bureau of Public Health,
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In the 18th century, Suriname (then also known as Dutch Guiana) had a prosperous plantation economy, based on the labour of African slaves. To counteract the manpower shortage after the abolition of slavery in 1863, the immigration of indentured labourers from British India began in 1873, followed by a similar movement of Javanese from the Dutch East Indies. The multi-ethnical,multi-cultural,multi-religious,multi-lingual society which now comprises the Republic of Suriname, has major ramifications for any [health] education program. The official language is Dutch, but Sarnami Hindustani;Javanese;Chinese;several Amerindian and Bushnegro (Maroon) languages, and a vernacular comparable to Creole: Surinamese, are widely spoken. More so than in other Caribbean countries the official language is only "official" in the true sense of the word. Although AIDS education faces the usual dilemmas as anywhere in the world, we meet this extra challenge of real ethnic diversity in a nation without a common voice. The first classified case of HIV infection dates back to 1982, and Suriname has since seen 36 people with clinical HIV infection(AIDS+ARC) out of a total of 61 known to be HIV infected. Though we do not have an approximation of the total number of HIV infected in Suriname, we believe that the number of clinical cases is as close to reality as possible. With an estimated 400,000 inhabitants, Suriname lags behind its neighbouring countries in regard to the number of people with AIDS. It is a dismal thought, but we may only be lagging behind the wave of a substantial outbreak of HIV related diseases.
A delay which we may (hypothetically) attribute, in part, to our special socio-demographic make-up with explicit norms concerning human sexuality.
But these very same cultural mores, in their diversity, could very well impede our AIDS education efforts.

Th.G.0.48

CHALLENGES IN DEALING WITH THE AIDS EPIDEMIC IN TRINIDAD AND TOBAGO

Beulah Duke
Ministry of Health, National AIDS Programme, Republic of Trinidad and Tobago

Objective. To discuss the socio-cultural factors influencing programme activities as we respond to the AIDS epidemic in Trinidad and Tobago.
Method. The presentation will be based on the personal experiences of the Programme co-ordinator in dealing with AIDS [illegible]
Result. Sexual transmission of HIV has been identified as the main mode of spread, as seen in cumulative total of 309 cases of AIDS over period 1983 - December 1988 (heterosexual 37.1%, homosexual 34.0% and bisexual 18.5%). Blood screening for HIV was initiated in 1985. A Cabinet appointed National AIDS Committee was established in 1987. Efforts to control AIDS are channelled through public education, training of Health Care Workers, counselling and social support services and community participation. Some of the major challenges appear to be the need for focused, sustained interest and willingness to address the problem of HIV infection/AIDS in the real centres of social and economic power and authority, at community and institutional levels. No new mind set has yet emerged in response to provision of services or treatment at institutional level for Persons With AIDS. Factors such as existing limited informational and management systems in the health sector, as well as inadequate laboratory and support services for HIV testing for the worried well impact on efforts to control the problem. There is need to increase the cadre of personnel who can educate for behaviour change or provide counsel and support for clients and families.
Conclusion. Although the AIDS Control Programme has been implemented in Trinidad and Tobago since 1987, there are some serious constraints which must be addressed, both at individual, community and institutional levels.

Le SIDA chez l'enfant
Pediatric AIDS

Th.G.0.49 MORTALITY ASSOCIATED WITH HIV AND DIARRHEA IN HAITIAN CHILDREN

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Objective To determine the mortality rate and associated co-factors in children discharged from a rehydration unit in Port-au-Prince, Haiti.
Methods From February 1986 to July 1987, 217 randomly selected children were followed for a minimum of 3 months after discharge from the State University Hospital rehydration unit. Age-matched healthy neighborhood controls (n=128) were similarly followed. All patients and controls had HIV serology (ELISA), weekly home visits and at least monthly physician evaluations.
Results Nineteen per cent (41/217) of the patients and 3% (4/128) of the controls died during the follow-up period. One-half of the patient deaths occured within 2 weeks of discharge and 61% occured at home. Pneumonia and sepsis were the most common causes of death. Characteristics of the patient and control groups are noted below:

	Patients		Controls
	Alive	Dead	
	n=176	n=41	n=128
Age (months)	6.3	4.5	7.6
Severe malnutrition (%)	16	39	15
Bottle-fed only (%)	40	66	21
Oral thrush (%)	5	34	0
HIV seropositive (%)	3	32	3

Conclusion Despite low in-hospital mortality (< 1%) and adequate rehydration, 19% of patients died within 3 months of discharge. Factors associated with patient deaths include age, severe malnutrition and HIV seropositivity.

Th.G.0.50 PEDIATRIC AIDS IN BRAZIL – DESCRIPTION AND ANALYSIS OF TRENDS

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*Ministry of Health - National Division of STD/AIDS- Brasília, Brazil,** Oswaldo Cruz Foundation/Ministry of Health-Rio de Janeiro, Brazil.

Objective. To describe the pediatric AIDS in Brazil, to quantify the problem, to identify high-risk groups, to work out explanatory hypotheses, and to propose measures for prevention and control.
Methods. All cases of pediatric AIDS reported to the Epidemiological Unit of the Ministry of Health's National STD/AIDS Division in the period from 1980 to 1988 were analysed. The analysis of the data was carried out by means of crossed and simple tables and diagrams, and by statistical tests. Information was gathered concerning the risk factor of the parents, through review of medical records, case discussion, and additional epidemiological investigation when it was necessary.
Results. In the period from 1980 to 12/03/1988, 175 cases of pediatric AIDS were reported to the Ministry of Health, with a case-fatality rate of 56%. The observed male/female ratio was 2:1. If haemophiliac cases were excluded, this ratio was 1:1. Of the reported pediatric cases, 35% caught the infection before, during or soon after the birth (perinatal transmission), 30% were haemophiliacs, 28% received a blood transfusion and/or components. There are 3 cases of drug-users (2%) and 5% were either not investigated or were unclear with regard to the category of transmission. The first pediatric AIDS cases were diagnosed in 1984 in haemophiliacs; however, the proportion of this group has been decreasing with a consequent increase in the occurrence of perinatal cases or those related to blood and/or components transfusions. By means of temporal distribution it was possible to observe a perfect positive correlation ($r=1$) between cases of perinatal transmission and cases of IV drug users. The cases of perinatal transmission, when analysed according to the parents' risk factor, show that around 60% had parents who uses IV drugs, and approximately 20% had bisexual fathers (preliminary data).
Conclusions. Pediatric AIDS in Brazil may be seen as an emerging problem with a possible tendency towards changing the categories of transmission. Given the positive association between perinatal AIDS cases and cases of drug-users, the observed increase in the number of drug-users may bring a sharp rise in perinatal transmission. It is therefore clear that measures for prevention and control must be directed as a priority towards the group of IV drug users.

Th.G.0.51 THE EFFECT OF HIV-1 AND HTLV-1 INFECTIONS ON BIRTHWEIGHT IN A POPULATION WITHOUT IV DRUG ABUSE

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*The Johns Hopkins University, Baltimore, MD, USA **Centers for Health and Development, Port-au-Prince, Haiti ***National Cancer Institute, Bethesda, MD, USA

Objectives. To determine the impact of maternal HIV-1 and HTLV-1 infections on birthweight (BW).
Methods. Woman residing in a periurban Haitian slum were screened at 6-to-8 months gestation for HIV-1 and HTLV-1 antibodies.
Results.

	HIV-1			HTLV-1		
	Pos.	Neg.	p-value	Pos.	Neg.	p-value
n = Hospital Deliveries	140	1464		46	1190	
Mean BW (gms)	3021	3082	0.200	3053	3073	0.837
< 2500 gms	15.0%	11.0%	0.154	13.0%	11.5%	0.750
Mean Mat. Wt.(kgs)	58.1	58.6	0.335	58.3	58.3	0.980

Maternal factors associated with LBW in logistic regression analysis were: inadequate prenatal tetanus toxoid (OR=2.2, 95% CI 1.2, 4.2); being unmarried (OR = 2.0, 95% CI 1.1, 3.6); sexual intercourse < 2 weeks preceding delivery (OR = 1.9, 95% CI 1.2, 3.1); and maternal weight < overall mean weight of 58.5 kgs. Smoking, alcohol use, socioeconomic and educational status were not associated with LBW. However, only 5.3% of the mothers smoked, 1 % drank alcohol, and all were of very low SES. IV drug abuse is not known to occur in this population.
Conclusions. Maternal HIV-1 and HTLV-1 infections had minimal impact on birthweight in these relatively asymptomatic women.

Th.G.0.52 MORBIDITY AND MORTALITY IN INFANTS OF HIV-1 INFECTED MOTHERS.

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*University of Nairobi, Kenya,** University of Manitoba, Winnipeg, Canada, ***Middlesex Hospital, U.K; + University of Washington, Seattle, U.S.A.

Objective: To assess the impact of HIV-1 on infant morbidity and mortality.
Method: Women attending the Pumwani Maternity Hospital in Nairobi, Kenya were screened for HIV-1 Ab. Infants of 128 HIV+ women(cases) and 206 HIV- women (controls) were enrolled at birth and followed prospectively.
Results: One hundred and thirty five case infants and 223 control infants were followed for an average of 10 and 9 (range 1-33) months. 31(23%) case infants and 25(11%) controls developed pneumonia (P=.005), and 16(12%) case infants versus 9(4%) controls had otitis media (OM) (P=.01). Measles developed in 7 case and 4 control infants (P=NS) and chicken pox in 2 infants from each group. 30(22%) case infants and 25(11%) controls failed to thrive (FTT) during the study period (P=.02). Failure to thrive occured before the age of 9 months in 16(53%) of 30 case infants compared to only 4 (16%) of 25 controls (P=.005). Infant mortality (IM) was 10/135 (7.4%) in cases and 6/223(2.7%) in controls, (P=.04). Infants of HIV+ mothers with more advanced HIV disease or subsequent death (25) had higher IM,FTT and OM than infants with asymptomatic mothers (103):IM(24% VS 4%, P=.003),FTT (48% VS 17%, P=.002), OM (32% VS 8%, P=.003).
Conclusion: Significant infant morbidity and mortality is associated with prenatal HIV-1 exposure and is correlated with more advanced maternal HIV disease.

Th.G.0.53 HIV INFECTION AS A RISK FACTOR FOR POOR OBSTETRICAL OUTCOME

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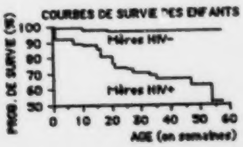
Objective: To determine whether HIV infection and other sexually transmitted diseases (STD) are riskfactors for low birth weight and stillbirth (SB).
Methods: Using a case-control design, 1300 women were recruited within 24 h. after delivery in one maternity hospital in Nairobi, Kenya. Infants with a birthweight ≤ 2500 g. were divided into preterms (P) (n = 321) and small for gestational age (SGA) (n = 181) using the Dubowitz'score. SB's were divided into intra-uterine foetal deaths (IUFD) (n = 89), and intra-partum foetal deaths (IPD) (n = 55). Controls were randomly selected from mothers delivering a neonate > 2500 g. Data collection included sociodemographic features, sexual and medical history, clinical signs and symptoms, serology for HIV and syphilis, and microbiology for *N. gonorrhoeae*, *C. trachomatis*, *S. agalactiae*, *M. hominis*, *U. urealyticum*, *T. vaginalis* and bacterial vaginosis.
Results: 3.2 % of the controls had HIV antibody. Preterm birth was associated with HIV infection (8.4 % pos., p = 0.008, OR = 2.8), as well as primiparity, being single, sex during pregnancy, rupture of membranes (ROM) as initial obstetrical event (IOE), and lack of antenatal care. SGA was associated with HIV infection (8.5 % pos., p = .006, OR = 2.7), primiparity, < 20 y., and hypertension. IUFD was associated with syphilis (18 % pos., p < .0001, OR = 6.4), HIV infection (11.2 % pos., p = .001, OR = 3.8), sex during pregnancy, previous SB, hypertension, and lack of antenatal care. IPD was associated with HIV infection (14.5 % pos., p = .0002, OR = 5.1), being single, previous SB, and postpartum endometritis. No association was found between other STDs and poor obstetrical outcome. At 2 weeks of age, 12 % of preterms had died, as compared to 1.5 % of the SGAs and controls.
Conclusion: Poor obstetrical outcome was strongly associated with HIV infection. However, further investigations are necessary to determine biological causality.

Th.G.0.54 SURVIE DES ENFANTS NES DE MERE POSITIVE POUR HIV1 : ETUDE PROSPECTIVE A BRAZZAVILLE (R.P. CONGO).

Marc Lallemant*, S.Lallemant Le Coeur**, D.Cheynier***, S.Nzingoula***, M.Sinet**, B. Larouzé** et al. * ORSTOM (S/URB), Brazzaville/Paris, ** INSERM U13, Paris , *** Minist. Santé/DSMIES, Brazzaville.

Objectif : Estimer la survie différentielle des enfants nés respectivement de mère positive et négative pour anti-HIV1.
Méthodes : 1833 femmes enceintes ont été prélevées de mai 1987 à mars 1988 dans 2 centres de surveillance prénatale et testées pour anti-HIV1 (ELISA Pasteur, confirmation WB Dupont de Nemours). Chacune des 71 femmes anti-HIV1+ (3.9%) a été appariée sur l'âge et la date présumée d'accouchement avec 2 mères négatives. 65 enfants nés de mère anti-HIV1+ et 130 enfants témoins ont été suivis (recul moyen au 20/12/88 : 13 mois ; 7 à 16 mois). Les probabilités de survie ont été estimées par la méthode de Kaplan .
Résultats : A la naissance, les 2 groupes d'enfants ne différaient pas pour la mortinatalité, le sex-ratio, le terme et le poids. La probabilité de survie était de 0,98 (ds=0,01) à 3 mois chez les témoins puis restait stable. Elle était, chez les enfants nés de mère anti-HIV1+, de 0,88 (ds=0,04) à 3 mois, de 0,73 (ds=0,06) à 6 mois, de 0,67 (ds=0,06) à 9 mois et de 0,52 (ds=0,11) à 1 an.



Conclusion : La surmortalité des enfants nés de mère anti-HIV1+ est hautement significative (p<.001). Les décès sont plus fréquents (taux de transmission plus élevé ?) et plus précoces (rôle de l'environnement infectieux tropical ?) que dans les cohortes occidentales.

Épidémiologie
Epidemiology

M.G.P.1

PATTERNS AND TRENDS OF HETEROSEXUAL TRANSMISSION OF HIV AMONG BRAZILIAN AIDS CASES

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Objective. To characterize the heterosexual transmission category of HIV, among AIDS cases comparing the features throughout the period from 1982 to 1988.
Methods. All AIDS cases reported in the heterosexual transmission category (404) were analysed over time. They represent a proportion of 8% of the total cases reported to the National Epidemiological System of AIDS. This category was compared to the others by gender, age, education level, and incidence of Kaposi's Sarcoma, using Chi-Squared and Fisher's exact tests.
Results. In 1984 the heterosexual transmission category cases corresponded to 5% of all sexually transmitted cases, while in 1988 this proportion reached 17%. Among heterosexual transmitted cases, the male/female ratio of 4:1 in 1984 decreased to 2:1 in 1988. This feature persisted over time and it has been homogeneous throughout the country.
Considering the male cases, it was observed that 10% were in the 20 – 47 age group. This proportion does not differ significantly for homo/bisexual male cases (91%) or for the indeterminate category AIDS cases (85%).
As far as educational status is concerned, there is not a significant difference of high-level of schooling when taking into account heterosexual male cases (34%) and indeterminate male cases (39%).
The incidence of Kaposi's Sarcoma in homo/bisexual male cases (16%) is significantly greater than the rate for heterosexual male cases (10%) ($p < 0,05$). The rate for indeterminate male cases was 11%.
The age distribution for females who acquired AIDS through heterosexual contact was similar to the cases acquired by intravenous drug use.
Conclusions. The excess of risk for males among the heterosexually transmitted cases, observed in Brazil is not compatible with the Pattern of AIDS, as has been, observed in several Western countries. This paper points to the necessity of a thorough study for validation of the classification criteria for the heterosexual transmission category.

M.G.P.2

HIV 1 and HIV 2 SEROLOGICAL SURVEY in LUNDA NORTE, NORTHEASTERN PROVINCE of REPUBLICA POPULAR de ANGOLA.

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Objective: From May to September 1987, a HIV1 and HIV 2 serosurvey has been carried out in three out of the four main urban centers of Lunda N. where STD incidence is high.
Methods: We used the imunoenzimatic method ELISA, positive sera being confirmed by W. Blot.
Results:

	Town	Group	N°	HIV 1 (%)	HIV 2 (%)	HIV 1+2 (%)	Total (%)
Healthy People	DUNDO	Pregnants	44	6.8	6.8	4.5	18.2
		Bl donors	50	8.0	16.0	0.0	24.0
		Military	54	1.8	13.0	0.0	14.8
		Volunteers	37	8.1	2.7	0.0	10.8
Patients		STD	219	11.0	10.5	3.5	25.0
		Tuberculos	65	7.7	6.2	3.0	17.0
		In-patients	108	7.4	14.8	2.8	25.0
	ANDRADA	In-patients	26	30.7	0.0	15.3	46.0
	LUCAPA	Out-patients	200	7.5	4.5	1.5	13.5

Conclusion: Another HIV 2 focus and highly prevalent HIV infection are present in areas closer the Rep. of Zaire. Concomitant seropositivity for both viruses is relevant specially in Andrada. Clinical data of seropositif patients is available in some groups namely STD patients.

M.G.P.3

THE SEROPREVALENCE OF HTLV-1 AND HIV-1 CO-INFECTION IN HAITI

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Objective: To determine the seroprevalence of HTLV-1 and HIV-1 infection in selected population groups in urban Port-au-Prince, Haiti, including healthy and ill persons.
Methods: Serum from 3,078 persons was tested for HTLV-1 antibody by ELISA (whole virus, Biotech) with RIA confirmation (p24 antigen, Biotech) and for HIV-1 antibody by ELISA (DuPont).
Results: The seroprevalence of HTLV-1 infection in the study cohort was 8.3% (256/3078). Co-infection with both HTLV-1 and HIV-1 was documented in 5.9% of subjects (183/3078). HTLV-1 infection rates were highest in AIDS patients, their spouses and in prostitutes. This group accounted for 94% (173/183) of co-infected subjects. The study populations are noted below:

Populations	Total number	HTLV-1		HIV-1		Both	
		n	(%)	n	(%)	n	(%)
Factory workers	84	4	4.8	3	3.5	0	
Hotel workers	25	1	4.0	2	8.0	0	
Leprosy patients	96	7	7.3	6	6.3	1	1.0
Clinical lab specimens	1097	56	5.1	70	6.4	9	0.8
Children w/diarrhea	139	1	0.7	1	0.7	0	
AIDS patients	951	132	13.9	938	98.6	131	13.8
Spouses of AIDS patients	557	47	8.4	187	33.6	31	5.6
Prostitutes	129	16	12.4	56	41.9	11	8.5
	3078	256		1261		183	

Conclusion: HTLV-1 and HIV-1 are endemic in Haiti. Infection with both viruses was most commonly observed in AIDS patients, their spouses and in female prostitutes.

M.G.P.4

ESTIMATE OF HIV INFECTION PREVALENCE IN BRAZIL

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Objective.To estimate the current number of persons infected with HIV from AIDS surveillance data.
Methods.Reported AIDS cases through December 1988 were used to estimate the number of infected people following the same approach adopted by CDC(MMWR 36 (N° S-6),1987). Data were adjusted for reporting delays. In the model, the number of AIDS cases diagnosed each year,t, can be seen as a convolution of the number of persons infected in each preceding year, and the number of those expected to be diagnosed with AIDS. The disease progression rates were assumed to be the same as those observed in the San-Francisco cohort, and the number of newly infected persons,i(t), in a specific year,t, was assumed to be described by exponential/logistic functions. The parameters of i(t) were estimated using nonlinear least squares estimators based on the pseudo Gauss-Newton interation.
Results.As of December 1988, the estimated number of HIV infected persons was 63000, and 50000 assuming logistic, and exponential as infection function, respectively
Conclusions.The projected estimates should be considered only as broad estimates of what may be occurring. On the other hand, for comparison purposes among other countries, and for health care planning those estimates could be useful.

M.G.P.5

HIV AND HEPATITIS B TRANSMISSION IN SUDAN

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Objective. To describe the prevalence and risk factors for HIV-1 and hepatitis B transmission among male soldiers living in different regions of Sudan.
Methods. A seroepidemiologic survey was conducted among 798 soldiers presenting to outpatient clinics between March 1987 and April 1988.
Results. Twenty-eight percent of the study population was born and raised in southern Sudan, an area bordering central Africa; and, 72% of study subjects were from northern Sudan. Seventy-seven percent of the study population had serologic evidence of past hepatitis B infection, and 13 individuals had confirmed antibodies to HIV-1. All HIV-positive soldiers had been living in southern Sudan during the previous five years; two of the 13 were northerners stationed in the South of Sudan and two were southerners who had been recently transferred to the North. Multivariate analysis indicated an association between living in the South of Sudan and both hepatitis B (odds ratio=8.2) and HIV-1 infection (odds ratio=14). A history of sexual relations with prostitutes was also found to be predictive of hepatitis B infection (odds ratio=1.5).
Conclusion. The increased risk of HIV-1 in southern Sudan is consistent with the proximity of this region to central Africa, where HIV-1 is endemic. The findings of this study suggest that sexual promiscuity is a risk factor for hepatitis B infection in Sudan. The findings also indicate one possible route for the spread of HIV-1 from central to northern Africa.
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M.G.P.6

EMPIRICAL EXTRAPOLATION PROJECTIONS OF AIDS INCIDENCE IN BRAZIL.

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Objective.To project the short-term course of the AIDS epidemic in Brazil for health planning purposes and comparisons among others countries.
Methods.After adjustment for reporting delays, public data from the Brazilian AIDS Surveillance System were fitted to polynomial(quadratic)/exponential/logistic models by regression procedures.
Results.The following table shows the projections of the number of new cases for the next 3 years:

MODEL	YEAR 1989	1990	1991	CUMULATIVE NUMBER 1982-1991
Quadratic	6000	8000	10000	31000
Logistic	7000	10000	12000	36000
Exponential	8000	18000	38000	71000

Conclusion.Any application of these empirical projections must take in account the unrealistic patterns of the models since they do not incorporate any information on the transmition dynamic or natural history of HIV infection. Compartmental models must the considered in spite of their present limitations.

M.G.P.7 PREVALENCE DES INFECTIONS PAR LES VIRUS HIV1,HIV2 ET HTLV1 DANS LA REGION DE TANANARIVE MADAGASCAR

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Objectifs: Estimer la prévalence des infections par les virus HIV1, HIV2 et HTLV1 dans un échantillon de la population malgache de la région de Tananarive.
Méthodes:Nous avons étudié 448 individus (201 femmes,247 hommes) se répartissant en 32,3% d'enfants de moins de 16 ans,scolarisés,et 67,7% d' adultes ayant une activité professionnelle.Les prélèvements ont été effectués au cours du premier trimestre 1988.Les 448 sérums ont été testés pour les Anticorps anti-HIV1 (EIA Abbott) et anti-HIV2 (EIA Pasteur).Les tests de confirmation par W.Blot Biorad(HIV1)ou Pasteur(HIV2) ont été utilisés.Quatre vingt onze sérums dont 46% provenant de sujets appartenant à des ethnies minoritaires de l' île ont été testés pour les anticorps anti-HTLV1 (EIA Abbott).
Résultats: Nous n'avons trouvé aucun sérum positif pour les marqueurs sérologiques du virus HIV1.Trois parmi les 448 sérums ont montré une positivité en réaction immunoenzymatique, qui n'a pas été confirmée par les tests d' immunoblotting.Aucune positivité n' a été trouvée pour les anticorps anti-HIV2 et HTLV1.
La population étudiée se place cependant tout à fait dans le cadre des populations à risque pour ce type d' infections.En effet nous avons par ailleurs trouvé un taux de 18,5% d'antécédents de syphilis(TPHA positif) et de 71,4% d'antécédents d' infections par le virus de l'hépatite B (Anticorps anti-HBc positif).
Conclusion:Cette étude mérite d' être étendue à un plus grand nombre d'individus.Elle montre cependant que la population de Madagascar est beaucoup moins touchée que celle du reste du continent africain par ces rétrovirus.

M.G.P.8 HIV-1 INFECTION IN PREGNANT WOMEN FROM SANTOS, BRAZIL

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Objective. To investigate the HIV-1 infection prevalence among volunteer pregnant women from Santos, Brazil.
Methods. HIV-1 antibodies were studied in serum samples from 514 pregnant women from the City of Santos (one of the major harbours of Brazil),obtained between February and October, 1988. The women were attending prenatal clinics from Public Health Service located at the inner-city area. The serum samples were initially tested by indirect ELISA using whole-virus preparation (VIRGO™ HIV-1 ELISA, Electro-Nucleonics). The positiveness to anti-HIV-1 was further confirmed by EIA employing recombinant viral proteins ("Dot blot" and/or indirect ELISA, Embrabio) and indirect ELISA using the synthetic peptide LGIWGCSGKLIC corresponding to a segment of gp41 (research test kit, Escola Paulista de Medicina).
Results. Twenty-four (4.67%) serum samples were repeatedly reactive in the screening test and 18 (3.50%) revealed to be anti-HIV-1 positive by confirmatory methods. The cumulative prevalence increased from 2.44% (6/245) in April 1988 to 3.50% (18/514) in October 1988. The major risk factors observed between the seropositive women were promiscuous sexual life, intravenous drug-addiction and sexual contacts with known HIV-1 infected individuals (some of them with AIDS).
Conclusion. These high rates of HIV-1 infection among pregnant women can not be extrapolated to other regions of the country, since Santos has the highest AIDS incidence coefficient in Brazil (44.4/100,000).

M.G.P.9 HIV-1 INFECTION IN SOME URBAN AND RURAL AREAS OF CAMEROON.

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Objective. To estimate the prevalence of HIV-1 infection in urban and rural areas of Cameroon.
Methods. 1232 serum specimens from adults and 178 whole blood samples adsorbed on filter paper from children-collected during three anthropological research projects, from 1986 to 1988- were screened by ELISA and positive confirmed by WB. To estimate the perinatal transmission and intrafamiliar spread of HIV-1 infection have been tested 86 families.
Results: Prevalence rates are reported in table.

year	village/town	geog.area	number	HIV+ve	prevalence
1986	Ebone´	south-west	218	1	.0045
1986	Mbouda	west	151	1	.0066
1986	Bafoussam	west	253	4	.016
1987	Bakeat	south-west	204	0	0
1987	Bandjoun	west	300	1	.0033
1988	Mama´	north	84	6	.0071
1988	Mora´	north	180	3	.0017

In the last two villages where familiar analysis was performed, no correlation has been evidenced among seropositive mothers and respective children indicative for perinatal transmission. The highest prevalence was documented in 1986 in a large urban area (80.000 inhabitants).

M.G.P.10 PREVALENCE OF ANTI HIV ANTIBODIES IN A SAMPLE OF THE GENERAL POPULATION.

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Objective. To determine and evaluate the seroprevalence of anti HIV antibodies in voluntary population, from Guadalajara, México.
Methods. The first of december of 1988, a serum sample was taken from 76 volunteer persons that resorted to an information center located downtown in the city of Guadalajara, they were processed by the ELISA assay and the ones that were positive were repeated by the same technique confirming them by means of indirect immunofluorescence assay and/or Western Blot. A questionaire with oriented epidemiologic data was applied when the person picked up their results.
Results. The sample was constituded by 65 male individuals and 11 females whose ages fluctuated between 18 and 55 years. Four (5.2%) were found positive, all of them belonging to the male sex, only 33 persons (43.4%) came to pick up their results, of these 25% had AIDS risk factors.
Conclusions. Independently of the slope that these kind of samples have, the prevalence obtained was high. For this reason we believe that information booths and voluntary tests should be done more frecuently, specially in different strategic points of the city, as complement help for the authorities of public health.

M.G.P.11 GEOGRAPHIC AND RISK-GROUP PATTERNS OF HIV INFECTION IN AFRICA

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Objective. To describe the geographic and risk-group patterns in the epidemic spread of HIV-I and HIV-II in African countries.
Methods. The Bureau of the Census maintains a microcomputer-based interactive database of information on HIV seroprevalence and AIDS in developing countries. Information in the database is drawn from medical and scientific literature, presented in papers or poster sessions at conferences, and available information from the popular press. The most recent reliable data on the geographic distribution and risk-group patterns of infection from African countries were selected for this report.
Results. Results of this investigation are presented in a series of maps. Choropleth maps are used to show the relative levels of infection in urban high-risk (e.g., prostitutes), urban low-risk (e.g., pregnant women), and rural low-risk populations, by country, for all of Africa. Similar maps show the distribution of HIV-I and HIV-II infection, especially in West Africa. The diffusion of the epidemic throughout the country is also important. For selected subregions of the continent, proportional circle maps are used to show the distribution of levels of infection through the country.
Conclusions. The pattern of HIV infection in Africa is far from even. The center of infection in virtually all countries is the population of large urban areas, especially those engaged in high-risk behavior. Considerable variation is noted within some countries, with isolated areas of high infection surrounded by lower infection levels.

M.G.P.12 STUDY OF HIV-1, HIV-2, AND HTLV-I IN HOMOSEXUALS IN BRAZIL

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Objective. To investigate seroprevalence of retroviruses (HIV-1, HIV-2, and HTLV-I) in Brazilian male homosexuals and to study patterns of retrovirus transmission in Brazil.
Methods. Antibodies against HIV-1, HIV-2, and HTLV-I were tested by ELISA and confirmed by immunoblot and radioimmunoprecipitation assays in 59 male homosexuals in Rio de Janeiro, recruited directly in bars and clubs. Information on demographics and AIDS-associated practices was obtained by interview and questionnaires.
Results. HIV-1 was found in 19% and HTLV-I in 5% of the subjects. One individual had antibodies to both HIV-1 and HIV-2; he was not an IV drug user. Antibodies against HIV-1 and HTLV-I were found in another subject (2%). Median age was 33 (17-70). Median number of partners/week was 2 (1-20). None of the interviewed subjects was an IV drug user or a prostitute. Fifty-three percent never used condoms and only 7% reported using condoms always. Multivariate analysis for significance of the different variables was done using log linear models.
Conclusion. HIV-1 and HTLV-I are prevalent in homosexual males in Rio de Janeiro, Brazil. HIV-2 has already been introduced in the homosexual community in Brazil.

M.G.P.13 STUDY OF HIV-1, HIV-2, AND HTLV-I IN FEMALE PROSTITUTES IN BRAZIL

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Objective. To investigate human retroviruses, seroprevalence, and transmission patterns in female prostitutes in Brazil.
Methods. A total of 187 prostitutes were studied in 2 states: 101 in brothels in Rio de Janeiro (34 lower- [LCP], 77 middle- [MCP], and 47 upper-class prostitutes [UCP]) and 86 prostitutes in roadside and other brothels in rural areas (RAP). Sera and a questionnaire with information on demographics and practices associated with AIDS were obtained. HIV-1, HIV-2, and HTLV-I were tested by ELISA, immunoblot and radioimmunoprecipitation assays.
Results. HIV-1 was found only in LCP in Rio (9%). HIV-2 was not found. HTLV-I was found in UCP (4%) and LCP (6%) in Rio, and in RAP (1%). Less than 2% of prostitutes were IV drug users; none of HIV infected LCP were IV drug users. Illiteracy was noticed in 20% of LCP, but none in UCP. Median number of different partners/week was 20 for UCP and MCP, 43 for LCP, and 15 for RAP. Log linear analysis identified significance in several variables studied.
Conclusion. HIV-1 was prevalent only in LCP. IV drug use was not a significant pattern of HIV transmission in prostitutes in Brazil. HTLV-I is present also in rural areas in Brazil.

M.G.P.14 SEROPREVALENCE OF HIV-1, HIV-2, AND HTLV-I IN BRAZILIAN BISEXUAL MALES

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Objective. To study the seroprevalence of HIV-1, HIV-2, and HTLV-I in bisexual males from Rio de Janeiro, and their role in the retrovirus transmission to the heterosexual community in Brazil.
Methods. Fifty eight bisexual males, recruited in gay bars and clubs were interviewed for demographic information and practices related to retrovirus transmission. Sera were tested for antibodies against HIV-1, HIV-2, and HTLV-I by ELISA, and confirmed by immunoblots and radioimmunoprecipitation assays.
Results. Seroprevalence was 28% for HIV-1 and 7% for HTLV-I; one individual had antibodies to both HIV-1 and HTLV-I. No HIV-2 was found. Twenty one men were prostitutes; 7 (33%) of these were HIV-1 positive. 49% of bisexuals never used condoms. Median number of partners/month was 19 (prostitutes) and 4 (non prostitutes); 60% of the sexual partners were men and 40% women. No current IV drug use was reported. Multivariate analysis of different variables, was done using log linear models.
Conclusion. The studied bisexuals have a high HIV-1 and HTLV-I seroprevalence, and may be an important bridge for HIV infection between the homosexual and heterosexual communities in Brazil.

M.G.P.15 SEROPREVALENCE OF HIV-1 IN EMERGENCY ROOM PATIENTS IN BRAZIL

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Objective.To study seroprevalence and routes of HIV-1 transmission in emergency room patients.
Methods. 163 patients were recruited in the adult emergency room of the UFRJ Hospital. Information on demographics and practices related to HIV transmission was obtained by a questionnaire. HIV-1 antibodies were tested by ELISA and confirmed by immunoblot.
Results. Fifty one percent of participants were male (M) and 49% female (F); they were white (52%), black (21%) and mixed(22%); median age in years was 45.5 for M and 33.1 for F. 26% had blood transfusions. 97% were heterosexuals; median number of partners/month was 1.6(M) and 1.1(F).22% of M had contact with prostitutes in the past 10 years. Sexually transmitted diseases were seen in 38% M and 12% F. 90% of sexually active single people never used condoms. Three (2%) subjects, 2 M and 1 F, had antibodies to HIV-1. All were heterosexuals, without contact with HIV infected individuals, IV drug use, or blood transfusions. Significance of the variables collected was determined by log linear models.
Conclusion. HIV-1 is reaching non risk population for AIDS in Brazil. Preventive measures to avoid HIV infection are not widely used by the population studied.

M.G.P.16 HIV-2 INFECTION IN PRENATAL WOMEN IN GUINEA-BISSAU

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Objective. To determine the prevalence of HIV-2 infection among antenatal women in various regions of Guinea Bissau and the rate of vertical transmission of the infection.
Methods. Sera from prenatal women in the capital Bissau and in 5 regional capitals and sera from children of seropositive mothers were tested by HIV-$2_{SBL6669}$ ELISA. Positive sera were confirmed by Western blot.
Results. 6,9% of 1892 women in Bissau were HIV-2 seropositive. The HIV-2 seroprevalence ranged from 3,1 to 13,2% among women from various parts of the city. The seropositivity rate increased with age from 2,5% in women less than 17 years old to 13,4 in women older than 33 years. In the 5 regional capitals the seropositivity rates were 2,1% (5/237), 3,6% (9/253), 7,0 (18/258), 3,4% (5/145) and 3,6% (7/196). All of 9 children of seropositive mothers followed up for more than 12 months after birth were seronegative.
Conclusion. The seropositivity rate among prenatal women varied considerably between different parts of the capital and between different regions. Follow-up of additional children which is in progress will allow conclusions about the vertical transmission rate.

M.G.P.17 CHILEAN NATIONAL HIV LABORATORY NETWORK

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Objetive: To stablish the usefullnes of a national laboratory network on HIV diagnosis and to show results obtained at the national HIV reference Center.
Methods: A questionaire was done and,according to its results, laboratories were classified in differents levels, depending on their implementation. Training and resources were given when needed.
Only one national HIV reference center was stablished and all doubtful or positive specimens must be sent for confirmation.
Results: The network is composed of 49 public and 23 private blood bank and laboratories in which HIV antibodies detection is performed with a monthly average of 20.000 blood donnors.
874 samples were studied at the national HIV reference center from june, 1987 to december, 1988 (Table I).

Period	Samples		Positive S.		Negative S.		Indeterminate S.	
	Nº	%	Nº	%	Nº	%	Nº	%
Jun/Dec 87	188	100	108	57.4	79	42.0	1	0.53
Jan/Dec 88	216	160	92	42.6	106	49.1	18	8.3
Jul/Dec 88	470	100	165	35.1	277	58.9	28	6.0

High risk groups distribution and seroprevalences will be fully discussed.
Conclusion: This national laboratory network allows proficency laboratory evaluation and makes a better use of limited recources, securing an acceptable quality standar diagnosis.

M.G.P.18 HIV-1 SEROPREVALENCE IN RURAL ZAIRE

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Objective. To determine the seroprevalence of HIV-1 in a rural area of Zaire.
Methods. As part of an ongoing perinatal study, based at a rural reference hospital 220 km s-w of Kinshasa, 1485 pregnant women were screened for antibodies to HIV-1. Screening was by Abbott Recombinant HIV-1 EIA, confirmed by Wellcozyme HIV Monoclonal VH 52/53 ELISA. 1000 blood donors were screened with the Cambridge Bioscience Latex Agglutination (LA) test, with EIA confirmation.
Results. Pregnant women: 48/1485 (3.2%) HIV-1 antibody positive (HIV+). If women from distant large towns are excluded there were 41/1422 (2.9%) HIV+. Age varied from 14 to 48 years, with mean 26 yrs for both HIV+ and HIV- women. HIV- women were more often monogamously married; HIV+ women, single ($p<0.01$). Mean parity (3) was the same for both groups. Educational level of both HIV+ women and their partners was higher ($p<0.025$, $p<0.01$ respectively). Women who were partners of chauffeurs or small businessmen were twice as likely to be seropositive. Blood donors: 55 positive by LA, 21/1000 (2.1%) confirmed HIV+ with ELISA. The false positive rate for the latex test was therefore 61.8%.
Conclusion. The prevalence of HIV-1 infection in two asymptomatic adult groups in this rural area of Zaire is 2.9% of pregnant women and 2.1% of blood donors.

M.G.P.19 ANTI-HIV 1 TESTING IN BLOOD BANKS IN ECUADOR

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Objective: To analyse the prevalence of HIV 1 infection in voluntary blood donors and other subgroups tested at the Red Cross Serology Laboratory in Quito.
Methods: ELISA screening confirmed by Western Blot on all voluntary blood donors from Quito and 13 provincial cities from Sept. 1986 to Dec. 1988 and on other subgroups of high and low-risk behaviors during 1988.
Results:

Year	#Tested (blood donors)	Initial Positive	Repeat Positive	W.B. Positive	Percent Positive
1986	6524	4	2	2	0.031
1987	20282	60	12	0	0.000
1988	25358	16	11	0	0.000
Total	52164	80(.15%)	23(.04%)	2	0.004

Group	#Tested	ELISA Pos.	W.B. Pos.	% Pos.
Military recruits and other institutional personel	7187	3	0	0
Homosexuales, bisexueles	26**	15	15	57.7
Prostitutes	100	1	0	0
Hemophiliacs	57	1	1	0.6
Sexual promiscuity	91	0	0	0
Intravenous drug addicts	3	1	1	33.3

Conclusion: Low-risk behavior groups as exemplefied by voluntary blood donors and military recruits present with very low prevalance rates for HIV 1 infection. Prevalance is significantly high for homosexual and bisexual males.
**patients referred for suspect HIV infection.

M.G.P.21 DYNAMIQUE DE L'INFECTION A VIH 1 EN GUYANE FRANCAISE DE 1978 A 1987

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Objectif. Evaluer la dynamique de l'infection à VIH 1 dans les différentes ethnies et selon les groupes à risques entre 1978 et 1987 en Guyane Française.
Méthodes. A partir de 1985, des recherches sérologiques d'anticorps anti-VIH 1 ont pu être entreprises par ELISA (ELAVIA Diagnostics Pasteur, EIA Abbott), et confirmées par RIPA (F. Barré-Sinoussi, J.C. Chermann, IP Paris) puis par Western Blot (Diagnostics Pasteur). En outre, des sérologies rétrospectives (de 1978 à 1985) ont pu être réalisées par ces mêmes techniques grâce à la sérothèque de l'Institut Pasteur de Cayenne.
Résultats. Ils indiquent que l'infection a débuté dès 1979 chez les Haïtiens immigrés pour diffuser ensuite chez les Créoles guyanais ; à partir de 1985, les autres ethnies (Dominicaines, Boni, Saramaka, Martiniquais, Surinamiens, Brésiliens, Européens, Indiens, Créoles anglais) sont progressivement concernées. Jusqu'en 1984, il s'agit d'une contamination essentiellement hétérosexuelle ; à partir de 1985, on commence à détecter l'infection chez des enfants (transmission materno-foetale), de très rares toxicomanes hétérosexuels, quelques rares homosexuels et un seul transfusé.
Conclusion. L'infection par le VIH 1 a débuté en Guyane dès 1979 chez les Haïtiens pour diffuser ensuite aux autres ethnies et plus particulièrement aux Créoles guyanais ; la voie majeure de contamination reste l'hétérosexualité, les autres modes d'infection étant rarement observés.

M.G.P.23 AN EPIDEMIOLOGICAL REVIEW OF HIV IN ZAMBIA.

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University Teaching Hospital,Lusaka,Zambia.

Objective: To review epidemiological studies on HIV and outline needs and priorities for epidemiological research in Zambia.
Methods: All epidemiological studies in Zambia were reviewed. Needs and priorities were identified and outlined.
Results: The prevalence of HIV seropositivity is 5-10% for blood donors, 10% in antenatal women, 30-40% in STD patients, 10-30% in prisoners and about 40% in tuberculosis patients. The applicability of the WHO clinical definition of AIDS, various forms of transmission and their rates and the role of predisposing factors in the transmission of HIV are discussed. In addition all other epidemiological aspects of HIv in Zambia are discussed.
The following areas have been identified for future research;
1) HIV transmission in high risk groups like prostitutes.
2) Use effectiveness of condoms with or without spermicides.
3) Role of STDs in the acquisition of HIV infection.
4) Transmission of HIV in the health care setting.
5) Sentinel surveillance of HIV infection in all provinces of the country.
6) Behavioral and social science research.
Conclusion: Although the epidemiological trends of HIV in Zambia are somewhat similar to those in other African countries, there are some subtle differences. More epidemiological research needs to be done in some areas so as to give a clear understanding of the epidemic.

M.G.P.20 SEROPREVALENCE OF HIV-1, HIV-2, AND HTLV-I IN MALE PROSTITUTES IN RIO DE JANEIRO, BRAZIL

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Objective. To study seroprevalence and transmission patterns of HIV-1, HIV-2, and HTLV-I in male prostitution areas in Brazil.
Methods. Thirty three prostitutes were recruited in prostitution areas in Rio de Janeiro;information on demographics and practices related to AIDS was obtained in a questionnaire. Antibodies against HIV-1, HIV-2, and HTLV-I were tested by ELISA, and confirmed by immunoblot, and radioimmunoprecipitation assays.
Results. 64% of the prostitutes were bisexuals (BS) and 36% were homosexuals (HS). The number of sexual partners/month was 19 for BS and 64 for HM.Receptive (RC) and insertive (IN) anal sex were practiced by HS (76% RC, 24% IN) and BS (14% RC, 86% IN). 47% of sexual partners of BS were women and 53% were men. None of the prostitutes was using condoms always;no IV drug use was reported. Seroprevalences: HIV-1 43%, HTLV-I 7%,HIV-1 + HTLV-I 3%;HIV-2 was not found.Log linear models was used for multivariate analysis.
Conclusion. HIV-1 and HTLV-I are prevalent in male prostitutes in Brazil. IV drug use is not prevalent in the studied population. Bisexual prostitutes may be an important bridge for retrovirus infection from the homosexual to the heterosexual population.

M.G.P.22 HIV SEROPREVALENCE IN EGYPT: A TWO AND A HALF YEAR SURVEILLANCE

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Objective. To determine the prevalence of HIV-1 infection among high risk groups, foreigners, and blood donors in Egypt over two and a half years.
Methods. From April 1, 1986 through October 15, 1988, 19,767 blood samples were collected from individuals of 28 Governorates in Egypt and were screened for antibodies to HIV-1. Risk groups included: drug addicts, prostitutes, patients with STD or FUO, blood product recipients, mental patients, travelers, and contacts of infected persons. Foreigners and routine blood donors were tested also. Sera which reacted repeatedly by commercial ELISAs were assessed by western blot (DuPont) for confirmation.
Results. Of the 19,767 sera, 139 (0.70%) produced repeatedly reactive results by ELISA. By western blot analysis, 69 were confirmed as HIV sero-positive. This constituted .35% of the total population tested, but only 26 (.13%) of the high risk Egyptians were positive. The distribution of positives were: foreigners: 43 (.21%), drug addicts: 2(.01%), STD: 4 (.02%), travelers: 1 (.005%), contacts: 2 (.01%), and blood product recipients: 17 (.08%). All blood donors were non-reactive, as were individuals from other risk groups.
Conclusion. In this two and a half year HIV serosurvey including high risk groups in Egypt, the prevalence of HIV confirmed positive cases was exceptionally low. Epidemiological data indicate that HIV is not endemic in Egypt since all 26 sero-positive Egyptians were linked to HIV exposure abroad.

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Prévalence : VIH et autres maladies
Prevalence: HIV and Other Diseases

M.G.P.24 HIV-1, HIV-2 AND TUBERCULOSIS (TB) IN ABIDJAN, COTE D'IVOIRE

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Objective. To study the relationship between HIV-1, HIV-2 and clinical TB.
Methods. In 1987-88, 338 TB outpatients (all with sputum smears positive for acid-fast bacilli) were clinically evaluated and tested for HIV-1 and HIV-2 by ELISA; repeatedly reactive specimens were confirmed by Western blot. Controlling for age by a log-linear model, the HIV serostatus of 244 male TB patients was compared to 150 similarly tested male blood donors.
Results. For TB patients, 259(77%) were HIV-, 40(12%) HIV1+, 9(3%) HIV2+ and 30(9%) HIV1+2+. Age, nationality, marital status, and quantification of AFB did not differ by HIV serostatus. M:F ratios were 2.6 for HIV-, 3.9 for HIV1+, 8.0 for HIV2+, and 29.0 for HIV1+2+ (p=.02). Mantoux tuberculin skin tests were negative (<10mm) in 25(17%) of 146 HIV-, compared to 8(44%) of 18 HIV1+, 2(40%) of 5 HIV2+, and 2(12%) of 17 HIV1+2+ (p=.02). Criteria for a simplified WHO AIDS clinical case definition (excluding cough) were met by 8(6%) of 143 HIV-, 8(47%) of 17 HIV1+, 1(17%) of 6 HIV2+, and 7(39%) of 18 HIV1+2+ (p<.001). HIV1+2+ serostatus was significantly associated with TB when compared to blood donors, 29(12%) vs 4(3%) (p=.03); for HIV1+, 30(12%) vs 12(8%) (p=ns); for HIV2+, 8(3%) vs 5(3%) (p=ns).
Conclusion. These data suggest that HIV1+2+ seroreactivity is associated with TB and a clinical picture similar to AIDS. Whether HIV1+2+ patients are dually infected remains to be determined. There was no association between HIV2+ and TB, but the number of HIV2+ patients was small.

Session d'affichage
Poster Session

Implications internationales
International Issues

M.G.P.25

HIV1 ET HIV2 PARMI LES TUBERCULEUX DU CENTRE ANTITUBERCULEUX ET DU SERVICE DE PNEUMOPHYSIOLOGIE DU C.H.U. DE COCODY (ABIDJAN)

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*.- Institut Pasteur de Côte d'Ivoire. **.- Centre Antituberculeux Abidjan ***.- Centre Hospitalier Universitaire de Cocody. ****.- Institut National de Santé Publique.

Les virus HIV ont été mis en évidence en Côte d'Ivoire depuis 1986. La séroprévalence parmi les patients tuberculeux, a pu être déterminée dans deux échantillons différents : l'un constitué de malades visitant un centre antituberculeux d'Abidjan, l'autre représentant des malades présentant une tuberculose pulmonaire grave nécessitant une hospitalisation dans un service de pneumophysiologie.
Sur 316 malades du centre antituberculeux, on note 71 séropositifs (22,4%) confirmés alors que chez les malades du centre hospitalier universitaire, on observe 104 séropositifs (32,0%) confirmés. Il ressort de cette étude un taux de prévalence vis-à-vis du HIV assez élevé chez les malades tuberculeux. L'association entre tuberculose et infection à HIV démontrée aux Etats-Unis et en Afrique est retrouvée ici.

M.G.P.26

TUBERCULOSE ET INFECTION A VIH A BOBO-DIOULASSO (BURKINA FASO)

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Traore, E.*** ; Tiendrebeogo, H.**** ; Dublanchet, A.* ; Deborne, B.* ; Vincent-Ballereau, F.* ; Lafaix, Ch.*.
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Ojectif : Evaluation du taux de séropositivité de l'infection à VIH dans une population de tuberculeux au Burkina-Faso.
Méthodes : Un échantillon de 96 tuberculeux traités à l'hôpital de Bobo-Dioulasso ont été étudiés. Les sérums ont été examinés en ELAVIA 1 et 2 ou en ELAVIA mixte (Institut Pasteur Production). Tous les sérums positifs par la méthode ELISA ont été testés en WESTERN-BLOT (WB) pour confirmation.
Résultats : 20 sujets ont été positifs en ELISA. 12 ont été confirmés en WB : 8 VIH-1 ; 1 VIH-2 ; 3 doublement positifs VIH-1 et VIH-2. 5 sujets positifs en ELISA ne présentaient pas, en WB, les critères de positivité pour VIH-2 et/ou VIH-2.
Conclusion : 12,5 % de la population étudiée s'est révélée positive en VIH-1 et/ou VIH-2. Cette étude confirme la séroprévalence élevée des VIH chez les tuberculeux en Afrique et incite à poursuivre le dépistage pour les deux virus dans cette région.

M.G.P.27

EARLY INFANT MEASLES: ASSOCIATION WITH MATERNAL HIV INFECTION

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Despite immunization efforts, measles causes significant infant morbidity and mortality in developing countries. An association between maternal HIV infection and increased risk of measles infection in infants prior to the current scheduled measles immunization (9 months of age) was seen in infants in an ongoing perinatal HIV transmission study in Nairobi, Kenya.
Results: Five (8%) of 62 infants of HIV+ mothers followed past 9 months of age developed measles prior to measles vaccination vs none of 89 controls (p=0.01). Age at measles illness ranged from 6 to 8½ months. One died, 3 were hospitalized, all survivors had slowed growth after measles, and 2 of 2 tested had an antibody response to measles. All participants were from lower socio-economic families. No increased exposure was seen in families of those developing measles (mean no. of household members was 3.6 vs 4.2 in other HIV+ and 4.8 in HIV- families, range 2-10). Two of 3 mothers tested by ELISA and HAI whose infants had measles had either no or borderline immunity to measles at partuition; 14 of 14 HIV+ and 18 of 19 HIV- mothers whose infants did not get measles were immune.
Conclusions: Decreased passive infant immunization and/or other undetermined factors may increase the risk of measles in infants of HIV+ mothers before scheduled measles vaccination. The HIV epidemic accentuates the need for improved measles vaccines which can be administered to young infants at an earlier age.

M.G.P.28

SPECIFIC ANTIBODI RESPONSE TO PLASMODIUM FALCIPARUM SCHIZONTS IN ZAMBIAN CHILDREN WITH HIV I INFECTION AND THEIR HOSPITAL CONTROLS.

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Objective: To assessand compare the specific anti IgG antibody response against Plasmodium falciparum malaria in infants and children with HIV I infection and HIV negative children living in an endemic area of Malaria.
Methods: Serum samples collected from thirty anti HIV I positive children between the age of 1 month to 5 years presenting with symptoms suggestive of AIDS or ARC and sixty sera from matched HIV negative hospital controls were tested for the presence of specific anti IgG antibodies to Plasmodium falciparum schizonts using the Indirect fluorescence antibody test. The cut off point for positivity was titres 1:80.
Results: The prevalence of antibodies to P.falciparum in HIV infected children was lower (43%) than their controls who were HIV negative (63%), but the difference was not statistically significant at the 5% level. A large proportion of children with antibodies to Plasmodium falciparum was between 1 and 5 years in both HIV positive and HIV negative children.
Conclusion: There was no apparent failure of the humoral Immune response to Plasmodium falciparum malaria in infants and children under five years presenting with symptoms suggestive of AIDS or ARC.

M.G.P.29

HIV IN VARIOUS RISK COMMUNITIES IN THE NORTH EAST OF ARGENTINA

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Objective. To study HIV prevalence on various populations in the North East of Argentina (NEA).
Methods.Spontaneous consultation arising from COPRES and samples sent from the NEA. Blood bank figures are those provided by participant centers. Serologic studies were performed thru ELISA and confirmed thru IFA and W.B.
Results.In the high-risk group,our studies show an HIV-1 prevalence of 30% in IVDA(219/736),8% in homosexuals(56/504),33% in female-partners of HIV+(17/52), 30% in male-partners of HIV+ females(8/27);in low-risk subjects,the seroprevalence of 2% in prostitutes(12/627),15% in dialyzed patients(25/165),0.6% in inmates and prison personnel(21/3,761),0.1% in patients of a psychiatric clinic and 23% in polytransfused patients(9/40),0.16% in voluntary blood donors(87/51,895);no positive results were found among 165 health care workers,116 Tuberculosis patients and 23 individuals relatives of AIDS persons.
Conclusion.Preliminary studies show that:1)regarding serologic prevalence,the greatest HIV impact is within IVDA(47%);2)the homosexual group shows a gradual increase in positiveness,perhaps due to their growing trust as the system gains in privacy and secrecy and,accordingly,their more frequent spontaneous consultations;3)for like reasons,the number of spontaneous visits of prostitutes is remarkable as well as a positive percentage of 2.3% for the last quarterly period;4)followed up couples where one of the members was positive enabled record of both types of transmission, i.e., male-female and female-male.

M.G.P.30

THE IMPRINT OF APARTHEID ON HIV/AIDS IN SOUTHERN AFRICA

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Objective. To identify general and unique socio-economic, legal and political factors in Southern Africa which may peculiarly affect the impact of and strategies to prevent HIV/AIDS amongst the 110-120 million inhabitants of the region.
Method. Review of applicable medical and social science literature and analysis of socio-political conditions in 11 Southern African countries.
Results. 1. (a) Data on the incidence and impact of HIV/AIDS in Southern Africa are "woefully incomplete". (b) Available data indicates uneven seroprevalence between countries, with highest rates (up to 21%) in northern Southern African states. (c) A "downward migration" of pattern II HIV/AIDS from Central Africa is reported. (d) In South Africa two HIV/AIDS epidemics are identified (pattern I for whites, pattern II for blacks).
2. Apartheid, internationally condemned as an illegal system, allows the political, social and/or economic domination of the Southern African subcontinent by a racial minority. It engenders throughout Southern Africa various socio-political features relevant to the HIV/AIDS epidemic: (a) regional economic dependence on South Africa reproduces underdevelopment in black states; (b) significant flows of temporary migrant labour to and within South Africa skew rural/urban gender ratios, undermine family units and foster sexual practices conducive to the spread of STDs; (c) inequitable distribution of wealth produces social conditions which enhance the spread and impact of otherwise controllable diseases; (d) acute political tension and social unrest inhibit flows of data and the diffusion and credibility of official information; (e) sustained South African destabilization has damaged or destroyed social, civil and economic structures in neighbouring black states; (f) forced removals in South Africa and refugee flight in the region have produced massive population displacements; (g) medical and social services in South Africa are provided on a racially discriminatory basis; (h) South Africa has a history of official denial of other morbidities.
Conclusion. The imprint of apartheid on the HIV/AIDS epidemic (a) fosters conditions certain to accelerate the spread of HIV/AIDS and maximize its impact on racially selected populations; (b) make it extremely unlikely that an epidemiological profile of HIV/AIDS can be developed; (c) seriously impairs regional capacities to implement and deliver strategies for effective HIV/AIDS prevention and care.

M.G.P.31

AIDS IN THIRD WORLD COUNTRIES : A GEOMEDICAL STUDY

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AIDS is the biggest health problem and there is yet no curative drug or protective vaccine available to combat AIDS. AIDS infection became pandemic by the mid- to late 1970 s and it was silent and unnoticed. The present study has made an attempt to analyse the spatialdistribution of AIDS with reference to epidemiological, ecological, socioeconomic and environmental factors. It is observed that the epidemiological situation is precarious in some regions of the Third World such as African parts of Caribbean and Latin America. Cases of AIDS have almost doubled in the Asia-Pacific region. Africa is the leading continent to witness next to America with 11,530 cases. In all 23 Central American and Caribbean countries have reported 1587 cases and 13 South American countries with a total of 2036 cases. It is also inferred that the regions identified to report with a higher prevalence rate are Brazil, The Bahamas, The Dominican Republic, Haiti, Mexico, Trinidad and Tobago. In addition, the countries included are Hong Kong, India, Indonesia, Malaysia, Maldives, The Phillippines, the Republic of Korea, Singapore, Sri Lanka and Thailand.

M.G.P.32

Stratégies et programmes
Strategies and Programmes

T.G.P.1

THE INTERNATIONAL AIDS ACTIVITIES OF THE UNITED STATES GOVERNMENT Aultman, Kathryn S.* ; Harris, J.R.*; Wells, J.D.** *Agency for International Development, (A.I.D.); ** Department of Health and Human Services (HHS) Washington, D.C., U.S.A.

OBJECTIVE: to describe the current and planned activities of the U.S. Government (USG) to combat the international HIV epidemic.
METHOD: All USG agencies known to be involved in international AIDS activities were surveyed concerning present and projected activities and funding levels.
RESULT: The resulting database contains descriptions and budget information by year, agency, location and type. In FY89 the overall budget is US$69 M; in the previous three years together it totalled US$94 M. The largest share (38%) of the USG FY89 AIDS budget is for the WHO/GPA, and this amount is excluded for the remainder of the analysis. There are presently six agencies engaging in international AIDS activities: four in HHS represent roughly 63% of the FY89 budget, while A.I.D. and the Department of Defense represent about 34% and 3% respectively. Roughly 40% of the activities have a worldwide or regional focus and the remainder are distributed between Africa (32%), Asia and the Near East (9%) and Latin America (19%). Prevention and prevention-related research account for 35% of the FY89 budget; epidemiology and surveillance represent another 34%.
CONCLUSION: The USG is increasingly active in international efforts to control the AIDS epidemic. During FY89 the U.S. government plans to spend almost as much on AIDS as it has done in all of the previous three years combined. Agencies involved in these efforts include both those with a domestic and a foreign policy focus. The geographical distribution roughly parallels the prevalence of HIV infection.

T.G.P.2

THE EPIDEMIOLOGY OF AIDS IN THE AMERICAS
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Objective. To describe the epidemiology of AIDS in the Western Hemisphere.
Methods. Since 1983, the Pan American Health Organization has carried out surveillance for AIDS. Quarterly data are analyzed to assess trends and define the epidemiological profile of the disease in the Americas.
Results. As of 30 December 1988 a total of 95,881 cases and 51,901 deaths have been reported in the Americas. Four countries, the United States, Brazil, Canada and Haiti, account for 95% of all reported cases. Excluding the United States and Canada, the remaining countries have reported 11,191 cases. Only two countries, the British Virgin Islands and Montserrat, have yet to report a single case of AIDS or HIV infection. We calculated cases per million population by subregion and by country for the years 1986, and 1987. These data demonstrate that the entire Caribbean area has exceptionally high rates of AIDS. In addition, male/female case ratios reveal two patterns of disease: (1) the homosexual/bisexual pattern with a very high male to female case ratio, observed in North America and most South American countries (pattern I); and 2) a second pattern of male to female case ratios of less than 3:1, suggesting increasing heterosexual transmission in a number of Caribbean and Central American countries.
Conclusion. These and other preliminary seroprevalence data indicate clear subregional differences as well as rapidly changing patterns (from pattern I to pattern II) in the epidemiology of AIDS and HIV infection in the Americas.

T.G.P.3

PRIORITIES FOR HIV EPIDEMIOLOGICAL RESEARCH
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Objective: To identify research priorities and methodologies for the study of the epidemiology of HIV infection in sub-Saharan Africa.
Methods: National AIDS Committees and research institutions were visited in 31 sub-Saharan African countries in order to identify AIDS-related research projects and laboratories presently supporting AIDS research. Principal investigators and heads of laboratories were then interviewed: for investigators, a standard inventory form was completed which included the title and objectives of the study, collaborators or collaborating institutions, study methodologies and preliminary results if available. For heads of laboratories, details about diagnostic testing and equipment available in the laboratory, as well as collaborating laboratories and methods of quality control, were recorded. Information was then computerized. After the inventory and computer data base were completed a series of meetings to review knowledge and gaps in knowledge about specific aspects of AIDS epidemiology in sub-Saharan Africa was conducted. African investigators identified from the computerized inventory, their collaborators from developed countries and other international experts in AIDS epidemiology and research methodology were invited to participate.
Results: Over 400 AIDS-related research projects were identified in sub-Saharan Africa. Systematic review of the objectives and methodologies of these studies as well as of methodologies and results of AIDS research previously reported in the literature, led to identification of incomplete areas of research. Research approaches and methodologies suited to address these areas were identified.
Conclusions: While over 400 AIDS-related research projects are currently being conducted in sub-Saharan Africa, several priority areas for AIDS related epidemiological research, especially in the epidemiology of HIV-2, urgently require attention.

T.G.P.4

IMPACT OF THE HIV EPIDEMIC: EMERGENCY DEPARTMENT RESOURCE UTILIZATION BY PATIENTS WITH KNOWN HIV-1 INFECTION
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Objective: To assess the reasons for visits to a large inner-city teaching hospital emergency department (ED) by patients with known HIV-1 infection.
Methods: Data was collected from review of records on all patients with known HIV-1 infection who presented to the main emergency department of the Johns Hopkins Hospital during a 4 month period in 1988.
Results: There were 256 (1.4%) ED visits by 164 patients with diagnosed HIV infection. Among these, 51 carried a diagnosis of AIDS. Of the 256 visits, 130 (51%) became admissions. The most common complaints were cough (25%), fever (25%), malaise (18%), and chest pain (14%). The most common diagnoses were PCP (13%), non infectious neurological disorders (13%) other pneumonias (7%), and sepsis (6%). Of the visits from patients who had a regular source of care, 70% (127/182) occurred during times when these sources were unavailable. HIV infected patients were more likely to have inadequate or no insurance compared to the general emergency population (OR=2.4; p<.01). HIV patients without a regular source of care (50) were more likely to have inadequate or no insurance compared to those who were regularly followed (OR=2.1, p=.05). Based on Illness Severity Scoring, visits with third party coverage (187) were sicker and were thus more likely to result in admissions than visits with inadequate coverage (OR= 3.2; p<.01). Since admissions are based only on severity of illness and not payor status, HIV patients without insurance likely use the ED as their primary source of care for less serious illnesses.
Conclusion: This ED is sought when other sources of care are unavailable, but HIV infected patients are less able to pay for services than others. Adequately subsidized and alternate sources of care are essential to achieve appropriate utilization of emergency services by these complex patients.

T.G.P.5

THE INTERNATIONAL WORKING GROUP ON AIDS AND IV DRUG USE
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Objectives: To provide timely information to scientists and policy makers the International Working Group on AIDS & IV Drug Use was first organized in early 1986 at an International Conference on AIDS and IV Drug Use in Newark, New Jersey. Later that year in Paris at the II International Conference on AIDS the First Annual Meeting was held and the goals of the organization were formalized .
Method: In late 1987 financial support was received from the National Institute on Drug Abuse (USA). Membership in the organization is free. The International Working Group on AIDS & IV Drug Use has developed the following strategies as a means of exchanging information. A quarterly Newsletter provides a forum for communication. In addition to the Newsletter, specialized data bases have been developed for researchers including: (1) a data base describing current research projects, survey instruments and publications, (2) a quick retrieval file of published abstracts, (3) a data base containing legislation, policy reports, presentations and publications, (4) an international file containing reports, policy papers, posters, pamphlets and correspondence organized by country, and (5) a bibliographic data base of publications from more than 30 journals, books, conference presentations, reports, and unpublished manuscripts.
Results: The membership includes 1,000 scientists and policy makers from over 30 countries. Approximately 20-30 new members join each month. In total, the data bases represent over 3,000 full text records. All the data bases are operational except the Current Studies Data Base, available in Spring 1989 and the Abstract File available by Summer 1989. Presently the organization receives over 30 bibliographic search requests per month from researchers, policy makers and treatment professionals working in IV drug abuse.
Conclusions: The International Working Group on AIDS & IV Drug Use has provided a much needed service for those involved in AIDS and IV drug use. At the Conference we will report on the progress of these databases and future projects under consideration.

T.G.P.6

SEROSURVEILLANCE OF HUMAN IMMUNODEFICIENCY VIRUS (HIV)INFECTION IN TRIBAL POPULATION OF ANDAMAN-NICOBAR ISLANDS,INDIA.

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The group of Andaman-Nicobar Islands in the Bay of Bengal is inhabitated by several tribes. Efforts are being made to bring these tribes in the main stream of the nation. Total population of two of the tribes, Andamanis and Onges is 32 & 105 respectively. Population of these tribes is gradually dwindling. They have a high incidence of tuberculosis and skin infections. A survey for viral antibodies revealed that more than 90% of two of the tribes, Andamanis and Onges have antibodies to Measles virus,Polio virus and Rubella virus. In addition 65-75% have antibodies to herpes simplex virus type 2. Therefore, to see whether these tribes have been exposed to HIV,32 sera from Andamanis and 16 sera from Onges have been tested for HIV-1 antibodies by competitive ELISA(Wellcozyme). The positive serum samples were confirmed by Western blot (Du Pont).
It was observed that 5 sera(4 Andamanis and 1 Onges) were found positive by competitive ELISA. By Western blot none of the sera were found positive according to the criteria laid down by Centers for Disease Control. However,one serum sample was strongly positive for anti-p-24 antibodies only. The data suggest that though there is no indication of HIV-1 antibodies in these sera they should be tested for HIV-2 and other retero viruses.

T.G.P.7

DETAILED ESTIMATES OF THE CURRENT AND FUTURE EXTENT OF THE HIV/AIDS PANDEMIC IN SUB-SAHARAN AFRICA

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Objective. To provide country-specific estimates and projections of HIV/AIDS to sub-Saharan countries for public health planning.

Methods. An AIDS projection model based on estimates of HIV seroprevalence and the annual progression rate from infection to AIDS was used.

Results. From the country-specific estimates, we estimate overall in 1987 that there were about 70,000 new AIDS cases in sub-Saharan Africa for a cumulative total since 1980 of about 100,000 cases in adults, and close to 50,000 in children. Approximately 2.5 million individuals are estimated cumulatively to have been infected with HIV in sub-Saharan Africa since 1980. By 1992, we estimate that there will have been a cumulative total of 800,000 AIDS cases in adults, and 200,000 cases in children. In 1992 alone, we estimate that there will be about 250,000 new AIDS cases. This is more than the cumulative total number of AIDS cases in sub-Saharan countries to 1987.

Conclusion. Over the next 4-5 years, we estimate that there will be at least a five-fold increase in the AIDS burden in each of the countries in sub-Saharan Africa.

T.G.P.8

CONTROL OF TRANSFUSION RELATED TRANSMISSION OF HIV INFECTION STRATEGIES OF THE EEC'S AIDS PROGRAMME FOR DEVELOPING COUNTRIES.

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European Economic Community - AIDS Control Programme/Developing Countries. Belgium

Various strategies to reduce the incidence of transfusion related HIV transmission have been developed. These vary from exclusion of high risk behaviour donors and a reduction of the number of transfusions to screening of donated blood for anti-HIV antibodies. A number of these are being implemented with support from the AIDS Task Force of the EEC in various countries in Africa, Latin America and the Caribbean. A choice for a particular strategy or combination of strategies must be made on the basis of an estimate of the costs and expected benefits of such an intervention. This is a function of the prevalence of HIV infection among the population, the existing infrastructure and capability of the health care system, including blood-transfusion services, and the cost of these interventions. Although screening of donated blood is a technical possibility, presently the cost of universal screening is prohibitive in many developing countries.The development of new tests however will influence strategy options. A preliminary analysis of various interventions in different countries is presented.

T.G.P.9

PLANNING A NATIONAL STRATEGY ON AIDS AND INJECTION DRUG USE: LESSONS FROM THE LITERATURE

MacKenzie, Betsy; Elmslie, K. Federal Centre for AIDS,
Health Protection Branch, Ottawa, Ontario, Canada.

Objective: To demonstrate how the literature can contribute to the development of a national strategy on AIDS and injection drug use.

Methods: The presentation will be based on an assessment of the literature (bibliographies will be made available) and specific illustrations from the Canadian experience.

Results: As of January 1989 in Canada, only .8% of a total of 2,337 identified AIDS cases were attributed solely to injection drug use. The prevalence of HIV infection among Canadian injection drug users is not yet known but small studies suggest that currently it is relatively low. The literature offers many lessons for a country that might be tempted to think it will escape the 'second wave' epidemic. Needle-sharing emerges as a widespread cross-cultural phenomenon. Data describing rapidly increasing seroprevalence among injection drug users in Edinburgh, New York and Bangkok signal an urgent need to acquire baseline data and to recognize that any window of opportunity will soon close. Published material testifies to the complexity of the problem and the need for collaborative, multidisciplinary prevention programs. Risk reduction strategies can form the basis of a partnership between public health and addiction services. The effectiveness of interventions remains uncertain, demonstrating the importance of conducting pilot studies with strong program evaluation protocols.

Conclusion: Canada is developing a national strategy to reduce HIV infection among injection drug users emphasizing collaboration, research and innovative program evaluation.

T.G.P.10

MEDIUM TERM PLAN FOR THE CONTROL OF AIDS IN CAMEROON-AFRICA: OCTOBER 1988-SEPTEMBER 1993.

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*Chief of AIDS Control Service,**President of the National AIDS Committee,
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Cameroon has a population of 10 millions and is located in Central Africa. It has borders with Tchad,Central African Republic,Congo,Gabon and Equatorial Guinea.

Data from surveys of the general population of provincial towns in the age group 15-44 show HIV 1 seropositivity rates between 0,3 and 0,8% (mean 0,5%). In prostitutes up to 7% have been found positive.A total of 72 AIDS patients have been notified,including 5 pediatric cases.

The governement has recognized that the AIDS epidemic poses a serious threat to the economic and social development of the country and has decided to give priority to combatting AIDS.A National Programme on AIDS has been approved,based on the global stategies as developped by WHO,with the participation of USAID,FHI,EEC,France,West-Germany and Canada.

A range of activities for the prevention and control of AIDS,integrated in the health care system of Cameroon,have already been initiated.The National Programme on AIDS has seven major components: (a)mass public information and education(b)blood screening establishment and rehabilitation of blood transfusion systems(c)protection of the public,health workers and children(d)establishment of an effective national surveillance system(e)drugs for treatment of STDs and AIDS cases(f)operational research(g)training and orientation of health workers.

T.G.P.11

ELABORATION D'UNE STRATEGIE DE PREVENTION DU SIDA ADAPTEE AU MILIEU DE LA PROSTITUTION ORGANISEE A COTONOU, BENIN.

Verbeke, Ronald* et Monteiro, Bruno**.
*Université de Mons, Belgique,**Université de Cotonou, Bénin.

Objectif: élaborer un message et des modalités de prévention du SIDA adaptés aux caractéristiques socio-culturelles des prostituées de Cotonou, Bénin.

Méthode: nous avons procédé à Cotonou à une enquête comprenant entre autres des entretiens individuels avec 61 prostituées, le repérage de tous les immeubles où vivent et travaillent au moins 4 prostituées, et des entretiens avec 8 tenanciers de tels immeubles.

Résultats: La prostitution organisée, à Cotonou, est le fait de 600 à 800 femmes qui habitent et travaillent à plusieurs dans un même immeuble. Une stratégie de prévention adaptée à ce milieu doit tenir compte notamment des aspects suivants: (1) méconnaissance des risques réels d'infection, croyance en l'efficacité préventive de médicaments et des toilettes intimes, et ignorance de ce qu'est un préservatif et de la manière de l'utiliser; (2) une forte méfiance lors du premier contact se transforme en grande réceptivité si l'entretien a été mené avec tact et chaleur, et de préférence par une femme; (3) 50% des prostituées sont analphabètes; (4) la solidarité qui lie entre elles les prostituées habitant et travaillant sous un même toit peut être utilement exploitée; (5) la collaboration des tenanciers et d'ex-prostituées s'avère aisée et souhaitable; (6) les préservatifs, dont le coût est prohibitif, doivent être accessibles aisément et à faible prix.

T.G.P.12

THE IMPORTANCE OF QUALITATIVE RESEARCH IN DEVELOPING OPERATIONS RESEARCH PROTOCOLS/STRATEGIES FOR GAY AND BI-SEXUAL MEN IN THE DOMINICAN REPUBLIC

Ramah, Michael*; Pareja, Reynaldo**;
*Porter/Novelli/AIDSCOM; **AIDSCOM, Dominican Republic

Objective. To determine to what extent research protocols and strategies must diversify to reach significant substrata of gay and bi-sexual populations.

Method. Focus groups, individual indepth interviews and unstructured gatherings at meeting places (bars, discos, bordellos, coffee shops) were conducted. Options with regard to language, sexual practices, marital circumstances and others were explored.

Results. Initial findings indicate that there does not exist among gay and bi-sexual population a set of universal standards or CODA with regard to above mentioned variables.

Conclusion. Individuals or groups responsible for conducting KAP Surveys or other formative research among these populations will need to carefully assess and understand the premise [illegible]t homosexual is not necessary homogeneous.

T.G.P.13 Contraceptive Social Marketing Principles: Promoting Condom Use in Uganda and Tanzania for AIDS Prevention

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*Johns Hopkins University/AIDSCOM, **Academy for Educational Development/SOMARC, ***Academy for Educational Development/AIDSCOM, U.S.A.

Objective: To apply contraceptive social marketing techniques in promoting condom use for AIDS prevention.

Method: Social marketing techniques are being used in developing condom promotion programs for AIDS prevention in Uganda and Tanzania. They are used to enhance the perceived value and desireability of condoms through branding strategies, audience segmentation, and pricing strategies. Distribution and trade considerations are being addressed, and condoms are being distributed through "AIDS in the Workplace" projects in Uganda & Tanzania.

Results: Using CSM strategies for promotion of condoms for AIDS prevention and Tanzania appears to show an increase in condom acceptability and purchase.

Conclusion: AIDS prevention has stimulated the market for condoms in both Uganda and Tanzania. It appears that condom social marketing for protection from HIV infection may overcome substantial barriers usually found in condom use.

T.G.P.14 FOLLOW-UP OF GROUPS AT RISK FOR HIV INFECTION

Dias,M.R.S.; Lima,J.H.; Abreu,W.B.; Aoki,F.H.; Goncales,N. and Pedro,R.J.
UNICAMP, Campinas, Sao Paulo, Brazil.

An HIV counselling/testing service was created in June 1988 at UNICAMP with three main objectives: a) provide an alternative free HIV testing site coupled with pre and post test counselling; b) set up a longitudinal serologic surveillance to determine the rate of annual seroconversion rate among high risk groups; c) give the blood bank support on confirmatory testing of anti-HIV positive blood donors. Testing is done by an ELISA (recombinant DNA) assay; if positive, a second blood sample is tested by ELISA; if positive, a Western blot test is done for confirmation. If a high risk person tests negative, counselling is emphasized and a 6 month follow-up testing is planned. Up to now, 167 persons have been tested; the table shows the distribution and the percentage who tested positive by at least one ELISA assay.

GROUP	No. TESTED	No. POSITIVE (%)
HOMO & BISEXUAL MEN	49	6 (12%)
IV DRUG USERS	42	18 (43%)
SEX WITH HIGH RISK PERSON	17	1 (6%)
SEX WITH INFECTED PERSON	8	2 (25%)
NON HEMOPHILIAC TRANSFUSION*	7	0 (0%)
NONE OF THE ABOVE RISK GROUPS	44	4 (9%)

* no hemopliliacs were seen at our service

T.G.P.15 EDUCATION AND LAW: THE CONTROL OF TRANSMISSABLE DISEASES THROUGH THE CONTROL OF GOSSIP, IGNORANCE, AND DISCRIMINATION

Traub, Kit, University of Georgia, Athens, Georgia, U.S.A.

Objective: To recall lessons from the history of the control of transmissable diseases and present effective, ethical, and scientific alternatives for the control of AIDS.
Methods: Review controls once applied to leprosy, plague, and syphilis, recognizing their reoccurance in the AIDS debate, and present alternative ways of thinking about diseases, particularly AIDS.
Results: The current generation has an opportunity to confront AIDS, a fearsome "plaque," without adopting dehumanizing rules as in the past with other transmissable diseases. Futile and ineffective gestures accumulate, producing great social damage without alleviating the causes or effects of AIDS. To keep our human perspective, we must first avoid referring to "AIDS Victims," speaking instead of "people with AIDS." Next, we must employ methods of disease control that are simultaneously effective, ethical, and scientific. Both the WHO and the Council of Europe have adopted enlightened, informed guidelines for avoiding discrimination in relation to HIV-infected people and people with AIDS. These efforts have been met by both support and resistance.
Conclusion: Ignorance, fear, and short-term political responses to the AIDS problem are counter-productive to the efforts to control the spread of AIDS. Alternative approaches are demonstrably more effective, while simulataneously preserving the human rights of infected persons and society generally.

T.G.P.16 TRAINING HEALTH WORKERS IN ZAMBIA FOR HIV INFECTION

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Health workers are increasingly having to inform patients that they are HIV infected or are suffering from an HIV-related illness, yet they rarely have experience or training in counselling; rather, their approach tends to be highly directive, allowing largely of only one-way communication. The use of a World Health Organization training manual is described, in a course consisting of one week's intensive orientation and role-playing exercises, project work carried out after return-to-normal duties, over a period of four weeks, and a further intensive de-briefing and training session lasting three days. Although not all physicians and nurses are able to acquire the necessary skills in this kind of brief, concentrated training, a sufficiently large cadre has been created to form a series of nuclei in various institutions, for further "snowballing" of the training programme in other areas of the country.

T.G.P.17 INTERNATIONAL AIDS PROGRAMS AT THE NATIONAL INSTITUTES OF HEALTH

Bridbord, Kenneth*;Hamburg, M.*;Schambra, P.*;Whitescarver, J.*; Fauci, A.*;*National Institutes of Health, Bethesda, MD., U.S.A.

The presentation will include an overview of NIH international AIDS programs amounting to over $18 million annually. Three programs will be emphasized. The first, the National Institute of Allery and Infectious Diseases program of International Collaboration in AIDS Research, contributes to international health by strengthening scientific linkages between U.S. and foreign investigators in areas with major health problems due to HIV.

The second, the Fogarty International Center (FIC) program of International Postdoctoral Research Training Grants in AIDS, supports collaborative research and training involving American and foreign scientists in the epidemiology, diagnosis, prevention, and treatment of AIDS.

The third, FIC's International Training Grants in Epidemiology Related to AIDS, increases the capability of scientists in developing countries to conduct epidemiologic research related to AIDS and to utilize epidemiology in clinical trials and prevention research. Establishment of an International Network for AIDS Research and Training will also be described.

T.G.P.18 DEVELOPMENT OF THE AIDS EPIDEMIC IN SOUTH AFRICA

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*Medical Research Council AIDS Virus Research Unit, National Institute for Virology, Sandringham, South Africa, **Johannesburg City Health Department.

The epidemiology of AIDS in South Africa represents an almost unique model of the intersection of type 1 (Western) and type 2 (African) patterns of AIDS and the dynamics of the epidemic are thus of considerable interest. Data on HIV seroprevalence obtained from a number of sentinel populations and AIDS cases reported voluntarily to the Advisory Group on AIDS have been used to construct a composite of the epidemiology of AIDS in South Africa. Analysis of AIDS data to the end of 1988 still reveals a predominantly type 1 pattern with 75% of 166 reported South African cases occuring amongst white male homosexuals, compared to 14% heterosexuals and 2% paediatric cases. Seroepidemiological data however, indicate a significant and rapidly developing epidemic of HIV infection in the black African heterosexual population, which may soon overtake the type 1 pattern dominating the AIDS profile presently. Thus, while no South African black STD clinic attenders were HIV positive in 1986/87 (Trans Roy Soc Trop Med Hyg 1987, 81: 874-875), at the end of 1988, 1.3% of 1174 black female STD attenders 0.3% of 1395 family planning attenders and 0.1% of 17236 new blood donors (first half of 1988), were confirmed HIV seropositive. In the white population type 1 is still the predominant epidemiological pattern, with low seroprevalences in the general heterosexual population (2 of 334 male heterosexual STD clinic attenders being seropositive while no female STD attenders or family planning clinic attenders were positive and also only 0.03% and 0.007% of male and female new white blood donors respectively).

T.G.P.19

SMALL PARTICLE PERMEABILITY OF USED VERSUS UNUSED SURGICAL RUBBER GLOVES

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Introduction. Surgical latex rubber gloves are repeatedly re-used in many third world countries after being washed and sterilized. A study was conducted to determine whether used and unused surgical rubber gloves are permeable to particles the size of HIV-1.
Methods. Surgical gloves were obtained from several medical facilities in New Delhi, India as well as the United States. Samples of the glove palm, back and fingers were used as barriers to 0.1 micron fluorescent, polystyrene beads. The rubber was subjected to a stretching protocol designed to mimic actual use conditions.
Results. The likelihood of transmission of particles through the latex rubber samples was dependant upon frequency of stretching, exposure time and condition of the rubber.

GLOVE SAMPLE	% OF SAMPLES SHOWING PARTICLE TRANSMISSION WITH STRETCHING	WITHOUT STRETCHING
Unused (India)	17	4
Used (India)	100	34
Unused (USA)	45	8

Discussion/Conclusions. Re-used surgical rubber gloves are more porous to virus sized particles compared with unused gloves. Anti-microbial contaminants in latex may affect the viability of virus particle transmission.

T.G.P.20

A STUDY ON HIV-1 INFECTION AMONGST HEMOPHILIACS IN IRAN.

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*Iranian Blood Transfusion Service, Tehran, Iran.
**Iranian Hemophilia Centre, Tehran, Iran.

Objective. An HIV-1 seroprevolence study was conducted on 368 hemophiliacs
found to be the only group exposed to HIV, amongst the high-risk groups
studied in Iran so far.
Methods. HIV-1 antigen and antibodies were tested by Elisa(Recombinant HIV-
1, Envacor and HIV-Antigen, EIA, Abbott Diagnostics, U.S.A.
Enzygnost Anti-HIV-micro, Behring Institute, W.Germany)
Results. 19%(69/368) of the patients studied were found seropositive, i.e.
20%(62/285) Hemophilia A patients, 12%(6/50) Hemophilia B patients and
only 3%(1/33) of patients suffferring from other bleeding disorders such as
von Willebrand, platelet dysfunction and afibrinogenaemia. All the anti-
HIV positive patients were positive for anti-P24 and anti-gp41 and all but
one with full-blown, AIDS were negative for HIV antigen. The anti-HIV
negative hemophiliacs were also tested for HIV antigen for possibility of
recent infection, but none were found positive. The highest incidence of
HIV infection was found in the sexually active group of 20-40 years.
However, no transmission was detected when all family members of 11 anti-
HIV positive patients were examined.
Conclusion. Follow-up studies on hemophiliac patients and screening of thei:
families followed by provision of necessary information and counselling
as well as control of imported clotting factor concentrates would be most
important in the prevention and control of AIDS in Iran.

T.G.P.21

ADAPTING WESTERN EXPERIENTIAL EXERCISES INTO AIDS PREVENTION COUNSELING TRAINING IN DEVELOPING COUNTRIES

JD DUPREE*, A DEMBY**, R CHINGONO***

*AIDSCOM, Washington DC; **Lassa Fever Research Project, Segbwema, Sierra Leone; ***AIDS Programme, Harare, Zimbabwe

Objective. To demonstrate that there are culturally sensitive and effective methods for adapting Western experiential exercises into AIDS prevention counseling training in developing countries.

Methods. This paper confronts some of the Western stereotypes about people from developing countries and their relationship to each other, to disease, death, and needs for support. The authors describe how such experiential exercises as role-playing, imagining one's own death through guided visualization, and discussing safer sex practices such as non-penetration with one another have been adapted into training in developing countries.

Results. Evaluation forms completed by AIDS prevention counseling training participants in developing country contexts indicate that many of the adaptations have been highly effective. Improvements have been made as a result of the evaluations, though there is still much to be learned.

Conclusion. Many of the skills required for an effective AIDS prevention counseler can be enhanced through culturally sensitive adaptation of some of the experiential exercises developed in the West. Other skills, however, require development of culturally-specific in-country methods.

T.G.P.22

Prevention Counselling: Integrating Concepts and Techniques in all AIDS Prevention Strategies.

D. Stone*, N. Kaleaba**, V. Orias***,
*Johns Hopkins University/AIDSCOM, **The Support Organization (TASO) in Uganda, ***Department of Health/Division of Health Manpower Development and Training Service, Republic of the Philippines. U.S.A.

Objective: Sinse counselling is one of the only strategies to support behavior change in HIV prevention, it is imperative that health care providers, educators, and others are provided with training in counselling concepts and techniques. The authors describe various means of incorporating counselling training within cultural settings.

Methods: Using "Train-the Trainer" Modules, health care providers, educators, and volunteers are being trained in basic prevention counselling concepts and techniques. Emphasis is placed on helping providers cope with client feelings raised by HIV infection either real or imagined, as well as on helping providers focus on high risk behavior of their clients.

Results: Although counselling for behavior change is a new concept, techniques are being adapted in various cultures to provide support. By working with governments and non-governmental organizations within each country, people are being trained to provide their clients accurate information on HIV infection, to assess their own risk, and to cope with anxiety and fear.

Conclusion: Whether HIV prevalence is high or low, providing prevention counselling skills to educators, health care providers, or others is essential. Working within local and cultural parameters prevention counselling proves to be a successful method in helping people change high-risk behavior.

T.G.P.23

AID AND ADOLESCENT: A PRELIMENTARY STUDY OF YOUTHS' PERCEPTION OF AID AS A DISEASE: NIGERIA EXPERIENCE

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UNIVERSITY OF IBADAN, IBADAN, NIGERIA

SUMMARY: Without doubt AID is a serious infection which has been associated with promiscuity and homosexuality. In Nigeria in spite of the mass campaign, the incidence of the disease has been found to be on the increase. Hence, this study is designed to find out the perception of Nigerian Urban youths of the disease, especially those related to health behaviour, in order to know what alternative strategies to employ with regards preventions.
Objective: To identify the perception and attitude of Nigerian youths to AID as a disease.
Methods: A random sample of 100 Nigerian youths were selected from various works of life, representing 60 males and 40 females. Questions related to AID were asked by 2 interviewers.
Results: The result showed that inspite of the heavy campaign on AID, many Nigerian youths still did not regard AID as a serious disease. A large proportion considered it as a capitalist ploy to down grade humanity and to ridicule the people of the 3rd World.

T.G.P.24

HIV/AIDS-RELATED TRAVEL AND MIGRATION RESTRICTIONS

Duckett, Margaret and Orkin, Andrew
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OBJECTIVE To identify trends in national regulation and/or practice restricting travel and/or migration by those with HIV infection or AIDS.
METHOD A comparative analysis of reports and data from multiple sources including Canadian and international governmental and non-governmental reports and a survey by questionnaire of all foreign representatives in Canada, and a review of applicable international law.
RESULTS While some countries have adopted deliberate policies of non-restriction of visitors and temporary and permanent residents, over 35 others have policies that discriminate against travellers and migrants with HIV infection or AIDS through mandatory HIV screening, exclusion and/or deportation. Examples of extreme responses are the mass deportation of seropositive permanently resident workers, and exclusion of persons found during border searches to be carrying zidovudine (AZT).
CONCLUSION Mobility and travel are affirmed values in international law and practice, although states enjoy the unfettered right to admit and exclude foreign nationals. The World Health Organization has advised that HIV/AIDS-related travel restrictions are "ineffective, impractical and wasteful". A disturbing trend is emerging, however, in which a significant number of countries have applied HIV/AIDS-related travel restrictions. The implications of this trend for social, cultural and economic exchange are profound, and the symbolic effect of such restrictions may impede global efforts to respond effectively to HIV/AIDS.

Épidémiologie : VIH-2
Epidemiology: HIV-2

T.G.P.25

DETECTION OF HIV-2 INFECTION AND RATIO TO HIV-1 AMONG HOSPITALIZED PATIENTS IN RIO DE JANEIRO, BRAZIL

Sion,FS*; Sereno,AB**; Krebs, John W***; Gonçalves,RS*; Quinhoes,EP*; Weniger,BG***; Perez,MA**; Santos,EA*; Ramos Filho,CF**; Valiente,PM**; Ismael,C*; and the Clinical AIDS Study Group. *Hospital Gaffrée e Guinle, Univ do Rio de Janeiro (RJ); **Hospital Universitário, Univ Fed do RJ, Brazil; ***Centers for Disease Control, Atlanta, USA.

Objective. To detect the presence of Human Immunodeficiency Virus Type 2 (HIV-2), and determine its ratio to HIV-1 to establish a baseline in this representative site to monitor the rate of penetration of this new strain of HIV in South America.
Methods. Sera collected 10-12/1988 from all consenting adult patients (n=496) admitted to all medical wards of two teaching hospitals were screened by ELISA assays using whole-virus-lysates of HIV-2 (Genetic Systems Corp[GSC]) and of HIV-1 (GSC). Sera repeatedly reactive (RR) for either virus were tested by the corresponding Western blot (WB) (HIV-2:GSC; HIV-1:Bio-Rad). WBs evidencing all 3 major gene regions (*gag, pol & env*) were considered Positive (P); 2 genes Indeterminate (I); and only 1 Equivocal (E). Specimens for virus isolation and DNA detection are being collected.
Results. Among 496 patients, 5 were RR by ELISA to HIV-2 only, 105 were RR to HIV-1 only, and 27 were RR to antigens of both viruses. Of these RR patients tested by the corresponding WB, 1 (0.2%, 1/496) was P for HIV-2 only (and negative on ELISA for HIV-1), 17% (86/496) were P for HIV-1 only (13 of these were also I or E for HIV-2), and 2% (11/496) P for both HIV-2 and HIV-1. There were another 17 RR patients with I results, and 16 with E results on either WB. Six RR patients were negative on corresponding WB test. Seroprevalence of WB P results only, an underestimate due to exclusion of I's, was 20% (98/496). The patient P for HIV-2 only was a 48yo previously-transfused woman with cough, oral candidiasis, bronchiectasis, and GI strongyloidiasis. The HIV-2:HIV-1 ratio was about 1:100. HIV-2 appears pathogenic. Dual Ps and the Is and Es are challenges to interpretation.

T.G.P.26

PROBLEMATIQUE DE L'INFECTION HIV2: EXEMPLE DU SENEGAL.

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*Hopital A. Le Dantec, Dakar, Sénégal.

Objectifs. Faire le point des connaissances actuelles sur HIV2 et identifier les problèmes particuliers qui restent posés en Afrique de l'Ouest comparativement aux connaissances actuelles sur HIV1.
Methodes. Depuis la 1^{ere} description en 1985 de HIV2 des travaux ont été réalisés dans les domaines les plus divers (épidémiologie, virologie, clinique etc.) au Sénégal et dans plusieurs pays d'Afrique de l'Ouest. Le bilan de ses études permet de dégager des problèmes spécifiques à l'infection HIV2 comparativement à HIV1.
Resultats. Les enquêtes épidémiologiques menées au Sénégal et dans la plupart des pays d'Afrique de l'Ouest sur des populations adultes saines ont montré une prédominance de l'infection HIV2 sur l'infection HIV1 et sa présence depuis au moins 1976. Des profils sérologiques particuliers ont été rencontrés et de nombreuses souches de virus HIV2 isolées. Des prostituées infectées par HIV2 suivies depuis 3 ans ne montrent pas de signes d'ARC ou de SIDA . L'étude de cas de SIDA HIV2 et HIV1 permet de dégager la longue incubation des pertubations causées par ce second virus. Tous ces résultats permettent de dégager une spécificité de l'infection HIV2.
Conclusion. HIV2 présent surtout en Afrique de l'Ouest, a été particulièrement étudié au Sénégal. Il pose des problèmes spécifiques comparativement à HIV1 et son étude devrait permettre de mieux comprendre l'épidémie actuelle du SIDA et pourrait aider aux mesures de lutte contre celle- ci.

T.G.P.27

HIV-2 LINK TO AIDS

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**University of Dakar, Dakar, Senegal.

Objective: To determine the extent of HIV-2 pathogenicity as compared to HIV-1.
Methods: To date, very little is known about the clinical spectrum of HIV-2 infection, and it is still unknown whether HIV-2 will ultimately prove to be as pathogenic as HIV-1. We, therefore, reviewed published laboratory and epidemiological data presently available to analyze the pathogenic potential of HIV-2.
Results: Although it appears that HIV-2 may be associated with AIDS, in vitro laboratory data concerning comparative HIV-2 cytopathogenicity are inconsistent. Most of the epidemiological evidence comes from descriptive data, and does not satisfy basic requirements that define causality. The most significant problems are the lack of control group and the absence of a correct temporal relationship with the exposure to HIV-2 preceding the occurrence of the disease. Methodological issues for further epidemiological studies are discussed.
Conclusion: On the basis of existing data, the pathogenic effect of HIV-2 seems limited as compared to HIV-1. Additional studies, of both laboratory and epidemiologic nature, are needed to further characterize the pathogenic potential for this distinct human retrovirus.

T.G.P.28

DOUBLE HIV1 AND HIV2 SEROPOSITIVITY IN GUINEA

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Kourouma K **; Diallo P**; Diallo K**
*CTS-CHU Pitié-Salpêtrière, Paris, France; **CTS-CHU Conakry, Fria, Guinea.

3855 blood donors ,142 women from maternity and 218 patients (class III - IV) were screened between November 1987 and December 1988 for HIV1 and HIV2 antibodies in three sites in Guinea. Repeatedly reactive sera were confirmed in Paris with the Western blot technique. We attempted to discriminate between HIV1 and HIV2 reactivity in the sera that showed both HIV1 and HIV2 positivity in Western blot, using the new Peptilav 1-2 test (Diagnostic Pasteur) and the screening for anti Nef .

- None of the 142 women were confirmed HIV positive.
- 17 of 3855 donors (0,44%) were confirmed HIV positive : 7 to HIV1, 9 to HIV2 and one to the both viruses. This serum was clearly discriminate as HIV2 with the Peptilav 1-2 test.
- 35 of 218 patients were confirmed HIV positive:17 to HIV1,7 to HIV2 and 11 to both viruses with the Western blot. With Peptilav 1-2 we could discriminate only one of these sera as HIV1. It is also anti Nef positive ; 4 sera gave stronger reactivity to HIV2 ; 3 of them could be screened for anti Nef and were negative; and 6 others showed simultaneous reactions to both virus peptides ; 5 were anti Nef positive and 1 negative. This finding raise the possibility of true double infections or infection with a third new virus whose epitopes are shared by HIV1 and HIV2.

These results indicate the presence of the two viruses in Guinea. The positive donors are predominantly infected with HIV2 (58,8%) and the patients with HIV1 (68,5%). 6 persons had serum reactivity suggesting simultaneous infection by HIV1 and HIV2 viruses or by another closely related virus. Only isolation of the viruses involved will being a conclusion.

T.G.P.29

COINFECTIONS HIV-2/HTLV-1 DANS UN GROUPE DE SUJETS A RISQUE AU SENEGAL.

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OBJECTIFS:Apprécier les facteurs de risque HIV-2 et HTLV-1 dans une cohorte.
METHODES: Un groupe de 200 prostituées de Ziguinchor (Sud Sénégal) est suivie de manière prospective depuis 1986. Un interrogatoire, un examen clinique et une prise de sang sont réalisés lors de l'inclusion puis chaque six mois.
RESULTATS: 40 % des sujets de la cohorte sont séropositifs pour HIV-2 (méthode WB), 16 % présentent des anticorps contre HTLV-1 (méthode WB); 78 % des sujets HTLV-1 sont également HIV-2 positifs.Nous avons analysés les facteurs de risque des deux rétrovirus: En ce qui concerne HIV-2 nous avons retrouvé comme facteurs significativement différents entre le groupe des séropositifs et séronégatifs: le tarif demandé au client (p=0,01), l'origine du sujet (sénégal/étranger), le nombre d'épisodes de pertes vaginales (p=0,002) et une sérologie HTLV-1 positive (p=0,0001). Pour HTLV-1: l'âge (p=0,002), les scarifications (p=0,002), les épisodes de pertes vaginales (p=0,01) et une sérologie HIV-2 positive (p=0,0001) ont été retrouvés significatifs.
CONCLUSION: Les coinfections HIV-2/HTLV-1 sont dans notre cohorte fréquentes et présentent des particularités qui seront discutées.

T.G.P.30

THE EPIDEMIOLOGY OF HIV1 AND HIV2 IN THE GAMBIA, WEST AFRICA

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Objective. To estimate the prevalence of HIV infection in The Gambia, West Africa, and to investigate the factors to which this is related.
Method. Samples were obtained from 5569 subjects - 2051 from random cluster samples and the remainder mainly from subjects attending health facilities and readily accessible occupational groups. A risk factor questionnaire was administered to a sample of these subjects. Serology was carried out with ELISA and positive results were confirmed with Western Blot.
Results. 88 subjects (1.6%) had evidence of infection with HIV2 and 6 (0.1%) with HIV1. The overall prevalence of HIV infection did not differ between the main groups studied or between sexes but the prevalence varied with age. HIV2 infections were found in all age groups but the HIV1 infections differed being limited to those under 30 years (p<0.01). The prevalence of HIV2 infection varied significantly with age in males (p<0.001) with a peak in the 35-44 yr. age group (18/477, 3.8%) while in women the peak was in the 25-34 yr. age group (25/1073, 2.3%). Preliminary and univariate analysis of risk factor data shows that infection in males was significantly related to a history of penile ulceration and urethral discharge.
Conclusion. The epidemiology of HIV2 infection in The Gambia has similarities to that of HIV1 infection elsewhere in Africa, however, the spread of HIV1 and HIV2 in the community appears to have been different.

T.G.P.31

NO EVIDENCE OF VERTICAL TRANSMISSION OF HIV-2 IN BISSAU

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Objective. To evaluate the occurrence of vertical transmission of HIV-2.
Methods. A cross-sectional HIV community study of the inhabitants of 100 randomly selected houses in Bissau, 1987. A case-control study of HIV-2 seropositives and seronegative controls matched for age, sex and civil status, 1988 (mean follow-up time 11 months), including a detailed obstetric history. All bloodsamples tested for antibodies against HIV-1 and HIV-2 in ELISA and Western Blot as appropriate.
Results. Only HIV-2 was found, no case of vertical transmission could be demonstrated; 4 of 680 children 0-14 years were HIV-2 seropositive, 3 had a history of blood transfusion. Fifteen HIV-2 seropositive women had a total of 18 children of 3 years of age or younger, all were HIV-2 seronegative. 1988: 6 HIV-2 seropositive women had given birth to 6 children during follow-up; the three oldest were HIV-2 seronegative, the three youngest seropositive with WB similar to their mothers'. Three months later these 3 children had lost most or all of their antibodies. - Twenty-nine HIV-2 seropositive women and 57 controls were interviewed; no difference was found for live children, dead children or abortions, neither in total numbers nor of the 3 most recent pregnancies.
Conclusion. Vertical transmission of HIV-2 seems to be rare or absent, it could be unnecessary to counsel HIV-2 seropositive women in early pregnancies to get abortions.

T.G.P.32

PREVALENCE AND CORRELATES OF RETROVIRAL INFECTIONS AMONG PROSTITUTES WORKING IN THE GAMBIA

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Objective: To study the prevalence of HIV-1, HIV-2 and HTLV-I infections and their correlates among a high-risk group in The Gambia.
Methods: 267 prostitutes(P) working in 5 urban centers of The Gambia were intèrviewed, examined and bled. Screening for HIV-1 and HIV-2 was done with competitive Elisas and confirmation by WB. HTLV-I antibodies were measured with a particle agglutination test.
Results: 69/264 (26.1%) were HIV + (66 for HIV-2 only, 1 for HIV-1 only, and 2 for both). P working for less than 1 year were less likely to be HIV + (5/42 [11.9%] vs 63/217[29%], p=0.03), but the prevalence of HIV infection was not correlated with duration of prostitution for those working for more than 1 year. HIV + P were older (32.8y vs 28.8y, p=0.02), less expensive (mean price per intercourse: $3.82 vs $4.77, p=0.01), and more likely to have positive RPRs and TPHAs (45/69[65.2%] vs 63/194[32.5%], p<0.001) than HIV - P, but there was no difference in the number of customers per day nor in the frequency of oral contraceptive use. 53/256 (20.7%) were HTLV-I +; HIV + P were more likely to be HTLV-I + (24/68[35.3%] vs 29/188[15.4%], p<0.001) than HIV - P.

Conclusion: HIV-2 has probably been introduced recently in this cohort of prostitutes. Infection with HIV-2 is associated with evidence of infection with T. pallidum and HTLV-I.

Aspects cliniques (partie 1)
Clinical Features (Part 1)

W.G.P.1

HIV,HBV,DELTA-AGENT AND T.PALLIDUM INFECTIONS IN TWO RURAL AFRICAN AREAS.

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Objective.To compare the seroepidemiology of HIV,HBV,delta agent and T.pallidum infections in two rural populations living in North Uganda (NU) and in Central Burundi (CB).
Methods.Sera collected in March-October 1986 (Kitgum District,NU) and in June-December 1987 (Buteri,CB) were stored at -20°C until tested for HBsAg,HBsAb (RIA methods) and anti-HIV antibodies (ELISA and WB) and screened for syphilis using the T.pallidum haemagglutination (TPHA) test (BBR). Samples showing reactivity against HIV p 24 and gp 41 (or gp 120) in WB were considered as anti-HIV positive. HBsAg-positive sera were also tested for anti-delta antibodies (RIA method).
Results.The 358 sera collected in NU were obtained from 289 outpatients (174 peasants and 115 soldiers) and 69 inpatients (50 TB and 19 clinically suspected of beings AIDS cases). In CB,sera were drawn from 30 healthy people,33 outpatients and 27 inpatients (all with clinical diagnosis of AIDS).All patients (264 males and 184 females) were adult (age range:14-80).In Ugandan people 63.6% of anti-HIV positive and 25.8% of anti-HIV negative patients were found to be TPHA-positive respectively ($p<0.01$).For Buteri the corresponding figures were 21.4% and 1.6% respectively ($p<0.04$).As for full blown AIDS,TPHA-positivity was 62.5% and 25.0% in NU and CB respectively. No association was,on the contrary,found in both areas between either anti-HIV or TPHA positivity and seropositivity for B and delta hepatitis serological markers (p NS).
Conclusion. This study confirms the association between seropositivity for HIV and T.pallidum (TPHA),suggesting common patterns of transmission.It also shows no correlation between either anti-HIV or TPHA positivity and markers for B and delta hepatitis in two rural African areas.

W.G.P.2

MARQUEURS DES RETROVIRUS (HIV ET HTLV-I) ET DU VIRUS DE L'HEPATITE B CHEZ LES LEPREUX AU CONGO.

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Objectif : Déterminer la prévalence des marqueurs HIV, HTLV-I et HBV chez les lépreux et dans des populations témoin au Congo. Comparer les marqueurs HBV en fonction du statut sérologique HIV dans les deux groupes.
Matériel : En 1988 un total de 800 patients : 318 lépreux et 482 témoins ont été soumis à un prélèvement de sérum dans 4 zones du Congo.
Méthodes : Dépistage HIV par ELISA (Abbott recombinant HIV-1 EIA), HTLV-I par immunofluorescence indirecte ; confirmation par Western Blot (Rapid Lav Blot I et II, Diagnostics Pasteur pour HIV ; avec souche HUT 102 pour HTLV-I).
Les marqueurs HBV : Ag HBs, antiHBs, antiHBc, AgHBe, anti-delta par Abbott EIA.
Résultats : Globalement, les prévalences sont respectivement pour les témoins et les lépreux de 3,2% et 3,8% pour HIV, de 1,9% et 9,7% pour HTLV-I et de 9,6% et 7,2% pour l'Ag HBs.
En fonction des zones géographiques, de très fortes variations sont observées allant pour HIV de 4,3% à 8,9% chez les témoins et de 1,3% à 10,2% chez les lépreux. Chez ces malades, la prévalence HTLV-I va de 0,5% à 23,4%.
Les paramètres HBV sont analysés en fonction de la séropositivité HIV et HTLV-I.
Conclusion : Il n'y a pas de différence statistique entre les prévalences HIV chez les lépreux et les témoins, ni entre les formes polaires de lèpre ; il n'existe pas non plus de différence de "profils" sérologiques HBV entre séropositifs et séronégatifs. En revanche, les lépreux sont significativement plus infectés par le HTLV-I que les témoins.

W.G.P.3

A TWO-YEARS EXPERIENCE IN HIV-POSITIVE PATIENTS IN HOSPITAL DE CLINICAS DE PORTO ALEGRE (BRASIL)

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Objective: Describe Hospital de Clinicas de Porto Alegre (HCPA) experience in HIV-positive patients according to risk groups.
Methods: It was reviewed 185 registers of HIV-positive patients who were at HCPA during January 1986 till December 1988.
Results: There were 173 men and 13 women. Among risk groups: 74 (40%) were homossexuals men; 75(40,0%), bissexuals men; 10 (5,4%), with coagulation disorders; 8 (4,3%), drug addicts; 8 (4,3%), had multiple transfusions; 6 (3,3%), bissexuals and drug addicts; 5(2,7), heterossexuals (4 women and 1 man), all with genital lesions.
Conclusion: As in other countries, the greatest group are the homossexuals and bissexuals men with 80% of the sample. As a whole group, those who received transfusion (Blood disorders and multiple transfusions) have 10% of the sample. Drug addicts, as a risk group are not so numerous as in other countries. Although our sample is not so large, it appears that heterossexual contamination occurs only in individuals with genital lesions.

W.G.P.4

A SURVEY FOR UNRECOGNIZED HIV INFECTION IN A SPECIAL STD CLINIC IN KUWAIT

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A three month survey for the presence of unrecognized HIV was conducted August through October 1988, on a total population of 3123 STD exposed patients and volunteer premarital examinees who presented themselves for standard STD testing. Of this total, 10% were selected (305) for HIV testing by methods of ELISA, and when required, Western Blot. The sample group was classified according to sex, marital status, occupation, age group, nationality (Kuwaiti vs Non-Kuwaiti), and sexual history.
The sample group reported travelling to total of 27 different countries within the previous six months and were queried on their sexual history, including heterosexual/homosexual encounters and premarital/extramarital/ sexual history. Clinical diagnosis was also recorded.
No HIV infection could be determined in the sample, which otherwise would appear to be a group at higher risk. One explanation may be that the group is not characterized by repeated sexual exposure and none were IV drug addicts or users.

W.G.P.5

ABOUT MONITORING OF HIV-SPREAD IN A DEVELOPING COUNTRY

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Objective: To determine the actual AIDS-threat and introduce prevention efforts with the means of a primary health care system.

Methods: Since 1986, HIV-spread was monitored in an African district hospital. HIV-testing was done in patients with possibly HIV-related disease, such as shingles (herpes zoster), therapy-resistant STD's, or sputum-positive TB (precedent monitoring of diseases helped to give early evidence of prevalence-alteration). In the general population, "Risk-groups" were detected, infection-routes were traced.

Results: A rise of shingles and sputum-positive TB was stated in the area. No rise of Malaria e.g. could be found. In young adults with shingles, a high coincidence with HIV-infection was found.

Conclusion: Shingles e.g. - easy to diagnose even by health workers - could become an "indicator disease" for HIV-spread without HIV-testing. This requires a precedent monitoring of such diseases in areas not yet AIDS-affiliated. With such a "basic monitoring", regional HIV-spread could be determined and prevention-efforts could be focused.

W.G.P.6

AIDS ASSOCIATED ENDEMIC INFECTIOUS DISEASES IN MEXICO

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Objective: To define the characteristics, epidemiological distribution and clinical evolution of AIDS associated endemic infections.
Method: Information was taken from registries notified to the General Directorate of Epidemiology between January 1981 and October 1988.
Results: Clinical information was available from 591 patients (87% men and 69% between 25 and 44 years of age). Data on reported diseases at time of initial AIDS diagnosis are: *P. carinii* pneumonia (PCP) 8% (n=50); other infections 76% (n=452); Kaposi's sarcoma (KS) 5% (n=28) and two or more clinical entities 8% (n=49). 882 pathogens were identified in 493 patients. Endemic infections (215, 24%) were: tuberculosis (71,8%), pneumoniae (nsp) (61,7%), cryptosporidiasis (25,3%), amebiasis (17,2%), salmonellosis (11,1%), toxoplasmosis (11,1%), cryptococcosis (10,1%) histoplasmosis (6,1%), giardiasis (3,0.3%). Patogens identified once were *T. trichiura, I. belli, T. cruzi, C.immitis, A.lumbricoides, P. malariae.* Enteropathogens represented 7% of all infections. Chronological, regional, transmission categories, and prognostic differences were observed between patients presenting endemic infections and the rest.
Conclusion: Endemic infections are associated with an increasing number of AIDS patients as the epidemic expands to rural areas, to heterosexuals and to lower socioeconomic levels. Prophylaxis and treatment probabilities should be explored.

W.G.P.7

THE IMPACT OF HIV INFECTION ON CHILD SURVIVAL IN AFRICA

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Objective. To estimate infant HIV infection prevalence and infant mortality rates associated with the vertical transmission of HIV, and to compare these figures with estimates of overall infant mortality and child survival rates. Methods. HIV seroprevalence data from pregnant women living in 12 countries in East, Central, and West Africa are used to estimate HIV infection prevalence and HIV-attributable mortality rates in infants, assuming: 25-60% vertical HIV transmission; and infant mortality of 20-25% among infected offspring. Estimates are compared with U.N. overall infant mortality rates. Results. The results for East African capital cities are:

City	HIV Prevalence in Infants	HIV-Attributable Infant Mort. Rate	Overall Infant Mortality Rate
Nairobi	0.6-1.6 %	1-4 /1000	72 /1000
Lilongwe	2.4-5.7	5-14	150
Maputo	0.3-0.6	1-2	141
Dar Es Salaam	0.9-2.2	2-5	106
Kampala	6.0-14.5	12-36	103

The estimated infection prevalence in infants in Central and West Africa ranges from 0.1-11%; the HIV-attributable infant mortality rates from <1-27. Conclusion. These estimates show that maternally-transmitted infection is having a low impact on overall infant mortality in some areas but a major impact in others. However, the later mortality of HIV-infected children who survive infancy may have a substantial impact on child survival rates.

W.G.P.8

THE NATURAL HISTORY OF HIV INFECTION IN TWIN PAIRS BORN TO HIV+ WOMEN IN KINSHASA, ZAIRE.

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Objectives. To describe the clinical and serologic progression in pairs of twins born to HIV+ women.
Methods. Nine "case" twin pairs born to HIV+ women and 10 "control" pairs born to HIV- women have been followed for the 18 month post-partum period. Blood drawn at 12 and 18 months was tested for HIV. All episodes of illness through age 18 months were recorded.
Results. Five case and 9 control pairs survived the first month of life.

Case pairs	HIV Serology at 12 + 18 mos. (Twin 1/Twin 2)	Clinical AIDS (Twin 1/Twin 2)
Pair 1	Pos/Neg	Yes/No
Pair 2	Pos/N/A (Dead)	No/Yes
Pair 3	Neg/Neg	Yes/No
Pair 4	Neg/Neg	No/No
Pair 5	Neg/Neg	No/No

Chorioamnionitis was diagnosed in the placenta from the dizygotic Pair 1. In addition, Twin 1 was breastfed while Twin 2 refused all maternal milk.
Conclusions. The discordant serologic and clinical pictures seen in these twin pairs emphasizes that even with equivalent exposure, environment and genetics, variations in HIV natural history can and do occur.

W.G.P.9

CORRELATION OF HYPERGAMMAGLOBULINEMIA WITH ASYMPTOMATIC AND SYMPTOMATIC HIV INFECTION IN A COHORT OF AFRICAN INFANTS

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Objectives. To examine the relationship between hypergammaglobulinemia and HIV infection in a large prospective cohort of African children. Methods. 473 children born to HIV-infected women and 597 children born to age- and parity-matched uninfected women have been followed prospectively since birth. Quantitative immunoglobulins (mg/dl, nephelometric assay) at 9 months age are being compared with serologic and clinical markers of HIV. Results. Using persistent HIV antibody (beyond 12 months) as laboratory evidence of HIV infection, and 3 clinical signs by the WHO criteria as suggestive of symptomatic infection, mean immunoglobulin levels are shown.

	N	IgG	IgM	IgA
Symptomatic, persistently HIV ab+	12	2732	236	100
Asymptomatic, persistently HIV ab+	28	1939	163	76
Symptomatic, HIV ab-, mother HIV+	4	1372	112	51
Symptomatic, HIV ab-, mother HIV-	8	1120	157	78
Asymptomatic, HIV ab-, mother HIV+	157	1056	128	66
Asymptomatic, HIV ab-, mother HIV-	224	1028	120	62

Of children born to HIV- mothers (many ill with other infections or malnourished), 17% had total Ig>1500; of children born to HIV+ mothers, 20% of uninfected children and 90% of infected children had total Ig>1500. Conclusion. High Igs were a sensitive marker of HIV infection even before symptom onset, and were uncommon in children ill with other infections.

W.G.P.10

INFECTION PAR HIV1 DANS LES 5 MATERNITES DE BRAZZAVILLE (R.P.CONGO) : FACTEURS DE RISQUE MATERNEL ET CARACTERISTIQUES DES NOUVEAU-NES

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Objectif : Identifier, dans un échantillon représentatif de parturientes les facteurs de risque de l'infection maternelle. Etudier les conséquences de cette infection pour le nouveau né.
Méthodes : De façon séquentielle, du 20/7 au 20/8/1988, 1406 parturientes ont été recrutées et testées pour anti-HIV1 (dépistage par test rapide/Organics ; vérification de la positivité en ELISA/Pasteur et confirmation en Western Blot/Dupont de Nemours).
Résultats : La prévalence de la séropositivité était de 3.0% (43/1406). Les risques relatifs (RR, I.C. à 95%) associés à la séropositivité ont été calculés pour chacune des caractéristiques maternelles :

Age	<21 ans	21-30ans	>30 ans		Quartiers	Périph.	Centre	
prévalence HIV	1.3%	4.6%	1.6%	p<.01		2.0%	6.0%	p<.01
RR (I.C. 95%)	1	3.6 (1.5-8.6)	1.3 (0.3-4.7)			1	2.3 (1.3-4.1)	
Hospitalisations>1980		non	oui		N° Unions	1	>1	
prévalence HIV		2.3%	6.9%	p<.001		2,1%	5,7%	p<.001
RR (I.C.95%)		1	3.0 (1.6-5.6)			1	2,7 (1.5-4.8)	

Les mères ne différaient pas pour les autres caractéristiques telles que le statut matrimonial, l'activité, ni, après ajustement sur l'age, pour leur histoire génésique. Les techniques d'analyse multivariée n'ont pas permis de prédire de façon satisfaisante leur statut HIV. Les enfants nés de mère respectivement anti-HIV1+ et anti-HIV1- ne différaient pas quant à la mortinatalité, au sex-ratio et au poids de naissance.
Conclusion : Le fait que l'infection HIV1 prédomine encore dans les quartiers centraux et dans certaines tranches d'age, invite à poursuivre la prévention à l'échelle de la population dans son ensemble (risques nosocomial et sexuel) Toutefois, les caractéristiques des mères ne permettent pas de prédire leur statut sérologique et donc de cibler des actions de prévention à l'échelon individuel (dépistage notamment).

W.G.P.11

UPDATE ON THE TRANSITION FROM HOMOSEXUAL TO HETEROSEXUAL AIDS IN TRINIDAD AND TOBAGO

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Trinidad and Tobago (pop 1.2 million) reported 389 cases of AIDS up to December 31, 1988 (32 cases per 100,000). The first case was recognised in 1983 and all 27 cases in 1983-84 were in homosexual/bisexual men. In 1985 there were 5 cases of heterosexual AIDS and 33 cases in homosexual/bisexuals. However, while there was only a 2 fold increase in homosexual/bisexual cases over the following three years, to 61 cases in 1988, there was a 12 fold increase to 66 cases among heterosexual AIDS cases and in 1988 there were more heterosexual than homosexual/bisexual cases of AIDS (66 vs 61). Notably, there has been a rapid increase of AIDS among women so that while in 1985 there were only 4 cases there was a 10 fold increase to 42 cases in 1988 during which interval there was only a 3 fold increase among men (36 vs 106). In 1985/86 all the cases of AIDS in women were infected by bisexual men. Intravenous drug abuse is not practised in Trinidad and Tobago and transfusion associated AIDS accounted for only 7 cases (1.8%). On the other hand, 36% of the homosexual/bisexual cases were in bisexual men.

Trinidad, therefore, serves as a model of the potential for transition from homosexual/bisexual to heterosexual AIDS, initially through bisexual activity and without the added risk factor of IV drug abuse.

W.G.P.12

CLINICAL MANIFESTATIONS OF AIDS IN QUITO, ECUADOR

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Objective. To evaluate the clinical manifestations of AIDS in Quito, Ecuador, in order to plan appropriate management of further AIDS patients, and add further information to the global picture of AIDS.
Methods. Review clinical data of all AIDS patients in Quito until June, 88, via chart review and personal contacts with patients and their physicians.
Results. As of June, 1988, only 10 patients had presented with clinical criteria for AIDS in Quito, (pop.:approx 1 million). (By Jan.30,1989 there were 20 AIDS cases in Quito, 40 in Guayaquil (pop.:approx. 2 million)and a total of 61 in Ecuador (pop.:approx.10 million)). The 10 AIDS patients were young (20-40 yrs. 90%), male (80%) Ecuadorian citizens (80%) infected via homosexual (40%) or heterosexual (30%) contact, IV drug abuse (20%), or blood transfusions (10%). They were infected in the US (90%) or Germany (10%). "SLIM DISEASE" (wasting caused by HIV) was present in 90%., with the wasting accompanied by chronic diarrhea in 70%, and by chronic fever and debility in 20%. Pulmonary disease was less frequent (40%), with no known cases of *P. carinii* pneumonia, but with one death due to untreated pneumonia. Other problems included skin disease (60%), hepatobiliary disease (60%), *Candida* esophagitis (40%) and neurological manifestations (40%). Mean time from first symptoms to death in 7 patients was 8 months; 2 AIDS patients are living 12 and 21 months after first symptoms of AIDS; with the 10th lost to follow-up.
Conclusion. "SLIM DISEASE" (wasting due to HIV) is an extremely common, rapidly fatal manifestation of AIDS in Quito, Ecuador. Other common diseases in AIDS are also present, but with very little *P.carinii* pneumonia.

W.G.P.13 A MODEL FOR AIDS OUTPATIENT CARE

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Objective. To present a model for AIDS patient care in implementation in Brazil.
Methods. It was carried out: (1) A qualitative and quantitative analysis of the AIDS demand for medical care, including the direct cost of hospitalization. (2) A nationwide analysis of the health care delivery system. (3) Proposal, implementation and evaluation of alternatives to reduce the economic and humanistic impact of the AIDS pandemic in Brazil.
Results. In December, 1988 there were 2,500 AIDS cases in Brazil, seeking for medical care, generating a demand for approximately 1,000 beds, which need to be expanded to 5,000, by 1990. The cost of a bed per day is high, around US$ 25,000 per patient/year. In addition secondary effects of AIDS can include the deviation of medical attention from other serious diseases, and the increase of the rate of endemic diseases, such as tuberculosis. The growing demand of AIDS cases and the impossibility of expanding the number of inpatient services as fast the pandemic, make AIDS a potential threat to the integrity of the health care system.
The model in implementation has two main strategies: preference for outpatient management using the whole health facilities and a wide health care workers training program. One of the objectives of such program is the suppression of professional rejection to AIDS patients. Highly efficient outpatient clinics are the critical point in the model, being reference to the health network. The high efficiency of these units is determined by the multidisciplinary team, by the availability of more complex diagnosis procedures, such as endoscopy and surgical biopsy and specially by the adoption of the day-hospital. The day-hospital, by which the patient returns to the community at night, can be used for intravenous chemotherapy, blood transfusions, hidratation and observation after invasive procedures. Another aspect which garantee the level of efficiency of these units is the free availability of drugs most prescribed. At the same time, alternative services (hospices, home care) has to be established with strong participation of the community. Preliminary evaluation has demonstrated that the model may reduce hospitalization.
Conclusion. This model may reduce the projected number of hospitalization, improve the quality of life of AIDS patients and decrease the cost. It should be implemented in developing countries.

W.G.P.15 Evaluation of HIV antibody tests in Brazil

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Objective: To compare the sensitivity, specificity and ease of performance of different serologic tests for HIV in panels of sera from Brazilians.
Methods: Brazilian serum panels (2 panels containing around 300 sera, half of each being HIV positive sera) were tested with the following kits: enzyme immunoassay (EIA): Abbott, Roche, Hoechst, Virgo, Organon and Salck; Virgo indirect immunofluorescence (IIF); Salck Passive Hemmaglutination (PH); Embrabio dot blot (DB) and Karpas cell test (CT). The parameters evaluated were the sensitivity, specificity, time consumed, equipments necessary and serum dilutions.
Results: ≥ 98% sensitivity: Abbott, Roche, Hoechst, Virgo EIA, Organon, Salck EIA, Virgo IIF and Embrabio DB; ≥ 95% specificity: Abbott, Hoechst, Virgo EIA, Organon, Salck EIA, Virgo IIF and Embrabio DB; <150 minutes consumed: Abbott, Virgo EIA, Organon, Hoechst, Virgo EIA, Salck PH and Karpas CT; 2 equipments: Salck PH, Karpas CT and Embrabio CT; undiluted serum: Hoechst.
Conclusions: Although several kits presented the sensitivity and specificity required by the Brazilian Ministry of Health, we think that to obtain a more accurate screening of blood it is necessary to perform lot-to-lot and proficiency evaluations. Evaluation of kits using panels constituted by endemic disease sera (Chagas' disease, schistosomiasis, leishmaniasis and malaria) are underway.

W.G.P.14 THEORY AND METHOD TO DEVELOP A REVISED CASE DEFINITION OF AIDS FROM EMPIRICAL CLINICAL DATA

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Objective. To review theoretical issues about defining and diagnosing AIDS, and to use discriminant analysis to revise clinical criteria for AIDS surveillance case definitions.
Methods. Seventy-nine variables associated with HIV positivity from a study of 110 HIV+ and 135 HIV- non-surgical hospital inpatients in Brazil (vide Soares, AB, *et al*) were applied on repeated iterations of STEPDISC (SAS, Inc.) to identify the 17 best. The SAS DISCRIM procedure was then applied on a random subset of the cases (n=137), producing the following discriminant score function (for convenience, constant and coefficients multiplied by +100 and rounded to nearest integer; coefficients of 0 eliminated; variable pos=1, neg=0):
SCORE = -84 +100(oralcand) +30(diarr>1mon) +29(anyTB) +20(anyVDnotHerp) +20(splenmeg) +16(fever) +15(convulsions) +11(dermatitis) +7(slowfingertaps) +6(MD-Dx'dZoster) +5(intinfilts) +1(neurvom) -35(oralulc>1mon) -7(anyCAnotlymph) -3(cottwool)
Patients with scores more positive than the cutoff of -9 are predicted HIV+. External validation against the other group of cases (n=108) not used to derive the function found the sensitivity of the prediction to be 92% and the specificity 91%.
Conclusions. The 92% sensitivity of this discriminant function in predicting HIV+'s improves on existing case definitions whose sensitivities range from 50 to 59% (vide Rodrigues, LGM, *et al*). Specificity is only about 8% lower than those other definitions. This data will be useful in developing diagnostic algorithms for diagnosing AIDS which add clinical criteria to the existing pathologic and serologic ones.

Facteurs de risque liés aux MTS (partie 1)
STD Risk Factors (Part 1)

W.G.P.16 PREVALENCE OF HIV SEROPOSITIVITY AMONG STD PATIENTS IN FREETOWN - SIERRA LEONE

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Objective. To determine the prevalence and possible inter relationship between HIV seropositivity and various other established STDS'.
Method. 332 patients attending the national referral STD clinic at Connaught Hospital, Freetown, the capital, were chosen by simple random sampling method and investigated for HIV antibodies during the period January - August 1988. Sera from these individuals were investigated by ELISA and twice positive specimens were confirmed by Western Blot Assay. Other STDs were diagnosed in the same clinic through urine, blood, urethral/cervical swabs, excudates from genital ulcerations examinations.
Results. 15/332, (4.5%) were seropositive, of which HIV1 7/15, (46.6%), HIV2, 6/15, (40%), HIV1 & 2 combination 2/15, (13.3%). The distribution of HIV seropositivity in various STDs are: Syphilis 6, LGV 2, Herpes progenitalis 1, Gonorrhoea 4, Candidiasis 1, and Trichomoniasis 1.
Conclusion. STDs, particularly genital ulcerative diseases(GUD) are common in Sierra Leone and may contribute to the increase risk of HIV among Heterosexuals.

W.G.P.17 TARGETING TRAVELLERS FOR AIDS PREVENTION EDUCATION

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Objective: This paper demonstrate the need to target transoceanic travellers for AIDS education with innovative strategies. There is overwhelming evidence that the primary mode of spreading the AIDS virus is through sexual activities. As a result, educational efforts have focused on changing sexual behaviors. Most programs seem to target "gay men", adolescents and ethnic minorities. However,the ease of air travel has shrunk the world into a complex "GLOBAL VILLAGE". It is the concept of the global village that bridges the continents. Using the global distribution of cases and the continued spread of AIDS around urban epicenters as background, this paper focus on travellers as a group that may be grossly under targeted for AIDS education. The author suggest that the AIDS information handout for travellers is not meeting the needs of a global strategy for AIDS prevention. In its place, we suggest that airlines should be encouraged to air 1-2 minutes safety programs on AIDS. The other arm of the proposal is to encourage airports to carry billboards with AIDS relevant messages.

W.G.P.18 HIV INFECTION IN HETEROSEXUALS FROM BUENOS AIRES CITY CONSULTING FOR VENEREAL DISEASE.

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Objective. To determine the prevalence of HIV antibodies among heterosexuals consulting for a sexually transmitted disease (STD) without suspecting HIV infection.
Methods. Among sexually active heterosexuals consulting for a STD between April 1987 - December 1988, a group of 216 males (median age 22) and 109 females (median age 27) agree to participate in this study. HIV antibodies were screened by EIA and gelatine particle agglutination and confirmed by Western blot.
Results. Table shows prevalence of HIV antibodies in heterosexuals according to drug addiction (DA).

DA	Males		Females		Total	
	No	%	No	%	No	%
IVDA	20/27	74.1	3/9	33.3	23/36	63.9
Non-addicts or non-IV DA	19/189	10.1	3/100	3.0	22/289	7.6
TOTAL	39/216	18.1	6/109	5.5	45/325	13.8

In 13.8% of heterosexuals HIV antibodies were detected, 51% of which were IVDA. Among non-addicts or non-IV DA, 11% were drug abusers but not by IV route, 17% were promiscuous and 30% had more than one STD. Promiscuity and multiple STD appeared equally distributed between HIV-infected and non-infected heterosexuals.
Conclusion. The 13.8% HIV prevalence found among sexually active heterosexuals consulting for a STD but not for HIV, suggests that HIV incidence in the population of Buenos Aires City might be higher than expected.

W.G.P.19 CASE CONTROL STUDY OF HIV POSITIVITY AMONG MALE INTRAVENOUS DRUG ADDICTS (IVDA) IN BANGKOK.

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__Objective__. To determine risk factors for HIV infection in an explosive epidemic among Bangkok IVDA.
__Methods__. In July 1988,452 male IVDA registered at 6 detoxification clinics consented to be interviewed and give a blood sample.
__Results__. 43% were HIV+.Compared to HIV- controls,no relationship was found with age,marital status,recent tatooing or blood transfusion,history of STD or other sexual variables.Associated with HIV+ status were 1.Injecting in company with others,OR 1.9(95CL 1.1-3.2),2.Sharing injection equipment,OR 2.6(1.5-4.4),3.Sharing same "load",OR 3.2(1.7-6.0),4.Injecting at seller's house,OR 1.5 (1.0-2.3),and 5.Time in jail,OR 1.5(1.0-2.2).Only 2.and 3.remained significant after multivariate analysis.Compared to non-sharing IVDA(18% of subjects),those with characteristics 2.through 5.had a cumulative OR of 14.9.
__Conclusion__. Widespread "works" sharing behavior led to an increase in HIV+ prevalence among Bangkok's IVDA from less than 1% in December 1987 to 16% in February,and 44% in September 1988.An intervention effort to change drug use behavior is underway.

W.G.P.20 SEXUAL BEHAVIOR AND PERCEIVED RISK FOR AIDS AMONG BANK EMPLOYEES AND SPOUSES IN KINSHASA

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__Objective.__ To determine the perceived risk for AIDS and its association with sexual behavior in a selected population.
__Methods.__ 2516 bank employees and spouses were interviewed between 11/87 and 3/88 as part of an annual medical exam.
__Results.__ The perceived risk for AIDS was "very high" or "high" for 30%, "low" for 25% and "nil" for 46%. Those considering themselves at very high or high risk were polygamous, separated or divorced (p=.0081); from Equateur or Shaba Region (p=.00004); knew someone with AIDS (p=.0018); and did not consider AIDS preventable (p=.0007). Married persons with extra-marital contacts (EMC) considered themselves at higher risk for AIDS ($p<10^{-4}$) and were more likely to have changed sexual behavior because of AIDS ($p<10^{-4}$).
__Conclusions.__ One-third of this population considers itself to be at high risk for AIDS. Those who are best educated are most likely to have EMC and least likely to consider themselves at risk. Further education is necessary to reverse pessimism, promote realistic perceptions and encourage further positive behavior changes in this population.

W.G.P.21 ANTI-HIV ANTIBODIES IN MALE AND FEMALE STREETWALKERS IN BUENOS AIRES CITY.

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__Objective__. To determine the prevalence of HIV infection among prostitutes in Buenos Aires City.
__Methods__. A group of 199 male and female prostitutes were serologically screened between September 14 - November 3, 1988 for HIV, and T. pallidum infection. Prostitution is not legal in Buenos Aires City. The population studied was overnight in jail because of their activities as streetwalkers in Buenos Aires City. They were invited to participate in this study on the understanding that their identity would remaing anonymous and the results obtained would be personally and voluntarily collected. Written informed consent was obtained from each participant. Anti-HIV antibodies were screened by EIA and gelatine particle agglutination and confirmed by IF and Western blot. VDRL and microagglutination tests were used for syphilis serology.
__Results__. The group consisted of 172 female prostitutes ranging in age from 18 to 72 (median 28 years) and 27 male prostitutes ranging in age from 18 to 37 (median 20 years). Total seroprevalence for HIV was 9.5% (5.8% for females and 33.3% for males). 23.9% of 188 prostitutes tested were seropositive for T. pallidum (21% females and 42% males). T. pallidum seropositivity was equally distributed between HIV positive and negative. Of the population studied 4.5% related a history of IVDA. 21% of the HIV-positive and 3% of the HIV-negative streetwalkers were IVDA. At the time of writing only 15% of the group went to the Hospital to pick up the results.
__Conclusion__. In Buenos Aires City a prevalence of 33% for HIV and 42% for syphilis was found among male streetwalkers. For female streetwalkers the prevalence was about 6% for HIV and 21% for syphilis. The female prostitute is an important group to study for better understanding of the heterosexual spread of HIV in Buenos Aires City.

W.G.P.22 COMPARISON OF NEW HIV-2 VIRAL ISOLATES BY SOUTHERN BLOT AND PCR

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__Objective.__ To isolate HIV-2 viruses from individuals of varying health status, and determine their heterogeneity.
__Methods.__ PBLs from seropositive individuals were cocultivated with PBLs from noninfected donors, and transferred to a variety of cell lines including HUT-78, SUP-T1 and U937. Infected-cell DNA was isolated and used as a template for PCR or for Southern blot analysis with an HIV-2 env-region probe. DNA was isolated simultaneously from HIV-2 (NIH-Z) and HIV-2 (SBL-6669) infected lines, and used for reference. Four HIV-2 specific PCR primers and probe sets were used. These were chosen on the basis of being conserved in available HIV-2 sequences, and not being present in HIV-1.
__Results.__ Virus was isolated from four different individuals:

__Isolate__	__Country of Origin__	__Sex__	__Health Status__
AS	Guinea-Bissau	F	Healthy
TY	Portugal	F	Sick, now recovered
MS	Ivory Coast	M	Died of AIDS
LP	Cape Verde	M	AIDS

All four isolates have unique restriction enzyme patterns. When isolates where analyzed in more than one cell line, some variation in restriction pattern was observed. All four HIV-2 specific primer-pairs PCR amplified DNA from TY, MS, LP, NIH-Z, and SBL-6669. AS served as a template for only three out of the four primer-pairs. The HIV-2-specific PCR reagents developed here will be useful for confirmation of HIV-2 infection in individuals with ambiguous serological profiles.

W.G.P.23 TENDENCY OF ANTI HIV ANTIBODIES IN MASCULINE HOMOSEXUALS DURING THE LAST FIVE YEARS IN GUADALAJARA, JALISCO.

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__Objective__. To evaluate the prevalence of anti HIV antibodies among male homosexuals of Guadalajara during the last five years.
__Methods__. Five samples chosen by the snowball technique from the male homosexual population, as follows: during 1984 (n=23), 1985 (n=268), 1986 (n=226), 1987 (n=238) and 1988 (n=325); determination of anti HIV antibodies were ascertained by the ELISA assay and confirmed by IF and/or WB.
__Results__. The seroprevalence obtained was as follows:

	1984		1985		1986		1987		1988		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%
POSITIVES	4	17.3	62	23.1	65	28.7	72	30.2	97	29.8	300	27.8
NEGATIVES	19	82.7	206	76.9	161	71.3	166	69.8	228	70.2	780	72.2
TOTAL	23	100.0	268	100.0	226	100.0	238	100.0	325	100.00	1080	100.0

The range of age of the sample were from 14 to 55 years with an average of 30.2. Of the total 27.8% were positive, making an average of 25.8% of the sample analized. There were no differences between the results of the confirmatory and screen tests used in this study.
__Conclusion.__ The number of cases in the homosexual population are apparently stable and probably this is the beginning of their decrease, and the increase of the casuistic in the heterosexual and pediatric group, as observed in the rest of the world.

W.G.P.24 HIV TRANSMISSION AMONG HETEROSEXUAL COUPLES IN MEXICO

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__Significance:__ The AIDS epidemic in Mexico has shown an increase in heterosexual transmission from a level of 2% at the beginning of 1987 from 2% at the end of 1988.
__Objective:__ To investigate sexual practices, condom use and social characteristics associated with HIV transmission among heterosexuals.
__Methods:__ The study was conducted among a heterosexual population of 58 HIV-seropositive blood donors who were infected in 1986. Twenty-three couples with the husband found positive at donation were identified. The women had no risk factors other than sexual contact with their husbands. The information was collected and analyzed retrospectively in a case-control design.
__Results:__ There were 7/23 (30%) female partners who were seropositive at the beginning of the study. The average age and education were 30 and 4 years, respectively. The retrospective information showed the following:

__Characteristics of women__

	__HIV+ (n = 7)__	__HIV - (n = 16)__
Housewife	85.7%	81.2%
Married	14.2	50.0
> 5 years with spouse	57.1	56.2
Pregnant	28.5	12.5
Practice anal intercourse	14.2	12.5
Use condoms	0.0	18.7
STDs Hx	28.6	12.5

Unprotected vaginal sexual intercourse per week was associated with HIV infection (X^2 for trend = 8.9; p value < 0.05). Seroconversion occurred among five women retested 12 months later.
__Conclusion:__ The increase in heterosexual transmission could be attributed mainly to the frequency of unsafe sexual contact, and low adherence to condom use. This study emphasizes the necessity for increasing educational programs focused specifically on condom use among the heterosexual population.

Épidémiologie
Epidemiology

W.G.P.25 MALE BISEXUALITY AND AIDS. PRESENT STATUS AND PERSPECTIVES IN MEXICO

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Objective. To define the sociodemographic profile, sexual practices and HIV infection prevalence in bisexual men who attend an HIV detection center in Mexico City.
Method. A survey which included HIV test was done in 1676 homosexual and bisexual men, who attended an HIV detection center in Mexico City from January to December, 1988.
Results. 740 men, (44%) declared having had sexual relations exclusively with men (H), 945 (56%) with men and women (B); 643 (87%) of homosexual men had at least one sexual partner during the last 6 months (Ha), 813 (86%) of bisexual men had at least one sexual partner during the last 6 months (Ba), of these, 373 (46%) had only male sexual partners during the last six months (Bam), 115 (14%) had only female sexual partners during the last 6 months (Baf) and 325 (40%) had both male and female sexual partners during the last 6 months (Baml). The HIV prevalence was as follows: H: 35%; B: 28%; Ha 34%; Ba 27%; Hna 43%; Bna 38%; Bam 31%; Baml 23%; Baf 21%. 88% of seropositive subjects were in clinical stage II, 12% were in III, none in IV. B had fewer school years, belonged to lower socioeconomic levels,15% had children. Frequency of stable heterosexual partner was 8% (Bam) to 47% (Baf), anal coitus with women was most frequent in Baml (43%). STD were most frequent in Ha (66%), and Ba (68%). Passive anal coitus (OR:1.5-6.1), rectal douches (OR:1.7-6.2), STD (OR:1.0-1.8), and increasing number of male partners (p<.05) were associated with HIV infection in all groups.
Conclusions. Bisexuality in Latin American countries has different patterns than in other cultures and has modified the epidemiological pattern of HIV infection. Results show that bisexual practices are frequent, risk practices associated to HIV seropositivity are similar to the ones described in homosexuals. While heterosexual practices constitute protective factors for bisexual men, they represent a risk of transmission to their heterosexual partners.

W.G.P.26 HTLV-I SEROPREVALENCE IS INCREASED AMONG THOSE LIVING AT LOW ALTITUDE IN JAMAICA

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Objective. To determine demographic and geographic determinants of human T-lymphotropic virus type I (HTLV-I) seroprevalence in Jamaica, an endemic island.
Methods. During 1985 and 1986, we measured HTLV-I antibodies using ELISA and Western blot in 13,000 Jamaican workers.
Results. HTLV-I seroprevalence was strongly age- and sex-dependent, rising from 1.9% (ages 10-19) to 9.0% (ages over 70) in men and from 2.0% (ages 10-19) to 18.6% (ages over 70) in women. Women were more likely to be seropositive than men (adjusted odds ratio = 2.23). Black men had marginally higher HTLV-I seroprevalence (M-H chi square = 0.06), but black women had equivalent prevalence to women of other races. Current residence at altitudes of less than 1000 feet (p = .003) and birthplace outside of the Kingston metropolitan area (women only)(p = .001) were significant risk factors for HTLV-I seropositivity, after stratification by age and gender.
Conclusion. Older age, female gender, and black race are known risk factors for HTLV-I infection in endemic areas. Higher HTLV-I prevalence in those residing at low elevation suggests transmission by an environmental vector, i.e., by arthropods.

W.G.P.27 HIV SEROPREVALENCE SURVEY AMONG HIGH RISK FEMALES AT MOMBASA, KENYA.

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Objective: To assess the prevalence and distribution of HIV infection among female prostitutes at Mombasa.
Method: 366 high risk females working in bars as barmaids, soliciting for men in bars and in Mombasa streets plus women known to entertain men in their houses in certain parts of Mombasa town were sampled using cluster method and recruited into the study. The women were asked to report to Communicable Diseases Control department at Ganjoni, Mombasa. While at the Ganjoni clinic, verbal consent was taken. 5 mls of blood samples were collected from the women and blood sera was later separated at Coast General hospital Laboratory, Mombasa and Enzyme Linked Immunosorbent Assay (ELISA) test using organon kit was done. A written questionnaire was administered by asking the study subjects questions and filling in forms.
Results: 144/366 (39.34%) women were ELISA positive for HIV; 80/366 (21.86% were positive for syphilis; 32/366 8.74% were positive for both HIV and syphilis; 48/366 (13.11%) were positive for syphilis alone and 112/366 (30.6%) had HIV alone.
Conclusion: The HIV infection among high risk females in Mombasa is definitely high and there is urgent need to organise counselling sessions for the patients.

W.G.P.28 PREVALENCE OF HIV-1 ANTIBODIES IN STD PATIENTS.

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Objective. To determine the prevalence of HIV-1 antibodies in patients with STDs attending one of the clinics in Addis Ababa, Ethiopia.
Methods. Sera from 500 consecutive STD patients (496 males and 4 females) were examined for the presence of HIV-1 antibodies. The serological tests were carried out by ELISA (Wellcozyme) and confirmed by Western Blot (Biorad).
Results. Of the 500 tested 60 (12%) were HIV-1 antibody positive. The prevalence of HIV-1 antibodies varied with the type of STD:

STD diagnosis	No. of patients	HIV-1-Ab	%
Gonorrhea	194	17	8.8
Chancroid	85	16	18.8
Nongonococcal uretheritis	117	5	4.3
Lymphogranuloma venerum	21	3	14.3

Conclusion. The prevalence of HIV-1 infection among STD patients is 12%. This infection rate is higher than that of blood donors (1.6%) but lower than figures for prostitutes in Addis Ababa (18.8%).

W.G.P.29 HIV-1 PREVALENCE IN NAIROBI SENTINEL POPULATIONS.

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Objective. To monitor the rate of change in HIV-1 in at-risk populations since the onset of the epidemic at the beginning of the decade.
Methods. Data accruing from all the studies related to sexually transmitted diseases (STD) and HIV conducted under the auspices of the World Health Organization collaborative centre for STD research and training within the Department of Microbiology, University of Nairobi from 1980 to 1988 were reviewed. The populations studied included men and women attending an STD clinic, pregnant women and a cohort of prostitutes living in one geographically defined area of Nairobi.
Results. HIV seropositivity (HIV+) rates increased from 0 to 24% in STD clinic patients, with the largest increase occurring in men with chancroid. Among prostitutes, the HIV+ increased from 3% to 80%. HIV+ in pregnant women increased from 0 to 3.7%.
Conclusion. HIV infection rate is spreading most rapidly in the Nairobi populations with the highest sexual activity. A slow but steady increase in prevalence of HIV+ in pregnant women suggests substantial spread to the general population.

W.G.P.30 HIV ANTIBODY TESTING AT AN ALTERNATIVE TESTING SITE IN HONG KONG

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Method: The AIDS Counselling and Health Education Service was established in November 1985 and provided anonymous and confidential HIV antibody test for individuals at risk of HIV infection. The clients were encouraged to discuss their at risk behaviour and appropriate counselling was given.

Result: Up to the end of December 1988, a total of 2,753 individuals agreed to have HIV antibody testing and 7 were found to be seropositive.

Result of HIV Antibody Testing

Risk Group		No. tested	No. +ve (%)
Homo/Bisexual -	Total	302	7 (2.3%)
	Chinese	264	5 (1.9%)
	Non-Chinese	38	2 (5.3%)
Heterosexual -	Chinese	2010	0
	Non-Chinese	270	0
IV Drug Abuser -	Chinese	62	0
	Non-Chinese	4	0

A total of 128 individuals requested HIV antibody testing because of various forms of contact with known HIV-infected individuals and only one homosexual partner of an HIV carrier was found to be seropositive.

Form of contact	No. tested	No. +ve (%)
Male homosexual partner	7	1 (14%)
Male heterosexual partner	3	0
Female heterosexual partner	6	0
Health care worker	84	0
Casual/household contact	28	0

Follow up HIV antibody tests were performed for 82 seronegative homosexuals and 263 heterosexuals after a median period of 8.7 months (0.9-32.8) and 5.1 months (0.3-32) respectively and only one homosexual showed seroconversion after 27.2 months.

Conclusion: The prevalence of HIV infection in a sample of homosexuals in Hong Kong ranged from 1.9-5.3%, being higher in non-Chinese. The prevalence in the heterosexual population is below 0.05%.

W.G.P.31 Approche Communautaire de la Lutte Contre le SIDA en Haiti

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Le SIDA, phénomène biologique modifiant l'intégrité moléculaire de la cellule humaine, est aussi un problème social aux incidences morales, économiques et culturelles non négligeables.

Dans les pays en voie de développement comme Haiti, confrontés à l'insuffisance des services sanitaires de qualité, à la marginalité d'un large secteur de la population, et surtout à un taux élevé d'analphabétisme, l'action participative de la communauté, renforcée par une intégration multisectorielle dynamique semble être la méthode d'approche la plus efficace et la mieux adaptée. La structure organisationnelle du système national de santé régionalisé offre l'avantage d'une mobilisation progressive passant par une action concertée du niveau central, régional et communal. Cette transmission à triple palier permet d'atteindre les diverses couches sociales en utilisant les canaux de communication correspondant au degré de compréhension du public visé, tels les messages écrits, les conférences, les spots rediotélévisés, les contacts interpersonnels, les forums populaires, le porte-à-porte et les rencontres avec les leaders naturels.

Les médecins traditionnels, les sagesfemmes et le prêtres vodou participent comme canalisateurs ou animateurs à des journées communales de motivation sur l'éducation et la prévention tandis que des boys-scouts et des agents communautaires aident à réaliser des séances éducatives à l'occasion des fêtes patronales.

Cette perspective d'une participation consciente et volontaire des diverses composantes de la population est l'une des demarches tendant à relever un grand défi national: Epargner le pays de la destruction de sa jeunesse et de sa force productive du travail par une évolution anarchique du SIDA.

W.G.P.32 THE FAMILY AND CARE-GIVING IN UGANDA

I. Maxine Ankrah*, Monica Lubega, Stephen Nkumbi; *Department of Social Work and Social Administration Makerere University, Kampala, Uganda., Counseling Center, University Hospital, Kampala, Uganda.

Objective: To examine the ways that AIDS was reinforcing as well as changing the traditional attitudes and practices of families toward sick members.
Method: Pretest data of a quantitative survey of three rural and one urban district for the WHO-intercountry survey is analyzed and compared to observations of 40 families studied intensely over a five-month period.
Results: Rural populations do not admit having seen AIDS patients, or accept that their relatives suffer from the disease. They agree to a diagnosis of some other disease of witchcraft. Care is given by the family or other relatives. Where AIDS is associated with promiscuous behaviour, the persons who infected the patient should give care, or the patient, believed to be able to afford many partners, should care for him/herself. Since AIDS is seen as affecting heaviest the poor who cannot afford treatment for needles, medicines and hospitalization of relatives, governament must support families with AIDS cases. The extreme measures recommended included the guarantining of persons found to be HIV+.
Conclusion: Increased support of community based efforts to educate rural populations, the majority, and to identify local sources of family support indicated.

Aspects cliniques (partie 2)
Clinical Features (Part 2)

Th.G.P.1 HIV AND HTLV-I INFECTION AMONG HOMOSEXUAL AND BISEXUAL MEN IN KINGSTON, JAMAICA

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Objective. To evaluate prevalence and risk factors for infection with HIV and HTLV-I in Jamaican homosexual men.
Methods. From 8/85 through 1/86, 125 homosexual or bisexual men had ELISA/Western blot for HIV/HTLV-I and questionaire data.
Results. 12 men (10%) were seropositive for HIV and 6 (5 %) for HTLV-I; one man had possible co-infection with HIV and HTLV-I. Sexual contact with men in the U.S.A. was common, and was weakly associated with HIV infection (p=0.11). The median number of homosexual partners was 12 per year (range 0-135) and a greater number of partners per year was associated with HIV seropositivity (p=0.01). Lymphadenopathy was identified in several HIV seropositives. For HTLV-I there were no obvious risk factors identified, and age-adjusted seroprevalence was not significantly higher than that of heterosexual men.
Conclusions. HIV appears to have entered this population via sexual contact with foreign men and spread efficiently among men with a greater number of sexual partners. The frequency of bisexuality (65/125 men) and the 11% HIV prevalence in bisexual men suggest that secondary infection of female sexual partners may occur.

Th.G.P.2 RISK FACTORS FOR HTLV-I INFECTION IN PREGNANT HAITIAN WOMEN

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Objective. To identify factors associated with HTLV-I infections in pregnant Haitian women.
Methods. Pregnant Haitian women were screened for HTLV-I, (ELISA and Wb) HIV-1, and syphilis.
Results. Of 2070 women, 89(4.3%) were seropositive for HTLV-I. Seroprevalence rates increased with age from 2.3% in women 14-19 years old to 8.4% in women over 34 years old. Regression analysis revealed independent associations with alcohol consumption (OR= 5.2,95%CI=1.2,23.2), HIV-1 seropositivity (OR=3.7, 95% CI=2.1, 6.8), smoking (OR=2.1,95%CI=1.0,4.2), and age >34 years (OR= 2.0,95% CI=1.1,3.9). HTLV-I seropositive women did not differ from seronegative women in marital, educational, or socioeconomic status, syphilis serology or prior use of family planning. Other potential risk factors, IV drug use and transfusions, are not prevalent in this population.
Conclusion. The increasing seroprevalence rates with age and the association with HIV-1 seropositivity suggest that HTLV-I is transmitted through sexual contact in this population. As our studies of HIV-1 risk factors also demonstrated, an association exists between seropositivity and smoking. We have undertaken additional studies in this population to determine the basis of this association.

Th.G.P.3 HIV INFECTION AMONG PROSTITUTES AND TRANSVESTITES IN BRAZIL

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UNICAMP, Campinas, Sao Paulo, Brazil.

During 1988 HIV testing was done among prostitutes and tranvestites who spontaneously reported to a health clinic located in the prostitution area in Campinas, southeastern Brazil. Tests were performed using the ELISA (recombinant DNA) antibody assay and Western-Blot (WB) antibody assay. One hundred and two individuals were tested: 21% were male and 79% female. The age ranged from 14 to 50 years but 61% were 20 to 30 years old. Most (79%) were prostitutes, 19% male homosexuals and 2% male bisexuals. Among the prostitutes 15% reported IV drug use. The first 42 individuals were tested by ELISA (2 samples) and WB. 35.7% had antibodies by both methods and 64.3% did not have antibodies by both methods, showing a sensitivity and predictive value of 100% for the ELISA test when compared to the WB test in this high risk population. The 60 ensuing patients were tested only through ELISA. The overall prevalence of HIV antibody positive individuals in the population studied was 21.5%.

Th.G.P.4 MERCHANT SEAMEN: A RISK POPULATION FOR HIV INFECTION?

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University of Valparaíso, Valparaíso, Chile.

In Valparaíso (principal port of Chile) 3/30 HIV infected people had been heterosexual merchant seamen, 2 of them had transmitted the infection to their wives.
Objective. To determine if merchant seamen could be a risk group for HIV infection and a factor in the propagation to the female population in Chile.
Methods. After informed consent was obtained a questionnaire was administered to 452 healthy seamen with at least 1 year of international travels. Simultaneously blood was drawn for HIV Ab and HIV Ag determination (Organon).
Results. The mean age was 36.7 years. 75.9% had medium or high level scholarity. In the last five years, 64.6% had frequently travelled abroad. During this period 7.3% had undergone surgical procedures, 1.3% had received blood transfusion, 35.2% inyections, and 3.10% tattoos. 100% of the subjects declared heterosexuality, 78.3% were married. 65.6% admitted multiple sexual intercourse predominantly with prostitutes of South America (Ecuador, Perú, Brasil) and Europe (UK,FRG) and 22.3% other S.T.D. Only 3.9% used condom. Marital status and education were not significantly associated with risk sexual behaviour and use of condom. HIV Antibody and HIV Antigen was not detected in 442 and 249 serum samples tested.
Conclusion. HIV infection was not demonstrated in this study, however the high frecuency of sexual contact with different foreign prostitutes may be a risk factor for this group and their female partners in Chile.

Th.G.P.5 PREVENTIVE INTERVENTION FOR HIV IN STD CLINICS IN ZAMBIA.

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Zambia is the only sub-saharan African nation with a STD control programme. It was launched in 1980 and has expanded to include a network of 38 STD clinics providing standardised treatment, contact tracing, counselling and surveillance. The male:female attendance ratio has improved from 5:1 in 1980 to 2:1 in 1987. The prenatal syphilis screening and treatment programme introduced in 1984 has reduced seroprevalence of syphilis in pregnant women in Lusaka from 12.8% in 1983 to 8.0% in 1987.
With high seroprevalence of HIV among STD attendees, it is single, easily accessible target population where health education, counselling and condom promotion can be highly successful in reducing HIV transmission.
Conclusion. Other nations can benefit from this model programme to establish similar programmes and introduce preventive intervention for HIV.

Facteurs de risque liés aux MTS (partie 2)
STD Risk Factors (Part 2)

Th.G.P.6 DETECTION OF HIV-1 FROM FILTER PAPER BY POLYMERASE CHAIN REACTION (PCR).

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Objective: To determine the suitability of collecting whole blood specimens on filter paper for HIV-1 DNA detection by PCR.
Babies born to HIV-1 seropositive mothers may carry anti HIV-1 antibodies which may have been transferred across the placenta.
At present, one must either isolate HIV by cocultivation or demonstrate viral DNA to determine the actual infection of the newborn. PCR is a newly developed method which enables detection of a minute amount of DNA.
Methods. Blood from known HIV-1 seropositive patients and known controls was collected by freshly spotting Whatman #3 filter paper, approximately 1 cm in diameter. The papers were kept in plastic bags at room temperature for 4-5 weeks. DNA was extracted by digestion with SDS and proteinase K followed by phenol-chloroform extraction and ethanol precipitation. Pellets were resuspended in 100 µl TE buffer. 2-5 µl of the DNA suspension was then used for DNA amplification by PCR. PCR was performed using HIV-1 specific primers for the gag, env, and LTR regions. The PCR product was dot-blotted and hybridized with p^{32} labelled probes of these three regions. Results were compared to HIV-1 DNA isolated from infected tissue cultures.
Results. We performed PCR amplification of DNA extracted from whole blood collected on filter paper from HIV-1 seropositive patients. Using this technique we have been able to detect the presence of HIV-1 viral DNA in minute quantities of blood.
Conclusion. Detection of HIV-1 by PCR, from whole blood collected on filter paper can be performed effectively. This method can facilitate diagnosis of HIV-1 in situations where (1) storage of blood may be logistically difficult: ie. in developing countries and /or (2) when the amount of blood available is very small, i.e. in newborns.

Th.G.P.7

LIAISON ENTRE LA DENSITE OPTIQUE EN ELISA ET LE RESULTAT DU WESTERN BLOT CHEZ LES DONNEURS DE SANG DE BRAZZAVILLE (Congo)

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Il existe au Congo un taux d'environ 40% de sérums positifs en ELISA et douteux en Western blot (WB) car contenant des anticorps anti-core, le plus souvent anti p24 sans anti gp.
Nous avons tenté de trouver une liaison entre la densité optique en ELISA et le résultat en WB.
Le réactif utilisé est ELAVIA Pasteur dans lequel le seuil positif est de 0.300. Cette étude a été faite sur 230 sérums et a donné les résultats suivants :

	0,3 < DO < 1	DO > 1
Western blot négatif	76	4
Western blot p24 isolé	55	9
Western blot positif	5	81

Cette distribution diffère de façon très hautement significative de celle qui aurait été obtenue par hasard (Chi carré = 162, p<0,0001).
Si on assimile les sérums p25 isolée aux sérums négatifs, l'odds ratio est de 163 (de 74 à 361). On peut donc définir la positivité en ELAVIA par une DO supérieure à 1, afin d'"économiser" les réactifs de Western blot.

Th.G.P.8

RAPID METHOD FOR DETECTION OF HIV1 AND HIV2 INFECTIONS : EVALUATION OF SENSITIVITY AND SPECIFICITY

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Objective : Evaluation of sensitivity and specificity of a rapid test (HIV CLONATEC) in the diagnostic of HIV1 and HIV2 infections by comparison with ELISA methods and western blots.

Methods : This rapid HIV test (CLONATEC/V-TECH) is an immunofiltration device which involves synthetic peptides (SYNTRO) as antigens to detect anti-HIV1 and anti-HIV2 antibodies.

Results : 484 sera from intravenous drug addicts were tested in the rapid test. 272 samples are positive for anti-HIV1 antibodies in ELISA (Vironostika anti-HTLV III - ORGANON / ELAVIA Ac-Ab-AK I - PASTEUR) and 212 samples are negative (ORGANON). 271 are positive in the rapid test with the HIV1 peptide (sensitivity of 99,6 % for the HIV1 peptide). 409 sera from the same group of samples were tested for the presence of anti-HIV2 antibodies. 314 are negative, 19 are unconclusive and 76 are positive in the ELAVIA Ac-Ab-AK II (PASTEUR). All are negative in the rapid test with the HIV2 peptide. Unconclusive and positive sera in the HIV2 ELISA are positive for anti-HIV1 antibodies in the two HIV1 ELISA. 34 sera among the 76 positive were tested by western blot (Novapath TM Immunoblot Assay (BIORAD) for HIV1 and Lav blot II (PASTEUR) for HIV2). All these sera were confirmed to be anti-HIV1 specific and no reaction was observed against envelop (gp 105) proteins in the HIV2 blot. All these sera are negative in the rapid test with the HIV2 peptide. These results show the great specificity of the HIV2 peptide in the rapid test.

Conclusion : 484 sera from a high risk population were compared in two Elisa tests, in the Target test and confirmed by western blot. The sensitivity of the rapid test is 99,6 % and specificity is 100 %.

Th.G.P.9

MODIFIED WESTERN BLOT ASSAYS FOR HIV INFECTION

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Six thousand sera were screened for HIV infection as a serosurveillence exercise at the P.G.I.M.E.R., Chandigarh, one of the national surveillence centers. The overall positivity rate was 3% by ELISA. Western Blot assay is the acid test for confirming a diagnosis of HIV infection but the cost of WB kit is prohobitive. It was thus imperetive to evolove a more economical system in developing countries. In the present study various reaction systems were tried:a)Protein A labelled to peroxidase, b) a three step procedure using anti-human rabbit and anti-rabbit labelled to peroxidase, c) an equivalent of a PAP system in tissues. It was found that results obtained with these reagents were comparable to those of avidin/biotin reagents supplied along with the kit. The strips stored at 4°C for 12-18 months also gave satisfactory results. The background was minimum with protein A.
Thus with indigenously raised antisera and protein A conjugated peroxidase effective time and cost of WB can be reduced substantially. The system can be applied to cases with strong clinical suspicion. The Dupont kit may be reserved for borderline cases.

Th.G.P.10

FDA REFORM: AN ACTIVIST PERSPECTIVE ON THE NEED FOR LEGAL AND REGULATORY CHANGE.

Harrington, Mark; Eigo, J.; McCarthy, M.; Long, I.; Kirschenbaum, D.Z. AIDS Coalition to Unleash Power, New York NY, USA.

Objective: To propose methods of removing regulatory and legal obstacles to faster drug trials and wider access to experimental treatments. Methods: Analysis of protocols, budgets, subject demographics, oversight hearings and discussions with officials. Discussion: Drug approval in the USA takes 8-10 years, longer than many PWA's can expect to live. Current drug approval standards lag behind advances in biotechnology, statistics modeling, toxicology, immunology and virology, and patient advocacy. FDA oversight, inadequate until the NDA stage, is often arbitrary and restrictive. Companies conduct poorly designed trials wasting of time and lives. Poor people cannot participate in clinical trials due to lack of third party reimbursement. Conclusion: FDA must redefine toxicity standards and efficacy endpoints flexible enough to allow for growing knowledge of HIV disease. FDA staff must be expanded to cope with new responsibilities. Members of the AIDS community and ethicists must participate in IRB's and FDA advisory review committees. Health care, and not simply "pure data" must become an acknowledged part of the trials system.

Th.G.P.11

BLINDED BY SCIENCE: DHPG AND THE CONFLICT BETWEEN "CLEAN DATA" AND HUMANE HEALTH CARE

Harrington Mark; Wiley, K.; Eigo, J. AIDS Coalition to Unleash Power, New York NY, USA.

Objective: To use the trajectory of DHPG (Ganciclovir) through the regulatory maze to exemplify problems impeding drug approval and up-to-date health care. Methods: We contacted Syntex Corp., negotiated with FDA and NIAID, read the protocols for the controlled "delayed treatment", treatment IND and compassionate use protocols, and talked with ophthalmologists, community physicians and persons with CMV infection. Discussion: DHPG is effective in over 80% of those treated for CMV infection, and is approved in 4 European countries. Because the data were derived from a compassionate, uncontrolled trial, FDA rejected Syntex' 1987 NDA application, instituting instead 3 interlocking trials, under which 40 persons would be untreated until progression of retinitis. Here, demands for data derived from "adequate and well-controlled trials" superseded concern for the 20% of PWA's endnagered by CMV. Conclusion: Provision must be made for accepting evidence of efficacy when thousands have responded well to a therapy and when there is no approved alternative. "Clean data" modalities must be modified during the AIDS pandemic to speed effective drugs to those at risk.

Th.G.P.12

NIH/NIAID - WHO AIDS Research and Reference Reagent Program.

Stern, Susan*, Mosl, L. and Milman, G. ERCI* and Pathogenesis Branch, AIDS Program, NIAID, NIH, Bethesda, Maryland, U.S.A.

The National Institutes of Health AIDS Research and Reference Reagent Program (Repository) in Rockville, Maryland is one of three collaborating centers established by the World Health Organization Global Programme on AIDS to facilitate the exchange of reagents needed for biochemical research on AIDS and related retroviruses. The repository distributes samples of cells, clones, virus isolates, and antibodies to qualified investigators worldwide, whose research relates to AIDS. Currently available materials include:

- Antibodies: Polyclonal and Monoclonal
- Cloned Provirus
- Expression Systems/Cloned cDNA
- Infected and Uninfected Cells
- Virus Isolates
- Biologics, Chemicals and Drugs

The repository relies heavily on reagents from individual laboratories. Scientists who wish to contribute to the program should contact the Principal Investigator regarding suitability and other requirements of submission. Contributors will be cited in the reagent catalog as the source and acknowledged in publications by the recipient. Contributors may also receive reports on the requests for their reagents. The repository encourages collaborative research aimed at standardization of reagents and of laboratory techniques. Future plans include the distribution of standardized protocols. For further information contact Dr. Stern by telephone at 301-340-0245 or FAX 301-762-4170.

Th.G.P.13 PHASE–I STUDY OF RECOMBINANT PEPTIDE CORRESPONDING TO THE GP41 TRANSMEMBRANE PROTEIN OF THE HIV-1 VIRUS COUPLED TO FICOLL

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Objective. Animal experiments demonstrated that short polypeptides coupled to Ficoll can produce a T-independent immune response in nude mice. The T-independent response engages only IgM antibodies. Antibodies directed at appropriate HIV epitope could possibly block an ongoing infection of newly born T-cells with the virus as well as inhibit the formation of syncitia between infected and healthy cells.
Methods. F-46 is a recombinant peptide equivalent to conserved regions of the gp41 of HIV-1 coupled to Ficoll. In order to evaluate the toxicity and tolerance of this Ficoll-coupled peptide, a phase–I study was performed in 14 patients with AIDS with different numbers of T-cells. Peptide was injected intramuscularly with either 0.1 mg or 0.3 mg. Four patients were boostered later on twice with a time interval of 4 weeks, one patient could be boostered only once. The patients were monitored carefully by laboratory and clinical examinations and antibodies were measured at days 0, 7, 14, 21, and 28, months 3, 6, 9, and 12 after injection.
Results. All patients tolerated the injections well without any significant side effects. The haematological as well as biochemical parameters did not show any signs of toxicity. There was a significant increase in antibodies against the peptide after the first injection with significant fall during the first four weeks. Details of the antibody responses of all patients including the boostered patients will be presented during the conference.

Th.G.P.15 THE ROLE OF FEMALE PROSTITUTION IN THE HETEROSEXUAL AIDS EPIDEMIC IN SOUTH AFRICA

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Many studies in Central and East Africa have confirmed the pivotal role of female prostitutes in the establishment, maintenance and expansion of pattern 2 (African) AIDS. In South Africa, until the latter part of 1987, no cases of AIDS were reported in the black population, while in the white population three cases observed in 1982 had risen to 48 (predominantly male homosexuals) the end of 1987. Since the end of 1987 the number of cases in black South Africans (all heterosexuals of both sexes) has risen sharply to 24 by mid-January 1989 and the role of promiscuous women in the development of this epidemic is confirmed by seroprevalence studies carried out in a number of sentinel cohorts - e.g. among STD attenders, 1.3% of females were positive as at December 1988 in contrast to nil of the same population at the end of 1986/87 (Trans Roy Soc Trop Med Hyg 1987, 81: 874-875); male STD attenders had a somewhat lower prevalence of 0.66%. The female:male dominance was also seen in other cohorts and even in black blood donor populations - 0.1% versus 0.06% respectively. The reproductive rate (Ro) of the heterosexual epidemic is, to a major extent, influenced by the characteristics of this core of promiscuous females and control measures need to be focussed on shrinking this core. Identification of prostitute populations in developing societies is far more difficult than in developed countries and licensing measures for control are virtually impossible because of the poor definition and transience of this population.

Th.G.P.17 HIV-INFECTION IN PREGNANT WOMEN AND THEIR INFANTS IN ARGENTINA

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Objective. To present the first communication on HIV perinatal transmission in Argentina.
Methods. A total of 19 HIV-reactive mothers(HIV-Mo)was studied through EIA HIV-1 and Immunofluorescence in 1988. Their children(CH)were studied also thru ENVACORE and HIV-1 Antigen Abbott(AG). Birth characteristics, Apgar index and weight were assessed, and clinical and serological follow-up of CH was made thru periods of 3 to 18 months(m). Also, 2 CH from hemophilic father and HIV-Mo, which births took place at another center, were studied.
Results. In 1988, 19 pregnant HIV-Mo were attended. HIV-Mo risk factors were: IVDA:17;HIV+IVDA partner:2. Age($\bar{x}$):21 years old. Obstetric outcome:abortion: 1;premature birth and dead fetus:1;vaginal birth:13;caesarean section:4(23.5%) Birth weight($\bar{x}$):2,982 gr(general population:3,300 gr).Gestational age($\bar{x}$):39 weeks.Apgar index($\bar{x}$):1 min=8; 5 min=9(range:1'=2-9; 5'=6-10).One CH dropped out.Out of 18 CH,17 were HIV+ at birth. AG:17(-) and 1(+); this one had + HIV culture. Five CH were ENV+ CORE- and 12, ENV+ CORE+. Ten CH were followed up from 3 to 18 m. The seronegative CH showed seroconversion at 18 m(ENV+ CORE- AG-), and clinical signs at present. Three cases turned negative at 8,9 and 16 m, respectively; the others remain unchanged. Out of 7 CH with clinical signs, 4 were ENV+ CORE- and 3, ENV+ CORE+.
Conclusion.HIV perinatal transmission is a problem,even in countries with few AIDS cases. HIV-infection did not alter the obstetric or neonatological features of this population. ENVACORE and AG did not help identify infected CH.-

Th.G.P.14 AFRICAN HIV EDUCATION MOBILIZED THROUGH A PUBLIC-PRIVATE WORKSHOP

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Objective. To help health care professionals in Africa develop locally based HIV education programs (LBHEP).
Methods. A church with its US university and local mission hospital sponsored a workshop in Malawi in cooperation with the Government of Malawi, the Private Health Association of Malawi, and WHO. Presentations described goals necessary to control HIV spread. Working in small heterogenous, multinational, groups, 200 participants from 15 African countries identified problems and developed solutions. These were combined into a document to be used in LBHEP.
Results. The broad sponsorship provided wide acceptability of the workshop to many different groups--including various mission organizations and government. The diversity of participants resulted in stronger, more realistic plans for patient counseling, home care, public health measures, and HIV education. Evaluation showed participants considered this workshop "African" because the proceedings and conclusions were by and for Africans. Most expected to make changes in their practices based on the workshop.
Conclusion. The model of private-public cooperative effort utilizing national health workers to describe and resolve problems can facilitate LBHEP and may be broadly applicable.

Épidémiologie
Epidemiology

Th.G.P.16 ATTITUDES EXPLAINING DESSERTION AND NO-USE OF CONDOMS IN GAY MEN IN MEXICO.

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Objective: To describe the attitudes that may explain dropping condom use or refusing its use.
Methods: In september 1988, a survey to determine knowledge, attitudes, opinions and practices related to AIDS and condom use was carried out in gay men in the second largest city in Mexico. Data about attitudes were collected through agreement or disagreement of several statements about condom use. The comparison groups were the never users (non users), ever but not recent users (dessertors), and current users of condoms (active).
Results: Main results are shown in the next table:

Statement	active users (162)	dessertors (47)	non users (74)	p
Preferable to run the risk than use a condom	33%	45%	63%	<.001*
Condoms take away the romance	36%	40%	58%	<.05 *
Your partner will reject you if you use a condom	26%	38%	45%	<.05*
Condoms are appropiate for yoy	96%	74%	47%	<.001*
Condoms must be part of sexual routine	96%	79%	73%	<.001*
Condoms frequently break or don't fit	64%	94%	73%	<.001**
Condom use is not effective to prevent AIDS	10%	57%	35%	<.001**
Condom use make your partner think you have AIDS	40%	62%	38%	<.05 **
If you suggest to use a condom people feel agression	75%	63%	65%	N.S. **

*Trend Chi square **Mantel-Haenszel Chi square correction.

Conclusion.- The reasons for dessertion may be explained as follows: "dessertors" are not convinced of the preventive effectiveness of condom use, or their partners may think that if they propose the use of a condom it is because they might have AIDS, and/or a condom breaks when they are used; on the other hand, the "non users" are more likely to run the risk than using always a condom, that its use takes away the romance of the moment and that partners reject them when a condom is proposed. Continuity in condom use exists when the user feels that condoms are part of sexual life.

Th.G.P.18 AIDS SURVEILLANCE AND PREVENTION IN UGANDA

Dr. Samuel Okware*, Berkley S. F.,** Neamare W.*** Sutherland D.****

A review is made of the current status of the AIDS epidemic in Uganda following the establishment of a national AIDS Control Programme in 1987. A simple surveillance reporting system was established to follow progression of the disease. By Dec. 1988 close to 6000 cases have been reported from all the districts. 47% were males. 53% females. The doubling time of cases was 3 - 6 months. The age distribution shows over 85% are between 15 - 40 yrs, about 10% 0 - 5 yrs, only 11 cases have been reported between 5 - 14 years. The mean age for males was older than females (28.6 versus 24.4 years).

A national survey yielded a similar pattern, but with a younger mean age. Sentinel surveys is suggested as appropriate for monitoring future disease trends and progression.

The review shows heterosexual transmission is responsible for over 85% of cases, vertical maternal transmission about 10% and blood transfusion about 1%. Risk factors in transmission are discussed and increased number of sexual partners and sexually transmitted diseases are important amplifiers of transmission. The relative risk (odds ratio) increases proportionately with increased number of partners or episodes of STDs. The social cultural complications in disseminating health education and information is discussed. The social economic impact pf health education is also reviewed.

* Director of Ugamda National AIDS Control Programme.

Th.G.P.19

AIDS AND AFRICAN WOMEN

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Objective: To expose the perceptions of HIV and AIDS of women and girls who are not targeted in subgroups of prostitutes, barmaids, pregnant women, and to identify unique cultural behaviors and attitudes.
Method: The gender dimension of a pretest of an instrument designed as part of an intended national WHO/Uganda KABP/Partner Relations Survey was administered to 300 respondents in the general population of three rural and one urban district. About 50% were girls and women. Survey data is supplemented by focus group discussions held in two urban settings with urban-based educated professionals and business women, and in one rural community with peasant women.
Results: The women view themselves as suffering disproportionately from HIV and AIDS. Age at first sexual contact at between 14 and 15 while boys stated an age of 17 men. They were less able to make decisions about sex and felt more exposed to infection. Women contract HIV from husbands who are free to have many partners. Wives of polygamous marriages may have sexual relations outside the union, thus increasing exposure. Poor women use sex to earn a living for themselves and children. Women who transmit the disease perinatally bear a heavy burden of anxiety, guilt, fear, and grief. Most women are unaware of measures through which they can change their situations.
Conclusions: Present AIDS campaigns do not target whole populations of women, the majority. Special interventions are needed to involve them in efforts of prevention and control of AIDS.

Th.G.P.21

HETEROSEXUAL TRANSMISSION OF HIV-INFECTION IN HEMOPHILIACS

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Objective. This ongoing study is designed to evaluate the rate of HIV heterosexual transmission among female-partners of hemophilic males.
Methods. Serum samples were tested for HIV antibodies (Ab) by means of the enzyme-linked immunosorbent assay(ELISA,Abbott). Samples reacting positive by ELISA were tested by means of immunofluorescence(IF)and of a competitive immunoassay(Abbott), employing recombinant DNA-produced HIV proteins(ENV/CORE) as antigen.
Results. Out of 156 HIV Ab-positive hemophiliacs,47(30%) have stable sexual partners, out of whom 32(68%) females were studied:7(22%) were HIV Ab-positive, including 1 with AIDS-related complex(ARC) and antigenemia.
Conclusion. These results indicate that heterosexual contact may be an important means of transmission of HIV among hemophiliacs. Out of these 7 women,3 got pregnant and, up to now, we have 2 births: 1 was culture-positive and the other has positive serology.

Th.G.P.23

"LES PRATIQUES ET MOEURS SEXUELLES AU SENEGAL (CONTRIBUTION A LA CONNAISSANCE DU SIDA)

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D'ALMEIDA L. "PLURALE BP. 5356 DAKAR-SENEGAL
BIENVENU E. S/C LAB. BACTERIOLOGIE H. LE DANTEC DAKAR

OBJECTIFS: Elle s'interroge sur: la nature des pénétrations sexuelles (vaginale, rectale , orale); les natures des produits utilisés; les idéologies et représentations liées aux moeurs sexuelles.
METHODES: Des entretiens semi-directifs auprès de prostituées, de matrones, de maîtres et maîtresses de cérémonies rituelles sont entrepris dans 4 grandes régions du pays. Un questionnaire centré autour de 14 thémes relatifs à la sexualité est passé auprès de 1.575 personnes.
RESULTATS: L'étude analyse leur rapport à la contamination du SIDA et tente des propositions de prises en compte de ces réalités dans la prévention des MST. et du SIDA.
CONCLUSIONS: Cette étude permet d'apréhender leur part hautement significative comme mode de contamination du SIDA.

Th.G.P.20

CONNAISSANCES, ATTITUDES ET COMPORTEMENT A L'EGARD DU SIDA DE LA POPULATION RWANDAISE

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Objectifs Evaluer les connaissances, attitudes et comportement de la population rwandaise pour évaluer et orienter les campagnes de prévention du SIDA.
Methode Une enquete répresentative nationale par interview standardisée en langue nationale selon le protocole du GPA/OMS a été conduite en 1988 auprès de 1488 et 1315 personnes agées de 15-49 ans en milieu rural et urbain.
Resultats La très grande majorité - 98% - connait le SIDA et 90% savent que le SIDA se transmet par les relations sexuelles mais un tiers des répondants partagent des conceptions erronées sur les modes de transmission par les contacts quotidiens. 60% savent qu'on ne guérit pas du SIDA et 70 et 58% en milieu rural et urbain déclarent qu'il est impossible ou très peu probable qu'il leur arrive d'être infectés. 80% sont partisans de la moderation sexuelle pour eviter le SIDA. 3 et 8% respectivement ont eu d'autres partenaires que leur conjoint dans les 6 derniers mois. 1 et 7% ont déjà utilisé les preservatifs.
Conclusion Le niveau des connaissances aussi bien en milieu rural qu'urbain est considérable mais ces connaissances ne sont pas encore suffisamment intégrées dans les comportements individuels: l'indice de proximité du risque pour l'infection à VIH reste faible: l'enquête nationale CAP a permis de reorienter les strategies éducatives.

Th.G.P.22

HIV IN MOZAMBIQUE. A GENERAL OVERVIEW.

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Objective: To present a general overview of the HIV situation in Mozambique assessed through seroepidemiological studies and AIDS cases diagnosis.
Methodology: Seroepidemiological studies were carried out on samples drawn up from: the adult urban population of the main country's cities selected by a cluster sampling method; blood donors; STD patients; pregnant women and war displaced populations. HIV 1 and HIV 2 antibodies were detected by commercially available ELISA and WB kits. AIDS suspected cases were serologically confirmed by ELISA and WB. Symptoms and signs reported were recorded and analysed.
Results:The seroepidemiological studies shown the existence of HIV 1 and HIV 2 infection all over the country. Seroprevalences of 1.17% for HIV 1 and 2.1% for HIV 2 were estimated for the urban adult population. HIV 1 and HIV 2 infection rates among blood donors were lower than those found in general population. HIV 1 infection rate was higher in STD patients and war displaced populations whereas HIV 2 infection rate do not show remarkable differences.Results also suggest that HIV 1 infection is more common in rural than in urban areas whereas HIV 2 is not. By January 1989, 27 AIDS cases serologically confirmed as HIV 1, HIV 2 and HIV1/HIV2 positives have been reported. Their number is below the expected one. The value of the used approach for the assessment of the HIV epidemic situation and for the definition of sentinel groups for its monitoring is discussed.

Th.G.P.24

INCIDENCE OF HIV INFECTION AMONG FEMALE INFERTILE PATIENTS

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Aim and Objective : With regard to the prevalence of STD among infertile individuals, a comparative analysis of incidence of HIV infection, Serum hepatitis, Chylamydiasis, Syphilis and gonorrhoea among females attending infertility clinic was carried out.
Methodology : 120 female infertile patients were screened for HIV infection. Of them 70 infertile females, 35 with tubal block and 35 with normal tubes were chosen for the Pilot Study, in the city of Madras, where 80% of the HIV infected individuals in India had been detected. In the wake of the finding that 95% of the Seropositive individuals for HIV are women, the study was undertaken to find a correlation between HIV infection and infertility and other infections which are major causes of infertility. HIV Screening by ELISA : HBS Ag Screening by ELISA; Chlamydial Monoclonal antibody test; Blood STS, cervical smear for gonococcal infection.
Results & Findings : 2% (women) & 5% (husbands) History of Multiple partners

State of Tubes	Anti chlamydial Antibody Ig G	VDRL	Smear for Gonococci	HBS Ag	HIV	HIV alone 50
35 blocked tubes	Cases 14 40%	2 5.74%	Nil	2 5.74%	Nil	Nil
35 normal tubes	Cases 7 20%	1 2.84%	Nil	2 5.74%	Nil	

Conclusion : From this Pilot study we conclude that HIV infection is not associated with female infertility, inspite of presence of other STD causing infertility.

Th.G.P.25 HIJRAS: A CULT SUSCEPTIBILITY FOR AIDS

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The prevalence of AIDS as related to sexual preferences and patterns of function seems to be a significance that will determine epidemiological action. That sexual functioning have socio-cultural determinants is a vexing problem for sexologists.

The Hijra cult revolves around deity worship of a goddess figure (Baitraj Mata) and a hierarchial epicentre in a small town in Gujarat, a west Indian state.

Membership is granted after a commitment to spend a life time of devotion to the goddess.

The initiation is completed by a ceremonial castration, by a senior member of the cult called "Dai-Ma" after intoxicating the individual with alcohol and the ceremony is carried out in the loud noise of drum beatings. Adult life of Hijra is patterned as Male Homosexual Prostitute.

The present study is a preliminary report of attempting to define the topography of AIDS prevalence in this group. Epidemiological, Clinical and Laboratory finding are presented.

Th.G.P.26 EPIDEMIOLOGICAL FINDINGS OF HIV INFECTION AMONG WOMEN IN SAO PAULO, BRAZIL.

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Objective:To evaluate the extension of HIV infection of women from Sao Paulo state.

Methods:Among the women(10y old)registered in two Out-patient care Units from Jan 84 to Jan 89 a sample of 611 were studied.The test used was ELISA and confirmed by W.B.techniche.The seroprevalence of HIV infection among sexual partners,IV drug abusers and blood transfusion receipts was determined.Others epidemiological aspects will be analyzed.

Results:Seroprevalence of HIV antibody in those groups

	Sexual Partners		IV drug abusers		Blood receipt		Ind	Total
HIV POS	81	33%	76	74%	22	48%	20	199
HIV NEG	163	67%	26	26%	23	52%		212
Total	244	100	102	100	45	100		.411

Conclusion:Many aspects of HIV infection in women will be emphasized.One of the most important is that among the IV drug abusers the seroprevalence(74%) was significantly higher than in the sexual partners (33%).

Th.G.P.27 EPIDEMIOLOGICAL FEATURES OF PEDIATRIC AIDS IN THE CARIBBEAN

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Objective. To describe the epidemiology of pediatric AIDS in the Caribbean.

Methods. AIDS cases, both pediatric and adults, reported to the Caribbean Epidemiolgy Centre, (CAREC), Trinidad from 18 English speaking Caribbean countries and Suriname were analyzed.

Results. As of September 1988, 79 children with AIDS were reported to CAREC, comprising 8.7% of all AIDS patients. Of these, 66 (83.5%) were under 5 years of age. The number of pediatric AIDS cases increased from 11 in 1985 to 30 in 1987 (compared to 115 in adults to 267 respectively), 89.1% of children with AIDS were from Bahamas (40 cases), Trinidad and Tobago (22 cases) and Jamaica (9 cases). Males predominated among both adults (75.7%) and children (57.3%). Information on risk factors was available for 49 children; 47 (95.9%) wer born to parents with AIDS or HIV infection, in Two (4.1%) no risk factor could be identified.

Conclusion. Pediatric AIDS is now a serious problem in the Caribbean and almost all cases are perinatally acquired, an indication of the increasing levels of heterosexual HIV transmission in the region.

Th.G.P.28 INCREASING PROBLEM OF HETEROSEXUAALY ACQUIRED AIDS IN THE ENGLISH SPEAKING CARIBBEAN AND SURINAME.

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Objective. To describe the changing epidemiolgy of AIDS in the Caribbean and it's implications for the control programme.

Methods. We analyzed data on AIDS reported by 18 English speaking Caribbean countries and Suriname to the Caribbean Epidemiolgy Centre as a part of PAHO regional Surveillance programme.

Results. As of September 30, 1988, 18 countries in the Caribean reported 914 cases of AIDS (only Montserrat is yet to report a case). Persons with AIDS, during early part of the epidemic, were primarily homosexual/bisexual men (55% of adult cases in 1985). Now heterosexually acquired (HT) cases are increasingly being reported (65% of all adult cases in 1988). Male to female ratio has declined from 5.4:1 up to 1985 to 2.2:1 in 1988. Trend in selectd countries as follows:

COUNTRY	1984		1986		1988	
	%HT*	M:F Ratio*	%HT	M:F	%HT	M:F
Trinidad	0	19:0	23	4.2:1	39	2.2:1
Bahamas	-	-	24	2.1:1	89	1.5:1
Bermuda	-	-	5	4.2:1	14	14:0
Jamaica	0	1:0	83	6:1	44	2.3:1
Barbados	-	2:0	30	3:1	42	2:1

*among all reported cases.

Conclusion. AIDS Education strategies have now been developed based on the changing epidemioigical situation in each country.

Th.G.P.29 MODIFICATION OF HIGH RISK HETEROSEXUAL BEHAVIOUR AFTER EDUCATION AND COUNSELLING IN NAIROBI

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Objectives. To evaluate the impact of education and counselling on sexual behaviour in men with prostitute-acquired sexually transmitted diseases (STD).

Method. 430 men with STD enrolled to a longitudinal study of HIV infection in Nairobi were informed and counselled about STD and HIV, with reinforcement at regular follow-up. Men were asked about past STD and habitual prostitute contact (HPC), follow-up prostitute (PROS) and regular partner (PART) sexual contacts, condom use and STDs were recorded.

Results. 28% of 293 HIV seronegative men followed-up 14 ± 16 (2-81) weeks reported prior habitual prostitute contact over one per month., and 12% had any subsequent prostitute contact. Over 50% had past and 19% had subsequent STD. Among men followed-up,

number	with HPC	had later PROS	or PART	contact with condoms.
93	≥1/mo.	13%	33%	30%
140	<1/mo	11%	31%	21%
74	once	9.5%	18%	18%

Conclusions. Established patterns of high risk heterosexual behaviour of men may be modified through education and counselling.

Th.G.P.30 TRANSMISSION OF HIV IN MANSA, ZAMBIA

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We studied a community of 50,000 located in Northeastern Zambia where malaria is holoendemic. We tested 3,305 school children for antibody to HIV in 1985 as well as members of 233 randomly selected households. Eleven (0.33%) school children (4 males, 7 females) were WB confirmed seropositive for antibody to HIV. Most were anemic and underweight, had scarifications, and had a parent who was also HIV seropositive (7/11). All had received inoculations of vaccines and two had received transfusions. Among the 233 households, 40 (17.9%) had one or more seropositive members. Ninety-two (9.9%) of 925 persons in these households had antibody to HIV; 24 (6.9%) of 348 men ($\bar{x}$ age 35.1) and 68 (11.8%) of 577 women ($\bar{x}$ 26.1). Only 9 (2.5%) of 358 household children under 15 were infected (none between 4-11 yrs). Nineteen (8.5%) households had more then one HIV infected person, accounting for 62 (67.2%) of the 92 household cases. Heterosexual and perinatal transmission and transfusion appear to be the most likely modes of HIV transmission in this community despite frequent exposures to unsterile instruments used for scarification and daily exposure to mosquitoes.

Th.G.P.31

Th.G.P.32

Divers
Miscellaneous

G.501

CURRENT STATUS OF HIV INFECTION IN TAIWAN

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Objective. To control the transmission of AIDS, this study has been conducted to investigate the status of human immunodeficiency virus (HIV) infection in Taiwan.
Methods. A total of 706,246 serum samples from 9 risk groups of acquired immunodeficiency syndrome (AIDS) were tested for HIV antibody, using mainly enzyme-linked immunosorbent assay (ELISA) and Western blot.
Results. Among 1,184 homosexuals, 33 were positive (2.79%): 6 full-blown AIDS patients; 2 AIDS-related complex (ARC); 2 HIV encephalopathy; 4 persistent generalized lymphadenopathy (PGL); 19 asymptomatic carriers. Among 526 hemophiliacs, 40 were positive (7.6%), of whom two developed full-blown AIDS. One asymptomatic homosexual HIV carrier donated four bags of blood which resulted in a seropositive uremic patient. In general, antibody titers were higher in asymptomatic HIV-carriers, PGL and ARC than those detected in patients with full-blown AIDS.
Conclusion. The conclusion is that AIDS has invaded Taiwan, but the prevalence of the HIV infection is presently low. In the interim, active community efforts are needed to achieve future successs in AIDS control.

G.502

DEVELOPMENT OF AN HIV/AIDS SURVEILLANCE SYSTEM

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Objective. To develop an accurate and comprehensive system of surveillance and follow-up for AIDS cases and HIV sero-positive tests.
Methods: Although Bermuda (approx. 57,000 population) is a small jurisdiction with a single acute care hospital and HIV testing facility, reporting of HIV/AIDS from physicians has not been complete. To ensure accurate surveillance, a detailed reporting scheme was developed based on regular communication between public health, hospital and laboratory staff. A computerized data base utilizing a personal computer and commercial spreadsheet software was developed to track all HIV sero-positive individuals and AIDS cases.
Results. Organization of the surveillance scheme has ensured that all diagnosed HIV/AIDS cases are reported to the Health Department for recording and follow-up. A Nurse Epidemiologist provides counseling for all newly diagnosed AIDS patients and pre- and post-HIV test counseling is provided by Health Department clinic staff. The accuracy of tracking and analysis has been improved through the development of the computerized HIV/AIDS data base.
Conclusions. A comprehensive surveillance system for HIV/AIDS can be developed utilizing currently available staff and resources by stressing effective communication between the public health department, acute care hospital and laboratory facility. A data base to provide accurate statistics for analysis and follow-up can be developed at low cost using proprietary software and a personal computer.

G.503

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Since 1984 when the first case of AIDS was reported in Kenya more than 3000 cases of AIDS have been diagnosed in this country. The M:F ratio is about 1:1 and the age distribution shows a bimodal characteristic with a small peak between ages 0 and 5 and a large peak between age 15 and 50. The commonest clinical presentation is weight loss, prolonged diarrhoea, chest infections, candidiasis and kaposis sarcoma. Recent surveys in selected large towns of Kenya have demonstrated high seroprevalence rates ranging from 12% to 24% among sexually promiscous women. Samples taken from sexually active and promiscous males in some of the towns have shown prevalences of about a third of the rate in corresponding females. Possible reasons for this distribution and implications for intervention measures will be discussed.

G.504

G.505

AIDS IN THE CONTEXT OF PRIMARY HEALTH STRATEGY.

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Objective. Demonstrate impact of the AIDS epidemic on primary health and community oraganization and participacion.
Methods. Trends of the AIDS epidemic are compared with governmental and nongovernmental responses in Latin America. Their impact on primary health and community organization is discussed.
Results. The AIDS epidemic is being characterized by successive waves of transmission among certain risk groups. Health authorities have been under pressure by the scientific community and the general public to implement strategies targeted at specific risk groups involved. Major efforts have been in health education, with emphasis put on: (1)disseminating "knowledge" about AIDS and (2)behavior modification. The crisis of health education strategies becomes evident when transmission begins to occur among relatively stable heterosexual populations. In these groups it is situations of risk (i.e. sexual exposure to an infected individual) rather than behaviors of risk that are major determining factors of AIDS transmission. Here, effective responses depend on (1)primary health system and (2)level of community organization and participation.
Conclusion. Responses to the AIDS epidemic have usually weakened already insuficient primary health resourses crucial not only for WHO's general health goals, but for the forthcoming waves of the AIDS epidemic.

G.506

GLOBAL SITUATION OF AIDS: AN ANALYSIS OF EPIDEMIOLOGICAL AND ECOLOGICAL ASPECTS

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AIDS emerged asa major general health problem generally refers to the last fatal stage of HIV infection. The ecological spectrum of Aids can be understood in five stages and the ecological changes associated with AIDS makes it difficult to identify since it constantly changes or modifies its outer coat alongwith genetic coding of the cells without making changes in its basic biology. The present study is an attempt to analyse epidemiological aspects with reference to spatial distribution and variation besides analysing its ecological trends. The epidemiological situation revealed that AIDS has already claimed 1,24,114 cases and in which North America has registered 71,343 cases followed by Europe with 12,414 cases. Of the total number of 58235 AIDS cases reported from 123 countries, 85% of the cases were from United States in September,1987. The analysis of AIDS cases reported by 6-month period from 1979 to 1987 revealed that 78% of the cases were from Americas followed by Europe (10.87%), Africa (9.43%), Oceania (1.05 %) and Asia (0.31%). It can also be expected that between 500,000 and 3 million new AIDS cases will emerge from persons already infected with HIV.
Statistical methods like ratio and percentage measures have been used to explain the ecological dimensions of AIDS in different countries and with this epidemiological situation is forecasted.

G.507

SERIAL SEROPREVALENCE STUDIES AND ESTIMATES OF INCIDENCE OF HIV-1 ANTIBODY IN PREGNANT WOMEN IN MALAWI.

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Objective. To determine the point prevalence of HIV-1 antibody and to estimate incidence of infection from prior prevalence studies.
Methods. 247 unselected consecutive women seeking care during December 1988 at the prenatal clinic of the QECH were studied for HIV-1 antibody status after informed consent. Sera were tested by ELISA; repeatedly reactive sera were confirmed by Western blot.
Results. 46 of the 247 (19%) were HIV-1 seropositive. From prior studies in Malawi, seroprevalence in the same population increased from 2% (4/200) in 1985 to 8% (7/85) in mid-1987 to its present level of 19% (46/247) in late 1988. It is possible to estimate that the incidence of seroconversion was approximately 3% to 4% per year during 1985-1987 and has increased to approximately 7% to 13% per year during 1987-1988 in pregnant women in Malawi.
Conclusion. HIV-1 infection continues to be epidemic in Central Africa and requires intensive and urgent intervention to reduce its high incidence.

G.508

G.509

EXPERIENCE IN PEDIATRIC GROUP (0-15y) IN A REFERENCE AND TRAINNING CENTER FOR AIDS.

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Objective.To verify age distribuition, risk factors and clinical presentation in 90 refered children to CRT Aids Sao Paulo-Brazil
Methods. 130 children were seen in a 10 month period (March to December,1988) at our Center, 90 of whom could be fully studied and comprise this paper. They were separated according to age in thefollowing groups: 1less than 15 m. o. ; 2. 15-36 m.o;3.3-6y.o 4. more than 6 y.o.
Results.Age distribuition were:28(31%)in group 1;24(26.6%)in group 2; 19(21%)in group 3;19(21%)in group 4.There were 10 symptomatic(class p2); 3 in group 1; 4 in group 2; and 3 in group 3. Only 2/ them died during during the follow-up period of 10 mo. Among the 90 children examinated,50 (50,7%) had drug addicted parents, 7 were themselves IV drug abusers; 6 had parental history of blood transfusion;4 had bissexual fathers;4 were adopted 3 were breast fed by infected women,3 were sexually abused.
Conclusion.These data support efforts toward education.

G.510

CHALLENGES AND ALTERNATIVES OF A NATIONAL PROGRAM OF AIDS. THE CASE OF MEXICO

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Objectives: To analyze the challenges and alternatives for the design, execution and evaluation of the National Program for the Prevention of AIDS (NPA) in a Latinamerican country.
Methods: The NPA analysis was based on epidemiological patterns, behavioral studies, and on the evaluation of health institutions, communication media, and cultural and other sociodemographic patterns.
Results: From 1983 to January 1989, 2,013 AIDS cases have been notified in Mexico. The epidemiological pattern has intermediate characteristics between patterns 1 and II. Estimates of 30,000 to 100,000 HIV infected people have been made. The National Council for Prevention of AIDS initiated its activities in 1986. It is a multidisciplinary committee represented by government and non-governmental agencies. Mass media campaigns were developed to counteract myths and stigmas which have been decreased. Critiques to the educational campaign arose in some groups of the population. Centers for counselling and educational programs with active participation of groups with high risk practices have been created. In a short period of time a national network of laboratories for HIV detection was created which needs improvement of its quality control and coverage. The care of HIV infected people and AIDS patients is undertaken in specific services. It must be integrated to regular health services and health personnel must be trained. The commercialization of blood has been prohibited, the detection of blood donors is mandatory; legal problems exist regarding prostitution and ethical problems have appeared regarding discrimination of HIV infected. The need of care for AIDS patients creates problems because of costs, hospital beds availability and socioeconomical repercussion.
Conclusions: The design, execution and evaluation of the NPA in a Latinamerican country as Mexico has involved challenges and alternatives according to the context and infrastructure of this country.

G.511

FAIBLE PREVALENCE DES ANTICORPS ANTI-VIH EN ZONE RURALE AU CONGO.

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Le Congo est un pays d'Afrique Centrale où sévit une épidémie de SIDA (1250 cas déclarés). La séroprévalence des anticorps anti-VIH chez les donneurs de sang des 2 grandes villes du pays (Brazzaville et Pointe-Noire) se situe entre 4 et 6%. Nous avons étudié de façon exhaustive la population de 5 villages situés dans différentes zones du pays. Des travaux antérieurs ayant montré que la probabilité pour qu'un sérum soit positif en Western blot lorsque sa densité optique en ELISA (ELAVIA, Diagnostics Pasteur) est inférieure à 1, est très faible, nous n'avons retenu comme positifs que les sérums dont la DO était supérieure à ce seuil.
526 sérums ont été étudiés et 5 ont été trouvés positifs, soit 0.95% +/- 0.83. Dans un village, aucun sérum n'était positif.
Cette faible séroprévalence en zone rurale doit inciter à y renforcer les campagnes de prévention afin d'éviter une extension de l'épidémie des villes vers les campagnes.

G.512

SEROPREVALENCE OF H.I.V. INFECTION IN BOLIVIA

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OBJETIVE.- Seroprevalence survey in differents groups of bolivian people in active sexual age.
METHODS.- We tested 5325 individuals for H.I.V. antibody and seropositivity confirmed by Indirect Immunofluorescence and Western blot, from March '88 to December '88. These individuals belong to the following groups: females prostitutes, prisoners, homosexual and bisexual men, blood transfused donors, intravenous drug abusers, prenatal control, military recruitment, spontaneous demand and university students.
RESULTS.- The seropositivity for HIV infection and the distribution is shown in the next table:

GROUPS	SAMPLES	%	H.I.V. +
1.- Prisoners	1,579	29.5	2
2.- Females prostitutes	1,094	21.0	0
3.- Homo/bisexual men	68	1.3	7
4.- Blood donors	1,255	23.6	1
5.- Intravenous drugs abusers	42	0.08	0
6.- Prenatal control	372	7.1	0
7.- Military recruitment	150	2.9	0
8.- University students	300	5.7	0
9.- Spontaneous demand	425	8.1	0
total	5,325	100.0	10

CONCLUSIONS.- The seropositivity was in the homo/bisexual group, prisoners and one in the blood donors others groups studied were negative, we conclude the seroprevalence in Bolivia is low yet.

G.513 The Constitution of the Organisation of the African Union-OAU and AIDS

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The African struggle against AIDS means fundamentally :
" Improve the living conditions of the Africans".

The improvement phase of the African standard of living may only be attained by the advent of a system of democratic plurality, appropriate to the mentality of the People of this Continent.

A democracy for Africa, a Continent which is essentially underdeveloped, is only possible in framework of the PanAfrican National Congress-PANC-
- which is the social-judicial manifestation of the organization of the African Union-OAU-,
- and which contains four popular power branches :
  1. the PanAfrican Legislative Council.;
  2. the Community Financial Audit.;
  3. the Constitutional Community Court.;
  4. the PanAfrican Executive Council.

G.514 IMPACT OF COMPUTER SCIENCE ON AIDS RESEARCH

Clavreul, Genevieve, **World Immunological Network Project Foundation**, Los Angeles, CA USA

OBJECTIVE To demonstrate the effort of laser and computer transmitted data on the dissemination of AIDS information among researchers and practitioners on the international level. **METHODS** Using Laser Disk and AIDS Stack technology, and international data bank utilizing Diversified Network Applications (DNA) on AIDS research and treatment has been created for use by researchers and clinicians worldwide. **RESULTS** The Laser Disk and AIDS Stack methods of data collection increase the speed, timeliness and availability of the latest information on AIDS, avoiding duplication of efforts, fragmentation of locale and unnecessary expenditure of scare resources. **CONCLUSION** There is a demonstrated need for centralizing information on AIDS to develop a cohesive, easily accessible body of data that is readily updated and revised. The computerized network of information enables researchers and clinicians to track epidemiological trends, exchange ideas on treatment protocol and document research results. The databank also has applications in the educational arena where universities, clinics and nonprofit groups are involved in teaching the community about AIDS.

G.515 EPIDEMIOLOGICAL FINDINGS OF HIV INFECTION AMONG WOMEN FROM SAO PAULO-BRAZIL.

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2.Reference Center for AIDS. Out-patient care Unit.SP.Brazil.

Objective:To evaluate the extension of HIV infection of women in São Paulo state.
Methods:Among the women(10years old)registered in two out-patient care Units from Jan 84 to Jan89 a sample of 611 were studied.The test used was ELISA and confirmed by W.L.techniche.The seroprevalence of HIV infection among the sexual partners,IV drug abusers and blood transfusion receipts was determined.Others epidemiological aspects will be analyzed.
Results:Seroprevalence of HIV antibody in those groups

	HIV POS		HIV NEG		TOTAL
Sexual Partner	81	33%	163	67%	244
IV drug abusers	75	74%	25	26%	102
Blood receptors	22	48%	23	52%	45
Indetermined	20				20
Total	199		212		411

Conclusion: Many epidemiological aspects of HIV infection in women will be enphasized in this study. One of the most important is that among the IV drug abusers the seroprevalence was higher than in the sexual partners (33%)

G.516 PREVALENCE OF POSTMORTEM ANTI HIV ANTIBODIES IN THE STATE OF JALISCO, MEXICO..

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Objective. To know the prevalence of postmortem anti HIV antibodies in corpse of unknown origin in the state of Jalisco, México, and to determine the risk factor for health workers that are in contact with them.
Methods. Randomized samples of 97 corpses of unknown origin were taken from 2595 necropsies, during the year of 1988. At the beginning of each necropsy a sample of 5 cc of blood was taken from the thoracic cavity, to which ELISA assay was practiced, and confirmed by indirect immunofluorescence assay (IFA) and/or Western Blot (WB).
Results. The seropositivity obtained and corroborated by IFA and/or WB assay in this study, was 1.03% (one case), that belonged to a 30 years old male corpse, apparently from the USA, his death cause was medical intoxication, and in the necropsy there was also data of homosexuality. The health workers risk factor in Guadalajara, from being in contact with corpses of unknown origin HIV positive, is 1.03% and it increases to 25% with foreingners.
Conclusion. In our country the prevention rules should be increased in health workers in contact with corps of unknown origin specially with foreingners, and probably with homosexuals.

G.517 VERTICAL TRANSMISSION OF HIV-2; LACK OF EVIDENCE

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Objective. To investigate the occurrence of vertical transmission of HIV-2.
Material and Methods. In a 2-year longitudinal cross-sectional community study from Guinea-Bissau based to investigate the epidemiology of cryptosporidiosis in children and their families, 113 mothers and their 143 children less than one year of age were tested for HIV-2 antibodies in order to elucidate the frequency of vertical transmission. Blood samples were tested for HIV-2 antibodies by indirect ELISA; positive results were confirmed by WB.
Results. Of the 113 mothers, 11 were found to be HIV-2 antibody positive. Two of the eleven children born of positive mothers were found to be HIV-2 positive. One was tested positive at 3 1/2 months of age and was lost to follow-up. The other was positive at 5 months but turned negative at 8 months of age. The remaining 9 children were repeatedly negative. No children born of HIV-2 negative mothers were found to be HIV-2 positive.
Conclusion. Vertical transmission of HIV-2 in Guinea-Bissau seems rare. Maternal antibodies apparently disappear before 8 moths of age.

G.518 HIV-1 ANTIBODIES IN BRAZILIAN PRISONERS

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Escola Paulista de Medicina, São Paulo, Brazil.

Objective. To determine the HIV-1 infection prevalence among male Brazilian prisoners.
Methods. The presence of HIV-1 antibodies was investigated in serum samples from 923 volunteers from a prison located at the inner-city area of São Paulo, obtained during Abril and May, 1988. They were clinically well at the time of blood collection. The serum samples were analysed by indirect ELISA tests using: whole-virus preparation (VIRGO™ HIV-1 ELISA,Electro-Nucleonics), recombinant viral proteins (HB K405, Embrabio) and the synthetic peptide LGIWGCSGKLIC corresponding to a segment of gp41 (research test kit, Escola Paulista de Medicina).
Results. By using the three distinct serological methods, the prevalence of HIV-1 antibodies was 12.56% (116/923). This result may reflect the minimum HIV-1 infection prevalence among the individuals within that prison, since some prisoners with risk factors denied to enroll in the study. False positive reactions due to antibodies to H9 cell line proteins were not observed.
Conclusion. The high prevalence of HIV-1 infection among Brazilian prisoners, as occurs in other countries, is mostly due to homosexual and drug-sharing exposures.

G.519

ABSENCE OF HIV-1 AND HIV-2 INFECTION IN AFRICAN TRIBES, 1968-72

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Marshall University, Huntington, WV, U.S.A.

Objective. To examine sera for HIV-1 and HIV-2 antibodies collected in Africa in the Pre-AIDS era.
Methods. 159 sera from Africa were collected as part of a respiratory epidemiological study from 3 tribes: 60 Mano (Liberia); 84 Korekore (Zimbabwe); and 15 Turkana (Kenya). These sera were tested for HIV-1 (Abbott HIV-1 EIA, Biotech/DuPont HIV-1 Western blot (WB) and HIV-2 (DuPont HIV-2 WB) antibodies.
Results. Number Positive or Indeterminant (I) / Number Tested (%)

	HIV-1			HIV-2	
Tribe	+EIA	IWB	+WB	IWB	+WB
Turkana	9/15 (60)	11/15 (73)	0/15	5/10 (50)	0/10
Mano	41/60 (68)	46/60 (77)	0/60	33/53 (62)	0/53
Korekore	56/84 (67)	33/83 (40)	0/83	15/45 (33)	0/45
Total	106/159 (66)	90/158 (57)	0/108	53/108 (49)	0/108

The frequency of positive EIA increased with age but indeterminant Western blot (IWB) to HIV-1 or 2 did not increase with age. The most common bands detected by HIV-1 WB were p24, (28%) and p17(29%). HIV-2 WB detected bands to p66 (41%) and GP41(14%) but infrequently to p24 (<1%).
Conclusion. No HIV-1 or HIV-2 infected persons were found in this retrospective study. Significant differences in patterns of HIV-1 and HIV-2 IWB occurred.

G.520

HIV INFECTION AMONG DUTCH EXPATRIATES WORKING IN AFRICA

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* National Institute of Public Health (RIVM), Bilthoven, The Netherlands.

Objective. To study the prevalence of HIV infection and related risk factors among Dutch expatriates working in sub-Saharan Africa.
Methods. In the course of a routine medical check expatriates who have been posted in sub-Saharan Africa for at least 6 months since 1978 are asked to give a vial of blood and to complete a self-administered questionaire on sexual, occupational and other risk factors for HIV infection.
Results. Among 1230 participants posted in 39 African countries (Sept.1987-Dec. 1988) Western risk factors were relatively rare: 18 men (2.6%) were homo/bisexual, 2 men and 1 woman had used i.v.drugs. However, 71 men (10.2%) and 20 women (3.8%) had been treated for S.T.D. Risk factors in Africa included sex with African partners (37% of men, 15% of women: mean 5, range 1-150). Condom use was infrequent and inconsistent. The majority of medical doctors (81%) and midwifes (69%) and 32% of nurses had suffered needle stick accidents (mean 15, range 1-150). Four participants were found to be infected (seroprevalence : 0.3%, 95%C.I. 0.01-0.7%), 2 men and 2 women: 1 woman had sex with a bisexual men, all 4 had sex with African partners and had been treated for S.T.D., 1 had an African partner and 1 was born in Africa, no one had occupational exposure to HIV.
Conclusion. Despite high prevalence of risk factors HIV infection is rare among a non-selected group of expatriates working in sub-Saharan Africa.

G.521

TRANSMISSION OF HIV INFECTION THROUGH BREAST MILK

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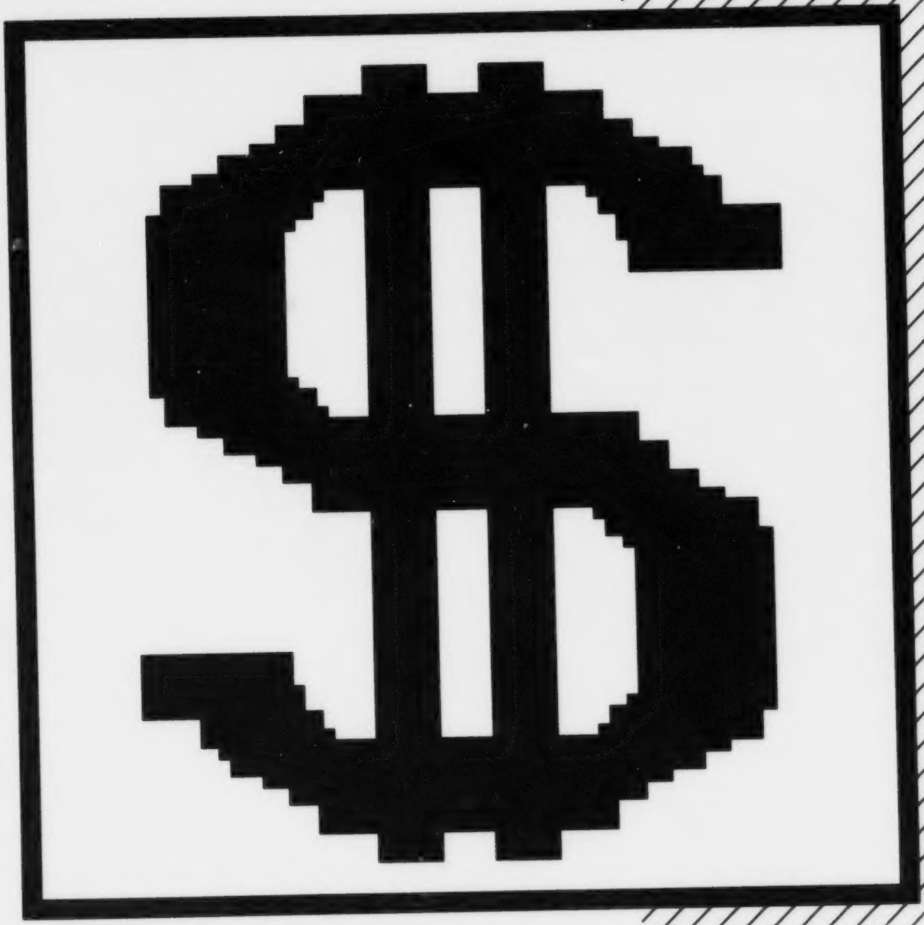
Objective. Can breast feeding transmit HIV infection from HIV seroreactive mothers to their children?
Methods. With a view to assess the possibility of perinatal transmission of HIV infection from seroreactive mothers to children besides vertical transmission, 19 HIV seroreactive prostitutes (both by ELISA and Western Blot) and their children were analysed. Group A mothers (2) were asked not to breast feed their children and the latter remained seronegative till 10 months of follow up. Group B mothers (3) who could not be stopped from breast feeding their children tranamitted HIV infection as evidenced by appearance of HIV antibodies in them by 6th, 7th and 8th month after birth. Group C mothers (14) who had breast fed all their children could be analysed only retrospectively. They revealed interesting patterns. The details would be presented.

Conclusion. The high rate of HIV transmission through breast feeding is highlighted.

SECTION H



Répercussions économiques du SIDA
The Economic Impact of AIDS

Séance thématique
Specialty Session

Répercussions économiques du SIDA
The Economic Impact of AIDS

Aperçu et coûts de la prévention et de l'éducation
Overview Plus Costs of Prevention and Education

M.H.0.1

OVERVIEW

Duckett, Margaret. McGill Centre for Medicine, Ethics and Law, Canada

M.H.0.3

COSTS OF AIDS EDUCATION

Fineberg, Harvey. Harvard School of Public Health, Harvard University, Boston, MA. USA.

M.H.0.5 COST-EFFECTIVENESS OF HIV SCREENING AMONG PREGNANT WOMEN IN PARIS HOSPITALS

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An epidemiologic multicentric study (coordinated by "Centre d'Hémobiologie Périnatale", Paris and Service de Virologie, Hôpital Bretonneau, Tours) about perinatal transmission of HIV is currently carried out in Paris region. In that context, between August 1987 and February 1988, HIV screening was systematically proposed to all pregnant women attending to 9 obstetrical clinics in the region (n=7,800). 2,140 have already been tested for HIV and 45 were known HIV+. Among the 5,660 tests of pregnant women who have never been screened, 18 were discovered HIV+ (Total prevalence : 6,95 10^{-3}). Under the assumptions of ELISA sensibility (98.5 - 99.5%) and specificity (98.3 - 99.7%) the *average cost per additionnal pregnant woman HIV+ discovered in clinics varies from $ 6,460 to 6,950.*

As women, before being screened, had to answer a questionnaire about risk factors, non-systematic screening based on such factors can be simulated. In this case, only 12,5% of pregnant women would have been tested, the total prevalence would have been 5,4% and the average cost per HIV+ discovered $ 1,300. With regards to the 3 additionnal HIV+ pregnant women discovered by systematic screening (compared to non-systematic one), the *cost per supplementary HIV+ woman found (marginal cost) is $ 33,500.*
For the next 6 months of the screening program (February - August 1988, n = 7,750), similar calculations lead to an average cost of $ 26,600 - 28,800 for systematic screening (4 pregnant women discovered HIV+) ; and of $ 8,000 for non-systematic screening (15% of at-risk population, total prevalence 7%).

Results suggest that *cost effectiveness of HIV screening among pregnant women in hospitals is, in fact, highly depending of diffusion of screening practices in other sectors of prenatal care* especially ambulatory medicine (between August 1987 and 1988, the % of women already tested before attending obstetrical clinics raised from 22 to 32%).

M.H.0.2 COST OF MEDIUM-TERM AIDS PREVENTION AND CONTROL PROGRAMMES IN SUB-SAHARAN AFRICA

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The globally agreed strategy for AIDS prevention and control calls for the formulation of comprehensive medium-term plans which describe the policies, strategies and activities around which government, non-governmental and international agencies will focus their collaboration. Governments and the international community need to know the level of resources required to implement these plans. As very litte published data exists on the real costs of implementing AIDS programmes, a study was made by the World Health Organization and the World Bank of budgeted costs of 12 medium-term programmes formulated in Sub-Saharan Africa.

The study initially described the main features of the first year budgets and then explored the relationship between costs and several country characteristics with the intention of using this both to predict likely future costs and to extrapolate costs to other countries in the region. This paper provides a discussion of the rationale, the methodology and the results of the study. It points to the need to develop uniform costing guidelines, to collect retrospective expenditure data and to undertake preliminary cost-effectiveness analyses of elements of the plan.

M.H.0.4 HIV SCREENING AMONG POTENTIAL IMMIGRANTS: A COST/BENEFIT ANALYSIS

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Objective. To assess the economic impact of HIV screening among potential immigrants to Canada on the national health care system and Canadian community.
Method. We developed an economic model based on current international HIV seroprevalence data, Canadian immigration statistics, disease progression estimates and the projected costs of HIV screening and treating AIDS patients.
Results. Estimating that 139,034 immigrants enter Canada in 1988, between 269 and 671 are likely to be HIV carriers. Screening would lead to the exclusion of between 284 and 686 persons including false positive results. The estimated total cost of screening every immigrant ranges between $1.7 million and $4.0 million. The present value (discounted at 7.5 percent) of the medical costs for 48 percent of the HIV carriers who will develop AIDS between 1988 and 1997, ranges between $6.5 million and $21.0 million. However, the limited net benefit associated with screening may be significantly offset by additional administrative costs to immigration, loss of desirable applicants, and forgone income.
Conclusion. The cost/benefit of HIV screening for potential immigrants remains uncertain given the associated costs which have not yet been determined.

M.H.0.6 THE ROLE OF COMMUNITY-BASED ORGANIZATIONS IN CONTAINING THE COSTS OF THE AIDS EPIDEMIC

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National AIDS efforts have 3 general components: prevention , health and social services, and creation of a supportive social environment. All three areas require substantial and rapidly-growing financial outlays.
Community-based AIDS service organizations (CBOs), including organizations of Persons With AIDS, have been in the forefront of education and service delivery in the U. S. One study estimated the value of volunteer services by one CBO in New York at over 2 million dollars for 1987 alone. A number of areas of work can benefit economically from CBO efforts:

AREA	MECHANISM OF COST REDUCTION
Medical services	Early discharge, home support
Education	Training of volunteers
Clinical trials	Publicity, recruitment, retention
Social disputes	Community education, dispute mediation
Prevention	Community education to reduce HIV transmission

CBOs depend on relatively fragile government and private support, and their volunteers face fatigue and burnout. In addition, the changing face of the epidemic in the U.S.- particularly the rise in the numbers of minorities and drug-users with AIDS - may make it more difficult to rely on unpaid volunteers. Support for the CBOs themselves is arguably a cost-effective investment for hard-pressed public agencies.

Coûts en milieu hospitalier
Hospital Based Costs

M.H.O.7

HOSPITAL CARE FOR AIDS PATIENTS: CLINICAL PROBLEMS AND ASSOCIATED DAILY COSTS.

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Admissions for AIDS patients are believed to pose a major economic burden to hospitals. However, aggregating the costs of specific admissions may be misleading given the diverse indications such as pneumocystis pneumonia (PCP), other opportunistic infections (OI), Kaposis Sarcoma (KS), neurologic problems (CNS), experimental treatments (ET), and other problems (OP). To estimate the cost of specific admissions, we evaluated daily costs at the Montreal General Hospital for AIDS between 1981-86 (84 admissions, 44 patients). Utilization and primary diagnosis were determined by chart review and unit costs for services were estimated by step-down costing (simultaneous allocation method). Average length of stay was 25.7 days and average total admission cost was $11,058. Mean daily cost was $453, with much variation (SD ± 157) due to primary discharge diagnosis and in-hospital death (IHD) ($p's<0.05$).

Primary Diagnosis			PCP	OI	CNS	KS	ET	OP
IHD	Yes	Daily Cost	$766	$444	$530	$349	—	$545
		(Admissions)	(5)	(7)	(3)	(1)	(0)	(2)
	No	Daily Cost	$385	$406	$464	$463	$496	$412
		(Admissions)	(14)	(19)	(5)	(9)	(8)	(11)

Conclusion. Specific AIDS admission costs vary greatly and estimates based on aggregated averages may be inaccurate. Primary diagnosis and IHD should be considered when projecting the costs of AIDS hospitalizations.

M.H.O.9

LONGITUDINAL HOSPITAL USE AND CHARGES OF SCATTER BED AND AIDS CLUSTER UNIT INPATIENTS

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Objective. A vital policy issue today is the most effective way of caring for seriously ill AIDS patients. The objective of this study is to compare two AIDS inpatient care modalities, cluster units vs. scatter beds, in Mount Sinai Medical Center, NY, NY.

Methods. This retrospective evaluation tracks all hospitalizations for AIDS patients over the course of illness. It assesses a unique cohort of patients who have received 2 different modalities of inpatient treatment with regard to sociodemographic data (age, sex, risk-group, and insurance status); diagnosis and severity of illness; resources consumed during hospitalization (length of stay, staff hours, ancillary procedures, and cost/charges); and total hospital use across settings (admissions x length of stay), using a merged data set from Blue Cross and Mount Sinai for 1987 and 1988.

Results. Results indicate a significant ($p<.05$) increase in length of stay for cluster unit patients (21.9±18.0 vs. 14.7±12.8). The results of cross-sectional multivariate analyses, controlling for differences in patient mix, severity, discharge status, and pooled with longitudinal descriptions of pre- and post-AIDS diagnosis hospital use and charges are also presented.

Conclusion. This study offers new indicators of cost and quality differences by hospital setting for AIDS patients. In particular, this study presents utilization differences over the entire episode of treatment. The methodology may be of use to planners world-wide as treatment and financing initiatives are evaluated in other settings.

M.H.O.11

NEW YORK MEDICAID AIDS PATIENTS: TRENDS IN HOSPITAL USE AND MORTALITY RATES

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Objective. To determine trends in mortality rates and hospital use for clinically comparable groups of N.Y. Medicaid AIDS patients.

Methods. All hospital discharges of Medicaid AIDS patients in 1985-87 in N.Y. have been identified through a search of claims data. A severity classification using ICD-9-CM codes in discharge abstracts grouped patients into 20 substages that are ordered by risk of inpatient mortality. Trends in health care resource use are analyzed.

Results. Over 16,000 Medicaid AIDS patients' hospital discharges were staged. Eighty percent of the AIDS discharges were aged 20 to 44 years, 66 percent were male, and 15 percent could be definitely identified as IV drug abusers. The number of discharges increased from 3580 in 1985 to 7903 in 1987. The average lengths of stay for 1985-87 were 20.5, 19.3, and 21.2 days respectively, but substantial variation was found by month. A January hospital stay was found to be 40% longer than a stay in June of the same year. Lengths of stay for each year formed a sine wave curve with peaks in winter months and troughs in summer months. Staging is being applied to these data to determine if, as in other diseases, patients experience greater morbidity from infections, either opportunistic or non-opportunistic, in the winter.

Conclusion. Marked monthly variation in lengths of hospital stay was found in N.Y. Medicaid AIDS discharges. Applying a severity classification to a large set of AIDS discharges over a three year time period will help inform clinicians of the range and outcome of conditions seen in AIDS patients hospitalized in N.Y. and will help policymakers plan for levels of hospital resource use.

M.H.O.8

PEDIATRIC HIV-RELATED DISCHARGES IN A SAMPLE OF U.S. HOSPITALS: DEMOGRAPHICS, DIAGNOSES, AND RESOURCE USE

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Objective. This paper describes the characteristics of and care provided to children with HIV-related diagnoses in acute-care general hospitals.

Methods. The analysis is based on pediatric discharges with HIV-related diagnoses in the Hospital Cost and Utilization Project (HCUP) data base for 1986 and 1987. HCUP is a national sample of 400+ hospitals. Thus, it oversamples admissions in areas with low incidence of HIV infection and reflects the range of demographic and clinical characteristics among children with AIDS, ARC, and HIV seropositivity.

Results. The analysis describes diagnoses, procedures, and resource use in relation to demographic, geographic, and hospital characteristics. Preliminary analyses suggest differences between pediatric and adult HIV-related hospitalizations. Pediatric cases have longer lengths of stay (16.4 vs. 13.6 days), nearly double the charge per stay ($21,434 vs. $11,016), and higher charges per day ($1231 vs. $1100). Medicaid was reported as primary expected source of payment for 47% of pediatric HIV discharges, with private insurance accounting for another 37%. Compared to discharges for all diagnoses, pediatric HIV patients are disproportionately black (15.3%) and hispanic (8.3%). However, the sex-distribution for pediatric AIDS is nearly identical to that of all other pediatric cases.

Conclusions. Pediatric HIV-related hospitalizations differ in important ways from both adult HIV and other pediatric discharges. Understanding these differences will help in planning prevention and treatment services.

M.H.O.10

THE $147,000 MISUNDERSTANDING: OVERSTATING THE COST OF AIDS

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Objective. We explain why the first published economic impact study of AIDS overstated medical costs by 2 to 3 times and trace its policy consequences.

Methods. Critical literature review, analysis of published data, interviews.

Results. During the early years the HIV epidemic appeared to overwhelm the U.S. biomedical and health care systems. With this crisis atmosphere as background researchers at CDC produced the first published study of lifetime AIDS treatment costs with an extraordinarily high estimate of $147,000 per case. It was nearly a year before much lower estimates in the $40-50,000 range were published.

Some analysts have recently tried to account for the very high CDC estimate as reflecting treatment patterns early in the epidemic or the high cost of AIDS in NYC municipal hospitals, but in fact the study overestimated the cost of AIDS because the methodology was seriously flawed. It was based on data which were inadequate for a cost estimate and made assumptions which tended to inflate the overall result. Our analysis of data from NYC for the same period indicates that patients whose total hospital stays were estimated by CDC to average 168 days actually averaged 75-80. This difference alone would have cut the CDC figure in half.

Nevertheless, the CDC study is still widely cited in the literature as the upper limit of AIDS lifetime costs. Viewed as the "early" cost of AIDS it led to spurious hypotheses about why costs declined; viewed as the high cost of NYC hospitals it fueled the drive to reduce these costs to supposedly much lower San Francisco levels. Insurers used the $147,000 figure to forestall the banning of antibody testing, to attempt to shift the costs of AIDS patients to the public sector, to argue in favor of state risk pools, and to sell cost-management programs to employers. There is evidence that insurers and their trade organizations continued to cite the CDC cost estimate to their benefit even once they knew the estimate to be inaccurate.

Conclusion. A prominent and widely disseminated CDC study in 1986 greatly overstated AIDS costs because of methodological problems. Misunderstandings about the financial impact of AIDS resulted, which influenced policy and still persist. There is no evidence that AIDS patients anywhere in the U.S. ever averaged 168 hospital days or cost $147,000.

M.H.O.12

UN SYSTEME D'INFORMATION HOSPITALIER POUR LES INFECTIONS PAR LE VIH

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Direction des Hôpitaux. Ministère de la Santé. Paris. France

L'épidémie frappe inégalement les différentes régions françaises alors que les budgets hospitaliers progressent annuellement selon un taux directeur national. Il est alors indispensable d'évaluer l'activité médicale et les coûts hospitaliers du VIH par un système d'information (SI). En l'absence de SI hospitalier intégré, un SI particulier au VIH a été élaboré pour les centres de référence VIH. Le résumé de sortie standardisé (non obligatoire en Fr) accompagné d'une fiche de consommations standardisée (actes, médicaments et produits sanguins en qualité et quantité) est relevé pour chaque hospitalisation ou hôpital de jour VIH sous numéro anonyme et responsabilité médicale après information et consentement des malades. Le nombre de lymphocytes T4, l'inclusion à un protocole épidémiologique ou thérapeutique et la notion de première hospitalisation pour le même diagnostic, informent sur la sévérité du cas et les conditions de prise en charge. Une classification diagnostique de type CIM-9, des thésaurus d'actes et de thérapeutiques ainsi que des règles de codage ont été définis. Des techniciens ont été spécialement formés à ce SI. Un logiciel de recueil, d'échange, de gestion et d'analyse statistique et financière des données a été distribué sur micro-ordinateur PC-AT.

Décidé fin 1987, ce SI est opérationnel depuis juin 1988. A présent installé dans 19 des 23 centres de références, 4336 dossiers médico-économiques ont pu être collectés dans une base de données nationale. L'évaluation de ce SI est en cours et il est déjà possible de connaître l'utilisation des structures de soins (près de 50 % de séjours d'un jour pour bilan ou suivi de sujets peu ou pas asymptomatiques), les différents processus de soins (amenant les responsables médicaux à diffuser des recommandations), la formation des coûts hospitaliers (durées de séjour, coût de l'interféron...) et les coûts des différentes pathologies VIH. Ce SI devra s'étendre aux activités ambulatoires.

En plus de ses applications nationales dans le financement et la planification des soins, ce SI apparaît aux hôpitaux indispensable à l'évaluation médico-économique de ses nouvelles activités.

Coûts en dehors du milieu hospitalier
Out of Hospital Costs

M.H.0.13 MEDICAL COST OF HIV INFECTION OF PATIENTS FOLLOWED IN GENERAL PRACTICE IN FRANCE

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Objectives: To estimate number of HIV patients followed by general practitioners.and the cost of their medical care
Methods: A questionnaire was mailed to all sentinel GPs (n=500) of the French Communicable Diseases Network (1% sample, representative of French GPs). The components of the questionnaire were : number of new HIV seropositive patients in 1987; number of HIV positive asymptomatic patients followed; number of consultations and type of biologic and clinic examinations. The mean cost by year and by patient is estimated as the mean sum of medical visits and biologic examinations.
Results: The response rate was 78%. 29% of respondents were caring for one or more infected patients. The mean number of HIV patients per GP was 1.2 corresponding to an estimation of 69 000 ± 3 000 cases, (mean ± sd) for France as a whole. The mean number of HIV patients screened in 1987 by GPs was 0.51 corresponding to 30 000 ± 2 000 cases for France. The mean number of HIV patients followed regularly by GPs was 0.84 corresponding to an estimation of 48 000 ± 2 500 cases for France.
Two thirds of HIV patients were regular patients of GPs. Each patient was seen 3.6 times per year. Those biologic examinations regularly prescribed were blood count, T4/T8 ratios, lymphocytes, thrombocytes counts and, HBs antigene, and HIV antigene detection.
Mean cost for first visit was 523 ± 18 FF (mean ± sd) and 446 ± 36 FF for other examinations. The total, the mean cost by patient by year have been estimated at 2 288 ± 251 FF.
(1FF = 0.17 US$ or 0.20 C $)

M.H.0.14 TRENDS IN UTILIZATION AND COST OF TREATING AIDS IN AN HMO

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Objective. To measure trends in utilization and cost for HMO members who died of AIDS, and to assess the effects of creating a new, centralized AIDS consultative team on efforts to substitute outpatient for inpatient services. This "enhanced" primary care model was established in April 1986.
Methods. Outpatient and inpatient records were analyzed for 93 consecutive deaths among HMO members dying of AIDS during fiscal years 1985 through 1988 (Oct.'84 - Sep.'88). These cases were divided into six cohorts based on date of death (FY85, FY86, 1sthalfFY87, 2ndhalfFY87, 1sthalfFY88, and 2ndhalfFY88). Mean survival rates were calculated for each cohort, in addition to mean outpatient visit rates, inpatient admissions, hospital days and out-of-Plan costs per patient and per patient month of life.
Results. Mean survival increased from 6.6 months for the FY85 cohort to 12.6 months for the 1sthalfFY87 cohort, the 1st cohort to receive all of their care under the new model. It then held steady over 3 cohorts, before increasing to 18.1 months for the 2ndhalfFY88 cohort. Lifetime outpatient visit rates increased over 280% between FY85 & 2ndhalfFY88, from 35.3/pt to 135/pt. Lifetime hospital admissions, hospital days and out-of-Plan costs increased from the FY85 through the 1sthalfFY87 cohorts, declined or held steady over the next 2 cohorts, and increased markedly in the 2ndhalfFY88 cohort, reflecting survival trends. Hospital admissions per patient-month increased slightly over the 1st 3 cohorts, but declined thereafter. Both hospital days and out-of-Plan costs per pt-mo declined dramatically, beginning with the 1sthalfFY87 cohort. Outpatient visit rates climbed steadily between the FY86 and 1sthalfFY88 cohorts (3.9 to 7.7/pt-mo), ending at 7.5.
Conclusions. Lifetime utilization and costs reflected increasing survival, while monthly rates reflected the shift in emphasis to outpatient care, which began with the establishment of an AIDS consultative team.

M.H.0.15 PLACE OF DEATH MEASURES EFFECTIVENESS OF AIDS-SPECIFIC COMMUNITY-BASED SERVICES

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Objective. To study place of death field on death certificates of persons with AIDS in Seattle-King County as an indicator of increased availability of community-based services.
Methods. We collected place of death data for the period 1984-1988 to analyze trends in place of death, and compared those data to the establishment and expansion of AIDS-specific community-based health and social services in Seattle-King County.
Results. 1) Expenditures to develop and support AIDS-specific home and community-based health and social services (exclusive of Medicare/Medicaid) increased from $40,000 anually in 1986 to $815,000 in 1988, an increase from $388 per person living with AIDS in 1986 to $2596 in 1988 in Seattle-King County; 2) Percentage of deaths occurring in hospitals decreased from 89% in 1984 to 72% in 1986 and 58% in 1988, while deaths in the home increased from 11% to 28% from 1984-88; 3) Deaths in stepdown care facilities increased during the study period, from 1% in 1986 to 14% in 1988; 4) Average length of stay per hospitalization for persons with AIDS decreased from 18 days in 1984 to 11 days in 1987.
Conclusions. 1) Development of community and home-based health and social support services and stepdown care options is associated with more deaths at home of persons with AIDS, and may reduce hospital utilization and costs; 2) Costs associated with the most expensive level of care, hospitalization, may be decreased by establishing and maintaining stepdown beds and support services to maintain persons with AIDS in the home.

M.H.0.16 POST DISCHARGE NEEDS OF HOSPITALIZED PERSONS WITH AIDS AND HIV RELATED ILLNESSES IN NEW YORK CITY

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Objective.This study identifies the post discharge service needs of 269 clinically stable patients with AIDS or HIV related illnesses in twenty New York City hospitals.
Methods.Twenty hospitals in New York City with the greatest numbers of 1987 discharges of patients with AIDS and HIV related illnesses were visited once between February and June,1988.Reviews of clinically stable patients with AIDS or HIV related illnesses,hospitalized for 10 days or more,were conducte using an assessment instrument measuring 106 patient attributes,in order to determine patients' post discharge needs.The variables:ability of the patient or coresident to direct care personnel,functioning status,and availability of a previous home to which to return,were used to determine the placement setting needed by each patient.
Results.A minimum of 14 percent of the 269 patients assessed needed a skille nursing facility upon discharge and 8.6 percent a health related facility. Adult care facilities were appropriate for 11.2 percent of the patients assessed,and individual housing for 17.4 percent.A total of 48.7 percent of patients could receive care in their previous homes.
Conclusion.This study documents the need for expanded residential care option for patient with AIDS and HIV related illnesses,both residences with health services provided and arranged congregate and individual housing.This need is increasing with the routine use of therapies which extend life expectancy.

M.H.0.17 RESOURCE USE AND COSTS OF CARE FOR AIDS PATIENTS IN LOS ANGELES.

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The RAND Corporation, California, U.S.A.

Objective: To describe the total resources use by AIDS patients.
Methods: Forty gay men in various stages of HIV infection were: (1) interviewed regarding hospitalizations (hosp), pharmaceuticals (pharm), labs, physician visits, social services (soc. serv.), health insurance and reimbursement for the two years (yrs) prior to the interview; and (2) asked to provide prospectively medical bills for one year.
Results: The subgroup of 15 men with KS (mean age of 40.6; range 31-65 yrs) had a mean of 1.27 inpatient hosp/yr (range 0-3); all but one were for evaluation or treatment of opportunistic infection. Mean inhospital costs/hosp were $11,879 ± $6,752 for 7.8 days, mostly for the room (36%), pharm (22%), MD (14%), and labs (15%). Mean outpatient costs were $23,780 ± $14,126, with over 50% of these related to pharm. Mean soc. serv. use was $5033 ± $3614, with 60% of these costs for mental health. The seven men who received chemotherapy for KS tended to use more resources than the other eight, mostly related to increased hosp, out-pt pharm, and lab tests. By 6/89, we will have similar data for 25 pts with PCP and other diagnoses and will convert resource use into physical units to facilitate international comparisons.
Conclusion: This sample of KS pts used a level of resources significantly greater than suggested in recent literature, mostly related to pharm, labs, and development of infections. We expect PCP pts to show ever higher resource use.

M.H.0.18 IMPACT OF DEGREE OF IMMUNE DEFICIENCY ON PLANNING OF PUBLICLY FUNDED OUTPATIENT SERVICES FOR H.I.V.

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Objective. To determine the accuracy of forecasts for outpatient HIV service needs in a public health agency.
Methods. Very few services are available to the asymptomatic HIV seropositive person without private insurance or access to research studies targeting this group, yet many researchers believe that secondary prevention may be of major importance for them. LA County has opened (2/89) a model clinic to assess medical, nursing and psychologic interventions for this population that will presumably reduce or postpone hospitalization by prophylaxis of certain opportunistic infections and by early detection and treatment of others. Under protocol, nurses provide periodic screening and treatment based on presence of symptoms as well as level of cellular immune function (measured by delayed hypersensitivity reactions [DHR] and T_4 helper cell count). Since total return appointments will vary based on the status of our self-selected clients, we are unable to project a maximum caseload for the given staffing pattern, nor project the cost of therapeutic interventions or monitoring tests. The following algorithm will be tested:
A) for T_4 > 400/mm^3 : no treatments, return in 6 mo.
B) for T_4 < 400 & > 200/mm^3, and DHR+ : return in 3 mo.
C) for T_4 < 400 & > 200/mm^3, but DHR-, or T_4 < 200 regardless of DHR : consider PCP prophylaxis [50% sulfa-trimethoprim, 50% pentamidine aerosol], and return monthly or more often.
Results. The following assumptions were made prior to the clinic's opening about the immune status of the volunteer patient population: group A, 50% ; group B, 30% ; group C, 20%. A comparison of maximal clinic caseload and costs for lab and drugs will be made between this assumption and the actual health status of the patient load seen during the first 3 mo.
Conclusion. Planning HIV preventive services is highly dependent on the degree of immune deficiency of target populations.

Séance thématique
Specialty Session

Repercussions economiques du SIDA
The Economic Impact of AIDS

Planification et gestion
Planning/Management

T.H.0.1

WORK DISABILITY AMONG AIDS CLINIC PATIENTS

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Objective. To describe the incidence, prevalence and predictors of work disability among 61 randomly selected AIDS clinic patients.
Methods. A cross-sectional study of medical and work histories which utilized a structured telephone survey instrument.
Results. Fifty-nine (97%) of the respondents reported symptom(s) which are associated with HIV-related illness. Fifty-three (87%) worked prior to onset of symptoms. The mean time between the onset of symptoms and interview was 2.3 years. Twenty-seven of the 53 (51%) stopped working during the period of time between onset of symptoms and study interview; 8(15%) during year 1, 13(29%) during year 2, 3(9%) during year 3, and 3(10%) during year 4. Among the 26 who remained working, the hours worked per week declined only slightly to 39 (±8). Among the 53 who worked prior to onset of symptoms, hours worked per week declined 52% to a mean of 19. Given the youth of the study participants (mean age = 30 years), and assuming that no additional work disability cases occur before retirement at age 62, 42% of the 40 year productive life span (PLS) of this population would be lost. However, assuming that a 10% disability incidence rate continues, 89% of the PLS would be lost.
Conclusion. This group of AIDS clinic patients experienced a 51% work disability rate within 3 years of the onset of symptoms. Since hours per week declined only slightly among those continuing to work, most of the lost productivity was due to a complete cessation of work. The incidence of work disability is estimated to result in the loss of 42-89% in the working life of this population.

T.H.0.2

FIVE YEAR AIDS PLANNING PROCESS AT A HEALTH MAINTENANCE ORGANIZATION

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Group Health Cooperative of Puget Sound; Seattle, Washington, U.S.A.

Objective: To provide a basis for resource allocation and planning decisions, Group Health Cooperative (GHC), a large HMO, completed a five-year (1989-1993) service planning process identifying major AIDS-related resource needs and key policy issues.
Method: GHC identified multiple areas where it has AIDS-related responsibilities and issues: e.g., providing and coordinating health care services; preventive education; developing and administering insurance packages; as an employer; utilizing clinical and management information systems; and as a partner in community-wide projects. A multidisciplinary planning team gathered data; identified policy issues and resource needs, and forecast future impacts. The team used the HMO's data systems and CDC's AIDS caseload projection methodologies to predict future AIDS costs and caseloads.
Results: By year end 1993, GHC predicts a 500% increase in number of surviving PWA's, unevenly distributed over the HMO's service area. The direct medical costs of treating PWA's are estimated at $21,000/patient/year in 1988 and projected to total $20 million over 1989-1993. These increased costs and caseload have a major impact on future planning for hospital beds, staff, in-and outpatient budgets, and insurance rates. To meet legal mandates and clinical protocols, AIDS/HIV counseling volumes will increase 5 to 10 times to over 25,000 enrollees counseled/year, putting significant resource demands on primary care staff. Staff training needs in infection control, clinical management, counseling and confidentiality were identified. A system to coordinate the care and support services for PWA's across settings is needed. Strong ties to community-based AIDS efforts (e.g. prevention and subacute and long term care facilities) were shown to benefit the HMO and its enrollees. The planning team set directions for design and administration of the the HMO's "benefits package" to support care for PWA's; treat PWA's and other patients equitably; and reduce adverse selection potential.
Conclusion: Long term service planning provides HMO's with information to allocate resources needed for adequate AIDS treatment, care coordination, and prevention services; future bed and staffing levels; training; and benefits administration.

T.H.0.3

UTILIZATION OF COMMUNITY-BASED AND HOSPITAL CARE FOR PERSONS WITH AIDS IN SAN FRANCISCO, 1988-89

Stern, Adam C.; Chen, R.; Udall, L.; Frazier, Y.; Lifson, A.; Hernandez, S.; Pittman-Lindeman, M.; Rutherford, G. Department of Public Health, San Francisco, CA, USA.

Objective: To assess utilization of community-based and hospital care for persons with AIDS (PWAs) in San Francisco.
Methods: We defined 8 distinct care settings for PWAs and surveyed care providers to determine average daily census of PWAs in each setting during January 1988 and January 1989. Utilization was calculated as a percentage of living persons with AIDS in San Francisco, adjusted for reporting delays.
Results: Of the 2,859 living PWAs in San Francisco in January 1989, 82.2% were living at home without homecare, 7.8% were receiving homecare, 4.4% were in residential settings with social service support, 3.8% were in acute care hospitals, 0.6% were in skilled nursing facilities, 0.5% were in hospices, 0.5% were in substance abuse treatment, and 0.2% were in mental health treatment. The distribution of living PWAs in these settings did not significantly change from January 1988 (2,042 living PWAs) to January 1989.
Conclusions: On an average day, most PWAs in San Franciso (82.2%) are currently living at home without homecare. Only 3.8% of living PWAs are in acute care hospitals. The remaining group of PWAs receive home care or are served in a variety of community-based care settings. As the number of living PWAs in San Francisco is expected to rise to 6,288 by 1993, utilization patterns at all care settings will be critical for health care planning purposes.

T.H.0.4

ASSESSING THE COST OF AIDS TO BOTH PATIENTS AND THE HEALTH CARE INSTITUTION

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San Francisco General Hospital, San Francisco, California and *San Francisco Dept. of Public Health, U.S.A.

Objective: To describe and document the cost of AIDS to San Francisco General Hospital.
Methods: The authors review patient medical records to assess a base line of services provided. These services are compared to internal workload monitors (i.e., nurse acuity tool; medical record tasks; medical social worker/client hours). The cost is further evaluated by looking at individual service department workload related to HIV patient care. The cost to the hospital in staff hours, materials, supplies and equipment is compared with other overall hospital costs. The cost of AIDS is also considered as an opportunity cost and the authors attempt to quantify the programs that have lost support or resources while the hospital staff have directed their efforts to AIDS.
Results: The review of medical records and departmental monitors clearly show that key hospital services are disproportionately involved in HIV care and that those services are typically not part of the billing documents. The paper describes a model that each health care institution can adopt in evaluating the cost of AIDS care.
Conclusion: The cost of AIDS care must be evaluated from the impact on the individual patient as well as the cost to a health care institution. This paper attempts to quantify those departmental expenses. It also raises the question of the emotional cost to our health care workers. Although this issue is not quantified, it is a crucial factor in assessing the real cost of AIDS.

T.H.0.5

PUBLICALLY-FUNDED COSTS OF COMMUNITY-BASED EDUCATIONAL PROGRAMS BY RISK CATEGORY IN SAN FRANCISCO

Evans, Patricia E.; Herring, M.; Rutherford, G.W.; Amory, J.W.; Cowne, D.; Nguyen, B.; Hembry, K.; Werdegar, D., Department of Public Health, San Francisco, CA USA

Objective. To evaluate publically-funded costs of community-based AIDS prevention/education program by risk category.
Methods. We reviewed all monies (federal, state and city) for the 12-month period July 1987 through June 1988 and categorized funding for 11 community-based organizations (CBOs) according to target populations. We determined per capita expenditures using estimated sizes of specific risk groups.
Results. Total public funding for the 12-month period was US$5,751,579. Of this amount, $3,311,127 (58%) was subcontracted to 11 CBOs according to the following target populations:

	Total Funding(X$1000)	Per Capita
Homo/bisexual men (including IVDUs)	$1,009 (30%)	$17.39
IVDU	897 (27%)	74.76
Heterosexual*	474 (14%)	4.82
General Public	520 (16%)	1.31
Provider Education	411 (12%)	16.60
TOTAL	$3,311	5.72

*Defined as heterosexual partner of an intravenous drug user or bisexual man or heterosexual with >2 sexual partners in last year.
Conclusions. San Francisco's comprehensive educational program includes $2,380,217(72%) of community-based funding targeted towards high-risk groups and $930,911(28%) towards the general public and provider education.

T.H.0.6

COMMUNITY-BASED RESEARCH IN AIDS: CRI AS MODEL

Thomas Hannan, NY Community Research Initiative

OBJECTIVE. To demonstrate how community-based research can represent a successful alternative model for the design and conduct of clinical research in AIDS, expanding the number of study participants and increasing compliance (especially including minorities and groups normally underrepresented in trials), employing community physicians and incorporating the perspective of people with AIDS in the process.
METHOD. The CRI is registered and approved by the New York State Department of Health to sponsor well-designed, meaningful, clinical trials of promising AIDS/ARC treatments conducted in a community setting by qualified physicians in cooperation with informed volunteer subjects recruited from their practices. The CRI has its own Board of Directors, an impressive Institutional Review Board (IRB) and a Scientific Advisory Committee composed of scientists and clinicians thoroughly experienced in the field of AIDS.
RESULTS. Although the CRI has been in existence for little more than one year, it already has 5 IRB-approved clinical trials fully enrolled and underway, as well as 4 other important formal studies about to begin. In addition, the CRI has an informal monitoring project of antabuse, the results of which were presented at the IVth International Conference on AIDS in Stockholm. The CRI has also generated a report submitted for publication on the endocrine abnormalities in AIDS of low DHEA levels. Both reports represent evidence of CRI's ability to collect and present meaningful data quickly.
We are prepared to present the procedures for development of research projects from potential sources, approval process and actual conduct of based research conducted in an AIDS context.

Coûts dans les pays en voie de développement
Costs in Developing Countries

T.H.O.7 COST EFFECTIVENESS ANALYSIS OF BLOOD SCREENING TESTS

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Objective. To analyze the cost-effectiveness of various methods of screening blood samples for HIV antibodies in developing countries.
Methods. A methodology has been developed for calculating and comparing the costs for various methods of testing blood samples for HIV antibodies. It consists of a general conceptual framework to be used in approaching the analysis of a testing system (sequence of tests) and software that can be adapted for individual circumstances. Preliminary work is based on the testing system at the Mama Yemo Hospital in Kinshasa, Zaire. All cost elements associated with the major types of screening tests are identified and built into an interactive microcomputer model which will evaluate costs for any given testing system. The user can insert key parameters or choice variables into the model and predict the cost of a particular system under specific circumstances.
Results. Such analyses will predict the effects of alternative means of preventing blood samples containing HIV antibodies from being used, and will measure the per unit cost of excluding these samples from the health system.
Conclusion. This methodology can be adapted to specific national or regional circumstances, and will assist decision makers in understanding what alternatives are available to them and to make cost effective and rational choices in the use of limited resources.

T.H.O.8 PROSPECTIVE QUANTIFICATION OF THE ECONOMIC AND MORBID IMPACT OF PERINATAL HIV INFECTION (PI) IN A COHORT OF 245 ZAIRIAN INFANTS BORN TO HIV(+) MOTHERS

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Objective. To prospectively determine the health care costs associated with perinatally-acquired infection (PI) in infants of HIV(+) mothers born at Mama Yemo Hospital (MYH), Kinshasa, Zaire.
Methods. For a 12 month period in 1987/88, all medical care was provided and its cost quantified for 3 groups of infants with age at study enrollment of 9 to 12 months. Group I had 65 children born to HIV(+) mothers with PI (HIV IgG at age 12/18 months or clinical AIDS). Group II had 180 children with HIV(+) mothers but without PI. Group III had 319 control children with HIV(-) mothers.
Results. Economic and morbid measures per child-year observation

		Group I	Group II	(P)	Group III	(P)
Admitted to Observation Ward		.82	.36	(<.01)	.26	(<.01)
Hospitalisations:	Number	.43	.11	(<.01)	.05	(<.01)
	Duration (Days)	4.83	1.26	(<.01)	0.41	(<.01)
Medication costs:	Antipyretics	13.70(USD)	11.62	(<.05)	10.62	(<.05)
	Antidiarrheals	19.08	11.28	(<.01)	10.54	(<.01)
	Antihelminthics	7.96	5.11	(<.05)	5.15	(<.05)
	Antibiotics	25.01	14.35	(<.01)	12.58	(<.01)
	Topicals	14.80	5.80	(<.01)	11.59	(<.01)
	TOTAL	99.92	72.93	(<.01)	67.89	(<.01)
Total health cost		163.42	110.09	(<.01)	99.83	(<.01)

(p values compare GpI with GpII and GpI with GpIII.
Among Group I children per child monthly expenses were greatest for children aged 22 months ($32.00), 11 months ($26.11) and 10 months ($23.93).
Conclusions. Because costs in this study were born by the research team and not by the family of each child, they reflect the cost of optimal therapy at MYH. Gp I children had health care costs 48% greater than those of Gp II and 64% greater than those of Gp III.

T.H.O.9 THE ECONOMIC IMPACT OF HIV INFECTION IN ADULT ADMISSIONS TO INTERNAL MEDICINE (IM) AT MAMA YEMO HOSPITAL.

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Objective. To determine the economic impact of HIV infection to the infected individual and to Mama Yemo Hospital (MYH).
Methods. A systematic 50% sample of all adult admissions to the Department of IM from 9/27 to 12/15/88 were recruited. Blood was drawn for HIV serology, and information collected on previous medical care expenses, recent disruption in living situation, and nature of the current cause of admission. Daily expenses accrued during the hospitalization were tabulated.
Results. Fifty % of 236 adult admissions were HIV+ by ELISA and Western blot; 49/112(44%) of males, 68/124(55%) of females. While the average length of stay for both HIV+ and HIV- patients was 8 days, 47% of HIV+ admissions resulted in death vs 30% of HIV-(p=0.01). No difference was found in the mean cost of hospitalization for HIV+ (48 USD) and HIV- (45 USD) patients. Of HIV+ admissions, 42% had experienced a major disruption (42% loss of job, 9% divorce, 10% change of residence) due to their illness vs 24% for HIV- (p=0.006). HIV+ patients had spent twice as much for treatment prior to their admission as HIV- (97 USD vs 48 USD, p=0.05).
Conclusion. The medical consequences of HIV infection are placing a heavy financial burden on the infected individuals and their families. The high prevalence of HIV in IM admissions implies that one half of the resources of the IM Dept of MYH are expended for HIV-related care.

T.H.O.10 COMPARATIVE STUDY OF A COMPREHENSIVE VERSUS A TRADITIONAL SYSTEM OF AIDS HEALTH CARE IN SAN JUAN, PUERTO RICO

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Objective. To compare the cost-effectiveness, coverage, and performance of a new comprehensive approach to the treatment and prevention of HIV infection in San Juan with the traditional hospital-based strategy.
Methods. The treatment of all AIDS patients under the traditional system in 1987 (N=128) and that under the new comprehensive system in 1988 (N=398) were compared. Based on medical records, all services, tests, procedures, pharmaceuticals, etc. were recorded for each patient for each day of treatment. The daily and yearly medical costs were analyzed in terms of the socio-demographic, medical, treatment, and institutional variables that influenced direct medical costs. AIDS health care staff in both systems were interviewed to assess their views of the performance of each institution.
Results. Compared to the traditional system, the comprehensive system: 1) decreased the average length of stay for AIDS patients, 2) decreased the average yearly cost of care per patient, 3) reduced the proportion of the AIDS health care budget spent on patient care, 4) increased the proportion of HIV infected individuals in San Juan who received treatment, and 5) increased the funds expended on epidemiology and prevention.
Conclusion. Patient management strategies that de-emphasize in-patient care and provide alternatives, such as home, extended, and hospice care can substantially reduce the direct medical costs associated with AIDS.

T.H.O.11 AN ANALYSIS OF DIRECT AND INDIRECT COSTS OF AIDS AND ARC IN MEXICO

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Objective. To measure the current and projected cost impact of AIDS and ARC in Mexico.
Method. Over 500 medical records of AIDS and ARC patients were analyzed retrospectively and 100 patients were followed prospectively from admission until death. Direct treatment costs (both public sector and out-of-pocket) were measured using information from the medical records. Indirect costs due to lost productivity were estimated. Statistical analysis was used to explain variations in costs and to project future costs. Costs of AIDS control and prevention activities were measured and a model established that projects relative costs for alternative approaches to treating and preventing AIDS in Mexcio.
Results. The direct treatment costs of AIDS and ARC consume a significant portion of public sector health resources. These costs are expected to increase sharply over the next five years. Indirect costs are higher than direct costs. The projected costs of AIDS and ARC can be reduced through interventions that prevent HIV transmission.
Conclusions. The Mexican government should anticipate increased demand for its health resources due to the rising costs of treating AIDS and ARC patients. One strategy for reducing these costs may be to invest more resources in programs designed to prevent HIV transmission.

T.H.O.12 COSTS OF AIDS IN A DEVELOPING AREA: INDIRECT AND DIRECT COSTS OF AIDS IN SAN JUAN, PUERTO RICO

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Objective. To assess the costs of AIDS to guide control efforts.
Methods. We began with projected numbers of new clinical AIDS cases in children, adult males, and adult females in SJ for the years 1988 through 2000. We derived lifetime treatment costs (average $50,000 per case) from insurance data and previous prtrospective studies. We cumulated lost earnings from premature death from age 16 (in children) and age 34 (adults) to age 64 using the SJ average wage and unemployment rates, a 2% productivity growth, and a 5% discount rate.
Results. The projected number of AIDS cases in SJ would quadruple from 198 in 1988 to 933 in 1992. Over this period, direct costs would escalate from $10 to $47 million (in constant 1987 prices) and total economic costs from $23 to $106 million. If present trends continued, in the year 2000 direct costs for the projected 23,000 new cases would be $1.1 billion ($1000 per resident of SJ) and total economic costs $2.6 billion.
Conclusions. Direct costs are expecially important in SJ because most medical care is publicly provided and medical costs approach those of the mainland U.S. Indirect costs, based on SJ wages, are substantially lower than those in the mainland. Thus. innovations in SJ to establish more cost-effective, comprehensive systems of AIDS care are critical. Economic studies are useful to guide policies and strategies for AIDS control.

Séance thématique
Specialty Session

Repercussions economiques du SIDA
The Economic Impact of AIDS

Impact macroéconomique dans les pays en voie de développement
Macroeconomic Impact in Developing Countries

T.H.O.13

POLICY CHALLENGES OF THE SOCIO-ECONOMIC IMPACTS OF THE AIDS PANDEMIC: A CO-ORDINATED RESPONSE BY THE UNITED NATIONS SYSTEM

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Objective. To define an international policy-oriented research agenda on the socio-economic implications of AIDS for the relevant agencies of the United Nations system and the academic and scientific community.
Methods. Models will be developed to provide realistic scenarios of socio-economic impact of AIDS in areas such as food and agriculture, socio-economic stability and growth, national health services and priorities, labour and employment. These scenarios are designed to anticipate the future course of the pandemic under different demographic assumptions as a guide to national governments and international organizations to explore appropriate policy options. Methodologies based on multivariate models, logistic regression, multiple imputation methods, cross-sectoral analysis and others will be used in the analyses.
Results. A nuanced set of scenarios and policy alternatives to facilitate the recognition of policy issues that may arise depending on the severity of the pandemic over the next five to fifteen years. Incorporated into these scenarios will be the socio-economic differences among nations of the world and among HIV patterns I, II and III.
Conclusions. A set of recommendations will be established on alternative strategies to anticipate and deal with the socio-economic and humanitarian aspects of AIDS and its impact at a policy/programming level.

T.H.O.15

A PRODUCTION FUNCTION APPROACH TO ESTIMATING THE AGGREGATE MACROECONOMIC IMPACT OF AIDS ON CENTRAL AFRICAN ECONOMICS

Over, Mead. The World Bank, USA.

T.H.O.17

A MEDIUM-RUN MODEL FOR THE ANALYSIS OF THE ECONOMIC IMPACT OF AIDS IN SUB-SAHARAN AFRICA

Kambou, Gerard. Department of Economics, Boston MA. U.S.A.

T.H.O.14

THE MIGRANT LABOUR SYSTEM AND ITS IMPLICATIONS FOR HIV TRANSMISSION

Webster, Eddie. National Union of Mineworkers, South Africa.

T.H.O.16

SOME ECONOMIC IMPLICATIONS OF INTRODUCING CONTROL MEASURES TO REDUCE THE SPREAD OF HIV INFECTION IN SUB-SAHARAN AFRICA

Rowley, Jane, Ng, T.W. and Anderson, R.M.
Pure and Applied Biology, Imperial College, London, UK.

Objective. This paper looks at the demographic and economic implications of introducing measures to control the spread of HIV infection in a country in sub-Saharan Africa.
Method. The consequences of introducing control measures at different times is explored using a simple mathematical model of the transmission dynamics of HIV infection that incorporates both epidemiological and demographic processes. The controls considered include the screening of blood for transfusions and measures to reduce the probability of the sexual transmission of HIV either by a reduction in sexual partner change rates or by the adoption of "safer sexual practices".
Results and Conclusion. The costs of these measures and the corresponding number of cases of HIV infection and AIDS prevented are used to show the costs and benefits of prevention. Results show the importance of the early introduction of control measures; any delay substantially increases the severity and potential costs of the future epidemic.

Séance thématique
Specialty Session

Répercussions économiques du SIDA
The Economic Impact of AIDS

Rôle des assurances
The Role of Insurance

W.H.O.1

"THE ROLE OF INSURANCE"

Castonguay, Claude, Groupe la Laurentienne, Montréal, Québec, Canada

W.H.O.2

"THE ROLE OF INSURANCE"

Kourouma, Ahmadou. CICA Re. Lome, Togo.

W.H.O.3

"THE ROLE OF INSURANCE".

Mullane, Denis F. Connecticut Mutual Life Insurance Co. Hartford, CT, USA.

W.H.O.4 WHO PAYS FOR AIDS IN THE UK LIFE- INSURANCE INDUSTRY?
Harris, Dai; Legal Officer, The Terrence Higgins Trust Legal Centre. UNITED KINGDOM

Objective: To critically examine how the UK life insurance industry has responded to HIV. To answer the question, who pays for AIDS in the UK insurance industry?
Method: A short history of life insurance and AIDS since 1986 and the legal status of the insurance contract. Future mortality projections, from Sir David Cox and The Institute of Actuaries. What are the assumptions of their reports and what is their margin of error?
Underwriting techniques - the identification of the risk group, and the risks of the group.
Is sex identified as the risk factor? Use of the supplementary questionnair asking direct questions and use of the antibody test. The anti-selection effect of these policies. Using the exclusion clause to exclude risk. Is moving out the better option, for the industry and customer?

Conclusion: So who is paying for AIDS claims? Presently the new customer pays with increased premiums and the industry to a very small extent by setting aside reserves.

W.H.O.5

THE ROLE OF INSURANCE

Kronheim, Helga. Amsterdam, The Netherlans.

W.H.O.6

Séance thématique
Specialty Session

Repercussions economiques du SIDA
The Economic Impact of AIDS

Financement et assurances
Financing and Insurance

W.H.0.7

EMPIRE BLUE CROSS AND BLUE SHIELD: THE FIRST 7500 AIDS CASES

Eisenhandler, Jon*, Padgug, Robert*
Empire Blue Cross and Blue Shield, New York City, USA

Objective: To describe the experience of Empire Blue Cross and Blue Shield with its first 7500 AIDS cases, and to draw conclusions regarding health insurance coverage, costs per case and trends in types and sites of treatment.

Methods: Presentation of Empire's policies regarding insurance coverage for AIDS followed by statistical analyses of hospital and medical claims data for persons with AIDS insured by Empire

Results: Lifetime health care costs for persons with AIDS covered by Empire are approximately $60,000 per case, significantly below many early cost estimates. Costs have been stable through the course of the epidemic because of a decline in inpatient utilization.

Conclusion. Costs for the treatment of persons with AIDS are manageable, even when the number of cases is large and there is easy access to health care providers. Results should be useful for private insurers, governmental bodies, and other institutions concerned with trends in costs and with insurance coverage issues.

W.H.0.9

THE COST OF HIV-RELATED HEALTH INSURANCE CLAIMS IN THE UNITED STATES.

Eby, Charles. Health Insurance Association of America. U.S.A.

Objective. To present data on the cost of health and disability insurance claims related to the HIV epidemic for 1976 and 1987. (Data for 1988 may be available by the time of the conference.)
Methods. Each year since 1986, the Health Insurance Association of America and the American Council of Life Insurance have surveyed their members to collect data on claims related to HIV illness. Although not all HIV-related claims are identified, this survey provides the best estimate currently available of the HIV-related costs paid by insurance companies.
Results. The percentage of claims related to HIV illness is small, but increasing rapidly. There is wide variation in impact among companies, with a substantial number of companies experiencing no HIV-related claims, while others report more than 4 percent of claims related to HIV illness.

W.H.0.11

NATIONAL SURVEY OF STATE SPENDING FOR AIDS PROGRAM ACTIVITIES

Rowe, Mona J.*; Ryan, C. C.*; Keintz, R.M.* ; and Merritt, D.M.*, Richland, J.**, Madden, S.**,and Farrell, K.***.
*Intergovernmental Health Policy Project,The George Washington University, **Public Health Foundation, ***National Association of State Budget Officers, Washington, D.C. U.S.A.

Objective. To report on findings from a 50-state survey of 1989 state appropriations for AIDS funding (non-Medicaid) across all state departments and by program area. Methods. A pre-tested questionnaire was distributed to a Governor's designated sample of state budget officers and health officials, with assistance from related organizations. Results. Preliminary survey results show that states are appropriating AIDS funds to a variety of state agencies besides health, including those in corrections and education. Total state-only funding (non-federal) for AIDS has increased by at least a third from the previous fiscal year. Almost four-fifths of the states have appropriated funds from their own general revenues. Those with no state funding continue to rely on federal grants, primarily for education and surveillance activities. AIDS has changed the source of support for public health activities, with the private sector directly funding service programs sponsored by state and local governments. The findings document the shift in AIDS funding for specific program activities and demonstrate the amount of state and federal funds passed through to local governments and community based organizations. Conclusion. Federal funding will continue to influence how states spend their own funds. States are using state funds to develop model programs for service delivery, planning and outreach to special populations.

W.H.0.8

HEALTH INSURANCE INDUSTRY MODELING OF THE HIV EPIDEMIC IN THE UNITED STATES.

Eby, Charles*; Dinius, J.**. *Health Insurance Association of America, **AEtna Life and Casualty, U.S.A.

Objective. To present the results of a model developed jointly by the Health Insurance Association of America and the American Council of Life Insurance.
Methods. A joint committee of the two trade associations developed a model for forecasting AIDS cases and claims costs through the year 2000, using a range of scenarios. This presentation discusses the assumptions, methodology and results of this modeling effort.

W.H.0.10

ANALYSIS OF AZT ASSISTANCE PROVIDED BY A PRIVATE HOSPITAL

Benge, Mark; Cintron,M.; Muniz,R.; Watson,T.; St. Clare's Hospital and Health Center, New York, NY, U.S.A.

Objective: To identify gaps in third party coverage of AZT

Methods: Analyzed free distribution of AZT during six months at St. Clare's Hospital, NYC to various financial classifications in relation to: 1) date Retrovir available for purchase; 2) dates of various stages of progression of governmental AIDS Drug Assistance Program (ADAP); 3) date assistance effective to individuals; 4) date patient first aware of assistance.

Results: Seventy-three patients were given 45,868 AZT capsules, cost approx. $74,765. Breakdown of capsule distribution as follows: Medicaid eligible, patient not notified by govt.: 24%. ADAP eligible, no action taken by Fed. Govt.: 6%. ADAP eligible, applications not available: 16%. ADAP eligible, program not implemented: 9%. Covered by private insurance, unable to afford out-of-pocket outlay: 33%.

Conclusions: Non-governmental agencies must be aware of bureaucratic delays in providing governmental assistance for new drugs and that patients are often unable to meet out-of-pocket expenses necessary with private third party coverage. These agencies must implement mechanisms to ensure interim assistance is available.

W.H.0.12

FINANCING THE MEDICAL COST OF THE HIV EPIDEMIC IN THE UNITED STATES: A POLICY REVIEW

Makadon,Harvey J*; Seage GR**; Thorpe KE*; Fineberg HV*.
* Center for Policy and Education, Harvard AIDS Institute, Harvard School of Public Health;
** Department of Health and Hospitals, Boston, MA, U.S.A.

Objective: To review strategies to provide access to care to people with HIV infection in a country without universal health insurance.
Methods: We use explicit criteria to evaluate use of policy options to provide increased access to care for those with HIV infection in the United States. The options include: Use of state risk pools and provider subsidies, employer mandates, and expansion of public financing programs, Medicaid and Medicare.
Results: The complex health care needs of persons with HIV infection highlight inadequacies in our fragmented health care financing systems and raise serious questions concerning how best to pay for care. While the total cost of caring for an individual with AIDS is similar to the cost of caring for those with other catastrophic illnesses, these costs do have a significant impact on both affected individuals and regions of the country that have been hard hit by the epidemic.
Conclusion: We recommend approaches to broaden the available continuum of care through improved financing mechanisms. In order to provide more universal access to care, we recommend changes that will extend eligibility for private insurance among the previously employed, extend Medicare and Medicaid coverage, and establish state funds for the uninsured.

Séance thématique
Specialty Session

Répercussions économiques du SIDA
The Economic Impact of AIDS

Méthodologie des analyses de coûts
Methodology of Cost Studies

W.H.O.13

OVERVIEW

Souteyrand, Yves. Paris, France.

W.H.O.14

USE AND COSTS OF HEALTH CARE SERVICES OF PERSONS WITH AIDS IN THREE PRACTICE SETTING IN SAN FRANCISCO. 1986/87

Scitovsky, Anne*, Cline, M *
*Palo Alto Medical Foundation, Palo Alto, California, U.S.A.

Objective: To determine if there were differences in use and costs of health care services of persons with AIDS depending on the practice setting in which they received care: fee-for-service physicians, public hospital or prepaid health plan.
Methods: Cohorts of 83 AIDS patients of fee-for-service physicians and of 35 patients treated at a public hospital (San Francisco General Hospital, SFGH) were enrolled in the study and followed for all their use and costs of medical services for 12 months, or until death if this occurred sooner. A random sample of 44 AIDS patients who were members of a prepaid group plan (Kaiser) and who received care during the same period as the two enrolled cohorts were selected, and data on all their use of health care services obtained from their medical records.
Results: The highest costs were incurred by patients treated at SFGH, mainly because they were the highest users of inpatient hospital care. Kaiser patients had the lowest use and costs of physician outpatient services. The use of home health services was about the same for patients treated at SFGH and by fee-for-service physicians, accounting for 6% and 8%, respectively, of total expenses.
Conclusion: Although there were differences in the patterns of use and costs between patients treated in the three practice settings, the differences were not substantial and the basic practice pattern similar.

W.H.O.15

FORECASTING THE MEDICAL CARE COSTS OF AIDS IN THE UNITED STATES: 1989-1993

Hellinger, Fred J., Ph.D.
National Center for Health Services Research, U.S. Dept. of Health and Human Services, Rockville, Maryland USA

Objective. To forecast the personal medical care costs of patients with AIDS in the United States during the years 1989 through 1993.
Methods. Statistical extrapolation models and back-calculation methods yield projections on the future number of AIDS cases using data reported to the Centers for Disease Control (CDC) between January 1984 and January 1989. Information on the cost per case is obtained from insurance companies, Medicaid agencies, HMOs, and hospitals.
Results. The model yields projections on the future number of AIDS cases which are higher than those of most earlier projections. An estimate of $60,000 per patient holding between 1989 and 1993 is used to project medical care costs.

Year	CDC (Updated) Number of Cases	Hellinger Number of Cases	Hellinger Cost (billions)
1989	49,000	50,500	$3.0
1990	60,000	65,500	$3.9
1991	71,000	83,000	$5.0
1992	80,000	107,500	$6.2
1993		124,000	$7.4

Conclusion. The economic impact of AIDS in the United States will be greater than expected over the next five years.

W.H.O.16

SCENARIOS LINKING EPIDEMIOLOGY AND ECONOMICS: POSSIBLE IMPACTS OF DRUG TREATMENT OF HIV-INFECTED IN THE FRG.

Leidl, Reiner *
* Institute for Medical Informatics and Health Systems Research/GSF, Munich-Neuherberg, FRG

Objective. Assessing and forecasting economic impacts of AIDS should cope with varying ideas of future spreads of the infection, resource needs for care, and possible medical advances. To derive effects of such alternative assumptions, scenario techniques are proposed and discussed.
Methods. Scenarios are drawn from a deterministic, PC-based model. Programs include a menu guided version for single runs and shells for fast sensitivity analyses. The epidemiologic part is formulated for a high- and a normal-risk group, links the spread of infection (weighted exp- and log-functions) with a 'development of the disease' model (based on transition data). It produces yearly prevalences for three case types (HIV, LAS/ARC, AIDS). These are linked with impact functions for the indicators: years of life lost (y) for social burden, hospital beds (b) for capacities, health care expenditures (x) for direct cost (data from cost studies). Behavioral changes were indicated by 4 levels of infection growth reduction (r) since 1987. As the main question, drug treatment was assumed for all HIV-infected from 1990 on with 11 classes of effectiveness (e:0-1) from not up to completely stopping disease progress, and 15 price categories (p: 800-12000 DM).
Results. 31680 starting sets of epidemiologic parameters were condensed into four basic types. From I to IV, they decrease in high-risk group size and future spread of AIDS, but fit AIDS cases reported in the past. 1990-1992 impacts of drug treatment are compared with no drugs for I..IV: e.g., if ($e=.6$, $p=7200$, $r=0$) then (y: -37..-32%, b: -40%, x: 168..108%, x/y: 16300..8800 DM). Only at $p<1800..2400$ expenditures would not increase - well below current AZT-treatment prices ($dx/de<0$, while for $p>4800..6400$ even $dx/de>0$). Increasing r reduces x/y especially for low e - i.e., with ineffective drugs, effective prevention substantially lowers the price of life years gained.
Conclusion. With scenario inputs covering relevant ranges, this flexible tool (adaptable to different country contexts) allows to analyse the dynamics of economic impacts of AIDS.

W.H.O.17

DEVELOPMENT AND APPLICATION OF A MODEL HIV INFORMATION SYSTEM

Hidalgo, Julia .*; Hamidi, C.* .
*Maryland Department of Health and Mental Hygiene, Baltimore, MD., U.S.A.

Objective. As the AIDS epidemic has grown in the U.S.A. during the 1980's state and local governments have assumed a major role in the planning, funding, provision, and evaluation of AIDS health services. Automated information systems of varying designs and sophistication are being developed across the country to assist state and local policy makers and program administrators in these activities. This paper describes characteristics of a model statewide AIDS health services information system, factors impeding its development, efforts to overcome these impediments, and applications of the information system for a variety of program planning and evaluation activities. Methods. An automated information system linking AIDS registry, vital statistics, hospital, long term and chronic care, clinical trial, community-based service, and health insurance claims records to measure the nature, volume, and costs of service use associated with AIDS treatment during the period between AIDS diagnosis and death. Resource consumption among socio-demographic and AIDS transmission groups, women, children, the homeless, the severely mentally ill, and persons with psychoneuriatric complications of HIV infection can be measure. The fiscal impact of AIDS treatment on public and private institutions and third party payers and movement across facilities and insurers may also be assessed. Conclusion. Since the health services information system draws upon secondary data bases available in other states, this system may serve as a prototype for state and local agencies.

W.H.O.18

LABOUR MARKET PRODUCTIVITY

Glied, Sherry. Harvard University, Department of Economics, Cambridge, MA. USA.

Séance thématique
Specialty Session

Répercussions économiques du SIDA
The Economic Impact of AIDS

Affectation des ressources et processus décisionnels
Resource Allocation and Decision-Making

Th.H.O.1

RESOURCE ALLOCATION BY DONOR COUNTRIES TO HIGH PREVALENCE OR LOW PREVALENCE COUNTRIES ?

Elmendorf, Edward. The World Bank, Washington, D.C. USA.

Th.H.O.2

ALLOCATION DE RESSOURCES
DECISIONS POLITIQUES ET CONTRAINTES

Prof. P.M.Johnson, b.a., ll.l., m.d.
ancien premier ministre du Québec; Faculté de droit et Centre de Médecine, d'éthique et de droit, Univ. McGill, Montréal.

Objectifs: Faire état des principales contraintes imposées aux décideurs politiques dans les questions relatives à l'allocation des ressources pour faire façe au SIDA.

Méthode: Donnés empiriques puisées de l'expérience récente et de certains enjeux politiques canadiens touchant le SIDA.

Résultats: Les contraintes générales qui s'appliquent à l'allocation des ressources en Santé s'appliquent au SIDA. Certaines préoccupations dites morales et les catégories de citoyens les plus touchés par la maladie ont un effet sur la position du ministre façe à ses collègues dans l'arbitrage général des budgets et des priorités. Les aspects épidémiques du SIDA compensent dans cette situation: d'où l'importance des donnés comparatives et des références à la situation internationale.

Conclusions: Les aspects touchant le caractère épidémique de la maladie, les projections sur la progression de la maladie et les démonstrations claires de comportements préventifs efficaces forment des matériaux essentiels pour les décideurs élus.

Th.H.O.3

DATA GAPS IN MODELING AIDS SERVICE UTILIZATION AND COSTS

Bilheimer, Linda T.

Mathematica Policy Research, Inc., Washington, DC, USA.

Objective. To identify major data gaps and other methodological problems in modeling AIDS and HIV-related service needs, service utilization, and costs. Methods. A microcomputer-based AIDS service utilization and cost model has been developed for use at the state and local level. Results. Data needs for state and local modeling are identified in six major areas: AIDS and HIV-related morbidity incidence projections; risk group and diagnosis distributions; survival probabilities; payer distributions; service utilization rates; and costs per unit of service. Other important methodological issues include: projection methods for low prevalence states; implications of different prevalence measures; lack of standardization of definitions and measurement methodologies; the need for longitudinal studies of service utilization and costs; and modeling nonacute care service needs. Conclusions. The modeling exercise demonstrates the inherent problems in attempting to model AIDS and HIV-related service utilization and costs using existing data sources, and identifies where priorities for data collection and methodological research should be placed.

Th.H.O.4

COMPARATIVE EVALUATION OF THE USE OF NGO's FOR RESOURCE ALLOCATION.

Manning, Steven. AIDS Committee of Toronto, Ontario, Canada.

Th.H.O.5

THE FINANCIAL IMPACT OF INTEGRATED CARE DELIVERY

Morrison, Cliff. The AIDS Health Service Program, University of California at San Francisco. San Francisco, CA. USA.

Coûts des traitements médicaux
Medical Treatment Costs

M.H.P.1

THE IMPACT OF ZIDOVUDINE ON AIDS-RELATED HOSPITAL ADMISSIONS. HOW LONG DOES THE HONEYMOON LAST?

Ng, T; Montaner, JSG; Schechter, MT; McLeod, A; Willoughby, B; Beardsell, A and Ruedy, J. AIDS Research Program, St. Paul's Hospital, University of British Columbia, Vancouver, BC, Canada.

OBJECTIVE. To assess the impact of zidovudine (ZDV) on AIDS-related hospital resource utilization.
METHODS. Data was gathered from the Provincial AIDS Registry, Medical Records Department, St. Paul's Hospital (SPH), and the Open Canadian Retrovir Trial (an ongoing trial, started in November 1986, where patients received 1200 mg/day of ZDV, under close medical supervision). The following variables, divided according to treatment groups, were compared on a quarterly basis:

I. AIDS vital statistics
II. AIDS related hospital admissions
III. Length of hospital stay

RESULTS. The number of alive AIDS subjects in the province of British Columbia increased steadily over the 2 year study period from 82 in the third quarter of 1986 to 194 in the second quarter of 1988. Over 70% of AIDS patients at all times were cared for at SPH. The number of separations and hospital days increased steadily until the third quarter of 1987 from 48 to 64 and 669 to 999 respectively. Both separations and hospital days failed to rise as predicted and actually decreased to 53 and 796 respectively by the fourth quarter of 1987. This could be at least partly attributed to ZDV therapy based on the fact this unusual reversal of trend occurred shortly after the time that ZDV became available and that 50% of alive AIDS patients receiving ZDV only contributed to 25% of separations and 19% of hospital days. At the time, given the available data from prospective ZDV efficacy studies, we predicted that if this phenomenon was due to a ZDV effect it should be self-limited. In fact by the second quarter of 1988, the number of separations and hospital days had reached similar proportions to those in early 1987, prior to ZDV therapy (68 and 923 respectively) and both variables continue to grow with an unequivocal upward trend.
CONCLUSION. Our data suggests that ZDV decreases the short term hospital resource utilization by AIDS patients; this honeymoon effect is however, short lasted and appears to wane within 1 year.

* Supported in part by the National Health Research Development Program (NHRDP), Health & Welfare, Canada.

M.H.P.2

EFFECTS OF THE USE OF AZT ON THE MEDICAL CARE COSTS OF PERSONS WITH AIDS IN THE FIRST 12 MONTHS

Scitovsky, Anne*; Cline, M.*; and Abrams, D.**
*Palo Alto Medical Foundation, Palo Alto, California, USA, **San Francisco General Hospital, San Francisco, California, USA.

Objective: To compare the medical care use and costs of persons with AIDS taking AZT with the use and costs of a matched group of persons with AIDS not using AZT.
Methods: Eight persons with AIDS participating in the Burroughs-Wellcome Phase two drug trial at San Francisco General Hospital in 1986 were matched with eight other AIDS patients who would have qualified for the trial but did not participate. These two cohorts were followed for one year and all information on utilization of and charges for medical services were collected.
Results: Mean monthly costs of the controls were more than twice those of the AZT patients, due entirely to the significantly greater use of inpatient hospital services of the controls.
Conclusion: Medical care costs of persons with AIDS who started taking AZT within 120 days of their first episode of PCP were, for the first 12 months, substantially lower than costs of a comparable group of patients not taking AZT. However, it is by no means certain that over their lifetime their costs will be significantly lower. Our data show that already, in the second six months, AZT users use of inpatient services rose substantially. Therefore, medical care costs plus the cost of AZT make it improbable that lifetime costs for AZT users will be lower than for comparable patients not using AZT.

M.H.P.3

ROLE OF A DEDICATED HIV/AIDS WARD IN A CENTRAL LONDON TEACHING HOSPITAL

Singh, S.; Connolly, G.M.; Hawkins, D.; Gazzard, B.
St. Stephen's Hospital, London, England.

Objective To analyse the use of inpatient beds in the first quarter of 1988 on a dedicated HIV/AIDS ward in a central London hospital.
Methods A prospective independent daily assessment was made of all HIV antibody-positive (HIV+ve) inpatients over a 3 month period. Each patient was categorised as receiving active investigation/treatment or social care (self-caring but social conditions prevented discharge) or terminal care (no active treatment, with no possibility of independent living).
Results Of the 221 HIV+ve admissions, 154 were under the care of the AIDS team. The remaining 67 were surgical. A total of 97 patients made up the 154 admissions (all except 2 gay men). A breakdown is as follows:

GROUP/Nos. of patients	Admissions	Bed-days	Overall occupancy
Blood transfusions/30	49	47	11%
GI Investigations/ 19	44	44	
Pneumonia/20	20	309.5	31%
Neurology/8	8	129.5	13%
Terminal/8	10	130.5	13%
Social/6	8	75.2	7.5%
OVERALL/97	154	991.6	93%

Conclusion This study reveals 1:2 admissions are short-stay (<7 days). The largest load results from treatment of pneumonia, half of whom could be treated as out-patients (Pa O2 > 8KpA). Admissions for terminal care and social support occupy a small proportion of beds. This has important implications for resource allocation as the epidemic unfolds.

M.H.P.4

DIGESTIVE INFECTIONS DURING AIDS, DIAGNOSTIC STRATEGY AND COST.

E. René A. Durrbach, R. Bouali, T. Chevalier, L. Geoffroy***, C. Roué**, T. Vallot, B. Régnier*, AG Saimot*, JL Vildé**, M. Mignon Hépato-Gastro-Entérologie - Inserm U.10 ; *Maladies infectieuses ; **Inserm U 239 Groupe Hospitalier Bichat - Claude Bernard 46 rue Huchard Cedex 18, France ***ARCHAM GR Santé 162 Av Lacassagne 69003 Lyon France. 75877 Paris,

Systematic and methodical explorations were prospectively performed in 119 AIDS patients and included first three stool bacteriological and parasitological examinations (S) ; second a duodenal fluid aspiration (DF) , and third endoscopic biopsies through gastroduodenoscopy and colonoscopy (EB). The direct cost was calculated according to the French Health Social Service cotation S=61$ X3 ; DF=128$; EB=807$. Several diagnostic strategies were simulated by changing the order of the 3 tests successively realized (S, DF, EB) and by introducing rules such as : to stop the investigation as soon as one test is positive. 76 explorations pointed out the presence of one or several germs totalizing 114 identified pathogens. 44 pathogens (39 %) were identified only by EB, 14 pathogens (12 %) only by S and 56 pathogens (49 %) by either S or DF or EB (36 Cryptosporidium (CRPT) 8 Giardia lamblia (GL), 12 Entamoeba histolytica (EH)). Sensitivity of S, DF, and EB was respectively for CRPT 75%, 47%, 11% for EH 100%, 28%, 25% and for GL 50%, 50%, 25% The best strategy (ST_1) was S, and then DF, and then if DF was negative EB. When using ST_1 the cost per patient decreased 29% (796$ vs 1121$ (direct costs)). Yet when dealing with polyinfected patients, ST_1 can lead to incomplete diagnosis : CMV 50%, HSV 31%, GL 12,6% (treatable pathogens), MAC 55% and CRPT 3% (non treatable pathogens). We show that a diagnosis strategy can reduce the cost of diagnosis concerning digestive infections in AIDS. If this strategy does not recognize 26% of the treatable germs in case of polyinfections, yet the diagnosis can be made later if symptoms go on in spite of a treatment fitting to the first identified pathogen.

M.H.P.5

HOSPITAL USE BY PWA'S IN N.Y., LOS ANGELES AND SAN FRANCISCO

Joanne Green, M. Leigh, H. Wintfeld
New York University Medical Center, New York, NY, USA

Objective. To describe patterns of hospital use by persons with AIDS/HIV in the three U.S. cities with greatest AIDS prevalence.
Methods. Analysis of all hospital discharge records for New York and California that were coded for AIDS/HIV related illness.
Results and Conclusions. Most of the acute care for AIDS in all three cities was heavily concentrated among a small proportion of hospitals. In New York, 1 hospital had 8% of the states entire AIDS census during 1983-1986 and just 14 hospitals had half the state's AIDS census. Among pediatric AIDS cases 1 hospital carried 14% and 6 hospitals had half the state's census. In Los Angeles, while 175 hospitals saw at least 1 case of AIDS, 1 hospital handled 15% of the city's census and 6 hospitals carried half the census. One LA hospital saw half the pediatric AIDS census. In San Francisco, 1 hospital handled 22% while 4 hospitals carried half the census.

Overall average length of stay (ALOS) for AIDS cases was highest in NY and considerably lower in both LA and SF (See Table). ALOS declined from 1983 to 1986 by 26% in SF and NY, and by 7% in LA. Stays lasting one week or less made up 33% of stays in NY, 45% in LA, and 44% in SF. The high ALOS in NY was skewed by many very long stays. There were 110 hospital stays for AIDS over 6 months long in NY, but only 4 in LA and 3 in SF. In NY, 8.2% of stays lasted over 50 days compared with just 2.1% in SF and 2.5% in LA. Removing these very long stay 'outliers' substantially reduces ALOS differences among cities. While NY's ALOS for AIDS was 61% higher than SF's, it was only 31% higher when stays over 50 days were removed.

	ALOS - ALL AIDS CASES				% DECREASE IN ALOS	ALOS WITH 'OUTLIERS' REMOVED
Area	1983	1984	1985	1986	1983-86	1986
NEW YORK	26.2	22.1	21.1	19.5	26%	14.7
SAN FRANCISCO	16.3	13.2	12.4	12.1	26%	11.2
LOS ANGELES	13.5	13.9	13.1	12.6	7%	11.2

M.H.P.6

COSTS AND CHARACTERISTICS OF OUT-OF-HOSPITAL PROGRAMS FOR PERSONS WITH AIDS IN SAN FRANCISCO, 1985-88

Stern, Adam C.; Amory, J.; Bala, M.; Hernandez, S.; Rutherford, G.; Department of Public Health, San Francisco, CA, USA.

Objective: To analyze costs and characteristics of out-of-hospital programs for persons with AIDS (PWAs) in San Francisco.
Methods: We collected data on 7 out-of-hospital services provided to PWAs in San Francisco during the period July 1, 1985 - June 30, 1988. We evaluated the programs on the following criteria: number of clients, cost per client, expenditures per living PWA (adjusted for reporting delays), average length of stay, and sources of financial support.
Results: From FY 1985-86 to FY 1987-88, annual expenditures for all 7 programs increased from US$2.9 mil. to US$5.2 mil., and the proportion privately funded increased from 30% to 42%. Annual expenditures per living PWA declined from US$3,251 to US$2,477. Characteristics of the programs for FY 1987-88 were:

Program	Clients	Cost/Client	ALOS(days)
Homecare	425	US$6,735	71
Emergency Housing	56	2,404	42
Residential Flats	99	7,169	172
Emotional Support	1,085	435	n/a
Practical Support	653	549	n/a
Social Service Advocacy	1,688	212	n/a
Patient Counseling	652	414	n/a

Conclusions: Expenditures for out-of-hospital programs for PWAs in San Francisco increased substantially during 1985-1988, with a larger proportion privately funded. However, expenditures per living PWA declined.

M.H.P.7

THE CONTRIBUTION OF PCP TO TRENDS IN AIDS HOSPITAL DISCHARGES AND AVERAGE LENGTHS OF STAY.

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Objective: To evaluate the contribution of Pneumocystis carinii pneumonia (PCP) to declining average lengths of stay (ALOS) and declining average daily census (ADC) of hospitalized AIDS patients in the San Francisco Standard Metropolitan Service Area (SMSA).
Methods: We compared acute hospital discharges and average lengths of stay (ALOS) for AIDS patients discharged with a primary diagnosis of PCP and those discharged with other AIDS-related diagnoses from 1984-1987. Discharge data included are non-federal acute-care hospitals in San Francisco, San Mateo, and Marin Counties.
Results: The contribution of PCP to all AIDS discharges did not change from 1984 and 1987 but the ALOS of patients with PCP decreased more rapidly than ALOS patients without PCP.

	1984	1985	1986	1987
Discharges, % PCP	30.3	35.8	32.3	34.1
ALOS, PCP	16.2	12.9	13.7	12.3
ALOS, non-PCP	10.6	11.6	11.5	9.8

Conclusions: The decreasing ALOS and ADC for hospitalized AIDS patients in San Francisco SMSA can be primarily accounted for by shorter ALOS for PCP patients.

M.H.P.9

HOSPITAL USE BY A POPULATION-BASED COHORT OF AIDS PATIENTS.

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Objective. To accurately determine statewide hospital use among AIDS patients by following all cases in a statewide, population-based cohort.
Methods. We follow all AIDS cases detected by active AIDS surveillance in Oregon who remain in the state for follow-up medical care. At six month intervals, we review each patient's medical record and abstract information about every hospitalization requiring at least an overnight stay.
Results. Records were available for 381 (94%) of the 407 Oregon AIDS cases diagnosed between 1/1/81 and 5/30/88. During the cumulative 3,965 case-months of follow-up, these 381 patients were hospitalized 783 times for a total of 8,240 days. Including initial (diagnostic) admissions, AIDS patients spent 6.8% of their time hospitalized. Admissions averaged 10.5 days each. Intensive care unit (ICU) days comprised 4.6% of all inpatient days; 83% of all ICU days occurred within the first 3 months of diagnosis. Among all patients, the median number of days spent in the hospital during the year following diagnosis has remained constant at between 7 and 8 from pre-1985 through 1988. By 12/88, 240 (63%) of the 381 patients had died. The total inpatient days among cases that had died averaged 30. This total was unrelated to length of survival after diagnosis by linear regression (total hospital days for those surviving 1-3 month, 26 days; 4-6 months, 23 days; 7-9 months, 38 days; 10-12 months, 30 days; 13-18 months, 32 days; 19-24 months, 25 days; more than 24 months, 34 days). The percent of time spent in the hospital was inversely associated with length of survival (1-6 months, 53%; 7-12 months, 12%; > 12 months, 5%; p=.0001 by linear regression).
Conclusion. In this cohort of AIDS patients, hospital use has been constant over time. Admissions have been short and relatively infrequent. Contrary to expectations, increased length of survival has been associated with more hospital-free days rather than more hospitalizations.

M.H.P.11

LA FREQUENTATION HOSPITALIÈRE LIÉE AU VIRUS DE L'IMMUNODEFICIENCE HUMAINE (VIH)

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Objective. Mesurer un jour donné l'activité hospitalière liée aux patients infectés par le VIH et en suivre l'évolution dans le temps.
Methodes. Une enquête nationale transversale semestrielle recense "un jour donné" les patients déjà connus comme infectés par le VIH 1) en fonction du stade de la maladie 2) en fonction du type de recours aux soins.
Resultats.

	patients recensés	asymptomatiques	formes mineures	SIDA avérés
9 décembre 1987	1 780	23%	37%	40%
8 juin 1988	1 871	19.3%	34%	46.7%

De décembre 1987 à juin 1988 l'augmentation totale des cas présents est de 5%. Elle porte sur les SIDA avérés (+ 25%), les formes mineures restent stables et les porteurs asymptomatiques diminuent de 13%. La diffusion des malades sur le plan géographique est très faible (70% des malades concentrés sur deux régions). Le champ des hôpitaux concernés reste stable. Deux malades sur trois sont hospitalisés (80% des SIDA) les autres sont vus en consultation. L'évolution observée porte sur l'hospitalisation de jour (40% des formes mineures). 84% des patients ont recours aux services de médecine générale et de spécialités médicales.
Conclusion. La répétition semestrielle de cette enquête fournit d'excellents indicateurs pour apprécier les sollicitations du système de soins par la pathologie à VIH et adapter les structures en fonction de son évolution.

M.H.P.8

COSTS OF HOSPITAL CARE FOR PATIENTS WITH HIV INFECTIONS

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The implications of AIDS for health care are unknown. Precise data on the utilization of health care facilities and the allied costs, and efficiency and effectiveness of hospital care are not available, mainly due to the absence of suitabale methods for registration of demographic, medical and financial data of individual patients in hospitals. For this reason we developed a system which enables a detailed collection and analysis of data. The application of this system in 40 patients with HIV infections treated in our hospital between January 1, 1987 and July 1, 1988 showed that the mean yearly costs of in- and outpatient treatment of a patient with AIDS (CDC IV) were $ 20,000; those of treatment of patients with other HIV infections (CDC II-III) ranged from $ 1,700 to 2,500. Comparison of the mean costs for patients who died in that period with those for patients who did not, revealed that patients deceased because of AIDS would have costed $ 40,000 yearly and those with AIDS who were alive at July 1, 1988 $ 15,000. These figures only concern costs of hospital care for these patients. Other costs, such as those of procedures for prevention of HIV transmission, are not included. By the time of the conference the data will be updated. In addition, underlying diagnostic activities and treatment patterns will be described.

M.H.P.10

OUTPATIENT TREATMENT OF AIDS: A VIABLE ALTERNATIVE THAT DEMONSTRATES SIGNIFICANT COST SAVINGS

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OBJECTIVE: To compare the per diem charge of inpatient vs. outpatient treatment of AIDS patients with an opportunistic infection.
METHODS: Twelve patients were grouped according to opportunistic infection with 4 classified as inpatient/outpatient. PCP- (2 inpatients/2 outpatients); CMV- (3 inpatients/2 outpatients); wasting- (1 inpatient/2 outpatients); lymphoma- (1 inpatient/1 outpatient); meningitis- (1 inpatient/1 outpatient). Hospital days and inpatient charges per admission, and outpatient clinic charges and home health care charges per visit were collected over eight months. Average inpatient and outpatient per diems were calculated. Ten additional patients will be added as charges are posted and billed.
RESULTS: Average inpatient per diem for PCP was $1023 x 18 hospital days. Average out patient per diem was $157 x 23 clinic /or home health visits. CMV averaged a $615 inpatient per diem x 13 hospital days. Outpatient averaged 30 clinic /or home health visits x per diem of $242. Average inpatient per diem for wasting was $609 x 31 hospital days. Out patient cases averaged 17.5 clinic /or home health visits at $147 average per diem. Lymphoma was $891 inpatient per diem x 37 hospital days. Outpatient was $154 per diem x 34 clinic /or home health visits. Meningitis averaged a $584 per diem x 8 hospital days. Outpatient averaged $83 per diem x 56 clinic /or home health visits.
CONCLUSION: Our data show that individuals with complications of AIDS incur very different direct costs and per diem charges at home and in the hospital. Preliminary data strongly suggests that when outpatient therapy for these complications can be administered, per diem charges can be substantially reduced. These preliminary findings warrant further study, and have profound implications for health care policy development.

M.H.P.12

MEDICAL CHARGES AND HEALTH CARE UTILIZATION FOR PRIVATELY INSURED PATIENTS WITH HIV DISEASE IN CALIFORNIA

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Objectives: To develop methods for identifying patients with HIV disease through insurance billing claims and to describe their total and estimated lifetime charges and distribution of health service utilization.
Methods: A major claims file of Blue Cross of California was screened between 1/85 - 3/87 for persons with HIV disease. Charges and utilization were analyzed for those with specific HIV diagnostic codes and for those with prominent HIV manifestations meeting specific age, sex, and reporting criteria. Kaplan-Maier lifetime cost estimates were also generated for all diagnostic groups except ARC.
Results: Of the 274 subjects identified, mean age was 39 years; 97% were male. Mean followup was 10 months, with 68% alive at study conclusion. Forty-three % had PCP. Mean charges were $19,000 for survivors v. $52,000 for those who died. The deceased were in hospital 3 times longer than survivors (29 days v. 10 days); their estimated lifetime charges were $79,000. Among all patients, hospital charges represented 62% of the total bill. Among those hospitalized, the highest charges were room and board. Among those not hospitalized, professional fees were highest. Among PCP patients, pharmacy charges increased from 9% for those diagnosed in 1984 to 26% for those diagnosed in 1987. Among the deceased, 81% of total charges accrued in the last 6 months of life, 66% within the last 3 months. Independent variables associated with higher medical charges for all patients included: death, PCP diagnosis, length of followup, total hospital days, later year of diagnosis.
Conclusions: Identifying expenses of persons with HIV disease through insurance billing systems includes outpatient costs potentially missed in hospital based reports or those relying on patient recall. We report charges comparatively low for survivors. But the strong association of charges with the terminal phase of HIV illness underscores the importance of reporting estimated or true lifetime charges (from diagnosis until death) rather than observed charges which include patients still alive. Unlike prior results from California, regional differences in charges are not explained exclusively by different hospitalization patterns in our population.

M.H.P.13

IMPLICATIONS OF PROPHYLACTIC AEROLSOLIZED PENTAMIDINE FOR THE DIRECT MEDICAL CARE COSTS OF AIDS

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Objective: To compare the health care costs of a cohort of 70 persons with AIDS (PWAs) receiving aerolsolized pentamidine as a prophylaxis against pneumocystis carinii pneumonia (PCP) with a comparison group of PWAs not receiving pentamidine.
Methods: Both treatment and comparison groups receive their primary care through the Johns Hopkins Hospital AIDS Services. The comparison group is stratified by length of time since diagnosis of AIDS and principal opportunistic infections in order to make it comparable to the group receiving pentamidine. Using chart abstraction, hospital billing records, established ratios between charges and costs, and average allowed Blue Cross professional fees, both groups are followed over the same six month period (or until death). For both inpatient and outpatient services, we calculate: (1) the costs of providing the pentamidine treatment, (2) the costs of treating PCP in the two groups, and (3) total direct health care costs in the two groups. The paper also discusses the cost implications of providing aerolsolized pentamidine in settings other than ambulatory hospital clinics.
Results and Conclusions: Because the analysis is currently underway, results will not be available until April 1989.

M.H.P.14

THE COSTS OF TREATING AIDS IN A RURAL SETTING

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Objective. To determine the costs of inpatient and hospital outpatient care of AIDS patients in a rural area with low HIV prevalence.
Methods. We examined the hospital charge records for 16 patients treated from 8-Mar-84 to 16-Jul-88.
Results. There were 65 hospital admissions with an average length-of-stay (LOS) of 14.6 days and a median LOS of 9 days. Average cost per day of admission was $624. Pathology and pharmacy accounted for 24% and 23% of these charges, respectively. The average cost per hospital outpatient visit was $773 with 26% and 30% of these charges generated by pathology and pharmacy, respectively. The average annualized cost per patient was $38,271. Medicaid patients accounted for 63% of the total charges ($430,485 of $678,527), but 93% of the nonreimbursed charges ($181,898 of $194,714). The average loss per Medicaid patient was $20,210 (42% of charges billed), whereas for self-insured patients, the average loss was $1830 (5% of charges billed).
Conclusion. Our LOS and costs per patient are lower than reported in areas of higher prevalence. This may be due to several factors, including lower hospital charges in a rural area and higher utilization of outpatient services. Attempts to further reduce the costs of care in our facility should be directed towards more efficient use of pathology and pharmacy services. Inadequate Medicaid reimbursement for patients with AIDS is a significant financial burden for our health care facility.

M.H.P.15

L'HOPITAL ET LA CONSOMMATION MEDICALE DES PATIENTS INFECTES PAR LE VIH

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Objectif. Connaître la structure des dépenses médicales directes et la formation des coûts à l'hôpital.
Méthodes. L'évaluation de ces coûts repose sur le recensement et la valorisation des prescriptions réalisées au cours de 5000 séjours hospitaliers liés au VIH.
Résultats.

Stades de la pathologie / Type de consommations	Biologie	Examens	Médicaments	Total
Asymptomatiques	14 %	2 %	0 %	16 %
Formes mineures	19 %	3 %	4 %	26 %
Sida	24 %	8 %	26 %	58 %
Tous stades confondus	57 %	13 %	30 %	100 %

Exprimé en journée, le coût des dépenses médicales est de 715 F pour les porteurs sains, 600 F pour les formes mineures et 510 F pour les sidéens. En revanche, le coût des séjours est de 1960 F pour les asymptomatiques, 4160 F pour les sidéens et 2300 F pour les formes mineures. Le bilan.moyen coûte 1850 F.
Conclusion. Cette étude met en évidence l'importance de la charge hospitalière des malades séropositifs non atteints de Sida avéré, le rôle essentiel de la biologie dans la constitution des coûts et les effets positifs d'une organisation hospitalière souple.

M.H.P.16

Health Care Costs for AIDS Patients in Saskatchewan.

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Objective: To obtain detailed and specific health care costs for the treatment of AIDS in Saskatchewan.
Methods: A detailed review of the medical records was possible for 19/21 AIDS patients. Physician visits, procedures, medical imaging and lab tests were assessed according to current billing codes. Hospital costs/patient day were based on the current per diem costs for medical patients at University Hospital. Medication costs were estimated by tabulating the active number of dose/drug combinations.
Results: Nineteen male patients 31(22-63) years [median (range)] of age were diagnosed as AIDS between April, 1985 and February, 1988. The 12 deceased patients lived 268(0-580) days after diagnosis, were admitted 4(1-6) times to hospital for 62(1-148) days for a total cost per patient of $33,039 ($2768-$64961). The 7 surviving patients have lived 360(186-551) days since diagnosis have been admitted 2(0-7) times to hospital for 25(0-86) days for a cost per patient of $11115(0-39410). The total cost per patient was $28759 of which fees to physicians were 6.8%, laboratory tests 21.6%, medications 6.7% and medical imaging 3.8%. The average medical costs per inpatient day were 3.74 times ($120.7 vs $32.32) greater for AIDS patients than the average medical patient. In-patient costs accounted for 94% of the total cost.
Conclusions: Costs of care for AIDS patients in Saskatchewan are substantial. Effective strategies for cost reduction include improved utilization of outpatient facilities and hospice/home care.

M.H.P.17

RESOURCE USE, CHARGES, AND MORTALITY FOR AIDS PATIENTS WITH PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

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Objective: To evaluate variations in resource use, charges, and in-hospital mortality for patients (pts) with HIV-related PCP infection.

Methods: Computerized longitudinal patient records of 200,000 discharges between 10/86 and 10/87 were evaluated; 257 pts with PCP from 15 hospitals in metropolitan areas of California were identified.

Results: No significant variations in resource use or total charges were noted between the group of 218 pts receiving care at seven high-AIDS-familiarity hospitals (≥30 AIDS discharges/10,000 general discharges--hi-fam GP) relative to the 37 pts at eight low-AIDS-familiarity hospitals (≤30 AIDS discharges/10,000 general discharges--lo-fam GP) in terms of: days (13.2 vs. 15.4); ICU days (2.3 vs 2.1); frequency of ICU use (21.2% vs. 19.4%), prior emergency room use (37.2% vs. 36.0%); bronchoscopy use (71.7% vs. 64.3%) and total charges ($21,348 vs. $20,946), respectively, (p = NS). Severity of illness markers between the two groups were not significantly different (using a staging system of Turner et al., 1988). In-hospital mortality for hi-fam GP was significantly lower than that for lo-fam GP (12.2% vs. 33.3%, p = .004).

Conclusions: Pts in the lo-fam GP did not differ in severity or resource use from those in hi-fam GP. However, they were more likely to die in-hospital. Outcome differences might be due to variations in process of care.

M.H.P.18

AIDS HEALTH CARE IN THE U.S.: CHARACTERISTICS OF THE PATIENTS AND THE HOSPITALS WHO TREAT THEM

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Objective. The National Public Health and Hospital Institute conducted a survey to examine AIDS treatment in U.S. hospitals in 1987
Methods. The survey was disseminated to member hospitals of 4 associations: the Association of American Medical Colleges's Council of Teaching Hospitals, the Nation Association of Public Hospitals, the National Association of Childrens Hospitals and Related Institutions, and the National Council of Community Hospitals. The survey requested information on hospital utilization, demographic and risk group characteristics of persons with AIDS (PWAs), financing, discharges and organisational characteristics.
Results. Fifty-five percent (341/623) of the hospitals responded, reporting information for 14,000 AIDS patients and 382,000 inpatients days. Analysis of the information examined similarities and differences of hospitals by ownership, region, number of AIDS patients diagnosed, city, location and other factors.
Conclusion. Conclusions consider how the burden of care, treatments and sources of support differ among institutional groups and areas of the country. The report also considers implications for AIDS care in the U.S.

Prévention
Prevention

M.H.P.19

COUT PAR PATHOLOGIES DUES AU VIH ET TRAITEES A L'HOPITAL

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Objectifs : Analyser et comparer les coûts hospitaliers des pathologies dues au VIH.
Méthodes : Un fichier de résumés médicaux et de consommations (actes biologiques-LAB, actes non biologiques-IMA, médicaments et produits sanguins-PSA) a été constitué pour 4236 hospitalisations réalisées en 1988 dans 16 centres de référence. Les diagnostics principaux des séjours (pneumocystose aigue, Sida avec complications multiples ...) définissent les types de pathologies étudiées. Les coûts sont la somme des dépenses médicales directes (consommations LAB-IMA-PSA) et du reste des dépenses journalières liées à l'hospitalisation (1300 F/j).
Résultats : Coûts par séjour-malade en Milliers de Francs (KF) : 1000 F = US $ 159

	Toxopl.	Pneumo.	Mult.	Cach.VIH	Enceph.VIH	Kaposi	Hémato.	Bilan
N	44	82	81	76	23	31	110	919
DMS	29.6	32.7	20.8	31.8	20.0	12.7	2.8	1.7
KF LAB	3.9	4.3	3.1	2.0	3.0	2.3	1.2	1.8
KF IMA	2.5	1.8	1.2	1.0	1.7	0.9	0.1	0.1
KF PSA	3.6	5.7	2.9	1.6	1.4	2.5	0.9	-
KF TOT	56.3	45.8	38.3	37.3	36.2	24.8	6.3	4.5

DMS:durée moyenne de séjour. Toxopl:toxoplasmose. Pneumo:pneumocystose. Mult:Sida+complications multiples. Cach:cachexie VIH. Enceph:encéphalopathie VIH. Hémato:formes mineures immunohématologiques. Bilan:séjour pour "bilan" de sujets asymptômatiques ou lymphadénopathiques. Les coûts varient selon les pathologies associées : pneumo. + autres complications Sida(N=31, DMS=38.1, 66.4KF). pneumo. + autres infections (N=16, DMS=24.3, 47.1KF). pneumo. isolée (N=35, DMS=18.0, 34.0KF). Certains coûts sont majorés par quelques séjours inhabituellement longs: les toxopl. avec DMS entre 5 et 57 j. (N=34, DMS=20.3) ont un coût de 36.4 KF (-33 %). Ces coûts seront comparés à ceux de pathologies classées dans les mêmes Diagnosis Related Groups (DRG's).
Conclusion : De telles études permettent de décrire le mode de formation des coûts liés au VIH.

M.H.P.20

POTENTIAL IMPACT OF HIV IN THE LABOR FORCE OF THE FUTURE

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Objectives. To evaluate the potential impact of HIV infection and disease in persons currently aged 11-24 on the future labor force--the labor force participation rate, and worker-to-dependent ratio in the years 2010-2040.
Methods. Review of fertility rates, population and labor force participation trends and relevant projections will be utilized to provide a picture of the impact of HIV infection on the future labor force. The impact of changing variables such as increased mortality and morbidity due to HIV infection on the cohort of persons currently aged 11-24 will be interpolated and analyzed.
Results. A description of prospective outcomes, in this 11-24 year old cohort population, from best case to worst case scenarios will be presented, utilizing the variables of seroprevalence, morbidity and mortality. The potential economic impact of AIDS in the labor force, and on labor force participation and dependency ratios of the future will be depicted.
Conclusion. Prevention efforts need to be targeted to the 11-24 year old cohort. If AIDS is to make serious inroads in this cohort of people the potential for significant negative repercussion on the labor force and the economy of the United States in the period 2010-2040 will be apparent.

M.H.P.21

ROTS.QUALITY STANDARD OF CONDOMS BASED ON A RHEOLOGICAL MODEL.

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Objective:The actual standards(ISO,BS,AFNOR,UNE..)start from a model of 1960 and with the tecnological,sanitary and cultural changes(2nd sex.revol.).The criterion or requirement was:SECURITY,evaluating it with tests of mecanical resistance on break,tested with constant deformation;for the detection of leaks etc.,the scientific base was a model:"elastic body(HOOKE) together with an adequate testing plan.The appearance of HIV and his danger lead us to develop new methods with more realistic bases.Description:The standard ROTS (Rheological Quality Test System)starts from 2 criterions:SECURITY.SENSIBILITY. The scientific base starts from a new analogical model:visco-elastic body (HOOKE-NEWTON)and the valoration of break by propagation of chaps(criterion GRIFFITH) which is different to an elastic break.The evaluation of security is made with the Rheological Test(Pat.met.) using impacts caused by shock-waves with water(non-constant deformation).The detection of leaks is realized by conductimetric. but with condom in tension,not like up to now(reposing). The sensibility is evaluated by the 1st module at 100% (G100),rejecting lots for defects in sensibility,as this fact interests the consumer.The testing plan is highly rigorous:AQL is 0,1% in spite of the 0,4% used in actual standards.
Conclusions: ROTS Standard permits to increase fiability of a condom by better analogy between the test methods and the real use by the consumer, with the objective to optimize the function of prophylaxis against HIV and as contraceptive barrier.

M.H.P.22

BARRIER PROPERTIES OF NATURAL SKIN CONDOMS TO SMALL PARTICLES

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Objective. To discover why high MW Dextran passes through natural skin condoms and microspheres do not, when both are claimed to contain particles 80nm in diameter i.e. similar to HIV at 90-120nm.
Method. The barrier properties of the condoms were assessed by placing aqueous dispersions of test particles inside a condom, which is then partly immersed in a beaker of water, and determining whether any of the particles could be collected on the outside. Samples of Dextran passing through the condom were collected and analysed using a calibrated GPC which measures molecular size.
Results. GPC Analysis of the Dextran as supplied showed that it contained a very wide range of particle sizes. The sample of Dextran collected, that had passed through the condom, contained particles considerably smaller than HIV. SEM pictures showed the polystyrene microspheres had a very narrow range of particle sizes.
Conclusions. Unlike polystyrene microspheres, Dextran contains a wide range of particle sizes. The bulk of the Dextran does not pass through the natural skin condoms, but fractions containing smaller particles permeate through. This produces the apparent discrepancy with the data from polystyrene microspheres since the latter is essentially a mono-dispersion. Therefore, natural skin condoms are probably a barrier to HIV since the virus is substantially larger than the largest model particle shown to go through.

M.H.P.23

EFFECT OF OZONE ON THE PHYSICAL PROPERTIES OF CONDOMS

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Objective. To determine the effect of ozone exposure on both packaged and loose condoms.
Method. A range of packaged and loose condoms were exposed to two ozone regimes; 300 parts per billion (ppb) of ozone for 72 hours and 5000ppb of ozone for 168 hours. Condoms were burst tested before and after exposure.
Results. The burst volumes and burst pressures of packaged condoms were unaffected by exposure to ozone. Loose condoms were very brittle after exposure and untestable.
Conclusion. Provided that condoms are retained in good quality packaging prior to usage, their performance is not diminished by exposure to ozone.

M.H.P.24

CONDOMS: A COMPARATIVE STUDY OF MECHANICAL STRENGTH, HUMAN RATING ABILITY AND IN VIVO CONDOM USE

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Objective. To compare mechanical with human efforts to rate the reliability of 7 condom brands and analyze the results with the aid of sexologists and condom video archives.
Methods. Seven brands of condoms were tested and subjectively rated by 49 college students. The same brands were then mechanically tested using ASTM and ISO standards. Similarities and differences in mechanical and human ratings were interpreted by reviewing 70 hours of human sexual condom patterning video tapes and discussing the comparative rating results with experienced sex therapists and educators.
Results. There are crude similarities between mechanical and human measurements of condom reliability. However, more significantly, many factors which strongly effect human assment and rating choices are not taken into account by laboratory tests. Thus users, manufacturers and laboratory scientists make serious, unnecessary errors in assessing condom reliability.

M.H.P.25

EVALUATION OF A NEW FEMALE CONDOM FOR VIRUS PERMEABILITY.

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Objective. To determine if a new female condom is permeable for viruses.
Methods. A new barrier contraceptive device for internal use by women is undergoing development in the United States. The "female" condom, designated WPC-333 (Wisconsin Pharmacal Company, Jackson, WI), consists of a soft, loose-fitting polyurethane sheath and two diaphragm-like, flexible polyurethane rings. One ring lies inside the sheath and serves as an insertion mechanism and internal anchor. The other ring remains outside the vagina once the device is inserted, protecting the labia and the base of the penis. We have developed an artificial intercourse model for this condom and tested it for permeability to viruses in triplicate as follows:

For each trial 2 ml of virus suspension is placed inside a female condom. This condom is placed inside a second female condom which contains 2 ml of tissue culture medium. A 35 cc plastic syringe case is inserted into the inner condom to serve as a penis. To simulate trauma associated with sexual intercourse, the entire apparatus is placed into a close-fitting foam model which serves as a vagina and plunged up and down fifty times. CMV cultures were performed in diploid fibroblast cells and HIV cultures in normal human lymphocyte cultures stimulated with PHA.
Results. Neither virus leaked from the inner condom.
Conclusion. In a laboratory model simulating sexual intercourse a female condom is impermeable to CMV and HIV.

M.H.P.26

VINYL VERSUS LATEX GLOVES AS BARRIERS TO TRANSMISSION OF HIV AND OTHER VIRUSES IN THE HEALTH CARE SETTING

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OBJECTIVE: To determine the permeability of 8 different glove types (7 latex and 1 vinyl) to three different sized viruses, Herpes simplex virus type 1 (HSV-1), Echovirus 9 (Echo 9) and Human immunodeficiency virus type 1 (HIV-1).

METHODS: Virus suspensions of HSV-1 ($10^{8}TCD_{50}/ml$), HIV-1 ($10^{5}TCD_{50}/ml$) and Echo 9 ($10^{7.5}TCD_{50}/ml$) were placed in an inverted glove finger from visually intact gloves immersed in sterile media in glass containers. Aliquots of 0.5 ml suspension were removed at 10 minutes, 30 minutes, 1, 2 and 3 hour intervals from outside and inside of the glove finger (positive control) and were tested in cell cultures for presence of virus. The experiments were repeated with Echo 9 after stretching of a glove finger for 18 hours.

RESULTS: None of the three viruses tested were recovered from the aliquots of suspensions from the outside of the inverted glove finger. All three viruses were recovered from inside of the glove finger (positive control).

CONCLUSION: Our data suggests that under the experimental conditions used, visually intact gloves which are used in our institution would act as effective barriers to transmission of viruses in a health care setting.

M.H.P.27

LEAKAGE OF VIRUS (BACTERIOPHAGE X-174) THROUGH STRESSED VINYL AND LATEX EXAMINATION GLOVES

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Objective. To compare stressed latex and vinyl examination gloves as barriers to viruses.
Methods. We tested leakage of bacteriophage ΦX-174 through examination gloves. Vinyl and latex gloves were stressed using a standardized set of manipulations designed to mimic activities performed during patient care. Four levels of stress were applied: full, partial, no manipulation (gloves donned and removed), and control (out of box), and gloves were tested for virus leakage blindly for each level of manipulation. One hundred ml of PBS containing 10^{5} - 10^{6} pfu/ml were poured into the glove. The gloves were then hung for 5 minutes and dipped into 100 ml of collection buffer for 5 minutes. The collection buffer was sampled using a standard coliphage plaque assay with E. coli C as the indicator strain.
Results. To date, 183 gloves, 92 vinyl and 91 latex, have been tested. Viral leaks were found in 44% of vinyl gloves (20 of 45) following full and partial manipulations as compared to 10% of latex gloves (6 of 63; Fisher's exact test, two-tailed; p = .0003).
Conclusion. These preliminary results on virus leakage through stressed vinyl and latex exam gloves are consistent with our results reported last year on leakage of bacteria, indicating more frequent leakage through vinyl gloves, particularly following manipulation.

M.H.P.28

M.H.P.29

M.H.P.30

Planification/Gestion
Planning/Management

T.H.P.1

THE IMPACT OF CARING FOR A.I.D.S. PATIENTS ON THE WORKLOAD OF PRIMARY CARE PHYSICIANS IN A HEALTH MAINTENANCE ORGANIZATION

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Objective. To measure the clinical and administrative workload generated in one year by the average AIDS patient in an HMO, and to relate it to that of the average adult HMO member, for purposes of resource planning. Methods. The ambulatory health center and hospital utilization records of all diagnosed AIDS patients who received treatment at an HMO during its fiscal year 1988 (n=119) were analyzed, as were those of all adult HMO members (n>195,000) during the same period. Health center encounter rates were calculated by clinical specialty and type, as were the mean number of in-Plan lab and x-ray exams and new prescriptions. The mean number of acute and long-term hospital days were also calculated. All utilization figures are for the fiscal year ending September 30, 1988. Results. 92% of all AIDS patients treated during FY88 were males between the ages of 20-49. The ratio of face-to-face internal medicine visits in this group (13.08/pt) to those of the average HMO male member 20-49 (1.12/pt) was 11.7 to 1. Face-to-face visits accounted for only 36% of all internal medicine encounters for AIDS patients, with telephone encounters representing another 20%. Over 40% were administrative encounters, such as making referral arrangements and coordinating inhouse lab testing. AIDS patients received almost 20 times the number of lab tests and x-rays as the average adult HMO member and almost 10 times the number of new drug prescriptions. The ratio of acute inpatient medicine days for AIDS patients (13.92 days/pt) to that for the average adult member (0.91 days/ pt) was 150 to 1. The average AIDS patient received 8.1 months of care during FY88. Conclusions. AIDS patients consume significantly more primary care M.D. time than the average HMO adult. This should be considered in planning M.D. to population ratios in settings having high numbers of AIDS patients.

T.H.P.3

DEMOGRAPHIC, UTILIZATION, AND REIMBURSEMENT DATA FOR AIDS PATIENTS IN 21 U.S. CITIES

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Objective Over $29 million has been awarded by the U.S. PHS to fund Service Demonstration Projects in 21 high AIDS prevalence U.S. cities. Data on client demographics, service utilization, and sources of reimbursement for care have been received. This is the only source of such data to date for different areas of the U.S.
Methods Preliminary data for 20 projects have been analyzed, comparing demographic profiles of clients with profiles of the national AIDS population. Primary sources of reimbursement were analyzed to assess regional or other variations.
Results Demographic data provide current information on age, sex, race, & transmission category for project clients diagnosed as asymptomatic HIV seropositive, AIDS, & other symptomatic HIV infection. The data confirm that these projects are serving a disproportionately high number women, & ethnic minority individuals as compared to the national profile of patients. Reimbursement data reveal a high reliance on public resources, with private insurance covering primarily hospital & hospice services. Federal and state funds constitute the largest source of reimbursement for ambulatory, home health, & subacute skilled nursing services. Local & other funds are the major source of support for residential services.
Conclusion Client profiles & reimbursement sources show that disproportionately high numbers of women, children, & minorities are utilizing these projects & public sources of reimbursement predominate.

T.H.P.5

SPECIFIC AND SENSITIVE ESTIMATES OF ACUTE CARE HOSPITAL STAYS ASSOCIATED WITH HIV IN NEW YORK

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Objective. Create and compare upper and lower bounds of total hospital discharges associated with HIV infection in NYS using available discharge data abstracts (DDA). Methods. With DDA for all acute hospital stays in NYS, 1981-87, patients 18-44 years, the specific method counts DDA containing diagnoses (ICD-9-CM codes : 042-049, 795.8, 279.10, 279.19, 279.30, or 136.3) HIV specific (HIVSD). The sensitive method designates all infections, malignancies, and/or CNS disease in the 1/88 ICD-9-CM AIDS revision as HIV related (HIVRD). This latter "worst case" estimate attributes all increase in DDA with any HIVRD to HIV infection, whether or not an HIVSD is on the DDA; it also includes DDA with an HIVSD without any HIVRD.

Results.	1984	1985	1986	1987
Discharge Estimate				
HIVSD (Specific)	3140	6204	10846	15734
Worst Case(Sensitive)	9398	13648	20824	25318
Ratio	3	2.2	1.9	1.6

DDA with an HIVSD but no HIVRD increased from 1984 (22%) to 1987 (28.9%).
Conclusion. The worst case estimate suggests that there are many more HIV related discharges than currently estimated. Upper and lower bound estimates of acute care hospital discharges in NYS are converging over time. Increasing HIVSD DDA with no HIVRD suggest there are other conditions, either not coded and/or not in the ICD-9-CM AIDS codes, that are responsible for such hospitalizations for HIV infected persons.

T.H.P.2

HOSPITAL-BASED AIDS VOLUNTEER PROGRAM IN HEALTH MAINTENANCE ORGANIZATION (HMO)

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Objective. To describe the design and operational structure of an AIDS volunteer program in the largest HMO in U.S.
Methods. An AIDS volunteer program designed to provide practical and emotional support to our in-patient AIDS population. Performed internal needs assessment and studied other programs in community; recruitment of HIV-sensitive personnel to staff program; established policies; developed manual for the program; provided 2.5 day HIV-sensitive training; weekly scheduling of volunteer staff support group meetings; and developed training video.
Results. HIV volunteer program now institutionalized at Kaiser Permanente. Results are: coordination of program through social work services for supervision and support; coordination through volunteer department for administrative support; and a model program recognized in San Francisco and external communities.
Conclusion. A hospital-based AIDS volunteer program providing a new adjunct service to a hospital-based AIDS unit with evaluation from providers, patients, families, and volunteers.

T.H.P.4

DEVELOPMENT OF A SEVERITY INDEX FOR USE WITH STATEWIDE MEDICAID AIDS PATIENT FILES

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Objective: To summarize the judgments of 6 national AIDS experts convened to develop a severity classification model for AIDS to be applied on statewide Medicaid files in New York and California.
Methods: Before the meeting, experts generated lists of major factors that could influence survival of AIDS patients. These factors were organized by affected organ system and by patient/treatment characteristics. In the meeting, the experts reviewed and finalized the list of factors. AIDS case scenarios were created with randomly assigned composites of these factors. Panel members estimated survival times for 100 cases as well as for each of the factors used in the cases.
Results: Clinical indicators used in the severity model included: AIDS-defining diagnosis and duration since diagnosis, subsequent opportunistic and non-opportunistic infections and cancers grouped by organ system, assessment of the degree of organ compromise with these conditions, nutritional status, and drug treatments. Patient factors included: age, sex, race, risk group, and level of denial of disease. Treatment site factors included: type of hospital and follow-up care, level of experience treating AIDS patients at the site, and size of local AIDS population. Weighted utilities were used to determine the relative importance of each indicator in the model.
Conclusions: This model demonstrates a method of integrating a variety of data contained on Medicaid files to assess severity of illness in order to promote meaningful contrasts among groups of AIDS patients.

T.H.P.6

THE C-100 CLINIC: THE ESTABLISHMENT OF A PRIMARY CARE PROGRAM AT CHARITY HOSPITAL AT NEW ORLEANS, LOUISIANA.

Wisniewski, Ted; Louisiana State University, New Orleans, Louisiana, United States.

Objective: To describe the incorporation of a model HIV Primary Care program into a traditional teaching medical center at Charity Hospital at New Orleans, Louisiana, the oldest public hospital in the United States. Methods: Description of programs developed and analysis of impact on public/private health systems through providing services for over 1,000 patients at all stages of HIV-related illness seen since 6/18/87. Results: Delineate components of this model clinic, discuss its evolving relationship with two medical schools, multiple subspecialties, inpatient and outpatient systems; review links with case management and local community groups, public health and STD clinics, pediatric clinics, home care and hospice agencies, and demonstrate the primary care role in relationship to on-site AIDS Clinical Trials Unit (ACTU) and other research programs. Funded in part through federal (HRSA) and private (Robert Wood Johnson) grants, the clinic's central role in service demonstration projects will also be elucidated. Conclusion: This model primary care program exemplifies program development in one of the most economically depressed regions of the United States, incorporating funding from private and public sources on a local, state and national level.

Session d'affichage
Poster Session

Repercussions economiques du SIDA
The Economic Impact of AIDS

T.H.P.7

SCATTER BED VERSUS CLUSTER UNIT TREATMENT OF AIDS INPATIENTS. Fulop G, Strain J, Fahs M, Sacks H.
The Mount Sinai School of Medicine, NYC, USA.

Objective. The Presidential AIDS Commission commented on the need to compile data from hospitals using dedicated AIDS units and those using scattered placement with regard to quality of care and outcome. Many hospitals are converting beds to an AIDS unit without the benefit of cost and benefit analyses. This preliminary study describes the outcomes and charges of AIDS Unit (Cluster) and Scatter HIV inpatients.

Methods/Results. Cluster (N=23) versus Scatter (N=67) patients were studied at the Mount Sinai Hospital in NYC using the Utilization Information Service database over a 3 month period. Cluster patients were more likely than Scatter inpatients to be female (P<.06), have more consultations (P<.01), stay 33% longer in the hospital (p<.01), and have higher charges (p<.05) (room- $9,423 vs $6,493 , and services - $9,970 vs. $7,735). No differences in age, race, insurance, number of procedures, hospital acquired infections, death rate, and discharges home were observed.

Conclusion. This preliminary study observed a significantly prolonged hospital stay and increased charges for Cluster patients compared to Scatter patients without significant differences in mortality and discharges home. Prospective, cost-effectiveness studies of Scatter vs. Cluster units are required.

T.H.P.8

The Economic Impact of Early Intervention in HIV Disease
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Objective: To assess the economic magnitude of providing early intervention services in HIV disease.

Methods: The prerequisites of an early intervention strategy were assessed. The number of individuals requiring early intervention was determined for New York, San Francisco, and the United States. The economic costs for requisite services, including HIV-antibody testing; serologic monitoring; counseling; drug treatment; and primary medical care were estimated.

Results: Median estimated costs of early intervention beginning each year 1988-1991(expenditures in millions of dollars)

	1988	1989	1990	1991
United States	4,078	3,870	3,602	3,260
NewYork City	627	599	567	531
San Francisco	88	82	75	67

Conclusion: There is a "window of opportunity" for effective early intervention in HIV disease because the majority of infected individuals are approaching the symptomatic phase of illness. Planning for its implementation should begin immediately.

T.H.P.9

PATIENT PREFERENCE AND SATISFACTION WITH AIDS SERVICES
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Objective: To evaluate the accessibility and quality of services available to persons with HIV infection in San Francisco in order to plan for future needs.

Methods: The authors will utilize a questionnaire and follow-up phone interviews with a sample of persons receiving one or more HIV-related services in San Francisco. Recruitment of persons to respond to the questionnaire will be 1) persons utilizing services at SFGH or other Department of Public Health service sites including substance abuse programs serving PWAs, will be asked to volunteer and 2) an ad will be placed in local newspapers. The initial questionnaire will be close-ended questions pertaining to prior utilization of services, housing and supports, perceived gaps or problems with services, preferred type of service provider, source of insurance/payments, socioeconomic data, and level of disability. The survey will be pretested with both providers and persons with HIV infections.

Results: Discussions about the long term needs of PWAs for planning purposes has indicated that the provider's opinion may vary from that of the patient. In some cases we believe that this may be due to a lack of information about the service and its availability. Some services have not been successful due to a lack of support from the person with AIDS.

Conclusion: In order to meet the needs of PWAs in the future in San Francisco, it is necessary to gather the direct input from persons utilizing the services. This information will ensure a responsive system of care.

T.H.P.10

HOSPITAL COSTS AND DRG REIMBURSEMENT FOR HIV ADMISSIONS.
Slim, Jihad*, Heidge, D., Perez, G. Johnson, E.S., Perez, E. Saint Michael's Medical Center, Newark, New Jersey, U.S.A.

Objective: To determine impact of DRG system and admitting service on hospital reimbursements.

Methods: Retrospective review of 1987 admissions coded as HIV disease. Total admissions listed as self-payers studied in detail as well as admitting service.

Results: Total of 326 patients comprised 403 admissions. Of these, 110 were listed as self-payers. 70% of admissions were to the Infectious Disease Service. Of the 110 self-payers, 64% not able to reimburse the hospital. This resulted in a $331,423 loss to the hospital. Only 13% of the Infectious Disease Service admissions with a Case Management System failed to reimburse as opposed to a 30% rate in the Medical Service group. Most of these latter admissions were emergency in nature.

Conclusion: Although losses occurred in the self-payer category, these can be minimized by prior infectious diseases and Case Manager involvement with a decrease in emergency type admissions.

T.H.P.11

SHIFTING TOWARDS AMBULATORY CARE OF AIDS PATIENTS - LESSONS FROM THE PCP EPIDEMIC.
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OBJECTIVE. To describe the successful shift towards ambulatory care of patients with AIDS-related PCP.

METHODS. Data was obtained from the Medical Records Department and the Microbiology laboratory PCP surveillance records at St. Paul's Hospital (SPH). The following variables were collected on a quarterly basis for the 2 year period ending March 31, 1988:

I. Number of AIDS-related PCP cases diagnosed
II. Number of AIDS-related PCP cases admitted to hospital
III. Length of hospital stay of AIDS-related PCP cases.

RESULTS. The number of PCP cases diagnosed at SPH increased steadily from the from the 2nd quarter of 1986 (86/2) to the 2nd quarter of 1987 (87/2) (from 17 to 31 cases). Hospital utilization by PCP cases followed the same pattern (from 273 to 576 hospital days). At this time, a major effort was undertaken to encourage a shift towards ambulatory care of AIDS patients. This was generally facilitated by the opening of an HIV dedicated ambulatory care facility in mid May 1987 and specifically in the case of PCP, by the introduction of effective oral antimicrobials, the wider use of PCP prophylaxis and the availability of zidovudine. Although SPH continued to care for over 70% of all AIDS cases in the province, the number of PCP cases stabilized at 23 per quarter. Approximately 20% of them were successfully treated on an outpatient basis while the rest required hospitalization for varying periods of time. As a consequence, the hospital bed utilization over the last 3 quarters of the study, decreased to 250 days per quarter. Average length of stay per diagnosed case of PCP also decreased from 16.45 days (86/2 to 87/2) for the period to 11.20 days for the last 3 quarters of the study.

CONCLUSION. The present study demonstrates the feasibility for implementation of ambulatory care programs for specific groups of AIDS patients. This lesson from the PCP epidemic should be expanded to aid in the shift towards ambulatory care of AIDS patients in general.

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T.H.P.12

HEALTH CARE COSTS OF CLASS 4 HIV CARE IN AN HMO SETTING
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Group Health Cooperative of Puget Sound; Seattle, Washington; U.S.A.

Objective: To identify the health care costs and service utilization of patients with CDC Class 4-HIV conditions from January 1987 to June 1988 at Group Health Cooperative (GHC), an HMO with comprehensive medical coverage.

Methods: A database tracking utilization and average costs was used to identify all care provided to a sample of 83 homosexual/bisexual males (mean age, 38 years) with CDC Class 4 HIV disease from January 1987 to June 1988. 86% (71) had an AIDS diagnosis; 14% (12) had other Class 4 HIV conditions e.g. ITP. Only months of care after an HIV diagnosis were studied. 88% (73) received AZT all or part of the time. Results were compared to an age and sex matched control sample randomly selected from all GHC enrollees.

Results: GHC's estimated annual costs for all services are $21,130/person for the AIDS sample; $640 for the control sample and $1,032/person for all GHC enrollees. In the HIV sample, costs were 55% inpatient, 7% primary care, 16% specialty care, 13% outpatient pharmacy, 4% laboratory, and 5% other. Assuming a survival range of 18 to 24 months, a range of diagnosis-to-death costs for PWA's is estimated at $31,700 to $42,300. Average length of hospital stay was 10.5 days (with a range of 1-80 days) comparable to the Washington State average of 11 days. GHC's primary care MD's manage HIV cases with specialty consultation as needed. Primary care utilization was 11 times greater than in controls. Eight specialties (infectious disease, pulmonary, oncology, radiation therapy, dermatology, ophthalmology, E.R. medicine, and surgery) were utilized to a greater extent than primary care.

Conclusions: Accurate information about the costs of AIDS care and utilization profiles are powerful tools for HMO's and hospitals to use in budgeting manpower and bed projections and long range planning, particularly when coupled with estimates of future caseloads.

Session d'affichage
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T.H.P.13 AN INTERDISCIPLINARY MODEL OF AIDS CARE IN A TEACHING HOSPITAL

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Objective. To describe St. Paul's Hospital (SPH) AIDS Care Program. SPH is a 575 bed teaching hospital of the University of British Columbia.
Method. Since 1982 SPH has cared for 350 (12/88) AIDS patients, the majority of whom are from 6 general practitioners (GP's) associated with SPH. In 1984, recognizing the complex nature of AIDS, a senior medical sub-specialist was asked to establish and run an interdisciplinary AIDS Care Group. The Group has evolved to include: GP's and Specialist Staff, Head Nurses of the Medical Wards and AIDS Clinic, the Director of Medical Nursing, AIDS dedicated Social Workers, Home Care Liaison Nurses and Pharmacist. In May, 1987 an AIDS dedicated Clinic was opened. Administrative support in policy and program planning is provided through the AIDS Advisory Committee. Research has been fostered by this cohesive environment.
Results. In a weekly 1 hour meeting the AIDS Care Group reviews all inpatients and problematic outpatients. Inpatient census averages 17 patients/day (12/88). Average length of stay is 11.5 days at a per diem estimated at $800. The AIDS Clinic has grown to 866 visits/month (12/88).
Conclusion. Comprehensive AIDS care integrated across medical wards and outpatient services has supported the diffusion of clinical skills amongst nursing staff, housestaff and students of various disciplines. Rapid expansion of the AIDS Clinic has helped contain the utilization of inpatient services.

T.H.P.15 COMMUNITY-BASED PNEUMO-CLINICS AS A MODEL FOR COST-EFFECTIVE LOWERED MORBIDITY AND MORTALITY IN HIV DISEASE.

Harrington, Mark; Kirschenbaum, D.Z. AIDS Coalition to Unleash Power, New York NY, USA.

Objective: To propose the development of community-based outpatient clinics in areas whose dense concentrations of HIV-infected persons could obtain voluntary, anonymous HIV testing in conjunction with quarterly T-cell monitoring and PCP prophylaxis for those at risk. Discussion: PCP pneumonia is the presenting condition at diagnosis for 60% of PWA's, and the cause of death for at least as many. Aggressive monitoring and early intervention would prevent many of those at risk from progressing to life-threatening stages of HIV disease. Clinics must be instituted in areas most affected by the epidemic. Early intervention will prevent massive medical expenses attendant upon hospitalization, drastically lowering HIV-related morbidity and mortality.
Conclusion: In conjunction with the AIDS community, the Federal government should sponsor a pilot program of community-based outpatient pneumo-clinics in New York City.

T.H.P.17 LIFETIME PATTERNS OF MEDICAID EXPENDITURES FOR PERSONS WITH AIDS IN CALIFORNIA

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*SysteMetrics/McGraw-Hill, Washington, D.C., USA.
**Health Care Financing Administration, Baltimore, Maryland, USA.

Objective. As the health care insurance program for certain groups of poor persons, Medicaid finances the health care of about 40% of persons with AIDS in the U.S. This study examines Medicaid expenditure patterns for cohorts of Medicaid enrollees with AIDS in California in 1984 to 1986.
Methods. The source of data is the HCFA Medicaid Tape-to-Tape person-level data file including enrollment, utilization and expenditure information. Persons with AIDS in the California files were identified using ICD-9-CM codes associated with AIDS.
Results. For the cohort beginning their enrollment in 1984, lifetime Medicaid expenditures totaled almost $22,000. Those with enrollment lengths of 3 months or less (about 20% of the study group) have monthly expenditures that are 2 to 3 times the monthly rate of those enrolled for longer periods. There is a peak in monthly expenditures during the first two months and last two months of enrollment in Medicaid.
Conclusion. Because of their high monthly costs, knowledge about persons enrolled in Medicaid for a short time is important so that services can be appropriately targeted within Medicaid. The peak in expenditures in the first months of enrollment indicate that a major medical event precipitates enrollment in Medicaid. The peak in expenditures in the last months are consistent with patterns observed in studies on last year of life.

T.H.P.14 ESSAI D'ADAPTATION D'UN CABINET DE MEDECINE GENERALE EN VILLE

Jean Florian METTETAL, M. BARY, F. EDELMANN, A. JOURDAN.
ARCAT-SIDA,(Paris, France)

Objectifs: Adaptation en ville du système de santé français.
Méthodes: Evaluation permanente des difficultés rencontrées par les patients et d'une réponse possible de médecins d'un cabinet progressivement spécialisé "HIV" de mars 85 à déc. 88, interviews des différents correspondants et intervenants sociaux, liaison avec les associations, informatisation.
Résultats: Les médecins du cabinet ont été confrontés à d'importantes lacunes:
1 - la double fonction du généraliste, médicale et psychologique, ou d'écoute, sociale et juridique, est limitée par le manque de formation, de temps, de prolongements complémentaires et adaptés.
2 - la structure traditionnelle du cabinet: médecins rémunérés sur des actes médicaux, et secrétariat.
3 - l'environnement: Les prolongements privés du cabinet, médicaux, paramédicaux, sociaux et juridiques sont aléatoires et en partie budgétisés. Le secteur public ne s'occupe que des cas extrêmes.
Pour combler ces lacunes, les médecins du cabinet ont cherché à acquérir:
1 - de nouveaux réflexes et connaissances: En 86, les bilans, le suivi des patients et des thérapeutiques étaient souvent hospitaliers et les besoins sociaux ne pouvaient être résolus qu'à titre individuel. En 88, la prise en charge médicale a permis de limiter le recours hospitalier, et la multiplication des contacts avec les organismes sociaux publiques et privés a satisfait aux besoins importants, mais n'a pas empêcher que des besoins exprimés ne deviennent des urgences. Il n'a pas été possible de réaliser une prévention sociale.
2 - un nouveau type de gestion, difficile à concrétiser: le cabinet continue de se heurter à la difficulté de s'informer, aux coûts, et aux réticences, voire aux rejets, des organisme censés être compétents.
Conclusion: Une évaluation réelle de la fonction de médecin généraliste et de la place d'un cabinet de ville, la nécessité d'inclure dans les dépenses de santé des actes sociaux préventifs, sont des préalables à une meilleure prise en charge des patients, à la diminution du coût de la maladie pour la société, et à l'acceptation sociale du problème.

Financement et assurances
Financing and Insurance

T.H.P.16 THE "MEDICAIDIZATION" OF AIDS

Jesse Green* and P. Arno **
*NYU Med Ctr, NY, NY, USA,**Montefiore Med Ctr, Brx, NY, USA

Objective. To describe a shift in the burden of payment for AIDS patient care from private to public sources.
Methods. Analysis of data on all AIDS related hospital discharges from New York State and California over a four year period.
Results. There was a sharp trend toward an increasing proportion of the burden of AIDS care being financed by public sources, primarily Medicaid, and a decreasing proportion by Blue Cross and private insurers (See Table). These trends are only partially explained by demographic shifts. We see the same trends among all racial/ethnic groups. The most likely explanation is that loss of employment, loss of private insurance, and subsequent impoverishment of PWA's leads to Medicaid eligibility. It is well known that most private physicians avoid treating Medicaid patients because of very low reimbursement rates. Therefore the "Medicaidization" of AIDS threatens the goal of shifting care to primary settings.

SHIFT IN SOURCES OF PAYMENT FOR AIDS CARE IN THREE CITIES, 1983 TO 1986

	New York		Los Angeles		San Francisco	
	1983	1986	1983	1986	1983	1986
Blue Cross	35%	26%	17%	10%	21%	10%
Commercial/HMO	8%	7%	58%	50%	46%	44%
Medicaid	36%	49%	11%	23%	19%	30%

The trend was evident even after controlling for shifts in the racial makeup of the population hospitalized for AIDS. Among whites with AIDS in NY, Blue Cross' share of hospital care declined from 52% to 42% while Medicaid soared from 16% to 29%. Among blacks with AIDS in NY, Blue Cross, which only covered 16% of hospitalizations in 1983, covered even fewer (14%) by 1986, while Medicaid's share of AIDS hospitalizations among blacks increased from 49% to 64%.
Conclusion. A substantial shift in the burden of financing AIDS care from private to public sources occurred from 1983 to 1986 in the three cities with the most AIDS cases. This trend raises important public policy questions regarding access to care, equity, and the impact of the epidemic on city, state, and federal budgets.

T.H.P.18 CONSUMPTION OF MENTAL HEALTH AND SOCIAL SERVICES BY PWAS

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Objective: To describe use of mental health and nonmedical resources by PWAs. Resource use in physical units by Calif. PWAs should be relevant to health planners in other countries.
Methods: 40 gay men in Los Angeles with various stages of HIV infection were (1) interviewed regarding two year retrospective use of medical and non-medical resources, medical history, insurance and employment status and (2) asked to provide prospective medical bills for a 12-month period.
Results: A subgroup of 18 men with KS; mean age, 40.6 yrs. (range 31-65 yrs); average use of hours of mental health care, .51 hrs. per week (range 0-2 hrs/wk) value of $21.83/wk; 80% of services provided by volunteer orgs; Mean use of volunteer org. food bank services, 14.88 wks/yr (+/-24.90 wks/yr), value of $260.40/yr; Mean practical assistance from friends and family, 1.91 hrs/wk (range 0-14 hrs/wk) value of $21.01/wk. Mean financial assistance from friends and family, $26.39/week (range 0-$230). The total yearly friends and volunteer organizations.
Conclusion: At conference we will present mental health and nonmedical resource use for full sample as function of (1) insurance coverage (pvt. Blue Cross, public) income and diagnosis (KS, PCP, other) will present cost breakdown across payors (pvt. ins., HMO, Blue Cross, Medical, etc.,)

T.H.P.19

MEETING THE NEEDS?

Cooper Jonathan Director of Programmes, United Kingdom, Haemophilia Society.UNITED KINGDOM

Objectives: To assess the needs of people living with HIV and examine financial provision made by the State for individuals and their carers.
Method: The weekly living costs of people with symptomatic HIV infection were assessed. An investigation of need compared to existing state benefits was made. Benefits examined were income related, contributory and non-contributory based.
Results: Personal needs per week for single person living with AIDS under 25 years old, on top of regular living costs = 65.22 Pounds.

Income Related Benefits Available:		
Income Support - Disability Premium:		13.05 Pounds
Non-Income Related Benefits Available:		
Mobility Allowance:		23.05 Pounds
Attendance Allowance:	(lower rate)	22.00 Pounds
Invalid Care Allowance:		24.75 Pounds
Invalidity Benefits:		41.15 Pounds
Severe Disablement Allowance		24.73 Pounds

Conclusion: The only benefits in the U.K. applicable to meeting the needs of people with symptomatic HIV infection is the 13.05 Pounds Disability Premium. This premium is only available to those with no, or virtually no income. As well as being inadequate the premium also has a qualification period

T.H.P.20

ACCESS TO INSURANCE AND PERCEIVED DISCRIMINATION BY HOMOSEXUAL MEN.

Kass, Nancy. Johns Hopkins University, Baltimore, Maryland, U.S.A.

Objective: 1) To compare access to health, life and disability insurance among homosexual men who are seronegative, seropositive or have AIDS; 2) to compare perceived discrimination in employment and in medical/dental treatment.
Methods: Self-administered questionnaires were distributed to Baltimore and Los Angeles MACS participants between October 1987 and December 1988. Questionnaires also were distributed to supplemental samples of AIDS and leukemia patients (the latter as a comparison group) at the Johns Hopkins Hospital.
Results: Analysis of the first 298 of 1600 subjects revealed the following results:

	Baltimore	L.A.	Leukemia	HIV-	HIV+	AIDS
Has any health insurance or Medicaid	95%	85%	100%	96%	93%	79%
Was asked about previous HIV testing or required to be tested by insurance company	4%	6%	–	3%	5%	19%
Turned down for health insurance	3%	5%	0%	3%	2%	11%
Fired for being gay	9%	13%	–	9%	10%	11%
Refused treatment by a doctor or dentist	4%	5%	–	0%	10%	32%

Conclusion: Persons with AIDS are more likely than seropositive or seronegative persons to be uninsured, to have been turned down for health insurance and to have been refused medical or dental treatment. Seropositives perceive more discrimination by doctors and dentists than do seronegatives.

T.H.P.21

COSTS OF HOSPITALIZATION FOR AIDS PATIENTS AT A COMMUNITY HOSPITAL IN CONNECTICUT

Lyons, Robert W.; Madden, G and Costanzo, R., St. Francis Hospital and Medical Center, Hartford, Connecticut, USA.

Object. To determine the cost of in-patient care for patients with AIDS (PWA) at community teaching hospital in the northeastern United States in fiscal year (FY) 1988.
Methods. All PWA aomitted are known to the Infectious Disease department. Detailed billing records of all PWA admitted from 10/1/87 to 9/30/88 were obtained from accounting department.
Results. 51 PWA had 108 admissions. The average length of stay (ALOS) per admission was 13.7 days. (The ALOS for all 23,122 admissions in FY 1988 was 7.5 days.)

The cost for PWA was $879,462 - $8,143/admission or $17,244/PWA/year. The largest cost was for room, $473,193, and includes $121,489 for 16 admissions totaling 210 days in an ICU. Laboratory costs were $126,782.

The total reimbursement received was $434,140 for a loss of $445,321 - a loss of $4123/admission or $8732/PWA/year. Reimbursement sources are shown:

Source	No.	Payment	Pay/Adm.	Loss
State Welfare	64	134,254.08	2097.72	361,273.28
City Welfare	17	62,086.66	3652.16	61,414.33
Insurance	20	161,998.55	8099.93	24,243.96
Self Pay	3	21,294.63	7098.21	(8,957.71 gain)
HMO	4	54,507.00	13,626.75	7,346.58

Conclusion. As the number of indigent PWA increases the financial burden on community hospitals will become unbearable unless more money is allocated for patient care and more out-patient facilities are developed.

T.H.P.22

HOW DO PERSONS WITH SYMPTOMATIC HIV DISEASE FINANCE THEIR CARE IN TEXAS

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**Southwest Texas University, San Marcos, Texas, U.S.A.

Objective. To determine utilization of medical and social services and payment by persons with HIV infection in the State of Texas.
Methods. An anonymous self-administered survey of HIV-infected persons in selected urban areas of Texas was undertaken in mid-1988 at the request of the State Legislative Task Force on AIDS. Participants identified through physicians, AIDS service organizations and other care providers were given surveys that were mailed back either to the investigators or the Task Force office. Forty percent (40%) of those distributed were returned.
Results. Respondents included 71 asymptomatic (AS), 81 symptomatic (SX) and 280 AIDS patients. ALL AIDS patients had seen a physician at least once in the three months prior to the survey (avg= 7.0 visits) and 44% had been hospitalized. There was heavy utilization of dentists and various counseling services. Between the time of first HIV-related diagnosis and the survey, the proportion of employed AIDS patients decreased (from 83% to 23%), as did the proportion with private insurance (from 60 to 41%); the proportion relying on public and indigent care exclusively increased (from 8 to 21% and from 5 to 21% respectively). Of AIDS respondents, 53% had spent all their savings on their illness and 44% were unable to pay for prescription drugs. A similar pattern was present for SX respondents.
Conclusion. As illness progresses, an increasing proportion of once prosperous persons are forced on the indigent care system in Texas.

T.H.P.23

HEALTH INSURANCE STATUS AND THE UTILIZATION OF HEALTH SERVICES IN A COHORT OF IV DRUG USERS

Solomon Liza, Frank R, Celentano D, Vlahov D, Cohn S. The ALIVE Study. The Johns Hopkins School of Hygiene and Public Health, Baltimore MD, USA

Objective To identify the patterns of health service utilization and the financing of outpatient health care services in a population of HIV positive and negative IV drug users (IVDUs).
Methods A cohort of IVDUs, recruited into a natural history study of HIV infection were interviewed to determine the type of health services used, and the means of financing these services. Persons with AIDS were excluded from recruitment. Correlations between HIV serostatus and type of insurance were examined.
Results Among the first group of 305 respondents, 64 (21%) were HIV positive (ELISA and WB confirmation). Forty-three percent of the study population had at least 1 outpatient visit within the past six months. Sixty-three percent of these visits were hospital based. Nine percent had a hospital admission. Presently 38% of the population is covered by Medicaid. Medicaid coverage did not vary by serostatus.
Conclusion The numbers of HIV positive IVDUs who do not have insurance suggests additional planning for an increasing Medicaid population is indicated. Further, this population's preference for using hospital based facilities, frequently emergency rooms, will continue to burden these facilities and be costly to the system.

T.H.P.24

THE SHARE OF AIDS MEDICAL CARE COSTS PAID BY PRIVATE INSURANCE IN THE UNITED STATES

Eby, Charles. Health Insurance Association of America.U.S.A.

Objective. To assess the merit of alternative sources of data on the distribution of AIDS medical costs among various payers in the United States.
Methods. The most widely cited estimates of payer shares are those developed by Andrulis, et al, based on surveys of public and teaching hospitals, and estimates of the Medicaid share developed by the Health Care Financing Administration. However, data from the National Hospital Discharge Survey, and data from local hospital associations appear to conflict with these widely cited estimates. This presentation reviews the strengths and weaknesses of all of these data, in an effort to identify the best estimate of payer share and the degree of uncertainty attached to it.

T.H.P.25 THE GLOBAL PHILANTHROPIC RESPONSE TO AIDS

Moskie, Steve*; Seltzer, Michael**
*Program Officer, Aetna Life and Casualty Foundation, Hartford, Connecticut, U.S.A.; **Executive Director, Funders Concerned About AIDS, New York, NY, U.S.A. Other additional panelists to be forthcoming (from Canada, Western Europe, and Latin America)

Objective. To provide information on the global philanthropic response to the HIV epidemic.
Methods. Panelists will present data on the contributions that foundations and corporations have made in providing resources to AIDS/HIV initiatives.
Results. All participants will understand how foundations and corporations can provide financial and in-kind support for certain types of AIDS projects.
Conclusion. Philanthropic resources are available now in some countries for specified initiatives, and more funding should become available in the future.

T.H.P.26 HEALTH INSURANCE INDUSTRY PERSPECTIVES ON THE 1988 REPORTS OF THE PRESIDENTIAL COMMISSION ON THE HIV EPIDEMIC AND THE INSTITUTE OF MEDICINE'S CONFRONTING AIDS: UPDATE 1988

Eby, Charles; Payne, Jude. Health Insurance Association of America, U.S.A.

Objective. To comment on these two important reports from the perspective of the health insurance industry, which is the single largest payer of AIDS costs in the United States.
Method. We compare the recommendations in the two reports with established policies of the Health Insurance Association of America, which represents the health insurance industry. We note areas of agreement and conflict. In the area of health care financing, we review the technical assumptions underlying the reports, suggest alternative assumptions in some areas, and assess the implications of these alternatives for policy.

T.H.P.27 AIDS CASE MANAGEMENT: WHAT INSURANCE COMPANIES ARE DOING

Eby, Charles; Jajich-Toth, C. Health Insurance Association of America.

Objective. To review the use of case management for AIDS patients by health insurance companies in the United States.
Methods. We present information on AIDS case management developed at a 1988 meeting of health insurance companies conducted by the authors. That information is updated with the results of more detailed studies conducted by health insurance companies since the meeting and by recent survey research conducted by the Health Insurance Association of America.
Results. Most health insurance companies in the United States have case management programs that apply to AIDS patients. Techniques for administering such programs vary widely, as do the reported effects on health care costs. Early identification of AIDS cases from claims data is a key problem. Nevertheless, these programs can reduce costs while providing more appropriate care.

T.H.P.28 STATISTICAL METHODOLOGY FOR STUDY OF THE AIDS EPIDEMIC

Thomsen, Donald L., Jr.; Societal Institute of the Mathematical Sciences (SIMS), New Canaan CT, U.S.A.

It is imperative to accelerate research for the AIDS epidemic. One way is to organize groups of outstanding researchers in relevant research fields and in addition encourage collaboration among these groups. Various modern communications systems are now of great assistance when research groups are located far apart geograhically. The Societal Institute of the Mathematical Sciences (SIMS) has organized a Study on statistical methodology for the AIDS epidemic where drug abuse is playing an increasingly significant role. To carry out this Study research centers consisting of outstanding research statisticians are being coordinated by SIMS at three universities: University of California (San Francisco), New York University, and the University of Waterloo (Canada). A fourth center may soon be added in Europe; this SIMS approach should not be constrained by international boundaries. The development of effective statistical methodology is critical in view of the fact that AIDS data is sparse and has only been available for a short period of time. Specific examples of research results obtained under this SIMS approach will be presented to demonstrate the acceleration thesis asserted above. Other areas of AIDS research might be able to benefit from this SIMS experience.

Support for this SIMS Study has been provided by the National Institute on Drug Abuse (NIDA)(USA).

T.H.P.29 AIDS IN THE WORKPLACE: A WORLDWIDE HEALTH CONCERN BECOMES A BUSINESS CONCERN

Ross, Paul A., Ed.D., Manager, AIDS Program Office, Digital Equipment Corporation, Concord, MA 01742 USA 508-264-1418

OBJECTIVE: To describe the multi-faceted strategy that Digital Equipment Corporation, a Fortune 50 international company with 123,000 employees worldwide is implementing to manage AIDS in the workplace. Key to the strategy is the AIDS Program Office, a part of Corporate Employee Relations. This office, the first and only one of its kind, is the focal point for education, policy, resource and referral, community and public relations and corporate philanthropy in regard to AIDS. Participants will learn about:

1. Digital's Commitment/rationale
2. Elements of their award-winning educational program (U.S. Department of Health and Human Services)
3. Communications and Implementation Strategies
4. Community leadership/Corporate philanthropy
5. Key factors for success

Participants will have a clear understanding of one company's response to this serious issue and will have strategies/guidelines for adapting the model to their own work environments. The purpose of this session is to empower and challenge others to move forward.

T.H.P.30

Session d'affichage
Poster Session

Répercussions économiques du SIDA
The Economic Impact of AIDS

Pays en voie de développement
Developing Countries

W.H.P.1 COSTS OF TREATING AIDS PATIENTS IN AFRICA

Makinen, Marty; Wong, H. Abt Associates Inc.,
Washington, DC, United States.

Objective. To assess the direct costs of treating AIDS patients in Africa and to determine patterns of treatment of the disease.
Methods. A methodology has been developed to estimate the direct costs of treating AIDS patients at selected health care facilities in African countries and to obtain information about the indirect costs of the disease to the patient population. Such retrospective studies have the advantage of being fast and inexpensive compared to prospective studies, and will provide important baseline data as a foundation upon which future studies can be built. Data will be collected on initial and subsequent diagnosis, number of visits and admissions to health facilities, length of stay for admissions, and costs of providing health services in the facilities. This information will be obtained from patient records, salary histories, and investigation at health care delivery sites. A questionnaire will be administered to the sample population to estimate the costs to the patients of treating the disease outside of the health care facilities, including charge per visit, charge per hospital stay, and charges for drugs.
Results. Information from such studies will document the magnitude and incidence of the costs required to treat the disease.
Conclusion. Such a methodology will help decision makers to weigh the costs of treating AIDS patients against the costs of treating other patients; to develop cost effective treatment protocols; and to prepare for the anticipated growth of the epidemic.

W.H.P.2 HEALTH-CARE COST OF AIDS AT A HOSPITAL IN CANARY ISLANDS

ARMAS,MARIO;Jiménes,P.;Martín,J.M.;Gómes,E.;Antolín,J.;
Acosta,A. et al.
Hospital Nuestra Señora del Pino.Las Palmas.Spain.

OBJECTIVE:To evaluate health-care burden of AIDS and AIDS-related conditions on our Hospital.
METHODS:Review of clinical records of HIV-infected patients admitted to Hospital or attended at the outdoor clinic from Jan.1987 until Nov,1988.
RESULTS:Number of HIV-infected:144.Number of AIDS cases:2o.
Duplication time of AIDS cases:8 months. AIDS cases dead:7(35%)
Main risk-factors for AIDS:Male homo-bisexuality(55%),and parenteral drug abuse(25%). Main opportunistic infections:TBC(35%),PCP(35%),and candidal esofagitis (30%).
Number of AIDS-related admissions:42.Mean delay from admision to definite diagnosis of suspected infection:13 days.Mean length of hospitalisation:31 days. Number of invasive procedures per admission: 1.4 (surgery,biopsy,or endoscopy).Cost per admission:83o.ooo pesetas (72oo USD).
CONCLUSION:AIDS cases are rapidly increasing in our Hospital area.
Our AIDS cases are mainly homo-bisexual males and parenteral drug abusers.
Tuberculosis is a leading opportunistic infection in our AIDS patients.
It is necessary a plan for reducing pre-diagnostic time,length of hospitalisation and health-care cost.

W.H.P.3 DIRECT MEDICAL COSTS OF AIDS IN LATIN AMERICA AND THE CARIBBEAN: MORE COST-EFFECTIVE MODELS

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J. Sotomayor*; *San Juan AIDS Institute, San Juan, Puerto Rico; **Harvard Institute for International Development, Cambridge, MA; ***Pan American Health Organization, Washington, DC; ****Harvard School of Public Health, Boston, MA, U.S.A.

Objective. To describe, compare and analyze the estimates of the direct medical costs of AIDS patients available to present in Puerto Rico, Dominican Republic, Mexico, Costa Rica, Brazil and Argentina, and to analyze the policy issues related to the respective health care delivery systems.
Methods. A compilation and comparison of all costs related to out-patient and in-patient care for AIDS patients available from official sources of the six countries, was followed by an analysis of how these costs related to the respective systems for financing and delivery of medical care.
Results. The availability of different types of services varied among countries. Length of hospital stay, costs per patient per year and share of hospital cost in the total cost of services, when comparable, were significantly higher in those places where treatment was mainly hospital-based and a comprehensive approach was not available.
Conclusion. A comprehensive system of health care including ambulatory, extended, home and hospice care provides a more cost-effective approach to the management of AIDS patients and may be applied in other LDC nations. Cooperation among nations to share their experiences in developing cost-effective models to contain the costs of AIDS and to maximize the utilization of available resources should be promoted.

W.H.P.4 COMPARATIVE COSTS OF AIDS CARE IN PUBLIC AND PRIVATE SETTINGS

Kouri, Y.*; Shepard, D.; Risek, R.*; Risek, J.E.**; Smith, S*;
Verjee, S.*
*Harvard Institute for International Development, Cambridge, MA, USA,
**University of Puerto Rico Medical School, San Juan, PR.

Objective. To identify the cost advantages of public and private settings to make AIDS care more cost-effective.
Methods. We assessed retrospectively the cost of AIDS care in 54 consecutive episodes of hospitalization in a private hospital and 249 in a public hospital in San Juan (SJ), PR in 1987-88. This area has many characteristics of a middle-income developing area. Types, amounts, and unit costs of services were abstracted from medical records and cost reports using identical protocols.
Results. The average length of stay was 16.4 days in the private hospital and 17.5 days in the public hospital. The cost per day averaged $200 in the private hospital and $340 in the public hospital. Patterns of care appeared similar. In 1988, however, after private management and incentives had been introduced in the public hospital, the average cost per day was reduced to $290.
Conclusions. The private hospital appeared to provide care more effeciently through a lower daily rate, earlier discharge, and more efficient use of acillary services. Good management can improve the efficiency of care of patients with AIDS.

W.H.P.5 Economic Analysis of AIDS in Puerto Rico

José I. Alameda-Lozada*, Alfredo González-Martinez**
*Assistant Professor of University of Puerto Rico at Mayaguez,
**Professor of University of Puerto Rico at Mayaguez.

The authors attempted to assess AIDS epidemic from the economic point of view. Specifically, they estimated the economic costs of AIDS for the Puerto Rican economy. It should be pointed out that Puerto Rico depicts high levels of AIDS prevalence rate as compared with other places. The Island ranks number seven among the fifty states and between the Latin American countries only Brazil surpassed the number of cases per million inhabitant in Puerto Rico.
The estimated economic costs consist in two main categories: Direct costs and indirect (implicit costs). The direct costs include medical care and, research & education expenditures. Indirect costs include the income losses due to illness and disability (morbidity) as well as present values of future earnings lost by premature death (mortality).
A striking result from the study is that main exonomic impact of AIDS between 1981 to 1988 is due to indirect costs rather than direct costs. The former accounted for over 80 percent of total estimated economic costs. The reason for this high indirect costs is attributed to the fact that most of the victims of AIDS are young persons. In 1988, 72 percent of AIDS victims are in 20 to 39 year age bracket, and therby, in their most potencially productive years. The average age for and AIDS victim is 34 years. Finally, the authors forecasted economic costs for the fiscal years 1989 to 1992 using a discount rate of 5 percent.

W.H.P.6 THE ECONOMIC AND SOCIAL IMPLICATIONS OF AIDS IN AN AFRICAN SETTING

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**N'Galy, B.
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Kinshasa, Zaire

Objective: To evaluate the economic and social impact on families of children with AIDS.
Methods: We reviewed the economic status of 84 families of children with symptomatic AIDS admitted to a state subsidized teaching hospital and the social interaction of the community toward the afflicted family.
Results: 39 parents were low echelon employees, 42 were unemployed and 3 had already died. The average hospitalization was 24 days with 23% mortality. A single hospitalization was 4 times and funeral expenses 11 times the average monthly income. Those who were employed received assistance from their employers for medical expenses and burial, however, wake expenses were supported by the family. African tradition requires a dignified and respectful funeral which entails considerable expense. The unemployed depended on family and friends for financial assistance. The most remarkable observation was the community's response to the afflicted and their families, A twofold process was observed: the community was tolerant and accepting of AIDS patients; extended families, friends and neighbors gave an abundance of moral support and contributed toward the medical care costs and funeral expenses.
Conclusion: The AIDS epidemic has placed a financial burden on the society. In the face of economic crisis, Africans continue to show a strong social solidarity, acceptance and goodwill towards AIDS patients and their families. In the case of demise, the community contributes toward the funeral expenses.

Méthodologie des coûts
Costing Methodology

W.H.P.7

HIV CASE MANAGEMENT UTILIZING INFORMATION SYSTEMS

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OBJECTIVE: To provide a Human Immunodeficiency Virus(HIV) case management system utilizing personal computers(PC) in the healthcare setting.
METHOD: Parkland Memorial Hospital(PMH) is the largest medical provider for HIV infected patients in Dallas County, Tx., with an active caseload of 588 patients out of 1523 total. There are three major components to the data collection system: clinical, accounting and AIDS Registry. The AIDS clinic utilizes 5 AT-class PC's in a local area network to maintain clinical and research data. The Medical Records Department maintains data on a single AT-class PC on all HIV related hospitalizations. The Hospital Information System Department utilizes its mainframe computer to report HIV related data at the incident of service level(demographics, charges and collections).
RESULTS: The clinic database measures and monitors patient data to enhance treatment, quality assurance and research. It also serves as a mini-medical record providing immediate access to data for telephone consults and interfaces with community healthcare providers. Networking between healthcare facilities/organizations to track total service utilization by one patient.
CONCLUSION: Achievement of quality case management through an enhanced information component. Total cost reduction through data analysis/trending of costs, clinical treatments and collection of epidemiological information. This system is utilized by Administration, Nursing Management, Clinicians, Quality Assurance, Infection Control, Business services and Public Relations.

W.H.P.8

DIRECT COSTS AND FINANCING OF HIV HOSPITAL AND COMMUNITY-BASED TREATMENT

Hidalgo, Julia.*
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Objective. The economic impact of HIV on the U.S.A. health care system has been difficult to measure. This paper applies a model automated HIV information system to measure use and direct costs of HIV-related treatment across providers and payer. Methods. Institution and community-based services used by 1,300 Maryland residents with HIV disease during the period between 1981–1988 were retrospectively studied. An automated information system made up of longitudinal, person-based files serves as the basis of this study. The system links HIV registry, vital statistics, hospital, long term and chronic care, and community-based service, and public and private health insurance claims records to measure the nature, volume, and costs of service use associated with HIV treatment during the period between diagnosis and death. Results. HIV-related costs are estimated for treatment of ARC and AIDS. Inflation-adjusted average lifetime, annual, and per diem costs, as well as components of cost, are reported. Payer-mix and the difference between costs, charges, and payments are described, as well as shifts in payment source during the course of illness. Factors including socio-demographic characteristics, transmission group, survival time, and case and service-mix are also discussed. Conclusion. Findings of this study are useful to policy makers at the local, State, and Federal levels in planning services and financing required to meet the needs of persons with HIV disease.

W.H.P.9

SOCIO-ECONOMIC MODELS TO ASSESS THE ECONOMIC IMPACT OF HIV INFECTION

Kahn, Joan
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Objective- To propose two comprehensive models that could be applied in the assessment on an international scale of the economic impact of HIV infection.
Method - A review and comparative analysis was carried out of existing literature on the economic impact of HIV infection, drawn from four countries (Canada, U.S., Australia and U.K.).
Results - The literature varied considerably with respect to its acknowledgement of the ways in which costs might be affected by:
1)Geographic Differences: local, regional and international, e.g. with respect to incidence and prevalence, modes of transmission and manifestation of pathology.
2)The Effects of Change, e.g., in disease definition, in treatment and diagnosis, in health care delivery systems, funding and utilization, and in the availability of human and natural resources.
3)Other factors, e.g. absence of an explicit conceptual framework, models and methodologies. This lack of explicitness limited meaningful commensurability.
Conclusion: Two comprehensive models are defined:
Model X: Three Orders of Costs - This model delineates three "orders" of costs : First Order (mandate)Costs: "Care" and "Containment"; Second Order Costs: foregone earnings, household services, labour and expertise, research, consumption and progeny; Third Order Costs, i.e. "psycho-socio-cultural".
Model Y: The Cascade Effect - This model delineates seven "levels" of cost: individual, immediate support system, community, institutional, government, society, and international. The possible advantages or disadvantages relating to the development and use of a standardized, international approach in determining the economic impact of HIV infection will be discussed.

W.H.P.10

HIV INFECTED HOSPITAL PATIENTS IN NEW YORK STATE (NYS); THE CREATION OF LONGITUDINAL INFORMATION FROM A HOSPITAL DISCHARGE DATA SYSTEM

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Objective. To obtain longitudinal information regarding HIV infected patients in NYS acute care hospitals, useful for describing HIV related acute care needs.
Methods. Abstracted medical records of patients discharged from NYS acute care hospitals between January 1,1983 and October 1, 1987, which contained a diagnosis of HIV infection (36,664) were linked into a longitudinal file (HIVLF) of patient specific cases (20,005). The records do not contain explicit personal identifiers, so linkage was accomplished using hospital code, medical record number, sex, date of birth, address, and payee identification codes.
Results. A validation study utilizing 1985 Medicaid discharge information indicated: the HIVLF cases contained 85% (SE:±2%) of the expected discharges; the number of HIVLF cases was too large by 10% (SE:±2%) due to a failure to link all the discharges to the appropriate cases.
The number of new HIV patients (HIV infection identified for the first time), entering the acute care system increased monotonically on a quarterly basis from 1984 through 1986. In the first quarter of 1984, 401 new HIV patients utilized the acute care system, as compared to 1899 in the last quarter of 1986. During the first year of acute care, new HIV patients in 1984 or 1985 exhibited an average of 1.8 admissions, and a mean total of 30 inpatient days. During this first year, patients with multiple stays had longer first and last stays as compared to intervening stays. As the number of stays increased the period between stays decreased and the length of stays of each admission decreased.
Conclusion. The HIVLF is of sufficient quality to be useful for estimating acute care resources required to respond to the HIV epidemic.

W.H.P.11

TEMPORAL CHANGES IN FINANCING OF HIV TREATMENT

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Objective. The financial burden of HIV treatment is shared among Federal, State, and private payers. It has been difficult to assess, however, the distribution of this burden among payers during the course of the AIDS epidemic. This paper applies a model HIV information system to measure temporal changes in financing of hospital, long term and chronic care, and community-based HIV-related treatment across payers. Methods. Institution and community-based services used by 1,300 Maryland residents with AIDS diagnosed between 1981–1988 were retrospectively studied. An information system made up of longitudinal, person-based files serves as the basis of this study. The system links HIV registry, vital statistics, hospital and community-based service, and insurance claims records to measure the nature, volume, and costs of AIDS treatment during the period between diagnosis and death. Results. Volume of AIDS treatment, associated costs, and payer mix are examined during the course of illness. Inflation-adjusted costs, charges, bills, and payments made by Federal and State payers are measured. Unreimbursed services generated by the difference between charges, bills, and payments are estimated. The proportionate distribution of the financial burden of HIV-related treatment and level of reimbursement expended by public and private payers is reported for the 8 year period studied. Probability of shifting from private to public insurers is estimated, are shifts from State to Federal assistance categories during the course of illness. Factors associated with shifts in payer, including socio-demographic characteristics and risk group, are also discussed. Conclusion. Findings of this study are useful to policy makers and health insurers in projecting the fiscal impact of the AIDS epidemic.

W.H.P.12

A PRODUCTION FUNCTION APPROACH TO ESTIMATING THE AGGREGATE MACROECONOMIC IMPACT OF AIDS ON CENTRAL AFRICAN ECONOMIES

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Objective: To combine demographic projections of the HIV epidemic's impact on population size and structure with economic projections of its impact on gross domestic product (GDP) in order to estimate the epidemic's impact on per capita GDP.

Methods. Based on previous modelling of the population dynamics of the disease by one of the author's and on aggregate production functions for sub-Saharan Africa which incorporate measures of human capital, the paper estimates the future course of both the GDP and the population under a variety of alternative assumptions. Sensitivity analysis is performed with respect to the size of the epidemic and with respect to the amount of human capital embodied in the affected individuals.

Results. Results are presented for the epidemic's impact on GDP growth rates and GDP per capita and compared with those of a naive model using a constant average cost per HIV-infected person. The discounted present value of losses due to the infection of a single individual with HIV are computed under several discount rates.

Conclusion. The AIDS epidemic is affecting most severely certain sub-Saharan African countries that are already experiencing slow or negative rates of per capita GDP growth. This paper estimates the degree to which the AIDS epidemic can exacerbate the growth problems of the most severely affected economies.

W.H.P.13

A MEDIUM-RUN MODEL FOR THE ANALYSIS OF THE ECONOMIC IMPACT OF AIDS IN SUB-SAHARAN AFRICA

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Objective: This study presents an internally consistent view of the medium-term macroeconomic repercussions of the epidemic on the labor market, on the producing sectors and thence on the entire economy of a "typical" sub-Saharan African country.
Methods. The study characterizes the AIDS epidemic as a shock to the supply of labor of several skill categories to several different productive sectors of a "typical" sub-Saharan African economy. The study uses a computable general equilibrium model in order to represent the productivity of the affected skill categories in the various sectors and the flexibility of this typical economy in adjusting to such shocks, and in order to require that projections be internally consistent.
Results. The results estimate the effect on medium-term aggregate macroeconomic performance of alternative assumptions regarding the distribution of the epidemic across skill categories of labor. The paper identifies the critical size of an AIDS epidemic at which general equilibrium methods like those used in this paper give substantially different estimates of the macroeconomic impact than would the easier-to-apply partial equilibrium methods. Results are presented for the epidemic's impact on such macroeconomic aggregates as current account balances as well as for per capita GDP.
Conclusion. Because the study shows that aggregate macroeconomic impact of the epidemic can be substantial in a severely affected African country, expenditures on demonstrably effective preventive measures are justified. Furthermore, the study shows to what degree some allocations of scarce prevention resources across categories of labor may have a more beneficial effect on macroeconomic performance than others.

Modélisation mathématique et prévisions
Mathematical Modelling and Predictions

W.H.P.14

THE SOCIOCULTURAL AND ECONOMIC IMPACT OF AIDS ON SOCIETY

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Objective. Investigation and analysis of the present and (possible and plausible) future situation(s) of the three mutually dependent AIDS-epidemics: the infection with HIV, the AIDS epidemic and the epidemic of reactions and answers -social, cultural, economic and political- to the AIDS and HIV epidemics.
Methods. A scenarioproject can be separated into three components:
-definition of the existing situation (basis analysis) by means of description and interpretation of the three AIDS epidemics as they exist at present
-the development of a number of future perspectives, as an alternative of the present situation
-presentation of a series of events that could lead to the future perspective with an indication of connecting pathways
Scenario research makes use of data already collected
Results. A differentiation is made into three aspects: epidemiological aspects: economic aspects, socicultural aspects. A model for the description of the course and the scope of the HIV epidemic is conceived. This model, has the epidemiological aspects as reference point. The epidemiological aspects will serve as basis and background for the determination and assessment of the influence of the AIDS and HIV epidemic on society.

W.H.P.15

DECLINE OF AIDS INCIDENCE IN KENYA

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Objectives: To reduce and control the spread of HIV infection in Kenya.

Method: By August 1988, 3278 cases of AIDS had been reported cummulatively by all the Health Facilities in Kenya. Data from three provinces that have been reporting consistently over a period of 19 months were compared with national figures - Graphical plots, linear trends and predictive models were fitted to the data.

Results: The rate of change for the national figures over the 19-month period show an increasing trend. But comparing 1987 and 1988 there is a definite drop in the number of the new cases reported. At the Provinces, a significant increase was observed in 1987, but the curves had assymptotic tendencies in 1988.

If the 1987-8 rate of change was sustained over 1988-9 the predictive models show a slight increase in the number of cases in Nairobi (425 in 1988 to 598 ± 32 in 1989); a drop in Nyanza (303 in 1988 to 143 ± 34 in 1989); and a drop also at Coast (808 in 1988 to 655 ± 34 in 1989).

Conclusion: The National figures are likely to stabilise or drop after the provision of testing kits, for HIV in all the district Health facilities (currently 30/41) and the current campaign against AIDS.

W.H.P.16

THE USE OF RANDOM GRAPHS IN MODELLING THE TRANSMISSION DYNAMICS OF HIV-INFECTION

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Objective: To develop a mathematical model for the epidemiology of sexually transmitted diseases being able to account for the characteristic features of the HIV-infection. To study mathematically treatable simplified model situations and to use computer simulations based on this approach to deal with assumptions realistic in the case of AIDS.

Methods: Based on two concepts: a random graph, representing the mesh of sexual contacts inside a society, and a discrete time stochastic process, describing the spread of infection on the graph, the model incorporates specific assumptions through specifications on the ensemble of graphs and on the dynamical process. Probabilistic and combinatorial methods allow to rigorously treat simplified model situations, while direct computer simulations deal with realistic assumptions.

Results: Here, the general frame of the modelling approach is described; it is shown how a variety of important details can be incorporated, and how it relates to standard epidemiological models; it is discussed how it may be used in public health planning to predict the effects of certain prevention strategies, a problem which can only be tackled by a model capable of simulating individual behaviour.

Conclusion: This new approach to the epidemiology of sexually transmitted diseases leads to predictions different from standard epidemiological models; it is versatile enough to account for the peculiarities of HIV and to allow for a detailed description of the dynamics of the transmission process; it will be continuously adapted, in its specific assumptions, to reflect the actual state of knowledge about the epidemiology of AIDS.

W.H.P.17

A MODEL FOR EVALUATION OF UNKNOWN NUMBER OF HIV-INFECTED PERSONS

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Objective. Evaluation of the extent of unknown HIV-infected persons in Sweden and a method used for this purpose.
Methods. Use of information collected by two report systems in Sweden concerning HIV: 1)Reports of HIV-infected persons (coded) initiated in 1985; 2)Reports of cases fulfilling criteria for AIDS since 1983.
Results. Of 228 AIDS cases diagnosed in 1985 to 1988 (22, 51, 68 and 87 cases in respective year), 59, 37, 25 and 32% were diagnosed during the four respective years in conjunction with the first HIV test, i.e. within 3 months of the test. However, there were considerable variations in different groups. In 1988, all hemophiliacs and IV drug users and the majority of the blood tranfusion recipients had been known as seropositive for more than a year before the AIDS diagnosis while those infected heterosexually or homosexually 42 respectively 39% were disclosed as seropositive in conjunction with the AIDS diagnosis. Several of these persons were people coming directly from abroad.
Conclusion. The findings indicate that among hemophiliacs, blood transfusion recipients and IV drug users few of those infected in the early 80ies are not yet detected. However, among those homosexually or heterosexually infected in the early 80ies, a number of individuals have not yet been tested for HIV antibody status. A continuous evaluation of this kind may contribute to the estimation of unknown HIV-infected persons.

W.H.P.18

HIV Carriers: Non-Infectious Initial Interval Slows up Spread of Virus

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Where the HIV is sexually transmitted, an increasing number of cases have been observed with a seroconversion latency period lasting 2 to 3 years and longer. Seronegative HIV carriers appear to be initially non-infectious or very slightly infectious. Transmission of the HIV through transfusions of seronegative blood have shown, however, that seronegative HIV carriers become viremic before seroconversion. Recent evidence suggests that the degree of infectiousness increases with the duration and progress of the infection.
Mathematical models show that a non-infectious initial interval causes a surprisingly long delay in the spread of the HIV, and thus a slowing down of the epidemic. During a temporary phase which can last for many years, depending on the length of this interval, the incidence of HIV carriers remains low; it appears as if the disease is spreading in a less infectious form.

Our models take into account heterogeneous sexual behavior, import and export of persons and infections, and variable patterns of infectiousness. Sensitivity analyses show that the non-infectious initial interval has a considerable influence on the dynamics of the spread of the HIV.

W.H.P.19 SHORT TERM PREDICTION OF HIV INFECTION AND AIDS: A CRITIQUE OF THE COX REPORT[1]

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Objective. To examine the Cox Report's estimates of the numbers of HIV infections in England and Wales.
Methods. The two main methods used in the Cox Report, the direct method (estimating the sizes of at risk groups and the numbers infected in those groups), and the back-projection method (using AIDS case numbers and incubation functions) are reviewed. A further method, using information from haemophiliac cases, is investigated.
Results. The Cox Report concluded that HIV infections were probably at the lower end of the 20,000 and 60,000 range. The review suggests that 60,000 to 100,000 is more realistic.
Conclusion. The Cox Report is underestimating the serious threat that HIV presents in England and Wales.

[1] Dept of Health, Welsh Office. 'Short term prediction of HIV infection and AIDS in England and Wales'. HMSO, 1988.

W.H.P.21 PROPORTION OF NEW AIDS CASE REPORTS ATTRIBUTABLE TO THE 1987 CDC REVISED SURVEILLANCE CASE DEFINITION: CANADA-UNITED STATES DIFFERENCES

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Objective. To analyze the proportion of new AIDS case reports attributable to the 1987 CDC revised surveillance case definition, and to explore Canada-United States differences to delineate the likely reasons for differential surveillance outcomes.
Methods. The monthly "Surveillance Update: AIDS in Canada" published by the Federal Centre for AIDS, Ottawa, and the "AIDS Weekly Surveillance Report - United States, AIDS Program" published by the Centers for Disease Control, Atlanta, have facilitated the calculation of the proportion of new cases attributable to the 1987 CDC revised surveillance case definition.
Results. Both countries appear to have stabilized in their application of the new case surveillance definition, with Canada and the United States attributing about 15% and 30% of cases respectively to the expanded criteria in the new definition.
Conclusions. HIV antibody testing may be less commonly used in Canada; presumptive diagnoses may be made more commonly in the United States; different diagnostic practices may exist between the two countries; differences in the population prevalence of latent organisms/diseases such as, for example, extrapulmonary tuberculosis, may exist between the two countries. These results affect policy and have implications in the broad areas of projections, resource allocation, education, diagnosis and care.

W.H.P.23 COMPARISON OF EPIDEMIOLOGICAL DATA FROM THE AIDS-EPIDEMIC IN THE USA AND THE FRG

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Objective: To compare the course of the course of the epidemic and clinical outcome of AIDS in the FRG and the USA.

Methods: Data from AIDS-register of the Federal Health Office and the US AIDS-programm of the CDC were analysed using standard statistical procedures, time series analysis and non linear regression modelling.

Results: In the FRG and the USA more than 80% of all AIDS-cases are homo-/bisexual men or IVDA's. In the FRG the relative proportion of IVDA's increased slowly from 8% to now 20%, while in the USA already early more than 20% of AIDS-cases came from this risk group with no increase apparent. Primary AIDS-manifestations in FRG are more often others than PCP. AIDS-associated malignancies were more often diagnosed in the FRG.

The development of the AIDS-epidemic follows identical patterns in the USA and FRG for comparable subgroups, however with delays in FRG varying from subgroup to subgroup. The course in the USA is best described by a non linear regression model with different points of inflection.

W.H.P.20 PARTICULAR FEATURES OF A LENTIVIRUS EPIDEMIC AND THEIR DYNAMIC CONSEQUENCES, SUCH AS TRANSIENTS, CRESCENTS, AND A 10 YEARS' MORATORIUM FOR THE DETECTION OF ERRORS

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HIV is, to the best of our knowledge, the first lentivirus ever to infect mankind. The long incubation period of up to 19 years and more (with an average of about 10 years) results in unusual phenomena such as "transients", "crescents", cumulative selection of malign virus variants, and a general delay of various dynamic effects. Even the visible outcome of saturation kinetics and an increasing potential of infectivity in recently infected, young virus carriers is considerably postponed. In a similar manner, our errors of today and ineffective or counterproductive measures have an "incubation time" of about 10 years, until the resulting course of events may lead to critical reevaluation of convictions and belated correction of erroneous actions. Computer based simulation may help to model and to understand these unfamiliar features of a new kind of human epidemic - and, thus, to predict its course correctly.

W.H.P.22 CHANGING TRENDS IN THE AIDS EPIDEMIC IN EUROPE

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Objective: To monitor the evolution of the AIDS epidemic in Europe and to provide regularly updated snort-term predictions.
Methods: Numbers of AIDS cases per half-year of diagnosis reported by 30 June 1988 were adjusted for reporting delays and fitted to a piecewise-exponential model to obtain estimates of average doubling times (DT) over successive 3-year periods. Short-term predictions were made by extrapolation using latest estimated doubling times. Data were analysed for the European Community (pooled data), by country and/or by transmission group. Alternative trend extrapolation models are under investigation.
Results: Latest estimated DTs and cumulated predictions include:

	-------- European Community	-------	Individual countries
Transmission group	DT (months)	predicted to mid-1990	DT: range (n)
all combined	12.7	63 645	9.2 - 19.3 (11)
homo/bisexual	15.4	26 715	10.9 - 23.8 (6)
IV drug user	9.3	25 535	9.0 - 12.6 (5)
heterosexual	11.2	4 130	5.3 - 15.0 (4)

Overall doubling times continue to increase. Countries with longer doubling times are those in which the homo/bisexual transmission group predominates; in at least 2 countries the epidemic curve shows signs of flattening.
Conclusion: More rapid spread among IV drug users than among homo/bisexual males is confirmed; cumulated cases in these 2 groups may be equal in the EC by mid-1990. A recent rapid increase in cases attributed to heterosexual transmission noted in Italy may be evidence of spread from IV drug users to their non-IV drug using heterosexual partners. Results will be updated.

W.H.P.24 IT TAKES TWO TO TANGO BUT ONE INFECTS: EFFECTS OF NON-DISCLOSURE ON THE UNDER-ESTIMATION OF THE PRECEIVED RISK OF HIV INFECTION.

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The effects of non-disclosure of either HIV infection or previous engagement of risk behaviors is studied through the use of a containers probability model
The basic equation for a single insertive sexual intercourse between two partners is as follows:

$$P = pr \times i$$

P - the probability of being infected in that specific encounter.
pr - the prevalence of HIV in the specific population or sub-population
i - the risk of being infected in a single sexual encounter with an infected person (this is sometimes referred to as infectivity).

An Underestimation Factor (UF) is derived from the equation. When the infectivity is assumed to be constant, the UF is shown to be equal to the ratio of the prevalence in the "assumed" population to the prevalence in the "real" undisclosed population.

$$UF = P_{aware}/P_{ignorant} = P_{infecting}/P_{being\ infected} = pr_{\text{"assumed"}}/pr_{\text{"real"}}$$

The equations are utilized to derive the UF for three unique cases and it is shown to range from 0.2-2 $\times 10^{1}$ in the case of an insertive anal intercourse between an HIV $^{+}$ and an HIV^{-} homosexual to 1×10^{4} in a similar case of a vaginal intercourse. This factor remains constant regardless of the number of sexual encounters between the same partners as long as ignorance prevails.
The discussion focuses on the implications of this derivation for education and social policy toward disclosure and non-disclosure in sexual encounters. It is shown that disclosure of relevant information in sexual encounters is perceived as essential in situations not relating to HIV infection.

W.H.P.25 DETERMINISTIC MODEL OF THE U.S.A. AIDS EPIDEMIC

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Objective. To calculate number of AIDS carriers in the USA as a function of time and assumptions about infection rates, mean of the incubation distribution, size of "at risk" populations, impact of behavior change, and rate of "at risk" population turnover.
Methods. A computer simulation models the infection process within and between eight at risk populations based on sexual, social, and biological factors. The carrier time series is calibrated with CDC's case statistics. Extensive sensitivity analysis isolates the important assumptions.
Results. Base study assumes size of at risk populations (Homosexual - 1,516,000; IV drug abusers-876,000), significant behavior change in the homosexual & bisexual population, and Weibull distribution with mean of 8 years. Units are thousands of carriers.

Description of cases		End of 1988	1990	1992	1994
I Base case:	Heterosexual men IV Drug	74	123	176	226
	Homosexuals & Bisexuals	566	623	645	631
	IV Drug Abusers	705	719	638	505
	Total number of carriers	1345	1465	1458	1363
II Size of populations reduced by 50% (Total)		909	893	806	691
III Size of populations increased by 50% (Total)		1564	1921	2009	1958
IV No Behavior Change in Homosexual & Bisexual		1766	2070	2052	1842
V Weibull dist. mean at 12.9 years (total)		2004	2132	2181	2184

Conclusion. Heterosexual men IV drug abusers are most rapidly growing "at risk" population. Behavior changes in this population would of course modify this result.

W.H.P.26 UTILIZING COMMERCIALLY AVAILABLE PC SOFTWARE FOR THE ANALYSIS AND MANAGEMENT OF CLINICAL TRIALS HIV DATA

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Objective. . Facilitate analysis of complex clinical (detailed history and physical exams) and lab (routine chemistries, p24 antigen cultures, pharmacological) data in a cohort of patients followed over time from HIV studies. To utilize personal computer (PC) based statistical software for the analysis, and Data Base Management Software (DBMS) for the organization and storage of HIV related data. Integrate these two software application programs.
Methods. R:BASE for DOS(tm) is the DBMS used to structure and store the clinical data and laboratory results from one or more sites. The data structures that suffice for data collection are transformed into those that best satisfy the requirements for analysis. R:BASE is used to perform validity and consistency checking and descriptive statistics. Subsets of the data selected for study are then extracted from the database and input directly to SPSS/PC+(tm). Reporting of the results is then accomplished from either or both applications based upon the format requirements for the finished paper.
Results. The complex data relationships of longitudinal and repeated measure studies can be effectively managed and analyzed using PCs. The data storage and management limitations of SPSS/PC+ are overcome by employing DBMS. Interfacing R:BASE with SPSS/PC+ eliminates the need to hand enter data for further analysis. Examples of these techniques will be shown.
Conclusions. When the investigator has control over the data, results are achieved quicker and more accurately for publications. By using commercially available, as opposed to custom developed, PC software, the cost of managing and analyzing large amounts of complex research data is greatly reduced

W.H.P.27

W.H.P.28

W.H.P.29

W.H.P.30

Affectation des ressources
Resource Allocation

Th.H.P.1

AFFECTATION DES RESSOURCES MONÉTAIRES (C-SAM)

Lise Lanctôt, Directrice générale, Comité SIDA Aide Montréal, Montreal, QC, Canada.

Objectif. Faire part aux congressistes de la distribution des ressources financières attribuées par les différents paliers gouvernementaux aux organismes sans but lucratif qui luttent contre le SIDA, dans la province de Québec.

Méthode. Exposition/conférence
- a) distribution gouvernement fédéral
- b) gouvernement provincial
- c) autres ressources
- d) répartition interne

Résultats. Les services offerts selon les argents obtenus tout en étant respectueux de la mission et des objectifs de l'organisme.

Conclusion. Évaluation du rendement selon les ressources financières pour 1985-1989.

Th.H.P.2

THE ECONOMIC IMPACT OF AIDS: A PATIENT PERSPECTIVE

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Objective: To examine the economic impact of AIDS on the patient population.
Method: Semi-structured interviews were carried out with 25 AIDS patients in three different centers in Ontario - Toronto, London and Ottawa.
Results: Approximately one-half of the patients interviewed have been negatively impacted upon economically because of their health status. These patients tend to be in their twenties or early thirties and have not had well established careers or jobs. In most cases, those who have experienced a negative economic impact have been fired from their fulltime jobs because of their health status, or have been forced to quit because of poor health. In order to survive economically, they rely on social assistance (welfare, U.I.C. or family benefits), financial assistance from their family and/or free lance work when their health permits and when such work is available. AIDS patients who have not experienced a drastic reduction in income tend to be in their late thirties or older who have, or have had, well established careers or jobs. For these AIDS patients, withdrawing from the work force either temporarily or permanently has meant relying on sick leave or disability plans (the latter typically purchased through employers), and their income has only been reduced slightly, if at all.
Conclusions: The economic impact of AIDS varies across the patient population. Not all AIDS patients have experienced a negative economic impact because of their health status, but those who have tend to be younger patients who have not had well established careers or jobs.

Th.H.P.3

DISTRIBUTION AND CHARACTERISTICS OF AIDS HOSPITALIZATIONS IN THE U.S., 1986-87

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Objective. To investigate the characteristics of AIDS hospitalizations in 1986-87 in a large, nationally representative sample of U.S. hospitals.
Methods. The Hospital Cost and Utilization Project collects over 2 million discharge abstracts per year from a sample of 400+ short-term community hospitals across the U.S. AIDS discharges have been selected based on the presence of an AIDS diagnosis or PCP. Both patient and hospital characteristics are analyzed to provide a national view of AIDS.
Results. In 1986, adult AIDS discharges (N=3230 from 196 hospitals) were concentrated in the west (39%) and the northeast (36%), in urban areas (98%), and in larger than average (over 400 beds), private not-for-profit (86%), and teaching (86%) facilities. On average, length of stay and total charges were highest in the northeast (17 days, $12914), but charge per day, a measure of service intensity, was highest in the west ($995). AIDS discharges were most often covered by private insurance (54% versus 43% for all discharges) but were twice as likely to be covered by Medicaid (23% versus 11%). Only 6% of AIDS discharges reported Medicare coverage.
Conclusion. For policymaking at a national level, the view of AIDS must be expanded beyond New York and California. Substantial variations in patient characteristics and resource use are found when a large number of AIDS discharges from across the U.S. are considered.

Th.H.P.4

THE ECONOMIC IMPACT OF AIDS ON THE HEALTH CARE SYSTEM IN SWITZERLAND

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Objective. To estimate the impact of all direct costs due to HIV infection and AIDS on the Swiss health care system and on the Swiss health care insurers by applying current epidemiologic projections (cum. 12,000 in 1995).
Methods. Analysis of medical and financial records of 60 AIDS patients (17% of all death cases), of governmental subsidies, and of other direct costs.
Results. Personal costs have been far lower than overall nonpersonal costs. This will change radically until 1995. Estimated lifetime costs were 74,000 Sfrs. per AIDS patient (including outpatient treatment). Health care insurers, who have generated much concern among policymakers, paid typically only 50 percent of all medical costs. The remaining costs consisted almost entirely of increased hospital deficits that were covered by taxes.

Direct Costs (in mio.Sfrs.)	1986	1987	1988	1991	1995
Personal Costs	6.0	8.0	12.0	60.0	225.0
Nonpersonal Costs	18.0	36.6	48.0	50.0	50.0
Total Direct Costs	24.0	46.6	60.0	110.0	275.0

Among nonpersonal costs, there had been expenditures for prevention & information (1986:1.5 mio. Sfrs., 1988:10.0), screening (7.0;7.0), HIV testing (6.0; 12.5), research (2.0; 10.0) and other expenditures (1.5; 8.5). By comparison, the impact of alcoolism (3.1%) and rheumatism (5.3%) on the health care system today is still far higher than the estimated impact of AIDS (1.0%) in 1995. The number of hospital beds required is low and will remain low (500 beds in 1995 or 1.0% of a all acute care hospital beds).
Conclusion. With cumulative 3,500 (12,000) AIDS cases expected until 1991 (1995), AIDS will have only minor resource implications on the health care system and will drain the coffers of the health care insurers only negibly.

Th.H.P.5

HOSPITAL UTILIZATION AND HOSPITAL EXPENDITURES FOR PATIENTS WITH HIV DIAGNOSES, UNITED STATES, 1984-1987

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Objective. To present a national overview of hospital utilization and expenditures and the changes found over the period 1984-1987.
Methods. The data are from the National Hospital Discharge Survey (NHDS) and are collected from the medical records of a sample of patients in a national sample of over 400 short-stay general and specialty hospitals. For the 4-year period, 1984-1987, there were over 700 records with an HIV diagnosis. Estimates of annual hospital expenditures were computed using data on hospital expense per day from the American Hospital Association.
Results. Approximately 3/4 billion dollars were expended by short-stay hospitals in the care of HIV patients in the years 1986-87. HIV patients spent almost 1.4 million days in hospitals in 1986-87, compared to half a million days in 1984-85. The increased number of days was due to growth in the number of hospitalizations: 10,000 in 1984, 23,000 in 1985, 37,000 in 1986 and 49,000 in 1987. The average length of stay for HIV patients remained at about 2-2½ times the average for all patients (15.9 days vs. 6.4 days for all patients in 1987). In 1986-87, public sources, primarily Medicaid, were expected to provide payment for 40 percent of hospital days for HIV patients, compared to 25 percent in 1984-85.
Conclusion. Hospital use and costs for patients with HIV diagnoses are growing rapidly in the United States. Public funds are supporting an increasing proportion of hospital costs.

Th.H.P.6

Impact of Hospitalized H.I.V. disease in a low incidence area

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Object: With 6% of the Canadian total of diagnosed AIDS cases Alberta is a low incidence area. To determine the impact on and distribution of H.I.V. disease within the 6 active treatment hospitals within the city of Edmonton, a medical records search was undertaken.
Method: Medical records analysts using PAS diagnosis indexes and ICD-9-CM codes 795.8, 279.19, 279.3 and 042.0 - 044.9 extracted hospital admissions and days of stay for all Edmonton hospitals 1985 through 1988. Data for 1988 was extrapolated to year end from available information.
Results: Hospital Days all HIV patients

Hospital	1985	1986	1987	1988*	total	%all days	%all Edmonton hospital beds
1 (UAH)	31	334	763	1512	2640	80%	29
2	89	32	165	120	406	12%	29
3	0	0	7	27	34	1%	12
4	0	66	37	4	107	3%	14
5	0	37	14	0	51	1.5%	14
6	0	0	70	0	70	2%	2
Total	120	469	1056	1663	3308	99.5%	100%

*estimated

Whereas provincially between 1985-88 there was a 180% growth in annual AIDS incidence, in Edmonton H.I.V. bed utilization grew 1385%; 78% of bed use by identified HIV patients was for AIDS.
Conclusion: Even in a low incidence area such as ours, impact of HIV disease has grown considerably. Growth in diagnosed AIDS cases has greatly underpredicted growth in in-patient days. Reasons for and consequences of the maldistribution of impact needs to be explored.

Th.H.P.7 A SYSTEMIC APPROACH TO AIDS ECONOMIC AND (SOCIAL) IMPACT ANALYSIS

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Our aim in this study was to construct indicators leading to a coherent planning (indirect) system by which to reveal obstacles to world distribution of scarce resources to do same things. If the same reallignment of AIDS founds can be worked by reading off these relative marginal efficiency rates in allocating mean to ends at all levels of hierarchical and functional autonomy (individual-nation-society-world), then the direct method of experimenting with and intended behavior or logical action constraints can be used as best method at solving the crucial problem of modern man or modern society plight for survival from a less and less congenial or cooperative environment.

Th.H.P.8 THE CANADIAN AIDS RESEARCH CONTRIBUTION: A CRITIQUE

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Canadians are becoming involved in the international effort to control the spread of HIV, and to understand the biology of the agent and the host response to it. This is evident by a number of parameters including the number of abstracts at the International Symposia from 1985(1) through 1989 (over 40), and the major contributions to the world literature. In 1989-90, almost 5% of the total Canadian research effort or 17-18 million dollars will be allocated to AIDS research. What is this purchasing? What are the priorities for the future?

All AIDS researchers in Canada have been circulated with a questionnaire to identify Canadian contributions and determine future directions. The questionnaires are being collated. It is intended that this exercise will determine how AIDS researchers in Canada evaluate the contributions made to date, the direction and quality of leadership of the Canadian AIDS research effort, and priorities required for the future. This is a constructive critique with some guidelines intended to determine where we wish to be and how we plan to get there.

Th.H.P.9 LABOR PRODUCTIVITY LOSSES TO NEVADA'S AND THE AMERICAN ECONOMY RESULTING FROM PREMATURE DEATH DUE TO AIDS

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Objective. To determine the labor productivity losses to Nevada's and the American economy resulting from the premature disability and death of persons with AIDS by calculating the past and future lost income for all individuals with AIDS reported in Nevada during the years 1987 and 1988.
Methods. The past and future income losses were individually calculated for each individual in the population (N=209) based upon date of birth, sex, race, age at AIDS diagnosis, month and year of AIDS diagnosis, occupation and annual income. Past income loss was defined as the period between the date of diagnosis and December 31, 1988 and was determined by calculating the partial salary for the year of diagnosis if diagnosed in 1988. For those diagnosed in 1987 the partial salary for 1987 was added to the projected 1988 salary. Upon determination of each individual's work life expectancy future income losses were calculated by multiplying the 1988 annual income by a growth factor of 6.4% for each year of the remaining work life.
Results. The labor productivity loss to Nevada's and the American economy in past and future income adjusted for inflation for all (N=209) AIDS cases reported in Nevada during 1987 and 1988 was $305,929,724. Past income loss was $4,654,398 and future income loss was $301,275,326. In constant 1988 dollars the total lost income is $117,567,218.
Conclusion. AIDS is having a serious impact upon the productivity of the labor force in Nevada and the United States. Billions of dollars will be lost to the American economy over the next few years as a result of the premature disability and death of persons with AIDS.

Th.H.P.10 STUDY ON CONSUMPTION OF CARE OF HIV-POSITIVE PATIENTS

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Objective. A follow-up study to estimate the consumption of institutional and non-institutional care of patients with HIV/AIDS and to study the changes in consumption over time.

Method. Two random samples of HIV/AIDS patients reported to the nation wide register of National Bact.Lab. before 1986-07-01 (1:st sample) and after 1986-07-01 (2:nd sample) were drawn.

Conclusion. The consumption of institutional and non-institutional care for HIV/AIDS patients can be estimated. When forecasting the need of care, the results from the studies can serve as a basis of facts.

Results. The follow-up study (the 2:nd sample) is going to be reported preliminary in June, 1989 and compared with the first one. Parts of results from that study show that the estimated yearly number of days of institutional care for AIDS patients was 178 per patient. For patients without developed AIDS, the corresponding number was 5.9 per patient. The estimated, yearly number of non-institutional care for AIDS patients was 17.1 per patient; 6.0 for HIV patients.

Th.H.P.11 Medical Consumption of HIV patients outside hospital in France, an analysis in terms of gravity level

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The aim of the study was to estimate the structure of the medical consumption of patients with HIV infection according to their seriousness level, seropositive or AIDS and to the prescription.
This study was conducted in Paris and Lyon, during 1988 :110 patients (90% men) were recruited and filled up a questionnaire that was given in ambulatory consultations or at the general practionners. After acceptation by the patient, the specialist or general practionner noted the seriousness level on the back of the questionnaire according to a check list (four cases). The questionnaire included : the number of ambulatory consultations (general practionner and specialist), the cost of drugs and biological examinations, the number of stay at hospital and some items about the professional life.
The main results are : there is a significant difference between the structure of the consumption of, the seropositive AIDS patients. This effect is an accumulation effect, non substitution one (e.g. : from 1.3 to 4.5 G.P. consultations for 3 months, and from 235 to 635 FF for the drugs). In the beginning of the disease, the G.P. are autonomous for their prescriptions while they are in synergy with hospital specialists when their patients fall in AIDS disease.
There is no effect of the participation to a therapeutic trial in terms of consumption outside of hospital because expensive drugs are given only by hospitals.
Most of the patients included in the sample are working (80% of seropositive and 55% of AIDS patients). Patients at work consume less consultations of G.P.
The direct cost of care outside hospital (according to the Social Security prices) is :
7 390 FF (around $ 1211) for each seropositive patient (1 022 paid by the patient) ; for AIDS patients, the direct cost is 8 534 ($ 1400, 916 FF paid by the patient)

Th.H.P.12 A COMPREHENSIVE AND COST-EFFECTIVE APPROACH TO THE MANAGEMENT OF AIDS PATIENTS IN AN OUTPATIENT CARE FACILITY: THE RESULTS OF A PATIENT SURVEY.

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At present time, Puerto Rico is in the list of the first eight countries in the world with the greatest number of AIDS cases reported by population density and the second in Latin America. Recent projections suggest that by the year 2,000, the cumulative number of AIDS cases in San Juan will be between 50,000 and 150,000- this is a metropolitan region of approximately 0.5 million people. Also, it has been estimated that 50% of the cases reported in Puerto Rico belong to the city of San Juan. The San Juan Department of Health developed a policy statement entitled "Alianza para la Salud", which explicitly encouraged the cooperation of public and private sectors in the provision of health care.
Following this policy, a cost-effective approach to the management of AIDS Institute, a private corporation formed in December 1987. It receives funds from the municipality under a contract to provide services, and its main purpose is to offer alternatives to in-patient and outpatient care, to emphasize in preventive meassures and reduce the costs of in-patient care.
As part of its main functions, the Institute provides ambulatory care at its main facilities, located in a third floor of a municipal local health center, which provides care to adult and pediatric patients, other than AIDS patients. Last year 1,719 patients were evaluated and treated as ambulatory care. 60 patients were picked at random, in a one month period, and asked to fill a questionnaire that meassured basically, quality assurance and patient's perception of services being offered. Final results disclosed a 95% (N=56) of satisfaction regarding quality of service and 93% of satisfaction in medical treatment received. 86% (N:51) felt confidentiality was assured and 88% (N:62) evaluated personnel as qualified or highly qualified in AIDS. 53% felt less anxious ever since they visited the Institute and more than half of seropositive drug addicts in group therapy were drug free and less concerned about course of future illness. Results of this study are indicative, that in spite of social stigma of high risk groups, space limitations, and reduced human resources in a large catchment area, the San Juan AIDS Institute has succeded in providing cost effective, high level care to AIDS patients in San Juan.

Pays en voie de développement - Divers
Developping Countries - Miscellaneous

Th.H.P.13 ENLISTING THE SUPPORT OF TRADITIONAL HEALERS IN AIDS EDUCATION CAMPAIGN

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A nationwide AIDS education campaign in Zambia was constrained by lack of support from traditional healers. Firstly some of them did not appreciate the nature of the new disease, and secondly others hampered the education efforts by publicity claiming that they possess curative and/or preventive medicines for HIV infection.

To overcome communication barriers, the health education unit convened a workshop for traditional medical practitioners and their orthodox counterparts. An important feature of the workshop was interactive participaroty small group discussion. At the close of the workshop significantly more healers understood the nature of AIDS and were willing to participate in the national information and education effort against AIDS.

Th.H.P.14

Th.H.P.15

THE FEAR OF AIDS IN YOUNG WOMEN

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The purpose of this study was to investigate the possible fear of Acquired Immune Defficiency Syndrome (AIDS) in young women with or without suspective clinical findings.
Material and Methods: 48 young women with more than one sexual partners during the last 3 months were interviewed about their fear for the possibility for carrying human immunodeficiency virus.
1st group) 36 women had no clinical findings. 2nd group) 12 women had clinical abnormalities as weight loss, fevér, fatigue, arthralgia, anorexia and diarrhea.
Results: 1st group)12 women(21.4%)complained about there fear for having AIDS.
2nd group)10 women(83.3%) complained about the same fear.
The difference is statistically higly significant between the groups($p<0.01$).
Conclusion: The fear of having AIDS is very high in young women with more than one sexual partners and with clinical abnormalities.

Th.H.P.16 ETUDE DU TEMPS MOYEN DE SURVIE DES PATIENTS ATTEINTS DE SIDA A KINSHASA/ZAIRE.

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Objectif:Evaluer le temps moyen de survie des sidéens afin d'établir des critères de base pour l'évaluation de l'efficacité des nouvelles thérapeutiques en expérimentation.
Méthodes et patients:Les dossiers des malades décédés avec le diagnostic de SIDA (Clinique + ELISA+) de Jan 84 à Nov 87 aux Cliniques Universitaires de Kinshasa ont été revus. Le temps moyen de survie est défini comme l'intervalle du temps écoulé entre la date de début du 1er symptôme et celle de décès.
Résultats:99 dossiers des décès dus au SIDA (56♂,43♀) ont été retenus.L'âge moyen des hommes (moyenne + ET :37,1 +/-9,1 ans) était plus élevé que celui des femmes (29,3 +/-7,4 ans) p<0,00001.La survie moyenne des femmes (374,1 +/- 282,4jrs; extrêmes:63-1525) est plus élevé que celui des hommes (249,9 +/- 238,2 jrs; extrêmes: 12-1051) p=0,03. L'étude des percentiles montre les 25^{e} 50^{e} 75^{e} respectivement de 124, 230 et 500 jrs pour les femmes et 92, 188 et 314 pour les hommes.
Conclusion:50 % des sidéens ne survivent pas plus de 6 mois après le début du 1er symptôme. La survie moyenne des femmes avec SIDA semble plus longue que celle des hommes.Une étude est en cours afin de déterminer les différents facteurs qui influencent la survie.

Th.H.P.17 INCIDENCE D'INFECTION HIV-1 DANS PROSTITUEES DE CALLAO, PEROU. ETUDE DE COHORTE.

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Objetif. Déterminer l'incidence d'infection HIV-1 dans une population de prostituées de Callao, Pérou.
Méthodes. On a selectionné une cohorte de 575 prostituées controlées dans le Centre de Santé de Callao, Pérou. Dans ce groupe, par les techniques de ELISA et WB, on a determiné la prevalence d'infection HIV-1. Six mois après, par les memes techniques, on a determiné les nouveaux cas. On a prévue la réalisation de une 3éme enquête à la fin du 12éme mois de surveillance.
Résultats. La prevalence d'infection HIV-1 fut de 0.003 (Abr. 1988). Dans la période de 6 mois on a enregistré un nouveau cas, ce qui donne une incidence de 0.001 (Oct.1988). Dans cette même période, il y a eu des changements dans le nombre et la composition de la cohorte; ce qui va être corrigé pendant l'enquête final. De la même maniére, dans cette période, on a appliqué un programme de prevention dans cette cohorte.
Conclusion. L'incidence d'infection HIV-1 dans ce groupe est bas par rapport à ceux qui on observe dans des autres groupes à risque. La différence relative peut s'expliquer par la particularité du comportement du virus dans cette population ou par l'impact du programme de prévention.

Th.H.P.18 UTILISATION D'UN TEST RAPIDE AU LATEX POUR PREVENIR LA TRANSMISSION DU HIV PAR TRANSFUSION DANS LES SOINS DE SANTE PRIMAIRES A KINSHASA.

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Objectif. Evaluer l'utilisation d'un test rapide effectué par un personnel non spécialisé dans 5 centres aux ressources limitées ne disposant pas de banque de sang.
Méthode. 726 donneurs de sang ont été recrutés consécutivement pour l'enquête. Tous les donneurs ont été testés par le test rapide d'agglutination au latex (Cambridge Bioscience)(L), effectué par le personnel infirmier préalablement formé pendant 15 jours au labo du Projet SIDA. Sur 428 échantillons consécutifs 364 ont été controlés par ELISA (Organon ou Wellcozyme)(E). Ont été considérés comme Vrai Pos(VP): 1L(+) avec 2E(+), Vrai Nég(VN):1L(-) avec 1E(-), Faux Nég(FN): 1L(-) avec 2E(+), Faux Pos(FP): 1L(+) avec 1E(-). Un Western Blot (DuPont)(WB) a pu être fait sur 6 sérums discordants soit entre L et E soit entre 2E, si fait, le résultat du WB a prédominé pour l'analyse.
Résultat. 61(8,4%) des 726 donneurs étaient L(+). Parmi les 428 échantillons 62 ont été éliminés: 59 L(-) dont l'E manquait et 3 L(+) avec un seul E(+). Sur les 364 échantillons restant 31(8.5%) étaient L(+); il y avait 18 VP, 331 VN, 2FN et 13 FP. La sensibilité du test est de 90 % ±1,6; sa spécificité de 96,2% ±1,0.
Conclusion. Un test rapide peut être utilisé pour prévenir la transmission du HIV dans les services de soins de santé primaires en Afrique.
La sensibilité du test dans les conditions du terrain est plus faible que prévu.

Th.H.P.19 PEAK PREVALENCE OF HIV IN NAMIBIAN TEENAGERS

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Objective. To determine the prevalence of HIV-1 and HIV-2 antibodies in a series of 708 serum specimens collected in the east Caprivi area of Namibia.
Methods. Elisa (Elavia and Du Pont) and Western blot techniques were used to investigate and confirm respectively the prevalence of antibodies to HIV-1 and HIV-2.
Results. Half of the HIV-1 positive specimens were from teenagers and younger. A significant difference in HIV-1 positivity between the two Elisa tests was found (4.2% by Elavia, 5.6% by Pasteur). On confirmation by Western blot, a false positivity rate of approximately 50% for both Elisa tests was demonstrated. No HIV-2 positives were confirmed although 15 of 704 (2.1%) HIV-2 Elavia positives were detected. Four false negative results were obtained (4/708, 0.6%).
Conclusions. In contrast to other countries, Namibian teenagers form the largest group of HIV-1 positive individuals. The high degree of false positivity suggests the presence of cross reacting antigens in this area. The detection of false negatives indicates the need for more careful evaluation of test results.

Th.H.P.20 AIDS AND MIGRATION IN JALISCO, MEXICO: THEIR RELATION WITH RISK FACTORS.

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OBJECTIVE: To describe migration backgrownd in the 250 AIDS patients reported in Jalisco, México, up to december 31,1988, and its relation to risk factors.

METHODS: Information supplied by the reports of AIDS cases in Jalisco. Analisys focused on travel to foreign countries and high risk practices.

RESULTS: Of the 250 case reported, aproximatly 50% traveled to foreign countries. Analising by sex and sexual habits the percentage modifies significantly.

CONCLUSION: A strong association was found with males and travel to foreign countries, this is stronger with homosexuals, at the beginning of the epidemic this relation was more frequent.

Th.H.P.21 HTLV-I INFECTION IN SEXUALLY ACTIVE AND HIV-I INFECTED SUBJECTS IN THE PHILIPPINES

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Objective. To determine the prevalence of HTLV-I infection among subjects at risk for or with HIV infection.
Methods. Sera were collected from subjects in Metro Manila being surveyed for HIV-I antibodies and HIV infected subjects under followup. Testing for HTLV-I was performed with particle agglutination(PA) and Western Blot(WB) methods. HIV-I antibodies were detected with PA and immunofluorescence tests.
Results. A total of 696 samples were tested for antibodies to HTLV-I and HIV-I. The age range was 18-57 years; most were females; originally from different islands; and with many sex partners from other countries. 662(95%) samples showed no antibodies to both HTLV-I and HIV-I on screening tests. 11 HIV negative samples had HTLV-I antibodies on the screening test: WB tests were negative in 6 and indeterminate in 5. Repeat WB studies in another laboratory showed no antibodies in the latter samples. Among the 23 HIV-I seroreactive samples, no antibodies to HTLV-I were seen on PA screening. There were no positive WB tests.
Conclusion. HTLV-I antibodies do not appear to be prevalent among the subjects studied. Further studies are needed to determine the significance of indeterminate WB results. However, additional serological surveys are necessary to establish the prevalence of HTLV-I among other population groups.

Th.H.P.22 MODES DE CONTAMINATION DES ENFANTS A POINTE NOIRE (CONGO)

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OBJECTIF : déterminer le mode de contamination des enfants hospitalisés pour SIDA dans le service de pédiatrie de Pointe Noire afin d'en déduire des méthodes de prévention.

METHODES : Tous les enfants atteints de SIDA hospitalisés du 01/01 au 30/04/1988 ont fait l'objet d'une enquête, d'un examen clinique et d'une sérologie VIH, de la mère et de l'enfant. L'interrogatoire a défini :

- les circonstances de la naissance, à domicile et en maternité, les vaccinations reçues, le nombre d'hospitalisations et de transfusions avec l'identité des donneurs, l'existence d'injections intramusculaires ou intraveineuses antérieures, de scarifications traditionnelles, de circoncision et de perçage des oreilles, le mode d'allaitement et l'existence d'autres malades ou décès suspects de SIDA dans la famille.

RESULTATS : Les modes de contamination ont été analysés chez 154 enfants : 64,3% sont contaminés par leur mère ; 16,4 % par des transfusions ; 8,3 % sont indéterminés ; 17 enfants, soit 11 %, non transfusés, dont la mère est séronégative, ont comme seul facteur de risque des antécédents d'effractions cutanées avec un matériel contaminé (injections, prélèvements, scarifications, vaccinations, etc).

CONCLUSION : L'importance de la contamination par effraction cutanée a conduit à une révision des attitudes thérapeutiques vis-à-vis du paludisme et des anémies, à une formation du personnel de santé et à l'organisation d'un programme d'éducation sanitaire.

Th.H.P.23 HIV-INFECTION IN HETEROSEXUAL POPULATION:PARADOX OR CONCEALMENT OF INFORMATION?

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Objective. To perform a comparative analysis of the prevalence of HIV-reactive subjects on 2 populations:one with HIV-reactive individuals repeated contact (P1),and the other with multiple sexual partners(P2)of unknown HIV serology.
Methods. A total of 269 patients(Pt)without a history of homosexuality,IVDA, hemophilia or transfusion was studied (P1:18 men(M),96 women(W)=114 Pt; P2: 106 M,49 W=151 Pt). Sera were asssyed through ELISA HIV-1 Abbott and confirmed through Immunofluorescence and/or Western Blot.
Results. Table I shows seroprevalence data.

	Men			Women		
	No	HIV+	%	No	HIV+	%
P1	18	-	-	96	12	12
P2	106	11	10	49	7	14
TOTAL	124	11	9	145	19	13

P1 W's partners were as follows:

	No	HIV+	%	
Bisexuals	7	1	14	
IVDA	58	6	10	p = ns
Hemophiliacs	31	5	16	

Conclusion. Heterosexual transmission is also confirmed in this population, where it shows a slight preponderance of M-W over W-M. Upon comparison of HIV +Pt risk group, no significant differences were found among their female partners. It is not clear whether P2 has seropositiveness levels higher than those of P1, a paradox that could be due to possible concealment of past epidemiological risk. This fact must be explained through subsequent studies.

Th.H.P.24 TYPOLOGY, BEHAVIOR, BISEXUALITY AND HIV INFECTION OF HOMOSEXUAL MEN OF COSTA RICA, 1985-1988

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Objective. A cohort was established to study risk factors and incidence of HIV-infection.
Methods. Healthy homosexual volunteers participated. Confidentiality, informed consent, and freedom to withdraw from the study at any time was assured. Each man was interviewed and tested by an ELISA and confirmed with Western blot. Three of five "types" of homosexual men in the country were represented: openly "gay" and "cryptic" (not publicly gay) (N=547); "male prostitutes" (N=95); and "homosexuals in prison" (N=61).
Results. 1) HIV infection remains confined to the gay and cryptic men (12% HIV-positive). Very few infections have been recorded in male prostitutes or in men in prison. 2) Bisexuality: 13 per cent of gays and cryptic men, and 33 per cent of male prostitutes said they were bisexual. 3) HIV infection by sexual preference: 12 per cent of exclusively homosexuals and 9 per cent of bisexuals were infected. 4) Behavior was similar in all "types", but differences in intensity and occurrence of sexual practice varied.
Conclusion. Our epidemic follows Pattern 1; two women with heterosexually acquired AIDS appeared in 1988 (4% of total). The presence of HIV in many bisexual men forecasts an increase of AIDS in women in the near future.

Th.H.P.25 HIV-1 AND HIV-2 SEROLOGICAL STUDY CARRIED OUT ON BLOOD DONORS FROM GUINEA BISSAU

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Objectif To evaluate if exist an increase of HIV$_2$ seropositivity in blood donors of Guinea Bissau in the comparison of the data collected during the first six months of activity with those regarding the second six months.

Material and methods The presence of specific HIV$_1$ and HIV$_2$ antibodies was investigate in 1766 blood donors (in majority relatives of pts admitted to Bissau Hospital); 1614 males, 152 females, average age 31.5 years. The statistic study was performed by means of Chi Square Test. The sera were tested with Elavia Pasteur Kit.

Results:

	BLOOD DONORS	HIV$_2$ POSITIVE	%	P
I° SIX MONTHS	720	54	7.5	
II° SIX MONTHS	1046	102	9.7	N.S.

Average age of HIV$_2$ Ab positive patients is 34.4 years. Out of 1766 patients, 7 resulted HIV$_1$ positive (0.39%).

Conclusion The study show a large number of HIV$_2$ Elavia reactive sera but no statistic significant prevalence of seropositivity in the comparison of two groups.

Th.H.P.26 AIDS SURVEILLANCE IN SICHUAN, CHINA

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Objective. To monitor introduction of AIDS from the outside world.

Methods. We used antigen slides of T-cell line infected with HIV and indirect immunofluorescent antibody technique(IFA) for the detection of antibodies against HIV in sera of persons at high risk.

Results. So far, in our laboratory 1,327 sera collected from high risk groups of AIDS including Chinese workers coming back from Mideast and African countries, Chinese and foreign businessmen, students, visiting schoolars, and others coming in and going out of China between January 1987 and November 1988 were tested by IFA. No positive result was obtained.

Conclusion. To date, 19 AIDS cases have been found in China and among them no AIDS case of native Chinese who was infected by HIV through homosexual and/or heterosexual intercourse was discovered. Because of dramatic increase of prostitutes in Sichuan Province and of the incidences of sexual transmitted diseases, sooner or later, AIDS will be introduced in the native population in China and more recently a sera collected from a young service girl working at a hotel in Wuhan city in Hubei Province was found to be sero-positive by IFA and other tests. It is an unavoidable task for us to enhance AIDS surveillance in our Province and it is urgent to obtain support and collaboration from scientists and individuals engaging in AIDS in the world.

Th.H.P.27 PREVENTION OF TRANSFUSION ASSOCIATED HIV TRANSMISSION IN KINSHASA/ZAIRE

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Objective. To develop a strategy in order to prevent transfusion related HIV - transmission.

Methods. Between 5/9/88 and 19/10/88 1044 consecutive patients on whom staff physicians requested a transfusion from Mama Yemo Hospital Transfusion Centre (Donor-HIV-Seroprevalence: 4.8%) where examined and interviewed by physicians.

Results. Indications of blood transfusions:

Diagnosis	Age<5 (N=460)	Age 5-14(N=125)	Age 15-39(N=363)	Age=>40(N=96)
Malaria	77.0%	58.4%	14.0%	15.6%
AIDS	0.9%	1.6%	15.2%	19.8%
Pregn.rel.Complicat.	0.0%	0.0%	43.3%	3.1%
Sickle cell anaemia	5.2%	20.8%	5.8%	1.0%

955 patients were transfused; 22.7% (N=214) without laboratory results (hemoglobin or hematocrit). 71.2% of these requests without lab. results occurred in patients >15 years of age. 30.8% of these transfusions where due to pregnancy related complications. 7.2% were transfused with Hb >6g% or HCT >25% ; 16.6% with pulse <100 without signs of dyspnoea.

Conclusion. Two groups have a high risk of acute anaemia requiring blood transfusions in Kinshasa: 1. children <5 years of age with malaria, 2. pregnant women. To reduce the number of blood transfusions in Kinshasa, two main approaches can be used: 1. More effective control of malaria, 2. Development and implementation of strict transmission guidelines particularly in the obstetrical service.

Th.H.P.28 AIDS IN EGYPT
AN EPIDEMIOLOGICAL STUDY

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AIDS, is a multifaceted problem with social, economic, political and medical implications.

The Ministry of Health in Egypt discovered 36 cases of the syndrome (20 foreigners and 16 Egyptians) by the year 1988. However,this may be only the tip of the iceberg.

National widespread screening of the syndrome started and all the discovered Egyptian cases were imported from abroad and they catched the infection during operation or blood transfusion.

Distribution and determinants of the syndrome in Egypt were presented and interpreted.

The suggested National Programme for Community Health action was discussed.

Th.H.P.29 AIDS EDUCATION FOR COMMERCIAL SEX WORKERS IN HONDURAS

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Objective: To provide education on STDs including HIV infection to registered commercial sex workers (CSWs) in Tegucigalpa, Honduras, and to evaluate the impact of the program on risk reduction behavior.

Methods: Registered CSWs are required to attend health clinics weekly. In this program, CSWs were provided with education on STDs and HIV and with a weekly supply of condoms. The intervention, which involved the participation of the CSWs in the development of materials, has been completed.

Results: Baseline data show that about 85% knew that HIV was transmitted sexually and condoms reduce risk. 86% have used condoms. Of condom users, virtually all have used them with clients, but only 25% of the 30% with non-client partners report condom use. CSWs report that over 40% of clients do not want to use condoms. Over 90% report condom breakage as a problem. 6% report anal sex. Final tabulations will show the impact of the education program on sex practices and condom use.

Th.H.P.30 AIDS PREVENTION AND IT'S COUNTERCURRENTS IN ASIA

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Objective. To assess the magnitude of AIDS prevention and its limitation in Asian Countries.

Methods. The following Asian Countries were chosen for the study Hongkong, India, Philippines, Singapore and Thailand. High risk groups (prostitutes, entertainers, homosexuals and IV drug users) AIDS counselling agencies, public health authorities and health care workers were visited and interviewed. Datas, opinions, suggestions and responses were evaluated.

Results. In Asia, the awareness of the potential thread and facts about the disease is very limited. The main source of information is the newspaper. Many still consider AIDS as a disease of foreigners. Even among the high risk groups, preventive measures are not a priority. For many prostitutes, survival is the main concern. Inadequate health resources and other health priorities make an effective AIDS program and screening unaffordable.

Conclusion. The potential for widespread dissemination of HIV infection in Asia is evident. Urbanization, prostitution & changing moral values, emerging from poverty and unemployment supported by growing entertainment and tourism industries make Asia vulnerable for HIV spread. Effective AIDS prevention and screening programs is apparently beyond the socioeconomic limits for many Asian countries.

W.B.O.45.A PEPTIDE T PHASE I STUDY:NEUROPSYCHIATRIC RESULTS

Goodwin, F.K.*, Bridge, Peter,*, Heseltine, P.N.R.**, Eaton, E.**, and Parker, E.S.**
*National Institute of Mental Health, Bethesda, MD.,
**University of Southern California, Los Angeles, CA., U.S.A.

Objective. To evaluate the toxicity and possible response measures to Peptide T (D-ala-1-peptide-T-amide), a homologue of VIP and gp-120, and gp-120 receptor blocker. Methods. In this ongoing study, 4 AIDS and 5 ARC patients received escalating fixed IV doses of Peptide T (.06-.8mg/kg/day) or intranasal (25 mg/day) without other antivirals. Baseline/repeat neurotoxicity measures were taken. Results. Pruritis in 1 patient led to early drug withdrawal. No neurotoxicity was observed. Individual responses to neuropsychologic testing varied from <0.5 to >1.5 S.D. increments across the 12 week testing period with variable decrements after drug withdrawal. Immuno/virologic drug responses were seen in as many as 5/9 patients. Cognitive neuromotor benefit and reduction of HIV constitutional symptoms on drug were greatest in those patients with immuno/virologic improvement. Conclusion. Peptide T was well tolerated for 12 weeks, with increases in body weight and well-being noted. Preliminary results indicate that these measures and immuno/virologic tests may be useful efficacy parameters for Phase II testing of Peptide T.

W.F.O.24 ETHICAL AND POLICY ISSUES POSED BY THE USE OF COERCION TO COMBAT THE SPREAD OF HIV INFECTION

Bayer, Ronald; Columbia University, School of Public Health, New York, NY, USA.

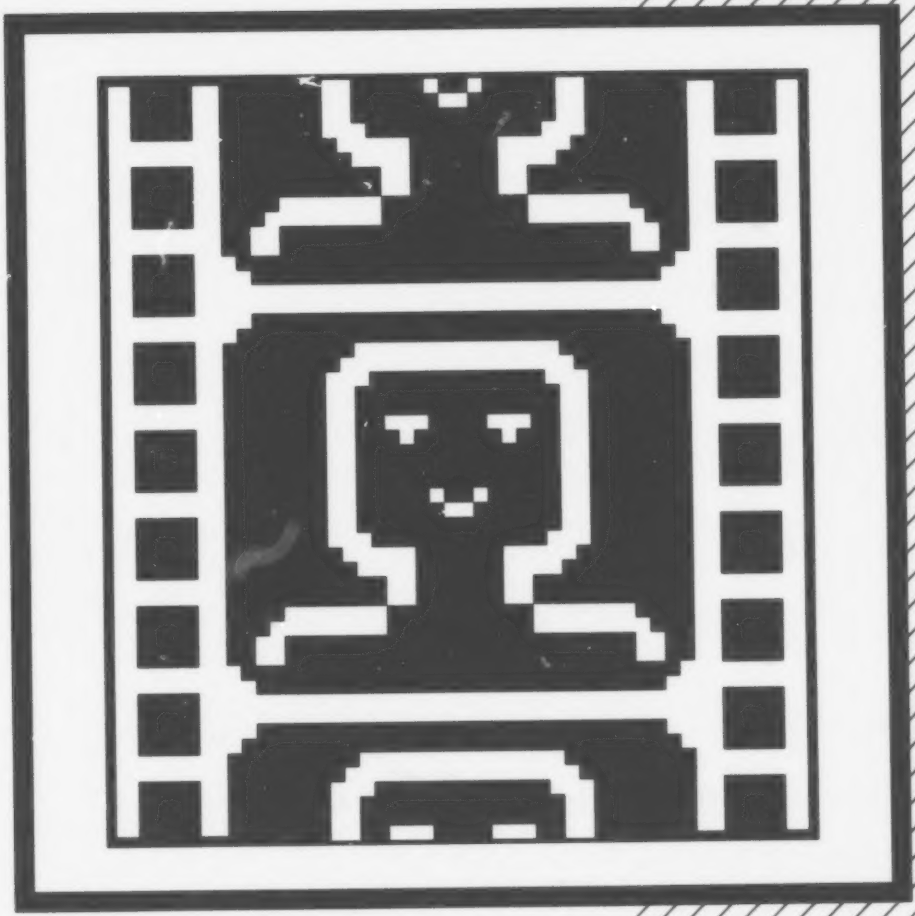
From the beginning of the AIDS epidemic there have been calls for the use of the State's power to quarantine to halt the spread of the lethal infection. But because it was quickly established that HIV infection was not casually transmitted the wholesale reliance on isolation was deemed unnecessary from a public health point of view, contrary to the principles of ethics that require respect for freedom, and undesirable from a public policy perspective. Troubling, however, was the question of how to respond to infected individuals who continued to act in ways that posed a threat to unsuspecting sexual or needle sharing partners. This has been the dilemma of those committed to a voluntaristic approach to controlling AIDS. There is, however, one national model of AIDS control that rejects the premises of voluntarism and that has determined that all HIV infected individuals must be isolated to prevent the possibility of behavioral transmission. The Cuban model stands as a bold and disturbing example of the exercise of public health powers to the exclusion of all other social values. This presentation will discuss the Cuban challenge and drawing on the experience of the United States, Sweden, Bavaria and South Africa analyze its relevance to other nations.

Th.E.O.6.A BLEACHMAN: A SUPER-HERO TEACHES AIDS PREVENTION

Pappas, Les*; Durazzo, R.*; Napolis, A. J.**
*San Francisco AIDS Foundation, San Francisco, CA., USA;
**Mid-City Consortium to Combat AIDS, San Francisco, CA., USA

Objective. To educate IVDUs about the risk of HIV transmission and the effectiveness of using bleach to clean hypodermic syringes. To motivate IVDUs to adopt safe needle using and sexual behaviors to limit the spread of HIV. Methods. A super-hero character was developed with extensive use of focus groups and field testing. BLEACHMAN appears in posters, brochures, billboards, bus cards, newspaper ads, television commercials, and on t-shirts. He also appears live (in an 8 foot super-hero costume with a bleach bottle for a head) and leads regular street outreach efforts. On the streets, accompanied by t-shirt wearing volunteers, BLEACHMAN talks to IVDUs and distributes bleach and condoms. BLEACHMAN has attracted the attention of IVDUs and their partners as well as extensive coverage in the media. Results. 89% of 165 randomly selected IVDUs have been reached by this AIDS prevention campaign. Of the IVDUs who acknowledged sharing needles (80% of the total group) 87.7% reported they were more likely to use bleach to clean their needles as a result of their exposure to BLEACHMAN. Conclusion. The ability to reach IVDUs indicates the effectiveness of this combined grass-roots and media strategy. BLEACHMAN represents a unique interactive approach to AIDS prevention. This is the first time IVDUs have had a hero who cares about their well being and they have responded with appropriate knowledge and behavior changes. AIDS prevention campaigns aimed at IVDUs can be effective if they are non-threatening and respectful of the target population.

SECTION I



Audiovisuel
Audiovisual

11:00 - 12:30

Session vidéo
Video session

Le Counseling
Counselling

11:00		Introduction: Ken Morrison
11:10	M.I.V.1	**"TALKING ABOUT AIDS"** Vidéo de/Video by: British Medical Association Foundation for AIDS Année/Year: 1988
11:33	M.I.V.2	**"PRE AND POST HIV TEST"** (en français, Rwanda), (in French, Rwanda) Vidéo de/Video by: Suzan Muska Norwegian Red Cross Année/Year: 1989

Le counseling est devenu un élément capital dans les traitements médicaux ou le dépistage d'anticorps reliés au SIDA. L'intervenant doit aider les personnes atteintes à comprendre l'infection par le VIH, ses modes de transmission et ses possibilités de traitement; il doit aussi les aider à faire face à leur situation tout en abordant les problèmes de la confidentialité, des droits, des responsabilités et du consentement éclairé. Ces deux films vidéo destinés à la formation de consultants (le premier en anglais, le deuxième en français) ont été choisis parmi plusieurs autres propositions sur le sujet.

Counselling has become a vital element in AIDS-related medical treatment or antibody testing. As well as helping people understand HIV infection, transmission routes and treatment possibilities, the care provider must help people to cope with their situation while addressing issues such as confidentiality, rights, responsibilities and informed consent. These two videos for counsellor training (the first in English, the second in French) were chosen from many submissions on the subject.

14:00 - 15:30

Session vidéo
Video Session

La Sexualité, la politique et l'histoire
Sex, Politics and History

14:00		Introduction: Andy Fabo
14:04	M.I.V.3	**"ARE WE GOING BACKWARD"** Vidéo de/Video by: David Tuff Année/Year: 1987
14:14	M.I.V.4	**"PROSTITUTES RISK & AIDS"** Vidéo de/Video by: GMHC Année/Year: 1988
14:39	M.I.V.5	**"THEY ARE LOST TO VISION ALTOGETHER"** Vidéo de/Video by: Tom Kalin Année/Year: 1989
14:52	M.I.V.6	**"REFRAMING AIDS"** Vidéo de/Video by: Pretibhe Parmar Année/Year: 1988

La vidéo offre toute une panoplie de méthodes pour poser un regard historique et analytique sur le sujet. Ce groupe éclectique d'artistes et de militants du monde des arts aborde les problèmes de la sexualité, de l'orientation sexuelle, du racisme, du sexisme, de la politique de la santé, de diverses phobies reliées au SIDA, des stéréotypes et de la considération du SIDA comme une catastrophe idéologique. Ces films vont de l'analyse visuelle à l'analyse textuelle en essayant de comprendre comment s'articule le discours sur le SIDA.

Video offers the use of a myriad of historical and analytical methods. This diverse grouping of artists and aesthetic activists touches on issues of sexuality, sexual orientation, racism, sexism, politics of health, various AIDS-related phobias, stereotyping and confronting AIDS as an ideological catastrophe. It ranges from visual to textual analysis attempting to understand the construction of AIDS discourse.

16:00 - 17:30

Session vidéo
Video Session

Les Femmes et le SIDA
Women and AIDS

16:00 Introduction: Colette Lachance

16:14 M.I.V.7 **"SAFE SEX SLUT"**
Vidéo de/Video by:
Scarlot Harlot
Année/Year: 1988

16:17 M.I.V.8 **"CORI: A STRUGGLE FOR LIFE"**
Vidéo de/Video by:
Nina Sobell
Année/Year: 1989

16:35 M.I.V.9 **"DOCTORS, LIARS & WOMEN"**
Vidéo de/Video by:
Carlomusto, Maggenti
Année/Year: 1988

16:58 M.I.V.10 **"JULIE"**
Vidéo de/Video by:
Seth Levin
Année/Year: 1989

17:08 M.I.V.11 **"LE SIDA ET LE MILIEU DU TRAVAIL"**
Vidéo de/Video by:
Kate Wardrop,
ACSP, CTC.
Année/Year: 1988

Mères, filles, amantes, travailleuses, lesbiennes, malades, militantes, prostituées, soignantes : les femmes sont vues de multiples manières à travers le prisme du SIDA. Ces films s'attaquent à la marginalisation des femmes sous divers angles. Chacun dépeint les luttes particulières des femmes face au SIDA et à l'infection par le VIH.

Mothers, daughters, lovers, workers, lesbians, patients, activists, prostitutes and caregivers: women are depicted in many ways in relationship to AIDS. From various viewpoints, these videos challenge the marginalization of women. Each depicts the special struggles which women face in relation to AIDS and HIV infection.

11:00 - 12:30

Session vidéo
Video Session

L'autodétermination des personnes atteintes
PWA Power

11:00		Introduction: Une Personne Atteinte A PWA
11:04	T.I.V.1	**"MEREDITH A YOUNG MOTHER WITH AIDS"** Vidéo de/Video by: Edan Programs Année/Year: 1988
11:24	T.I.V.2	**"ROBERT MARSHALL"** Vidéo de/Video by: Stuart Marshall Année/Year: 1989
11:34	T.I.V.3	**"LIVING WITH HIV"** Vidéo de/Video by: Nicke Johanssen Année/Year:
11:54	T.I.V.4	**"SURVIVAL OF THE DELIRIOUS"** Vidéo de/Video by: Michael Balser, Andy Fabo Année/Year: 1988
12:08	T.I.V.5	**"WORK YOUR BODY"** Vidéo de/Video by: GMHC Année/Year: 1988

La prise en charge de soi-même est devenue essentielle pour vivre avec le SIDA. Ces films scrutent la vie d'hommes et de femmes porteurs du VIH et examinent d'autres moyens de faire face aux dangers de l'affaiblissement du système immunitaire et à une société hostile. Films des États-Unis, de Suède, de Grande-Bretagne et du Canada.

Self empowerment has become the key to living with AIDS. These videos investigate the lives of those affected by HIV infection and examine alternative means of coping with the hazards of a weakened immune system and a hostile society. Presentations from the United States, Sweden, Britain and Canada.

14:00 - 15:30

Session vidéo
Video Session

La discrimination
Discrimination

14:00 Introduction: Tom Waugh

14:05 T.I.V.6 **"ONE OF OUR OWN"**
Vidéo de/Video by:
G.T. Rogers
Année/Year: 1987

14:35 T.I.V.7 **"WHEN THE FAMILY GETS AIDS"**
Vidéo de/Video by:
Slawomir Grunberg
Année/Year: 1988

15:03 T.I.V.8 **"THE 2nd EPIDEMIC"**
Vidéo de/Video by:
Amber Hollibaugh
Année/Year: 1988

Trois films, trois situations, trois techniques visuelles : illustration du SIDA au travail et des dilemmes qui en découlent, un regard personnel sur une famille aux prises avec une infection par le VIH et une analyse documentaire des effets négatifs de la réaction de la société au SIDA. Ces documents offrent une vision éclairante des problèmes inhérents à un monde dominé par la peur et les préjugés et présentent les diverses manières dont des personnes atteintes font face à ces difficultés.

Three videos, three situations and three visual techniques: 2 dramatizations of AIDS in the workplace and resulting dilemmas, a personal look at a family dealing with HIV infection, and a documentary analysis of the negative effects of society's response to AIDS. Each gives an insightful look at the problems inherent in a world of fear and prejudice and the various ways by which PWAs cope with these difficulties.

16:00 - 17:30

Session vidéo
Video Session

Programmation française
French Programming

16:00 Introduction: Colette Lachance

16:04 T.I.V.9 **"OÙ EST PASSÉ STÉPHANE"**
Vidéo de/Video by:
Dr. Didier Jayle
Mutualité Française
Année/Year: 1987

16:08 T.I.V.10 **"UNE VIE INCURABLE" (EXTRAIT)**
Vidéo de/Video by:
Robert Blais
Année/Year: 1988

16:18 T.I.V.11 **"REPORTAGE SUR JACQUES UNE PERSONNE ATTEINTE DU SIDA"**
Vidéo de/Video by:
Année/Year: 1988

16:27 T.I.V.12 **"UN MONDE UNI CONTRE LE SIDA"**
Vidéo de/Video by: OMS/WHO
Année/Year: 1988

16:48 T.I.V.13 **"VIRUS, QUEL VIRUS?"**
Vidéo de/Video by:
Fabrice Rouleau
Année/Year: 1987

17:05 T.I.V.14 **"FAITS DIVERS"**
Vidéo de/Video by:
Quentin Van De Velde
Année/Year:

Les films de France, de Belgique, de Suisse et du Québec traitent de multiples aspects du SIDA, des campagnes d'information pour les jeunes au contexte international du SIDA, avec des reportages très personnels.

Presentations from France, Belgium, Switzerland and Quebec, these videos address many aspects of AIDS ranging from general information for youth, the international context of AIDS, to very personal accounts.

11:00 - 12:30

Session vidéo
Video Session

La Perte et le deuil
Loss and Mourning

11:00 Introduction: Andy Fabo

11:11 W.I.V.1 **"MILDRED PEARSON: WHEN YOU LOVE A PERSON"**
Vidéo de/Video by:
Yannick Durand
Année/Year: 1988

11:20 W.I.V.2 **"THE INAUGURAL DISPLAY OF THE NAMES QUILT"**
Vidéo de/Video by:
David Thompson
Année/Year: 1988

11:36 W.I.V.3 **"DANNY"**
Vidéo de/Video by:
Stashu Kybartas
Année/Year: 1987

11:56 W.I.V.4 **"A PLAGUE HAS SWEPT MY CITY"**
Vidéo de/Video by:
Emjay Wilson
Année/Year: 1987

11:59 W.I.V.5 **"GAB"**
Vidéo de/Video by:
Ann Moriyasu
Année/Year: 1986

12:11 W.I.V.6 **"A"**
Vidéo de/Video by:
Andre Burke
Année/Year: 1986

12:19 W.I.V.7 **"THIS IS NOT AN AIDS ADVERTISEMENT"**
Vidéo de/Video by:
Isaac Julien
Année/Year: 1987

Vivre la perte d'un être cher. Ces films vont de l'hommage à l'élégie -- douleur collective et peine individuelle, douleur vécue dans les familles traditionnelles et dans d'autres qui le sont moins.

Dealing with the loss of a loved one. These tapes range from tributes to elegies, from collective to individual grief and from alternative family to traditional family grieving.

14:00 - 15:30

Session vidéo
Video Session

Le Militantisme et la résistance culturelle
Activism and Cultural Resistance

14:00		Introduction: John Greyson
14:03	W.I.V.8	**"THE ADS EPIDEMIC"** Vidéo de/Video by: John Greyson Année/Year: 1987
14:08	W.I.V.9	**"SNOW JOB"** Vidéo de/Video by: Barbara Hammer Année/Year: 1986
14:16	W.I.V.10	**"WE'RE NOT REPUBLICANS"** Vidéo de/Video by: Bob Huff Année/Year: 1988
14:30	W.I.V.11	**"STIFF SHEETS"** Vidéo de/Video by: John Goss Année/Year: 1989
14:49	W.I.V.12	**"ANOTHER MAN"** Vidéo de/Video by: Youth Against Monsters Année/Year: 1988
14:54	W.I.V.13	**"TESTING THE LIMITS NEW YORK part 1"** Vidéo de/Video by: Testing the Limits Collective Année/Year: 1988
15:20	W.I.V.14	**"SPREAD THE WORLD"** Vidéo de/Video by: Aboriginal Medical Service Redfern Co-Operative ltd. Année/Year:

Le militantisme artistique et la résistance culturelle face au SIDA ont entraîné une prolifération de films et de vidéos. Cette séance en présente parmi les meilleurs. Des défilés de mode provocateurs aux vidéos musicaux subversifs, de la désobéissance civile à l'analyse critique des médias, les stratégies esthétiques illustrées prouvent qu'il ne faut pas seulement réinventer la politique du SIDA mais aussi le langage du SIDA.

Aesthetic activism and cultural resistance in response to AIDS has meant a proliferation of videos. This session is a sampling of some of the best. From guerrilla fashion shows to subversive music videos, from civil disobedience to media deconstruction, the aesthetic strategies illustrated show that not just the politics of AIDS but the politics of language related to AIDS needs to be reinvented.

16:00 - 17:30

Session vidéo
Video Session

Les clips
Clips

16:00 Introduction: René Lavoie

16:15 W.I.V.15 Clips télévisés du monde entier
Television spots from around the world

Les campagnes de prévention restent le principal moyen d'informer le grand public. Beaucoup d'organismes, gouvernementaux et communautaires, ont essayé d'intervenir en utilisant les techniques médiatiques existantes comme les messages télévisés d'intérêt public ou des clips spécialisés pour les lieux publics.

Ces clips sont réservés ou conservateurs, explicites ou hilarants, réactionnaires ou fascinants. Ils sont juxtaposés à dessein pour amener le public à choisir activement entre la peur et la prise en charge de soi.

Prevention campaigns remain the primary means of getting information to the general public. Many organizations, both government and community-based, have tried to intervene using existing media techniques such as Television Public Service Announcements (PSA's) or community-specific shorts intended for use in public venues.

These clips vary from coy to conservative, explicit to hilarious, reactionary to riveting. They are purposefully juxtaposed to force the audience to actively participate in choosing between promotion of fear or of empowerment.

11:00 - 12:30

Session vidéo
Video Session

Programme international-espagnol
Spanish International Programme

11:00 Introduction: Dr. Guy Lonergan

11:03 Th.I.V.1 **"PUPPETS AGAINST AIDS"**
Vidéo de/Video by:
Gary Friedman,
African Research and Educational Puppetry Programme
Année/Year: 1989

11:08 Th.I.V.2 **"SIDA UN PROBLEMA DE TODOS"**
Vidéo de/Video by:
Daniel Villalobos
Année/Year: 1988

11:38 Th.I.V.3 **"OJOS QUE NO VEN"**
Vidéo de/Video by:
Latino AIDS Project
Instituto Familiar de la Raza
Année/Year: 1987

Trois voies pour l'éducation communautaire et l'éducation des jeunes. D'Afrique du Sud, un film vidéo qui dépeint l'emploi de marionnettes géantes pour décrire le SIDA. Du Chili, un film gouvernemental d'information sur le SIDA et sur la transmission du VIH mettant en scène des jeunes et un médecin. Des États-Unis, la transposition du SIDA sur le petit écran dans des téléromans explorant les relations sociales au sein de la communauté latino-américaine.

Three alternatives to community and youth education. From southern Africa, a video depicting the use of oversized puppets to describe AIDS. From Chile, a state informational video on AIDS and HIV transmission with youth and a doctor. From the United States, the dramatization of AIDS by the use of soap opera/ tele novella exploring the social intricacies of the latino community.

14:00 - 15:30

Session vidéo
Video Session

Le personnel soignant
Care givers

14:00		Introduction: James Miller
14:04	Th.I.V.4	**"WITH LOVING ARMS"** Vidéo de/Video by: Child Welfare League of America Année/Year: 1989
14:22	Th.I.V.5	**"FINDING OUR WAY TOGETHER"** Vidéo de/Video by: Mark Dworkin, John Mitsud, American Red Cross Année/Year: 1989
14:50	Th.I.V.6	**"NURSING AND AIDS--COMMUNITY CARE"** Vidéo de/Video by: Année/Year: 1988
15:00	Th.I.V.7	**"THE INSIDE STORY"** Vidéo de/Video by: Lynn Coward, Royal Victoria Hospital Année/Year:

Les intervenants sociaux ont besoin de formation, de conseils et de soutien dans l'aide qu'ils apportent aux personnes atteintes du SIDA. Ces films évoquent le rôle des parents d'accueil, des familles, de la communauté homosexuelle et lesbienne, de tous ceux qui dispensent des soins palliatifs, des infirmiers et infirmières et de divers bénévoles qui racontent comment ils ont vécu la réaction de la société au SIDA.

Care providers need training, guidance and support when caring for people with AIDS. These videos depict the role of foster parents, families, the gay and lesbian community, palliative care workers, nurses and various volunteers telling their stories about society's response to AIDS.

16:00 - 17:30

Session vidéo
Video Session

La Prévention
Prevention

16:00		Introduction: Ken Morrison
16:05	Th.I.V.8	**"THE BEST DEFENSE"** Vidéo de/Video by: Deborah Shames Année/Year: 1988
16:10	Th.I.V.9	**"WORK SAFE PLAY SAFE"** Vidéo de/Video by: Jessica Douglas Henry Année/Year: 1988
16:30	Th.I.V.10	**"SOMETHING FIERCE"** Vidéo de/Video by: GMHC Année/Year: 1989
16:50	Th.I.V.11	**"ON GUARD"** Vidéo de/Video by: Deborah Shames Année/Year: 1988
17:13	Th.I.V.12	**"AIDS-WISE, NO LIES"** Vidéo de/Video by: David Current, Anne Ruthledge Année/Year: 1988

La prévention reste le noyau fondamental de toute intervention contre le SIDA. Puisant dans le déluge de films vidéos proposés, cette séance présente un aperçu général des techniques de prévention mises en oeuvre pour de nombreux groupes cibles : toxicomanes, travailleurs du secteur de la santé et des services sociaux, personnels paramédicaux, prostituées, homosexuels et jeunes.

The nucleus of AIDS work remains prevention. From the deluge of videos submitted on the subject, this session provides an overview of prevention techniques for many target groups: drug users, health care workers, paramedics, prostitutes, gay men and youth.

Principaux commanditaires

Major Sponsors

Santé et Bien-être social Canada

Le Ministère de la Santé nationale et du Bien-être social est responsable des questions relatives à la promotion et au maintien de la santé, à la sécurité sociale et au bien-être social des Canadiens qui relèvent du Parlement du Canada. Des exemples de ses responsabilités sont l'application des lois touchant à la santé, à la sécurité sociale et au bien-être social des Canadiens; la conduite d'enquêtes et de recherches dans les domaines de la santé publique et du bien-être social; les services d'information sur les conditions et les pratiques sanitaires; les services de santé pour les Indiens et les Inuits, les habitants du Yukon et des Territoires du Nord-Ouest, les fonctionnaires fédéraux, les immigrants et le personnel de l'aviation civile; la coopération et la coordination avec les gouvernements provinciaux sur les questions de santé, de sécurité sociale et de bien-être social; et la collecte, la publication et la diffusion d'informations sur la santé, la sécurité sociale et le bien-être social.

Une importante partie des efforts que déploie le Ministère pour préserver et améliorer la santé et le bien-être social de tous les Canadiens exige la collaboration avec les autorités provinciales et territoriales. La nécessité de mener des activités conjointes dans certains secteurs découle de la division constitutionnelle des responsabilités et de l'existence de programmes fédéraux dont l'objet est d'aider les provinces et les territoires à assurer leurs propres programmes de services sanitaires et sociaux.

Les responsabilités et les activités du Ministère sont concentrées dans les principaux secteurs suivants : la sécurité du revenu pour les particuliers et les familles; les services sociaux de base, particulièrement pour les Canadiens défavorisés sur le plan socio-économique; l'universalité d'accès à des services de santé adéquats pour tous les Canadiens; la protection contre la maladie et les risques liés à l'environnement; la promotion de modes de vie sains; l'essor, l'encouragement et le développement de la condition physique et du sport amateur.

Les principales stratégies par lesquelles le Ministère s'acquitte de ses responsabilités sont les suivantes : transferts aux particuliers, transferts aux gouvernements provinciaux et territoriaux (sans oublier les groupes autochtones), recherche, réglementation et surveillance, services directs à des groupes particuliers, consultation, conseils, information et promotion.

Une brève description des divers programmes suit :

Services et promotion de la santé : Ce Programme assure un appui financier et technique aux provinces et territoires au titre des services de santé assurés et de certains services complémentaires de santé. Il encourage également l'adoption et la conservation de saines habitudes de vie, et stimule la recherche en santé publique.

Services sociaux : Ce Programme contribue à assurer de l'aide sociale et des services sociaux aux personnes qui n'ont pas les moyens financiers de satisfaire leurs besoins fondamentaux, ou qui, en raison de circonstances sur le plan social, sont exposés à la pauvreté, à l'isolement ou à la dépendance.

Services médicaux : Ce Programme assure des services de santé à plusieurs groupes de clients. Les principales activités s'adressent aux Indiens inscrits et aux Inuits de tout le pays, ainsi qu'à tous les habitants du Yukon et des Territoires du Nord-Ouest. Des services de santé sont également fournis aux fonctionnaires fédéraux, aux immigrants, aux résidents temporaires, aux voyageurs internationaux, au personnel de l'aviation civile, aux personnes physiquement handicapées et aux victimes de catastrophes.

Protection de la santé : Ce Programme vise à éliminer les risques pour la santé liés à des facteurs environnementaux, naturels ou artificiels, pouvant être cause de maladies et de décès prématurés. Les principales activités portent sur l'évaluation et le contrôle de la qualité et de la sécurité des aliments, ainsi que de la sécurité et de l'efficacité des médicaments et des appareils médicaux; l'identification et l'évaluation des risques liés au milieu; la surveillance des maladies; et la fourniture de services de laboratoire spécialisés.

Sécurité du revenu : Ce Programme a pour but de maintenir et d'améliorer la sécurité du revenu des Canadiens. Trois grands programmes de sécurité du revenu sont administrés : le Régime de pensions du Canada, la Sécurité de la vieillesse et des Allocations familiales. Un programme d'évaluation de l'invalidité est également appliqué dans le cadre de la Loi de l'impôt sur le revenu.

Condition physique et Sport amateur : Ce Programme contribue à améliorer la condition physique des Canadiens et à promouvoir l'excellence dans le sport amateur canadien sur les plans national et international.

Administration centrale : Ce Programme fournit au Ministère des services de direction et de gestion.

Health and Welfare Canada

The Department of National Health and Welfare is responsible for matters related to the promotion and preservation of the health, social security and social welfare of the people of Canada over which the Parliament of Canada has jurisdiction. Major examples of these responsibilities include administration of legislation relating to the health, social security, and welfare of the people of Canada; investigation and research into public health and welfare; information services relating to health conditions and practices; health services for Indian and Inuit people, residents of the Yukon and Northwest Territories, federal government employees, immigrants and civil aviation personnel; cooperation and coordination with provincial governments on matters of health, social security and welfare; and collection, publication and distribution of information relating to health, social security and welfare.

A significant amount of Departmental activity involves collaboration with provincial and territorial authorities in efforts to preserve and improve the health and social well-being of all Canadians. The need for joint activity in certain areas arises from the constitutional division of responsibilities and the existence of federal programs which assist provinces and territories to maintain their own health and social service programs.

Departmental responsibilities and activities are focused on the following principal objectives: income security for individuals and families; essential social services, particularly for socially and economically disadvantaged Canadians; universal access for all Canadians to quality health services; protection against disease and environmental hazards; promotion of healthy lifestyles; promotion, encouragement and development of fitness and amateur sport.

The major strategies through which the Department carries out its responsibilities are: transfers to individuals, transfers to provincial and territorial governments and to native groups, research, regulation and surveillance, direct service to specific groups, advice, consultation, information and promotion.

Following is a brief description of the various programs:

Health Services and Promotion: This Program provides financial and technical support to the provinces and territories for insured health care services and certain extended health care services. The Program also promotes the adoption and maintenance of healthy lifestyles and fosters public health research.

Social Services: This Program supports the provision of social assistance and services to persons whose economic circumstances are inadequate to meet their basic needs or whose social circumstances expose them to risk of poverty, isolation or dependency.

Medical Services: This Program provides health services to several client groups. The major activities are directed towards registered Indians and Inuit throughout Canada and residents of the Yukon and Northwest Territories. Clients also include federal public servants, immigrants and temporary residents, international travellers, civil aviation personnel, the physically handicapped and disaster victims.

Health Protection: This Program endeavors to eliminate health hazards associated with the natural and man-made environments that lead to illness and untimely death. Principal activities include: assessment and control of the quality and safety of food, and safety and effectiveness of drugs and medical devices; the identification and assessment of environmental hazards; the surveillance of diseases; and the provision of specialized laboratory services.

Income Security: This Program is responsible for maintaining and improving the income security of the people of Canada. It administers three major income security programs: The Canada Pension Plan, Old Age Security and Family Allowances. It also assists in the administration of the Income Tax Act through a disability certification.

Fitness and Amateur Sport: This Program contributes to the increased fitness of Canadians and the promotion of excellence in domestic and international amateur sport by Canadians.

Departmental Administration: This Program provides executive direction and management services to the Department.

ACDI

Créée en 1968, l'Agence canadienne de développement international (ACDI) est l'organisme du gouvernement fédéral responsable de la gestion d'environ 75 % de l'aide publique au développement accordée par le Canada aux pays en développement.

Depuis 1987, l'ACDI participe à la lutte contre le SIDA dans le monde en appuyant le Programme mondial de lutte contre le SIDA (PMLS) de l'Organisation mondiale de la santé ainsi que les programmes nationaux de lutte contre le SIDA. L'ACDI estime que les efforts déployés pour lutter contre le SIDA dans les pays en développement devraient également permettre d'améliorer et de renforcer les systèmes de soins de santé primaires établis dans ces pays.

L'aide de l'ACDI vise principalement à soutenir les cinq stratégies communes à la plupart des programmes nationaux de lutte contre le SIDA, notamment : le contrôle épidémiologique; la prévention contre la transmission de la maladie par relations sexuelles, par la transfusion sanguine ou autres produits sanguins, ou encore pendant la période périnatale; et la réduction des effets du SIDA sur les individus et sur la société.

À l'intérieur de ce cadre d'intervention très large, l'ACDI a apporté son soutien à la réalisation d'enquêtes sur la connaissance du SIDA, sur les attitudes à son égard et sur les pratiques sexuelles; à diverses initiatives en matière d'information, d'éducation et de communication; à la lutte contre les maladies transmises sexuellement; aux traitements palliatifs; aux services de conseils aux personnes infectées et à leurs partenaires; à la protection des réserves nationales de sang; au perfectionnement du personnel de laboratoire et des méthodes de diagnostic. Les compétences des universités canadiennes, d'autres organismes gouvernementaux et des organisations non gouvernementales ont rendu possible la mise en place d'un bon nombre de ces activités et continueront à favoriser la réalisation d'autres initiatives de ce genre.

Les engagements financiers de l'Agence en matière de lutte contre le SIDA, atteignent actuellement plus de $45 millions. L'ACDI est l'un des plus importants donateurs au PMLS, lui ayant fourni la somme totale de $14,5 millions de 1987 à 1989.

À travers ses programmes bilatéraux, l'ACDI appui des programmes pluriannuels dans de nombreux pays d'Afrique, des Antilles et de l'Amérique latine, dans le cadre de leurs programmes nationaux de lutte contre le SIDA. Ainsi, l'ACDI s'est engagée à verser $6,3 millions à l'Afrique anglophone et $22,8 millions à l'Afrique francophone : ces sommes permettront la réalisation de différents projets, dont la préparation d'une brochure d'information en portugais qui sera distribuée au Mozambique ainsi que d'un programme intensif de huit ans, mis en oeuvre en Afrique francophone. Les interventions réalisées dans le cadre de ce programme seront concentrées dans les domaines de l'information, de l'éducation, de la communication, du perfectionnement des ressources humaines, de l'épidémiologie et des études en anthropologie.

En Amérique latine et aux Antilles, l'ACDI a accordé $3,2 millions pour l'exécution de programmes régionaux et nationaux de lutte contre le SIDA.

D'autre part, la Direction générale des Programmes spéciaux de l'ACDI a affecté $1,4 million à la réalisation de trois projets de lutte et d'information administrés par des organisations non gouvernementales. Dans le cadre de ces projets, on préconise l'utilisation d'une bande dessinée conçue à l'intention des enfants de la rue ainsi que celle de documents d'information que distribuera la Fédération internationale de planning familial.

D'autres projets sont actuellement à l'étude et il est à prévoir que la contribution de l'ACDI à l'effort international de lutte contre le SIDA augmentera à la faveur de la naissance de nouvelles initiatives et de la mise en place de nouveaux programmes nationaux de lutte contre le SIDA.

CIDA

Created in 1968, the Canadian International Development Agency (CIDA) is the federal government agency responsible for approximately 75 per cent of Canada's official development assistance to developing countries.

Since 1987, CIDA has contributed to the global fight against AIDS by supporting the World Health Organizations's Global Program on AIDS (GPA), and national AIDS control programs. The Agency sees AIDS-control efforts as opportunities to complement and strengthen existing primary health cars systems in developing countries.

CIDA's assistance primarily supports five basic strategies common to most national AIDS control programs: epidemiological surveillance; prevention of sexual transmission; prevention of transmission through blood and blood products; prevention of perinatal transmission; and reduction of the impact of AIDS on the individual and society.

Within these broad approaches, CIDA has supported surveys of AIDS knowledge, attitudes concerning AIDS and sexual practices; information, education and communication initiatives; control of sexually transmitted diseases; palliative care; counselling of infected individuals and their partners; protection of national blood supplies; and upgrading of laboratory personnel and diagnostic procedures. The expertise of Canadian universities, other government agencies, and non-governmental organizations has been instrumental in many of these endeavors, and will contribute to future initiatives.

The Agency's spending commitments on AIDS control projects now total over 45$ million. CIDA is among the largest donors to the GPA, having contributed a total of $14.5 million from 1987 to 1989.

Through the bilateral channel, CIDA supports multi-year programs in many African, Caribbean and Latin American countries, within the context of their national AIDS control programs. CIDA has committed $6.3 million in Anglophone Africa, and $22.8 million in Francophone Africa. Projects range from the preparation of an AIDS information pamphlet in Portuguese for distribution in Mozambique, to an eight-year intensive project in Francophone Africa, focusing on information, education, communication, human resource training, epidemiology, and anthropological studies.

In Latin America and the Caribbean, CIDA has designated $3.2 million for sub-regional and national AIDS control programs.

Through the Special Programs Branch, $1.4 million has been allocated to three projects administered by non-governmental organizations involving AIDS control or information. These projects include an instructional cartoon for street children, and support for the dissemination of information by the international Planned Parenthood Federation.

A number of additional projects are in the discussion phase, and CIDA's contribution to international AIDS programming is expected to increase as new initiatives and more national programs develop.

Centre de recherches pour le développement international

Le CRDI est une société d'État créée par le Parlement du Canada en 1970. La mission du CRDI consiste à favoriser le développement du Tiers-Monde par la recherche et des activités connexes.

Par "développement", le CRDI désigne le processus d'évolution sociale et économique constant en vertu duquel les habitants d'un pays parviennent à déterminer quels changements ils devraient apporter à leur société et comment effectuer ceux-ci. Pour cela, les pays en développement doivent participer à la prise de décision sur un pied d'égalité avec les autres pays et doivent profiter pleinement des conséquences du changement. Cette forme de développement permet aux habitants du Tiers Monde d'améliorer leurs conditions de vie sans pour autant sacrifier leur dignité et le respect d'eux-mêmes.

Le CRDI est convaincu que cette forme de développement est plus susceptible de se manifester quand une population mange à sa faim, est en bonne santé, manifeste un esprit d'indépendance, est fière de ses réalisations, respecte les droits d'autrui et voit les autres respecter les siens. C'est pourquoi elle parraine les recherches destinées à faire naître ces conditions.

Objectifs

Le but principal poursuivi par le CRDI est de soutenir la recherche pertinente au développement et dont les résultats probables faciliteraient les activités dans ce domaine. Le Centre s'intéresse particulièrement aux projets qui se concentrent sur les problèmes liés à la pauvreté.

En deuxième lieu, il vise à consolider les capacités de recherche des pays en développement. Comme il préconise une intégration suffisante de ses activités, le Centre prend grand soin de rattacher l'aide qu'il prodigue en formation aux projets et aux programmes de recherche qu'il soutient.

Son troisième objectif est de promouvoir la diffusion, la vulgarisation et l'application des résultats des projets qu'il parraine.

Un quatrième objectif consiste à établir des liens entre les scientifiques des pays en développement et à aider ceux-ci à avoir accès aux résultats des travaux poursuivis un peu partout dans le monde.

Pour y parvenir, le CRDI finance des groupes et des établissements de recherche dans les pays en développement et soutient des réseaux et des organismes régionaux dans le Tiers Monde. Ainsi, il espère créer un noyau de chercheurs dans chaque pays et favoriser le développement de réseaux de personnes et d'établissements qui disposeront des ressources nécessaires à la réalisation des projets de recherche et à l'exploitation de leurs résultats.

Depuis 1970, le CRDI a ainsi contribué à plus de 3 500 projets auxquels participent au-délà de 10 000 scientifiques de 900 établissements répartis dans plus de 100 pays.

Bureaux

Le CRDI compte sept bureaux—le siège social, à Ottawa, et six bureaux desservant diverses régions des pays en développement : Bogota, Colombie; Le Caire, Égypte; Dakar, Sénégal; New Delhi, Inde; Nairobi, Kenya; Singapour.

Pour de plus amples renseignements sur le CRDI et les projets subventionnés par le CRDI dans les pays en développement, veuillez vous adresser à :

Louise Behan (613) 598-0564 ou Diane Hardy (613) 598-0570
Agentes de relations avec les médias
CRDI
B.P. 8500
Ottawa (Ont.)
K1G 3H9

International Development Research Centre

IDRC is a public corporation created by the Parliament of Canada in 1970. IDRC's mission is to contribute to development in the Third World through research and activities which support research.

IDRC uses the term "development" to mean a continuing process of social and economic change in which people have the power and ability to decide what changes to make in society, and how to make them. They must be able to participate equally in these decisions, and to share fully in the results of change. This kind of development makes people's lives materially better and encourages a sense of dignity and self-respect.

IDRC believes that this kind of development is most likely to happen when people eat properly, are healthy, have a sense of independence, are proud of their achievements, respect the rights of others and have their rights respected. It supports research which tries to foster these conditions.

Objectives

IDRC's main objective is to support research relevant to development and whose likely results could be used in development work. The Centre is especially concerned with research on the problems of poverty.

A second objective is to build up the research capacity and capability of developing countries. Since it wants its activities to be relatively well-integrated, the Centre very carefully links most of its support of training to research projects and programs it supports.

A third objective is to promote the diffusion, popularization and application of the results of the research which the Centre supports.

A fourth objective is to develop links among developing country researchers, and to provide them access to the results of world-wide research.

To achieve these objectives, IDRC funds research groups and institutions in developing countries, and provides some support to regional networks and institutions in the Third World. This support is designed to build a corps of researchers in each country, and to help develop the networks of people and institutions which provide the services needed to get research done and to use its results.

IDRC has supported more than 3,500 projects involving over 10,000 researchers in 900 institutions in more than 100 countries.

Offices

IDRC has its headquarters in Ottawa plus six regional bureaus to service particular regions of the developing world: Bogota, Colombia; Cairo, Egypt; Dakar, Sénégal; New Delhi, India; Nairobi, Kenya; Singapore.

For more information on IDRC or IDRC-funded projects in the developing wold, contact:

Louise Behan (613) 598-0564 or Diane Hardy (613) 598-0570
Media Relations Officers
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Ottawa (Ont.)
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Qu'est-ce que l'OMS?

L'Organisation mondiale de la Santé (OMS), institution spécialisée des Nations Unies créée en 1948, a 166 états membres. Elle agit en tant qu'autorité directrice et coordonnatrice, dans le domaine de la santé, des travaux ayant un caractère international. Les organes directeurs de l'OMS sont l'Assemblée mondiale de la Santé, "parlement" de la santé publique qui se réunit deux semaines par an, et le Conseil Exécutif, composé de 31 experts de la santé qui se réunissent deux fois par an.

Le secrétariat de l'OMS comprend environ 5 000 spécialistes opérant dans plus de 100 pays. Quelques-uns d'entre eux travaillent au siège de Genève et collaborent avec six bureaux régionaux en Afrique, dans les Amériques, en Méditerranée orientale, en Europe, en Asie du Sud-Est et dans le Pacifique occidental.

Les états membres contribuent directement au budget ordinaire de l'OMS—plus de 300 millions US $ par an—et des contributions volontaires additionnelles, qui doublent pratiquement le budget de fonctionnement, financent des programmes spéciaux tels que le SIDA, la reproduction humaine, les maladies diarrhéiques et la recherche concernant les maladies tropicales.

La "Santé pour Tous" est le principal but de santé sociale que se sont fixés les gouvernements et l'OMS pour les décennies à venir. De nombreuses organisations non gouvernementales apportent leur appui et les individus sont encouragés à "s'aider eux-mêmes". La "Santé pour Tous" a été définie par l'Assemblée mondiale de la Santé comme "un niveau de santé qui permette aux gens de mener une vie socialement et économiquement productive".

Sous la tutelle impartiale de l'OMS, les pays ont au cours des 40 dernières années combattu ensemble les fléaux de l'humanité. Un exemple en est la variole, la première maladie mortelle jamais éradiquée de la surface du globe. L'OMS s'est maintenant engagée à éradiquée la poliomyélite, qui paralyse encore quelque 275 000 enfants chaque année. Grâce au programme de l'OMS de lutte contre la cécité des rivières, des millions d'enfants d'Afrique de l'Ouest ne deviendront plus aveugles. En 10 ans, le pourcentage des enfants vaccinés contre six maladies mortelles est passé de 5 à plus de 50%. À ce jour, plus de 100 gouvernements ont adopté la liste modèle de l'OMS des 200 médicaments considérés comme essentiels.

Les succès sont nombreux, mais les défis restent impressionnants. Des millions de gens sont encore pris dans un cercle vicieux de pauvreté, de malnutrition et de maladie et n'ont pas accès aux soins médicaux, à une eau saine et à des systèmes d'élimination des déchets. La pandémie de SIDA exigera pendant de nombreuses années une mobilisation mondiale. Pour relever ces défis, l'OMS souligne que l'engagement politique et la participation des populations seront des facteurs essentiels.

What is WHO?

The World Health Organization (WHO), a specialized agency of the UN created in 1948, has 166 Member States. Its mandate is to act as the directing and coordinating authority on international health work. The two governing bodies of WHO are the World Health Assembly—a public health "parliament" which meets for two weeks every year—and the Executive Board, composed of 31 health experts who meet twice a year.

The Secretariat of WHO comprises some 5,000 specialists working in more than 100 countries. Of these, about 1,500 work at the headquarters in Geneva and there are six Regional Offices in Africa, the Americas, the Eastern Mediterranean, Europe, South-East Asia and the Western Pacific.

Member States contribute directly to the WHO regular budget—over US $ 300 million per year—and additional voluntary contributions, which virtually double the working budget, support special programmes such as AIDS, human reproduction, diarrhoeal disease control and tropical disease research.

"Health for All" is the main social health target of governments and WHO for the coming decades. Valuable support to achieve this goal comes from numerous nongovernmental organizations, and much emphasis is placed on helping individuals to help themselves. Successive World Health Assemblies have defined "Health for All" as "a level of health that will permit people to lead a socially and economically productive life."

Under the "neutral umbrella" of WHO, countries have, over the past 40 years, cooperated to combat together the scourges of humanity. An example is smallpox, the first killer disease ever to be eradicated from the world. Now WHO aims at eradicating polio, which still cripples about 275,000 children every year. As result of WHO's river blindness control programme, millions of children in West Africa no longer risk going blind. Immunization coverage of children against six killer diseases—measles, tuberculosis, whooping cough, tetanus, polio and diphtheria has increased from 5% to over 50% in 10 years. To date, more than 100 governments have adopted the WHO model list of 200 drugs considered essential for good medical practice.

The list of achievements is very long but the challenges that remain are daunting. Millions of people are still trapped in a vicious cycle of poverty, malnutrition and disease, and have no access to medical care, clean water and safe waste disposal. The AIDS pandemic will require a global mobilization for many years to come. To meet these challenges, WHO underlines that the vital factors will be political commitment and people's involvement.

Ministère de la Santé et des Services sociaux

Le Québec s'est doté d'un premier plan d'action sur le SIDA en 1987. Un groupe de travail, formé d'experts et de professionnels, a alors été constitué afin de fournir des éléments de réponse sur les questions éthiques et légales, la prévention, les soins, les aspects psychosociaux et la recherche.

La synthèse de ces travaux est devenue la principale source d'information à la base de la deuxième phase du plan d'action lancé par la Ministre de la Santé et des Services sociaux à l'occasion de la Journée mondiale du SIDA, le 1^{er} décembre 1988. Cette phase II comporte des mesures regroupées dans plusieurs champs d'activités avec prédominance de la prévention.

La prévention, par l'information et l'éducation, demeure encore le moyen le plus efficace de lutte contre le SIDA. Le Québec a identifié plus particulièrement quatre clientèles auprès desquelles devront s'articuler les efforts: la population en général, le milieu scolaire et la jeunesse, les personnes susceptibles de contracter le SIDA et celles avec lesquelles elles ont été en contact, et enfin certains groupes-cibles.

Le plan prévoit aussi des mécanismes d'information et de support pour toute personne désireuse de connaître sa situation par rapport au SIDA, des services de dépistage et de counseling, des subventions à des organismes communautaires pour des fins de support et d'entraide, des modalités pour la surveillance épidémiologique et des mécanismes de surveillance éthique relativement aux enquêtes de séroprévalence. Par ailleurs, des activités de formation et d'information sont prévues pour le personnel du réseau de la santé et des services sociaux, qui regroupe plus de 900 établissements.

En matière de soins hospitaliers, le plan d'action prévoit l'accessibilité à des services dans l'ensemble des centres hospitaliers québécois ainsi que la mise en place d'unités SIDA d'un maximum de 20 lits.

Pour les services complémentaires, l'orientation qui a été développée consiste à répondre aux attentes des malades qui souhaitent demeurer le plus possible dans leur milieu de vie ou dans un contexte qui lui ressemble. Ainsi, des projets pilotes de maisons d'hébergement ou de familles d'accueil spéciales et un programme de soins et d'aide à domicile sont mis en place.

L'évolution rapide de la maladie et l'état précaire des connaissances sur ce sujet nécessitent un accroissement des efforts en matière de recherche. Des fonds seront donc investis dans le développement de la recherche psychosociale et biomédicale et dans le perfectionnement des chercheurs.

Enfin, toutes les interventions seront l'objet d'une coordination et d'une évaluation visant à mesurer leur pertinence eut égard aux objectifs visés et aux résultats escomptés.

SANDOZ

SANDOZ Ltd., dont le siège social est situé à Bâle en Suisse, emploie plus de 43 000 personnes dans le monde entier dans des domaines aussi divers que la recherche et le développement, la fabrication de produits pharmaceutiques, chimiques et de matières colorantes, la nutrition et les produits agricoles.

Les recherches effectuées par Sandoz touchent cinq domaines de la médecine : neurologie, cardiologie, endocrinologie, immunologie et dermatologie. Cette entreprise investit, à l'échelle mondiale, plus de 700 $ millions par an dans la recherche fondamentale et la recherche clinique. Les spécialités pharmaceutiques Sandoz comprennent des produits tels que le Parlodel (bromocriptine) et le Sandimmune (cyclosporine) qui représentent de grands progrès scientifiques. Ce dernier produit, en particulier, a ouvert la voie à la transplantation et à la maîtrise du système immunologique.

Sandoz contribue aux travaux de recherche des professionnels de la santé en parrainant des colloques sur la science et la médecine. Depuis plus d'un siècle, des hommes et des femmes chez Sandoz ont participé activement à une véritable révolution sociale. Grâce à leur esprit innovateur et leur désir de partager leurs connaissances scientifiques, leurs travaux ont permis des améliorations importantes dans les sciences médicales et la santé. C'est ainsi que certains médicaments les plus remarquables du XX^{e} siècle sont des produits provenant de la recherche entreprise par Sandoz.

Sandoz Ltd., with headquarters in Bâle, Switzerland, employs over 43,000 people around the world in research, development and manufacture of pharmaceuticals, chemicals and dye stuffs, nutrition and agricultural products.

SANDOZ directs its medical research into five main areas; Neurology, Cardiology, Endocrinology, Immunology, and Dermatology. The company invests more than $700 million annually in basic and clinical research worldwide. SANDOZ medications include such breakthrough products as Parlodel (bromocriptine) and Sandimmune (cyclosporine). The discovery of Sandimmune has opened the road to organ transplantation and, ultimately, to control of the immune system.

SANDOZ contributes to the work of the health care community through the sponsorship of medical and scientific education forums. In fact, some of the most notable and advanced medications of the 20th Century are products of Sandoz research. For over a century now, the men and women of Sandoz have been active participants in a veritable social revolution. Through their spirit of innovation and desire to share knowledge, their endeavors have contributed to major improvements in medical science and human health.

Société canadienne de la Croix Rouge

Red Cross Society

Chaque année, la Société canadienne de la Croix-Rouge vient en aide à un Canadien sur six. Elle dessert la population à partir de plus de 1 000 postes non officiels, 608 sections, 10 bureaux divisionnaires provinciaux et territoriaux, et 17 centres de transfusion sanguine au Canada. C'est le siège social à Ottawa qui est responsable du Programme du sang et des Services internationaux, et qui coordonne 16 services de santé et d'action communautaire au pays. Toujours au siège social, le Laboratoire central constitue le centre de consultation du système canadien de transfusion sanguine et veille à l'élaboration et au respect des normes établies à l'égard du sang et des produits sanguins. La Société cnadienne de la Croix-Rouge désire remercier la "Vancouver PWA Society" et le Comité des personnes atteintes du virus de l'immunodéficience humaine (CPAVIH) du Comité SIDA Aide Montréal (CSAM), pour leur aide au centre d'accueil et de repos pour les personnes atteintes du SIDA.

The Canadian Red Cross Society touches the lives of one in six Canadians every year. Its services are delivered through more than 1,000 informal units, 608 branches, 10 provincial/territorial divisions, and 17 blood centres across Canada. The National Office in Ottawa is responsible for the national blood program and international services, and co-ordinates 16 health and community initiatives across the country. The National Office includes the NRL (National Reference Laboratory), the reference centre for the national blood system, developing and monitoring the standards and quality of blood and blood products. The Canadian Red Cross Society gratefully acknowledges the assistance of the Vancouver PWA Society and the PWA Committee of CSAM (Comité SIDA Aide Montréal) in the operation of the PWA Rest and Welcome Centre.

L'Industrie des assurances de personnes au Canada

The Life and Health Insurance Companies in Canada

Cent soixante-cinq sociétés d'assurance-vie offrent leurs services aux Canadiens. En coordonnant ses efforts et en allouant des ressources financières, l'industrie canadienne des assurances de personnes est en mesure d'apporter une aide importante à la lutte contre le SIDA et de faire ainsi preuve d'initiative dans ce domaine.

En 1987, elle a mis sur pied un Groupe de travail des chefs de direction sur les projets concernant le SIDA pour faire face à la menace que constitue cette maladie dévastatrice pour l'industrie et l'ensemble de la société.

Le plus sûr moyen d'enrayer la propagation du SIDA étant la prévention, l'objectif principal des projets parrainés par l'industrie est donc l'information, en particulier celle diffusée en milieu de travail et auprès des jeunes. L'industrie a financé un certain nombre de projets à cet égard et est constamment à la recherche d'autres projets dignes d'intérêt.

Canadians are served by 165 active life insurance companies. Through collective action and funding, the life and health insurance companies in Canada have the opportunity to make a significant contribution to the fight against AIDS and to show leadership on this issue in this country.

In 1987, the life and health insurance industry formed a CEO Task Force on AIDS Projects in response to the threat this devastating disease poses to business and to society.

The life and health insurance companies in Canada consider prevention the one sure way to curb the spread of AIDS. Therefore, the primary focus for industry-sponsored projects is on education, especially among young people and in the workplace. The industry has funded a number of projects in this area and is continually seeking other projects appropriate for consideration.

ORGANON TEKNIKA

One of the companies that make up AKZO's Pharma Division, ORGANON TEKNIKA focuses its activities on the R&D, manufacturing and marketing of high-tech products for hospitals, blood banks and laboratories.

From its headquarters in Turnhout, Belgium, ORGANON TEKNIKA serves a worldwide market via 40 local companies in all important geographical regions and production sites in the Netherlands, Ireland and the United States of America.

ORGANON TEKNIKA provides a range of HIV diagnostics for a range of applications. The latest contributions to the diagnosis, monitoring or confirmation, of HIV-infection are VIRONOSTIKA ANTI-HIV UNI-FORM (compatible with testing procedures for HBsAg and anti-HBc), VIRONOSTIKA HIV antigen, VIRONOSTIKA anti-Core and VIRONOSTIKA anti-ENV, which will be introduced at the V International Conference on AIDS together with HIV-LIA. Accomplishments diagnostic system, which also includes for instance the HEPANOSTIKA line of HAV and HBV assays and an extensive series of modern tests and dedicated equipment for still other viral, bacterial, parasital and endocrinological parameters.

With more than 25 years of experience in the field—including the invention of worldwide accepted standards like ELISA—ORGANON TEKNIKA has become a trendsetter in the systematizing of diagnostic praxis.

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M.A.O.31, M.B.O.36, M.B.O.37, M.B.O.42, W.B.O.45a, M.B.P.63, M.B.P.102, M.B.P.198, M.B.P.264, W.B.P.26, W.B.P.29, W.B.P.33, W.B.P.34, W.B.P.51, W.B.P.218, Th.B.P.165, Th.B.P.217, Th.B.P.221, Th.B.P.241, Th.B.P.259, Th.B.P.260, Th.B.P.267, Th.B.P.277, Th.B.P.375, B.574, B.595, M.C.P.107, W.C.P.24, W.C.P.91, W.C.P.112, C.759, T.D.P.50

see also Cerebrospinal fluid; Computerized tomography; Magnetic resonance

CEREBROSPINAL FLUID (CSF)
M.B.O.35, M.B.P.134, W.B.P.4, W.B.P.8, W.B.P.14, W.B.P.21, W.B.P.50, W.B.P.51, W.B.P.55, W.B.P.56, Th.B.P.165, Th.B.P.196, Th.B.P.210, Th.B.P.214, Th.B.P.219, Th.B.P.224, Th.B.P.228, Th.B.P.229, Th.B.P.231, Th.B.P.234, Th.B.P.235, Th.B.P.238, Th.B.P.241, Th.B.P.243, Th.B.P.244, Th.B.P.246, Th.B.P.247, Th.B.P.363, B.573, B.628, M.C.P.92, W.C.P.42, Th.C.P.97, C.721

CERVICAL NEOPLASIA
M.B.P.53, M.B.P.56, M.B.P.60, M.B.P.292

CHAGA'S DISEASE (*TRYPANOSOMA CRUZI*)
M.B.P.102, Th.B.P.4

CHELATING AGENTS
T.C.P.148

CHEMOTAXIS
Th.B.P.89, C.556, C.724

CHEST X-RAY
M.B.P.106, M.B.P.212, T.B.P.15, T.B.P.379, Th.B.P.38, Th.B.P.56, B.532, B.559

CHILDREN
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clinical presentation
M.B.O.1, M.B.O.39, M.B.P.227, T.B.P.146, T.B.P.150, T.B.P.156, T.B.P.158, T.B.P.161, T.B.P.168, T.B.P.169, T.B.P.174, T.B.P.181, T.B.P.187, T.B.P.188, T.B.P.190, T.B.P.191, T.B.P.196, T.B.P.199, T.B.P.203, T.B.P.211, T.B.P.259, T.B.P.262, T.B.P.263, T.B.P.264, T.B.P.265,

T.B.P.266, T.B.P.374, T.B.P.378, W.B.P.382, B.583, B.586, B.600, W.G.O.2, W.G.O.4, Th.G.O.33, Th.G.O.34, Th.G.O.51, G.509

- diagnosis
  - W.A.P.5, A.572, A.633, M.B.P.1, T.B.P.149, T.B.P.155, T.B.P.159, T.B.P.166, T.B.P.211, T.B.P.216, T.B.P.217, T.B.P.223, T.B.P.225, T.B.P.227, T.B.P.228, T.B.P.230, T.B.P.233, T.B.P.234, T.B.P.236, T.B.P.237, T.B.P.238, T.B.P.243, T.B.P.244, T.B.P.260, W.B.P.136, W.B.P.174, W.B.P.200, T.C.P.55, T.C.P.66, Th.C.P.21, C.767, C.773, Th.G.O.34
- foster care
  - M.E.P.38, M.E.P.39, M.E.P.42, Th.E.P.57, E.807
- group care
  - M.B.P.318, D.512, M.E.O.16, M.E.P.42, E.579
- hemophilia
  - M.A.P.41, T.B.P.253, T.B.P.257, W.B.P.87, W.B.P.295, Th.B.P.5, Th.B.P.9, Th.B.P.18, Th.B.P.20, Th.B.P.21, Th.B.P.29, D.556
- HIV antigen
  - M.B.O.5, M.B.P.372, T.B.P.228, T.B.P.230, T.B.P.237, T.B.P.261, W.B.P.87, W.B.P.382, B.573, B.592, W.F.P.3
- immunological
  - Th.A.O.4, Th.A.O.7, W.A.P.49, M.B.O.1, M.B.O.4, T.B.P.151, T.B.P.161, T.B.P.163, T.B.P.172, T.B.P.184, T.B.P.206, T.B.P.208, T.B.P.209, T.B.P.211, T.B.P.212, T.B.P.213, T.B.P.215, T.B.P.218, T.B.P.224, T.B.P.228, T.B.P.246, T.B.P.254, W.B.P.78, Th.B.P.89, Th.B.P.372, B.573, B.586, B.625, T.C.P.66, W.C.P.95, Th.C.P.91, C.554, M.G.P.28, W.G.P.9
- neonates
  - M.A.O.18, W.A.O.7, W.A.O.10, Th.A.O.5, Th.A.O.6, Th.A.O.8, M.A.P.6, W.A.P.1, W.A.P.5, W.A.P.47, W.A.P.50, W.A.P.51, Th.A.P.113, M.B.O.40, W.B.O.2, M.B.P.12, M.B.P.13, M.B.P.15, M.B.P.17, M.B.P.26, T.B.P.115, T.B.P.148, T.B.P.152, T.B.P.154, T.B.P.159, T.B.P.160, T.B.P.162, T.B.P.163, T.B.P.167, T.B.P.173, T.B.P.176, T.B.P.200, T.B.P.206, T.B.P.210, T.B.P.219, T.B.P.220, T.B.P.221, T.B.P.222, T.B.P.223, T.B.P.224, T.B.P.226, T.B.P.229, T.B.P.235, T.B.P.236, T.B.P.238, T.B.P.239, T.B.P.243, T.B.P.257, T.B.P.378, B.540, B.573, B.574, B.577, B.590, M.C.O.31, M.C.O.31, T.C.P.122, C.749, T.F.P.12, Th.G.O.53, W.G.P.10
- neurological
  - M.B.O.40, M.B.O.41, M.B.O.42, M.B.O.44, M.B.P.24, T.B.P.148, T.B.P.174, T.B.P.175, T.B.P.176, T.B.P.177, T.B.P.179, T.B.P.180, T.B.P.182, T.B.P.184, T.B.P.185, T.B.P.186, T.B.P.187, T.B.P.248, W.B.P.183, B.574, B.575, W.C.P.61, W.C.P.127
- pathology
  - T.B.P.267, T.B.P.370, Th.B.P.324, Th.B.P.372, B.580, W.C.O.45
- prevalence
  - M.A.O.18, T.A.O.40, Th.A.O.7, Th.A.O.11, M.A.P.14, T.A.P.1, T.A.P.65, W.A.P.1, W.A.P.9, W.A.P.47, Th.A.P.15, A.572, A.633, Th.B.O.39, M.B.P.160, T.B.P.157, T.B.P.165, T.B.P.190, W.B.P.174, Th.B.P.325, Th.G.P.27
- prevention
  - M.B.P.17, M.B.P.314, B.600, W.D.P.43, M.E.P.67, W.E.P.46, E.520, E.682
- prognosis
  - M.B.O.1, M.B.O.5, M.B.O.39, T.B.P.147, T.B.P.170, T.B.P.205, T.B.P.228, T.B.P.241, T.B.P.245, T.B.P.265, B.592, Th.C.P.7, W.G.O.5, W.G.O.6, Th.G.O.49, Th.G.O.52, W.G.P.7
- progression
  - M.A.P.14, W.A.P.4, W.A.P.50, M.B.O.1, M.B.O.2, M.B.O.44, T.B.P.153, T.B.P.163, T.B.P.165, T.B.P.169, T.B.P.170, T.B.P.174, T.B.P.190, T.B.P.193, T.B.P.197, T.B.P.210, T.B.P.234, T.B.P.254, W.B.P.382, Th.B.P.20, B.574, B.575, Th.C.P.7, W.G.O.4, Th.G.O.54
- psychology
  - M.B.O.41, M.B.P.305, M.B.P.317, T.B.P.175, T.B.P.178, T.B.P.183, W.B.P.183, B.595, M.E.O.16, M.E.P.42, E.504
- sexual abuse
  - M.D.P.7, T.D.P.71
- social impact
  - M.B.P.313, M.B.P.314, T.B.P.378, M.E.O.16, W.H.P.6
- *see* Transmission, vertical
- treatment
  - M.B.P.323, T.B.P.247, T.B.P.261, B.575, B.579, B.584, B.591, B.600, M.E.O.15, Th.E.O.9, M.E.P.34, M.E.P.67, M.E.P.71, W.E.P.21, Th.E.P.57, E.682
- twins
  - W.G.P.8
- vaccination
  - M.B.P.372, W.G.O.3, M.G.P.27
- other
  - W.A.O.18, M.A.P.35, W.A.P.48, Th.B.O.39, M.B.P.26, M.B.P.315, T.B.P.164, T.B.P.194, T.B.P.204, T.B.P.207, T.B.P.249, T.B.P.256, T.B.P.258, T.B.P.260, C.715, T.D.P.79, W.D.P.16, Th.D.P.27, D.556, E.666, T.F.O.18, Th.H.P.22

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- B.596
- *see also* Alternative therapies

CHLOROQUINE
- M.C.P.66, M.C.P.119

CHURCH SUPPORT
- W.E.O.26, W.E.O.27, W.E.O.29, Th.E.P.41, Th.E.P.43, Th.E.P.45, E.532, E.534, E.674, E.733, E.734

CIRCUMCISION
- T.A.P.86, T.A.P.89, Th.G.O.27

CLASSIFICATION
- *see* Diagnostic criteria

CLINICAL TRIALS, METHODOLOGY
- M.B.O.47, M.B.P.50, M.B.P.104, M.B.P.301, M.B.P.303, T.B.P.56, T.B.P.72, T.B.P.201, T.B.P.359, W.B.P.68, W.B.P.247, W.B.P.249, W.B.P.250, W.B.P.258, W.B.P.270, W.B.P.286, W.B.P.296, W.B.P.299, W.B.P.300, W.B.P.309, W.B.P.374, B.556, M.C.P.11, M.C.P.13, M.C.P.14, M.C.P.52, M.C.P.59, M.C.P.62, M.C.P.85, M.C.P.94, M.C.P.101, Th.C.P.106, Th.C.P.141, C.590, C.601, C.603, C.607, C.618, C.619, C.628, C.639, C.640, D.711, E.689, E.690, E.711, E.732, T.F.O.13, W.F.O.5, W.F.O.6, W.F.O.7, T.F.P.1, W.F.P.1, W.F.P.2, W.F.P.3, M.G.O.3, W.H.P.26
- *see also* individual drugs

CLOTTING FACTORS
- M.B.P.250, M.B.P.252, M.B.P.253, Th.B.P.6, Th.B.P.10, Th.B.P.21, W.C.P.97

CMV INFECTIONS
- *see* Cytomegalovirus

CNS
- *see* Central nervous system

CO2 LASER
- Th.B.P.349

COCCIDIOIDOMYCOSIS
- M.B.P.45, M.B.P.46

COFACTORS
- M.A.O.16, M.A.O.29, M.A.O.32, M.A.O.34, M.A.O.46, M.A.O.48, M.A.O.49, Th.A.O.6, Th.A.O.10, Th.A.O.17, Th.A.O.26, M.A.P.21, M.A.P.71, M.A.P.87, M.A.P.89, M.A.P.90, M.A.P.91, M.A.P.92, M.A.P.93, M.A.P.95, M.A.P.109, M.A.P.110, M.A.P.111, M.A.P.112, M.A.P.113, T.A.P.81, T.A.P.91, T.A.P.119, W.A.P.65, W.A.P.77, Th.A.P.23, Th.A.P.72, Th.A.P.100, Th.A.P.103, A.508, A.516, A.540, A.565, A.566, A.567, A.615, A.620, A.621, A.631, W.B.O.10, M.B.P.110, T.B.P.151, W.B.P.190, W.B.P.239, Th.B.P.63, Th.B.P.150, Th.B.P.315, Th.B.P.316, B.519, B.521, B.547, W.C.P.80, W.C.P.125, W.C.P.129, Th.C.P.19, C.740, C.747, D.713, E.688, Th.G.P.2, G.509

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- M.A.O.27, M.A.O.45, M.A.O.48, T.A.O.19, T.A.O.31, Th.A.O.3, Th.A.O.16, Th.A.O.24, M.A.P.34, M.A.P.87, M.A.P.93, M.A.P.105, M.A.P.108, M.A.P.110, M.A.P.111, M.A.P.112, T.A.P.31, T.A.P.58, T.A.P.104, T.A.P.107, W.A.P.30, W.A.P.45, W.A.P.50, W.A.P.54, W.A.P.55, W.A.P.59, W.A.P.65, W.A.P.71, W.A.P.74, W.A.P.75, W.A.P.80, W.A.P.93, Th.A.P.41, Th.A.P.86, Th.A.P.92, Th.A.P.105, A.548, M.B.O.45, T.B.O.27, W.B.O.24, W.B.O.26, W.B.O.28, W.B.O.41, W.B.O.45, M.B.P.29, M.B.P.42, M.B.P.196, M.B.P.254, T.B.P.162,

T.B.P.204, T.B.P.207, W.B.P.71,
W.B.P.112, W.B.P.181, W.B.P.201,
W.B.P.211, W.B.P.224, W.B.P.270,
W.B.P.273, Th.B.P.16, Th.B.P.22,
Th.B.P.75, Th.B.P.95, Th.B.P.183,
Th.B.P.195, Th.B.P.200, Th.B.P.202,
Th.B.P.218, Th.B.P.261, Th.B.P.276,
Th.B.P.278, Th.B.P.287, Th.B.P.288,
Th.B.P.324, Th.B.P.373, B.555, B.633,
W.C.P.98, C.787, T.D.O.6, T.D.P.35,
T.D.P.39, T.D.P.67, Th.D.P.39, Th.D.P.40,
Th.D.P.67, Th.D.P.78, Th.D.P.79,
T.E.P.43, Th.E.P.73, M.G.O.28, T.G.O.11,
Th.G.O.54, M.G.P.3, T.G.P.6, Th.G.P.4,
Th.H.P.17

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Th.A.O.23, M.A.P.18, M.A.P.79, M.A.P.80,
M.A.P.81, M.A.P.93, T.A.P.29, W.A.P.3,
W.A.P.40, Th.A.P.18, Th.A.P.23,
Th.A.P.30, Th.A.P.109, A.552, A.573,
A.586, A.615, A.620, T.B.O.10, Th.B.O.58,
M.B.P.19, M.B.P.78, M.B.P.110,
M.B.P.371, T.B.P.266, W.B.P.98,
W.B.P.112, Th.B.P.66, Th.B.P.70,
Th.B.P.351, B.519, B.529, B.610,
W.C.P.47, W.C.P.80, Th.C.P.5,
Th.C.P.105, C.787, Th.D.O.4, T.G.O.21,
Th.G.O.26, M.G.P.3, M.G.P.23, T.G.P.28,
W.G.P.6

COLCHICINE
W.C.O.24

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M.B.P.64

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M.B.P.63, T.B.P.284, W.B.P.328,
Th.B.P.213, W.C.P.109

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A.627, M.B.P.301, M.B.P.303, M.B.P.304,
M.B.P.313, T.B.P.18, W.B.P.67,
W.B.P.247, W.B.P.250, W.B.P.263, C.601,
M.D.P.21, Th.D.P.27, Th.D.P.73, D.704,
M.E.O.24, W.E.O.5, W.E.O.8, Th.E.O.18,
M.E.P.7, M.E.P.8, M.E.P.9, M.E.P.11,
M.E.P.16, M.E.P.49, M.E.P.50, M.E.P.57,
M.E.P.63, M.E.P.67, M.E.P.72, T.E.P.3,
T.E.P.5, T.E.P.10, T.E.P.40, T.E.P.41,
T.E.P.56, W.E.P.16, Th.E.P.33, Th.E.P.68,
Th.E.P.69, Th.E.P.72, E.502, E.503,
E.529, E.530, E.531, E.535, E.536, E.537,
E.538, E.539, E.541, E.557, E.567, E.674,
E.695, E.696, E.702, E.732, E.740, E.761,
E.778, E.779, E.809, E.810, Th.F.P.2,
T.H.P.15

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Th.B.P.127, Th.B.P.134, Th.B.P.139,
Th.B.P.191, T.C.P.12, T.C.P.68, C.558

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M.C.P.19, W.C.P.92, W.C.P.94,
Th.C.P.129, C.575, C.771

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Th.B.P.139

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M.B.O.44, M.B.P.41, Th.B.P.255,
Th.B.P.283, B.559

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T.A.P.9, T.A.P.72, T.A.P.75, W.A.P.72,
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C.562, W.E.P.6, W.E.P.32, W.E.P.62,
E.539, E.712, T.F.P.11, T.G.P.3, T.G.P.5,
G.502, G.514, W.H.P.26
management
C.562, G.514
see Model
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Th.B.P.294

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M.A.O.37, T.A.O.13, T.A.O.25, M.A.P.114,
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W.A.P.101, A.544, T.D.O.35, W.D.P.39,
W.D.P.87, D.685, T.E.P.14, W.E.P.30,
Th.E.P.54, E.597, E.670, E.671, M.H.P.21,
M.H.P.22, M.H.P.23, M.H.P.24, M.H.P.25
use by gay men
T.A.P.19, T.D.O.7, M.D.P.15, M.D.P.24,
T.D.P.45, W.D.P.89, W.D.P.92, D.700,
D.701, T.E.P.1, T.E.P.12, W.E.P.7, E.544,
T.G.O.8, Th.G.O.29, Th.G.P.16
use by general population
T.A.O.24, W.A.P.94, W.A.P.95, W.A.P.98,
W.A.P.100, W.A.P.103, T.D.P.5, W.D.P.88,
D.526, W.E.O.1, T.E.P.23, T.E.P.61,
W.E.P.61, W.E.P.63, W.E.P.65, Th.E.P.1,
Th.E.P.39, Th.E.P.46, E.547, E.670,
Th.G.O.29
use by heterosexuals
Th.A.O.15, T.A.P.14, W.A.P.97, T.D.O.35,
T.D.P.81, E.735
use by intravenous drug users
T.A.P.44, T.A.P.111, T.D.P.77, T.D.P.81,
Th.E.P.4
use by prostitutes
M.A.P.117, T.A.P.14, W.A.P.96, Th.D.O.7,
Th.D.O.8, Th.D.O.11, W.D.P.87, D.682,
D.698, W.E.P.14, E.522, W.G.O.20,
W.G.O.23, Th.G.O.29
use by students
M.D.P.27, T.D.P.5, T.D.P.11, Th.E.O.6a,
Th.E.P.35, E.585, W.F.O.14
other
W.A.P.100, Th.B.P.30, Th.B.P.33,
T.D.O.24, T.D.O.25, M.D.P.4, T.D.P.4,
T.D.P.11, T.D.P.13, T.D.P.91, D.544,
T.E.P.21, E.643, T.G.P.13

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T.A.P.75, W.A.P.84, M.D.P.66, M.E.P.29,
E.711, E.725, T.F.O.2, T.F.O.3, T.F.O.4,
T.F.O.5, T.F.O.6, T.F.O.7, T.F.O.11,
M.F.P.6, M.F.P.7, T.F.P.1, T.F.P.2,
T.F.P.3, T.F.P.4, T.F.P.8, T.F.P.10

CONSENT (INFORMED)
T.E.P.19, Th.E.P.10, E.720, T.F.O.11,
M.F.P.2, Th.F.P.9

CONTACT TRACING
see Partner notification

CONTRACEPTION
see Family planning

CONTROL GROUPS
M.A.O.46, M.A.P.21, M.A.P.87, W.A.P.95,
Th.A.P.4, Th.A.P.105, Th.A.P.107, A.620,
W.B.P.301, B.643, Th.D.P.92, E.785,
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W.B.P.199, W.B.P.207, T.D.P.46,
T.D.P.50, W.D.P.17, Th.D.P.54, D.536,
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T.B.O.29, M.B.P.90, M.B.P.263,
M.B.P.265, M.B.P.267, M.B.P.271,
M.B.P.278, T.B.P.24, T.B.P.35, T.B.P.278,
T.B.P.309, Th.B.P.333, B.509, B.583,
M.C.P.55, T.C.P.110, W.C.P.131, C.564

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W.E.O.12, M.H.O.13, T.H.O.11, T.H.O.12,
W.H.P.1, W.H.P.3, W.H.P.5, W.H.P.8,
Th.H.P.4, Th.H.P.8
health care
M.A.P.75, A.608, M.B.P.310, W.B.P.265,
W.B.P.271, D.661, T.E.O.14, T.E.O.17,
T.E.P.41, E.701, E.706, M.F.O.18,
W.G.P.13, M.H.O.13, M.H.O.14, M.H.O.17,
T.H.O.4, T.H.O.8, W.H.O.7, W.H.O.8,
W.H.O.9, W.H.O.14, W.H.O.16, M.H.P.2,
M.H.P.12, M.H.P.13, T.H.P.6, T.H.P.17,
T.H.P.19, T.H.P.20, T.H.P.22, T.H.P.24,
T.H.P.27
hospital care
M.B.P.302, W.B.P.253, M.F.O.18,
W.G.P.13, M.H.O.7, M.H.O.8, M.H.O.9,
M.H.O.11, M.H.O.12, M.H.O.17, T.H.O.9,
T.H.O.10, M.H.P.1, M.H.P.3, M.H.P.4,
M.H.P.5, M.H.P.7, M.H.P.8, M.H.P.9,
M.H.P.10, M.H.P.11, M.H.P.14, M.H.P.15,
M.H.P.16, M.H.P.17, M.H.P.18, M.H.P.19,
T.H.P.5, T.H.P.7, T.H.P.10, T.H.P.11,
T.H.P.16, T.H.P.21, W.H.P.2, W.H.P.4,
W.H.P.10, Th.H.P.3, Th.H.P.5, Th.H.P.6
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T.H.O.11, T.H.O.12, W.H.P.5, Th.H.P.4
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T.B.P.68, T.H.O.16
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W.A.O.21, M.B.P.336, M.B.P.351,
T.B.P.100, T.B.P.202, T.B.P.234,
W.B.P.71, W.B.P.280, Th.B.P.184,
Th.B.P.187, Th.B.P.367, B.555, B.638,
M.C.P.116, Th.C.P.7, Th.C.P.104,
T.E.P.44, E.690, E.725
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society
W.A.P.27, M.E.P.49, T.G.P.8, W.G.P.13
treatment
Th.B.P.216, T.E.P.45, T.H.O.8, W.H.O.10,
M.H.P.1, M.H.P.2, M.H.P.4, M.H.P.13,
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  T.B.O.30, M.B.P.82, T.B.P.23, T.B.P.34, T.B.P.41
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  W.B.P.285
CROSS-REACTIVITY
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  M.B.P.91, M.B.P.96, M.B.P.282, W.B.P.1, W.B.P.2, W.B.P.3, W.B.P.4, W.B.P.5, W.B.P.6, W.B.P.7, W.B.P.8, W.B.P.9, W.B.P.10, W.B.P.11, W.B.P.12, W.B.P.13, W.B.P.14, W.B.P.15, W.B.P.16, W.B.P.17, W.B.P.18, W.B.P.19, W.B.P.20, W.B.P.21, W.B.P.22, B.519, B.599, M.C.P.141
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    B.516, M.C.P.132, T.C.P.17
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    T.B.P.98, T.C.P.63, W.C.P.48
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    T.B.P.112, T.B.P.117, W.B.P.293, Th.B.P.96, M.C.O.28, T.C.O.22, Th.C.O.14, M.C.P.131, W.C.P.16, W.C.P.64, C.596, C.768, C.769
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  T cells
    T.B.P.112, T.B.P.224, W.B.P.284, Th.B.P.105, W.C.O.39, W.C.O.43, M.C.P.22, M.C.P.131, T.C.P.47, T.C.P.68, T.C.P.110, W.C.P.28, W.C.P.65, Th.C.P.52, Th.C.P.126, C.596, C.709, C.710, C.768
  other
    M.B.P.45, M.B.P.73, M.B.P.125, T.B.P.118, Th.B.P.57, M.C.P.124, T.C.P.88, T.C.P.106, W.C.P.52, W.C.P.54, W.C.P.61, Th.C.P.48, Th.C.P.68, Th.C.P.104, Th.C.P.133, C.767
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  other
    W.A.P.77, M.B.P.88, M.B.P.114, M.B.P.116, M.B.P.120, M.B.P.121, M.B.P.126, M.B.P.129, M.B.P.192, M.B.P.268, W.B.P.33, W.B.P.36, W.B.P.39, Th.B.P.22, Th.B.P.25, M.C.P.65, M.C.P.74, T.C.P.78, W.C.P.68, C.504, C.676, Th.G.P.11
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  M.B.P.248, M.B.P.257, T.B.P.284, W.B.P.43, C.568
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  M.B.P.42, W.B.P.294, W.B.P.330, Th.B.P.78, B.578, W.C.O.31, W.C.O.42, W.C.O.43, Th.C.O.34, T.C.P.2, T.C.P.32, T.C.P.57, T.C.P.148, C.524, C.543
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DIETHYLCARBAMAZINE
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Th.D.P.8, W.E.O.18, M.E.P.21, M.E.P.66, T.E.P.27, T.E.P.36, T.E.P.52, Th.E.P.44, E.577, E.693, E.790, E.814, Th.F.O.3, Th.F.O.7, M.F.P.1, M.F.P.6, Th.F.P.3, Th.F.P.6, W.G.O.13, T.H.P.20

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see Nitrite inhalants
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D4T
M.C.P.76, M.C.P.96, M.C.P.114, M.C.P.128

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M.A.O.27, M.A.O.44, M.A.O.46, T.A.O.31, T.A.O.32, M.A.P.88, M.A.P.93, M.A.P.108, M.A.P.111, M.A.P.112, W.A.P.53, W.A.P.57, W.A.P.64, W.A.P.68, W.A.P.74, Th.A.P.86, Th.A.P.94, A.545, A.548, M.B.P.293, Th.B.P.373, T.D.O.23, T.D.P.63, W.G.P.11, W.G.P.23
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W.A.O.27, T.A.P.18, W.A.P.91, W.B.O.40, W.B.O.41, M.B.P.312, M.B.P.321, W.B.P.181, W.B.P.215, W.B.P.226, W.B.P.244, T.D.O.19, W.D.O.2, M.D.P.22, T.D.P.24, T.D.P.42, T.D.P.45, T.D.P.57, T.D.P.67, T.D.P.76, Th.D.P.88, D.524, D.528, D.681, D.720, M.E.O.14, M.E.P.2, M.E.P.3, Th.E.P.50, Th.E.P.51, E.540, E.727
seroconversion
M.A.O.26, Th.A.O.17, T.A.P.21, T.A.P.22, W.A.P.41, W.A.P.43, W.A.P.44, W.A.P.58, W.A.P.68, W.A.P.74, Th.A.P.94, Th.A.P.95, T.B.P.83, W.B.P.54, W.B.P.73, Th.B.P.373, B.603, M.C.O.8, Th.C.P.111, D.720
see Sexual behaviour
subgroups
M.A.O.44, W.A.P.67, W.B.P.221, Th.B.P.184, Th.C.P.105, T.D.P.28, T.E.P.6, W.E.P.7, Th.E.P.30, E.556, T.G.P.12
symptoms
T.A.O.32, M.B.P.244, W.B.P.55, W.B.P.180, Th.B.P.345
other
W.A.P.27, Th.A.P.29, Th.A.P.33, M.B.O.33, W.B.O.1, Th.B.O.2, M.B.P.116, M.B.P.191, M.B.P.223, M.B.P.224, W.B.P.52, W.B.P.58, B.521, B.606, C.564, C.716, T.D.O.6, T.D.O.34, M.D.P.35, M.D.P.38, T.D.P.20, T.D.P.40, T.D.P.56, W.D.P.9, D.511, D.539, D.662, D.677, D.700, M.E.O.14

GENE PRODUCTS
26kD
Th.A.P.83
biochemical synthesis and processing
T.C.O.38, M.C.P.1, Th.C.P.43, Th.C.P.73, C.656, C.772
core proteins
M.B.P.357, T.B.P.96, T.B.P.246, W.B.P.116, W.B.P.143, Th.B.P.109, Th.B.P.171, Th.B.P.370, W.C.O.44, M.C.P.13, T.C.P.65, T.C.P.135, Th.C.P.145, C.520, C.545, C.554, C.633, C.736
endonuclease
T.C.P.109, Th.C.P.44
env
M.B.O.22, T.B.P.81, T.B.P.87, T.B.P.96, W.B.P.116, W.B.P.122, W.B.P.148, T.C.O.19, T.C.O.20, T.C.O.34, T.C.O.36, T.C.O.37, T.C.O.38, W.C.O.13, W.C.O.31, Th.C.O.3, Th.C.O.26, Th.C.O.32, Th.C.O.34, Th.C.O.48, M.C.P.1, M.C.P.4, M.C.P.10, M.C.P.16, M.C.P.19, M.C.P.40, M.C.P.51, M.C.P.134, T.C.P.2, T.C.P.24, T.C.P.39, T.C.P.49, T.C.P.53, T.C.P.86, T.C.P.122, T.C.P.144, W.C.P.8, W.C.P.9, W.C.P.10, W.C.P.12, W.C.P.34, W.C.P.79, Th.C.P.6, Th.C.P.12, Th.C.P.36, Th.C.P.43, Th.C.P.80, Th.C.P.115, Th.C.P.122, Th.C.P.149, C.526, C.536, C.540, C.554, C.572, C.643, C.653, C.667, C.668, C.676, C.717

gag
T.B.P.81, T.B.P.82, T.B.P.106, W.B.P.75, W.B.P.167, B.620, T.C.O.5, T.C.O.20, M.C.P.7, M.C.P.15, M.C.P.16, T.C.P.16, T.C.P.49, T.C.P.121, T.C.P.130, T.C.P.144, W.C.P.116, Th.C.P.10, Th.C.P.36, Th.C.P.95, Th.C.P.110, Th.C.P.130, C.526, C.544, C.647, C.663, C.671, C.717, C.772
HIV
M.B.O.23, T.B.P.91, B.602, W.C.O.44, C.531
see HIV antigen
nef
M.B.O.24, W.B.P.146, W.B.P.158, Th.B.P.178, W.C.O.35, W.C.O.37, W.C.O.44, Th.C.O.6, Th.C.O.23, T.C.P.42, T.C.P.102, W.C.P.5, W.C.P.124, Th.C.P.39, Th.C.P.70, Th.C.P.99
pol
T.B.P.106, W.B.P.75, W.B.P.126, W.C.O.44, T.C.P.49, T.C.P.137, W.C.P.116, Th.C.P.23, Th.C.P.95, Th.C.P.110, Th.C.P.130, C.683
see Protease
see Regulation
rev
T.C.O.30, M.C.P.51, T.C.P.81, T.C.P.114, Th.C.P.27, Th.C.P.140, C.646, C.668, C.679
tat
M.B.O.24, T.C.O.28, T.C.O.29, T.C.O.30, M.C.P.51, T.C.P.89, T.C.P.93, T.C.P.103, T.C.P.113, C.782
vif
M.B.O.24, Th.C.O.6
vpr
T.C.O.17, T.C.O.45, T.C.O.46, Th.C.O.6, Th.C.P.35
vpu
T.C.O.47, W.C.O.34, W.C.O.36, T.C.P.144, Th.C.P.18, Th.C.P.35
vpx
T.C.O.17, T.C.P.95, T.C.P.115, T.C.P.126
other
T.B.P.340, Th.C.P.36

GENERAL POPULATION, PREVALENCE
M.A.O.2, M.A.O.4, M.A.O.5, M.A.O.17, W.A.O.30, M.A.P.1, M.A.P.3, M.A.P.7, M.A.P.8, M.A.P.9, M.A.P.13, M.A.P.32, M.A.P.36, M.A.P.40, M.A.P.43, M.A.P.63, M.A.P.70, M.A.P.74, M.A.P.82, T.A.P.6, T.A.P.11, T.A.P.12, T.A.P.24, T.A.P.120, W.A.P.56, Th.A.P.67, Th.A.P.76, Th.A.P.88, A.501, A.512, A.514, A.518, A.519, A.521, A.534, A.590, A.595, T.B.P.350, W.B.P.153, W.B.P.220, W.D.P.48, M.E.P.54, Th.E.P.18, E.515, E.545, M.G.O.2, M.G.O.17, M.G.O.30, W.G.O.26, M.G.P.4, M.G.P.6, M.G.P.10, M.G.P.22, T.G.P.2, T.G.P.30, W.G.P.3, W.G.P.29, Th.G.P.30, G.511, G.512, T.H.O.16, W.H.P.17, W.H.P.23, Th.H.P.19

GENOME
LTR
T.C.O.14, T.C.P.78, T.C.P.91, T.C.P.105, W.C.P.17, W.C.P.88, Th.C.P.31, Th.C.P.32, Th.C.P.33, C.645, C.658, C.672, C.733, C.782
new gene
T.C.O.49, T.C.P.83, T.C.P.104, T.C.P.143, C.649

GENOMIC DIVERSITY
C.643

GEOGRAPHICAL ASPECTS, AFRICA
Africa, general
M.A.O.16, M.A.O.32, T.A.P.86, W.A.P.114, M.B.O.6, M.B.O.17, T.B.O.9, Th.B.O.55, M.B.P.185, T.B.P.94, T.B.P.191, T.B.P.197, T.B.P.352, W.B.P.14, W.B.P.107, W.B.P.109, W.B.P.276, Th.B.P.132, Th.B.P.209, B.599, B.623, B.637, T.D.P.34, D.505, D.575, W.E.O.26, T.E.P.59, W.E.P.55, W.E.P.56, W.E.P.71, W.E.P.72, E.537, M.F.O.4, Th.G.O.6, Th.G.O.27, Th.G.O.34, Th.G.O.53, M.G.P.11, T.G.P.7, W.G.P.1, W.G.P.7, W.G.P.9, G.513, G.519, G.520, M.H.O.2, T.H.O.16, W.H.P.1, Th.H.P.19
Algeria
W.E.P.69
Angola
A.511, M.G.P.2
Burkina Faso
Th.G.O.26, M.G.P.26
Cameroon
Th.A.O.19, T.A.P.1, A.573, M.B.P.99, W.D.P.87, Th.D.P.22, W.G.O.21, M.G.P.9, T.G.P.10
Central African Republic
B.641, T.C.O.41, M.C.P.139, W.E.P.3, W.E.P.5, Th.E.P.52, W.G.O.28, Th.G.O.54
Congo
A.568, M.B.P.91, T.B.P.19, W.B.P.151, B.642, Th.G.O.54, T.G.P.3, W.G.P.2, W.G.P.10, Th.G.P.7, G.511, Th.H.P.22
East Africa
A.515
Egypt
W.E.P.75, E.650, M.G.P.22, Th.H.P.28
Ethiopia
M.A.P.79, T.A.P.102, T.E.P.21
Gambia
M.D.P.12, W.E.P.8, M.G.O.5, T.G.P.30, T.G.P.32
Ghana
A.629
Guinea Bissau
M.B.P.82, T.B.P.357, T.B.P.357, M.G.P.16, T.G.P.28, Th.H.P.25
Ivory Coast
Th.A.P.112, A.587, T.B.O.8, T.B.O.10, T.B.P.158, W.B.P.113, Th.B.P.346, Th.C.P.131, W.G.O.27, M.G.P.24
Kenya
T.A.O.25, Th.A.O.25, M.A.P.110, T.A.P.87, T.A.P.88, T.A.P.91, W.A.P.65, Th.B.O.39, M.B.P.53, M.B.P.160, T.B.P.108, T.B.P.133, T.B.P.134, B.536, Th.E.P.39, W.G.O.22, Th.G.O.5, Th.G.O.52, W.G.P.27, W.G.P.29, Th.G.P.29, G.503, W.H.P.15
Madagascar
M.G.P.7
Malawi
W.G.O.29, Th.G.O.28, Th.G.P.14, G.507
Mali
A.577
Mozambique
M.B.P.327, M.B.P.373, Th.G.P.22
Nigeria
M.B.P.156, M.B.P.158, M.C.P.150, D.542, Th.E.P.38, Th.E.P.76, E.620, W.G.O.24, T.G.P.23
Rwanda
M.B.P.188, T.E.O.3, Th.G.P.20
Senegal
M.A.O.15, M.A.P.19, M.A.P.117, T.A.P.3, T.B.P.105, W.B.P.100, Th.B.P.377, W.C.P.136, M.D.P.18, T.D.P.37, M.E.O.32, W.E.P.4, Th.E.P.35, E.565, E.741, E.798, W.G.O.20, T.G.P.26, T.G.P.29, Th.G.P.23
Sierra Leone
W.G.P.16
South Africa
M.A.P.83, W.D.P.47, T.E.O.15, W.E.P.28, W.F.O.22, M.G.P.30, T.G.P.18, Th.G.P.15
Sudan
M.G.P.5
Tanzania
Th.E.P.34, E.604, E.652, T.G.O.11, T.G.P.13
Uganda
T.A.P.11, W.A.P.56, A.617, T.B.O.11, T.B.P.189, Th.B.P.302, Th.B.P.317, W.D.P.8, M.E.O.8, W.E.O.5, W.E.O.17, W.E.P.22, Th.E.P.43, E.805, M.G.O.13, M.G.O.14, M.G.O.15, T.G.O.12, T.G.P.13, W.G.P.32, Th.G.P.18, Th.G.P.19
West Africa
A.556, T.B.P.343, T.B.P.351, T.B.P.362, W.B.P.108, B.612, Th.C.O.24, C.766, M.D.P.12, M.E.O.10, W.E.P.5, W.E.P.66, Th.E.P.3, T.G.P.11
Zaire
M.A.O.35, Th.A.O.21, T.A.P.90, W.A.P.96, M.B.O.38, Th.B.O.30, M.B.P.31, T.B.P.107, T.B.P.108, T.B.P.181, T.B.P.188, T.B.P.205, T.B.P.366, W.B.P.359, Th.B.P.186, Th.B.P.211, Th.B.P.221, Th.B.P.239, Th.B.P.267, M.D.O.3, M.D.O.17, T.D.O.35, W.D.O.6, M.D.P.13, M.D.P.49, W.D.P.2, W.D.P.90, D.694, D.721, M.E.O.33, M.E.O.36, Th.E.O.3, T.E.P.4, T.E.P.61, W.E.P.65, Th.E.P.1, Th.E.P.40, E.621, E.666, E.812, M.G.O.3, M.G.O.16, M.G.O.17, W.G.O.1, W.G.O.4, W.G.O.26, W.G.O.30, Th.G.O.32, M.G.P.18, W.G.P.8, W.G.P.20, T.H.O.7, T.H.O.8, T.H.O.9, W.H.P.6, Th.H.P.16, Th.H.P.27
Zambia
M.A.O.37, M.A.O.42, Th.A.O.5, W.A.P.50, W.A.P.54, M.B.P.149, M.B.P.236, T.B.P.144, T.B.P.337, T.B.P.371, W.B.P.265, D.723, W.G.O.5, Th.G.O.4,

M.G.P.23, M.G.P.28, T.G.P.16, Th.G.P.5, Th.G.P.30, Th.H.P.13
Zimbabwe
Th.A.P.5, M.B.P.289, Th.B.P.214, Th.B.P.217, M.E.P.50, Th.E.P.62, W.G.O.19, Th.G.O.6

GEOGRAPHICAL ASPECTS, ASIA
China
A.619, B.596, Th.H.P.26
Hong Kong
T.A.P.120, W.G.P.30, Th.H.P.30
India
M.B.P.139, M.B.P.381, Th.E.O.13, Th.E.P.60, E.648, W.F.O.14, T.G.O.22, T.G.P.6
Japan
M.A.P.42, Th.A.P.14, Th.A.P.28, C.753
New Guinea
Th.A.P.7, T.G.O.24
Philippines
T.B.P.377, W.B.P.152, Th.G.O.25, Th.H.P.21
Sri Lanka
M.E.O.31, M.G.O.18, T.G.O.7
Taiwan
C.754, G.501
Thailand
Th.D.O.1, M.D.P.19, M.D.P.50, W.E.P.14, T.G.O.23, W.G.P.19

GEOGRAPHICAL ASPECTS, AUSTRALIA
T.D.P.49, W.D.P.62, W.D.P.64, D.697, W.E.O.8, T.E.P.20, E.769, E.773, M.F.P.8, W.G.O.14

GEOGRAPHICAL ASPECTS, CARIBBEAN
Bahamas
Th.A.P.120
Barbados
T.E.P.32
Bermuda
G.502
Caribbean, general
E.575, E.576, E.631, E.653, Th.G.P.27, Th.G.P.28
Cuba
W.A.P.86
Dominican Republic
W.A.P.94, Th.D.O.10, Th.D.O.12, T.D.P.89, M.E.O.11, Th.E.O.15, E.580, E.670, E.672, M.G.O.25, T.G.P.12
Haiti
M.A.O.29, Th.A.O.30, W.A.P.7, T.B.P.182, T.B.P.185, T.D.O.32, M.D.P.33, D.534, M.E.O.11, M.E.P.10, M.E.P.12, Th.E.P.26, T.G.O.19, T.G.O.20, T.G.O.21, Th.G.O.49, Th.G.O.51, M.G.P.3, W.G.P.31, Th.G.P.2
Jamaica
B.636, M.D.P.47, T.F.P.5, W.G.P.26, Th.G.P.1
Martinique
T.A.P.12, Th.A.P.30, W.C.P.126
Puerto Rico
W.A.P.32, W.A.P.48, A.505, M.B.P.27, D.597, M.E.P.19, Th.E.P.67, W.G.O.2, T.H.O.10, T.H.O.12, W.H.P.4, W.H.P.5, Th.H.P.12
Trinidad
Th.A.P.23, M.B.P.296, Th.E.P.65, E.574, E.671, W.G.P.11

GEOGRAPHICAL ASPECTS, CENTRAL AMERICA
Costa Rica
A.555, A.603, Th.B.P.14, B.511, E.763, Th.H.P.24
Mexico
T.A.P.8, Th.A.P.80, Th.A.P.81, A.585, T.B.P.193, T.B.P.335, W.B.P.168, B.515, Th.D.O.11, M.D.P.7, M.D.P.69, E.585, E.738, M.F.P.3, M.G.O.1, M.G.O.27, T.G.O.8, T.G.O.9, Th.G.O.29, Th.G.O.30, M.G.P.10, W.G.P.6, W.G.P.23, W.G.P.24, W.G.P.25, Th.G.P.16, G.510, G.516, T.H.O.11, Th.H.P.20
Panama
E.658

GEOGRAPHICAL ASPECTS, EUROPE
Belgium
M.A.P.49, M.A.P.66, A.532, T.B.P.94, T.B.P.108, T.B.P.197, M.D.P.67
Bulgaria
B.613, B.614
Denmark
Th.A.P.69, M.B.P.79, W.B.P.27, W.D.P.55, D.559, D.689, Th.E.O.10, W.E.P.38, T.G.P.31
Europe
M.A.O.7, Th.A.O.20, T.A.P.98, W.A.P.15, A.537, Th.B.P.132, B.620, T.E.P.50, W.H.P.22
Finland
T.A.P.18, Th.A.P.2, A.509, M.B.P.159
France
M.A.O.24, M.A.O.40, M.A.P.25, M.A.P.44, M.A.P.46, M.A.P.106, T.A.P.19, Th.A.P.3, Th.A.P.116, A.539, A.552, A.557, A.574, A.635, T.B.P.20, M.D.O.1, T.D.O.20, T.D.P.47, Th.D.P.31, Th.D.P.35, D.569, T.E.O.2, W.E.O.21, Th.E.O.7, T.E.P.37, W.E.P.23, Th.E.P.12, Th.E.P.17, E.516, E.617, E.618, E.673, T.F.O.7, M.H.O.5, M.H.O.13, Th.H.P.11
French Overseas Territories
M.A.O.14, T.E.O.2, T.E.P.23, M.G.P.21
Greece
Th.A.P.27, W.B.P.342, Th.D.P.72, E.615, E.654, E.747
Italy
M.A.O.38, T.A.O.19, M.A.P.8, M.A.P.36, M.A.P.44, M.A.P.48, M.A.P.78, T.A.P.30, T.A.P.38, T.A.P.41, W.A.P.30, W.A.P.43, W.A.P.63, A.536, A.545, A.566, A.567, A.634, M.B.P.92, T.B.P.74, T.B.P.100, T.B.P.178, T.B.P.345, T.B.P.346, Th.B.P.51, Th.C.O.40, W.C.P.50, M.D.P.37, Th.D.P.67, D.623, D.688, M.E.P.61, T.E.P.26, W.E.P.19, W.E.P.45, E.616, E.622, E.790, E.814
Netherlands
T.A.O.21, T.A.P.14, T.A.P.82, W.A.P.97, A.593, M.B.P.162, M.D.P.34, T.D.P.47, D.705, Th.E.O.2, E.506
Norway
M.A.P.91, W.A.P.103, Th.A.P.59, A.607, M.B.P.308, T.D.P.5, D.619, T.E.O.8, T.E.P.31
Paris
M.B.P.154, Th.B.P.64, M.D.P.40, Th.E.P.23
Poland
M.A.P.69, T.A.P.7, Th.D.P.41, W.E.P.63
Portugal
M.A.P.18, M.A.P.77, M.A.P.82, M.A.P.86, W.E.P.76, TH.E.P.46
Scotland
T.A.O.14, M.A.P.47, M.A.P.92, M.A.P.105, T.A.P.51, Th.A.P.115, Th.D.P.3, Th.D.P.55, D.612, W.F.P.8
Spain
M.A.O.41, T.A.O.3, T.A.O.23, M.A.P.52, M.A.P.81, M.A.P.104, T.A.P.22, T.A.P.114, W.A.P.55, W.A.P.71, W.A.P.75, W.A.P.78, Th.A.P.19, Th.A.P.22, A.534, A.556, A.575, A.576, A.578, W.B.O.37, M.B.P.97, M.B.P.137, M.B.P.240, W.B.P.28, W.B.P.40, Th.B.P.57, Th.B.P.327, B.610, B.647, Th.D.P.19, D.671, W.E.O.22, M.E.P.22, T.E.P.3, T.E.P.27, T.E.P.73, Th.E.P.48, E.515, E.526, E.579, E.674, E.765, E.766, E.777, E.813, W.H.P.2
Sweden
W.A.O.10, Th.A.P.69, Th.A.P.113, W.D.P.65, W.D.P.76, W.D.P.88, Th.D.P.36, D.618, D.669, W.E.O.15, M.E.P.2, T.E.P.30, T.E.P.76, E.780, E.784
Switzerland
M.A.P.43, W.A.P.116, W.A.P.117, W.A.P.120, Th.A.P.111, Th.D.P.71, Th.D.P.80, D.636, E.739, M.H.P.18, Th.H.P.4
United Kingdom
W.A.O.9, M.A.P.57, T.A.P.31, Th.A.P.75, A.538, A.594, A.597, W.B.P.383, Th.B.P.317, M.D.O.1, M.D.O.18, M.D.P.15, T.D.P.20, T.D.P.23, T.D.P.68, D.529, D.625, D.682, T.E.O.12, W.E.O.3, W.E.O.23, M.E.P.46, M.E.P.73, T.E.P.38, Th.E.P.47, Th.E.P.71, E.521, E.522, E.538, E.642, E.658, E.802, T.F.O.2, Th.F.P.9, W.H.O.4, M.H.P.3, T.H.P.19
USSR
W.A.O.5, A.588
West Germany
M.A.P.44, M.A.P.103, T.A.P.9, T.A.P.10, T.A.P.60, T.A.P.64, Th.A.P.29, Th.A.P.65, Th.A.P.96, W.B.O.26, Th.B.P.59, Th.B.P.60, Th.B.P.73, Th.B.P.183, C.546, M.D.P.9, W.D.P.23, M.E.P.57, T.E.P.2, E.606, E.607, E.705, E.767, E.775, E.776, E.792, T.F.P.9, W.H.P.23
Yugoslavia
T.E.P.22

GEOGRAPHICAL ASPECTS, MIDDLE EAST
Iran
T.G.P.20

Israel
  M.A.P.59, T.A.P.2, A.508, W.E.P.47
Kuwait
  W.G.P.4

GEOGRAPHICAL ASPECTS, NORTH AMERICA
Alaska
  W.A.P.23, A.519
California
  A.528, A.565, W.B.P.263, Th.B.P.195, M.D.P.6, M.D.P.14, D.666, E.646, E.748, T.H.P.17
Canada
  Th.A.O.27, M.A.P.97, M.A.P.113, M.A.P.115, T.A.P.6, T.A.P.69, T.A.P.84, Th.A.P.37, Th.A.P.38, Th.A.P.46, A.535, A.591, M.B.O.47, W.B.O.10, W.B.O.27, M.B.P.157, T.B.P.54, T.B.P.106, T.B.P.359, W.B.P.241, Th.B.P.18, Th.B.P.28, Th.B.P.52, M.D.P.58, M.D.P.75, T.D.P.8, W.D.P.59, Th.D.P.32, D.503, Th.E.O.4, M.E.P.37, M.E.P.58, T.E.P.55, Th.E.P.10, Th.E.P.25, E.531, E.543, E.569, E.584, E.644, E.693, E.749, E.783, T.F.O.5, M.F.P.4, M.F.P.12, T.F.P.2, T.F.P.7, W.F.P.9, Th.F.P.7, W.G.O.14, T.G.P.24, M.H.P.16, W.H.P.21, Th.H.P.6
Chicago
  W.B.P.260, W.D.P.30, D.591
Los Angeles
  M.A.P.12, M.A.P.74, T.A.P.65, T.A.P.67, W.A.P.2, M.B.P.68, M.B.P.313, T.B.P.161, T.E.P.47, W.E.P.70, Th.E.P.11, M.H.O.17, M.H.P.5
Miami
  M.A.O.28, W.A.P.1, D.592, W.E.P.70, E.706
Minneapolis/St. Paul
  T.A.O.26, M.A.P.72, T.A.P.43
Montreal
  T.A.P.59, M.D.P.33, M.D.P.64, D.534, M.E.P.10, M.E.P.51, T.E.P.46, W.E.P.16, Th.E.P.18, Th.E.P.26, Th.E.P.33, Th.E.P.68, Th.E.P.72
New York City
  M.A.O.34, M.A.O.43, T.A.O.12, M.A.P.10, M.A.P.51, M.A.P.67, T.A.P.48, T.A.P.54, T.A.P.70, T.A.P.71, T.A.P.89, T.A.P.112, W.A.P.5, W.A.P.9, W.A.P.11, W.A.P.12, W.A.P.16, W.A.P.21, W.A.P.32, W.A.P.34, W.A.P.84, Th.A.P.4, Th.A.P.13, Th.A.P.25, Th.A.P.26, Th.A.P.32, A.550, A.564, A.615, W.B.O.41, M.B.P.141, T.B.P.344, W.B.P.209, W.B.P.249, W.B.P.343, Th.B.P.50, Th.B.P.261, Th.C.P.5, Th.D.O.16, M.D.P.45, W.D.P.60, W.D.P.68, Th.D.P.1, Th.D.P.6, Th.D.P.7, Th.D.P.8, Th.D.P.38, Th.D.P.59, Th.D.P.64, D.607, D.609, D.628, D.725, M.E.P.12, M.E.P.40, M.E.P.67, T.E.P.41, T.E.P.52, T.E.P.57, W.E.P.70, Th.E.P.4, Th.E.P.51, E.503, E.520, E.557, E.612, E.688, E.691, E.728, E.736, E.772, E.778, Th.F.P.6, M.H.O.16
New York State
  M.A.P.71, A.558, M.B.P.57, T.B.P.52, W.B.P.258, W.D.P.15, Th.D.P.16, Th.D.P.45, T.E.P.14, T.E.P.33, T.E.P.40, E.684, M.H.O.11, T.H.P.5, W.H.P.10
Ontario
  Th.D.P.52, M.E.P.25, M.E.P.47, W.E.P.10, W.E.P.24, W.E.P.25, Th.E.P.49, E.619, Th.F.P.4
Quebec Province
  M.A.O.21, W.A.O.14, W.A.P.83, A.547, M.E.P.41, M.E.P.45, W.E.P.11
San Francisco
  M.A.O.49, T.A.O.7, W.A.O.27, M.A.P.64, W.A.P.13, W.A.P.14, W.A.P.24, W.A.P.46, W.A.P.80, W.A.P.91, Th.A.P.32, Th.A.P.90, A.637, W.B.O.19, M.B.P.150, W.B.P.202, W.B.P.354, Th.B.P.75, Th.B.P.201, T.D.O.12, Th.D.O.4, Th.D.O.5, M.D.P.31, M.D.P.53, T.D.P.33, W.D.P.28, W.D.P.52, Th.D.P.5, Th.D.P.33, Th.D.P.34, D.615, D.658, T.E.P.7, T.E.P.41, W.E.P.70, Th.E.P.73, E.566, T.H.O.3, T.H.O.5, W.H.O.14, M.H.P.5, M.H.P.6
USA
  M.A.O.2, M.A.O.17, T.A.O.27, T.A.O.37, W.A.O.1, W.A.O.15, W.A.O.16, W.A.O.17, W.A.O.18, Th.A.O.18, Th.A.O.23, Th.A.O.29, M.A.P.3, M.A.P.9, M.A.P.50, M.A.P.55, M.A.P.75, T.A.P.15, T.A.P.27, T.A.P.37, T.A.P.50, T.A.P.66, T.A.P.85, T.A.P.96, T.A.P.97, W.A.P.26, W.A.P.29, W.A.P.38, W.A.P.64, W.A.P.81, W.A.P.109, Th.A.P.18, Th.A.P.20, Th.A.P.21, Th.A.P.44, Th.A.P.49, A.533, A.551, A.553, A.559, A.603, A.608, A.639, W.B.O.24, M.B.P.23, M.B.P.29, M.B.P.200, T.B.P.70, T.B.P.162, W.B.P.15, W.B.P.61, W.B.P.267, Th.B.P.44, Th.B.P.216, B.519, B.574, B.634, M.D.O.1, M.D.O.7, M.D.O.13, T.D.O.13, T.D.O.21, W.D.O.1, M.D.P.1, M.D.P.56, M.D.P.59, T.D.P.9, T.D.P.18, T.D.P.21, T.D.P.40, W.D.P.24, W.D.P.29, W.D.P.32, W.D.P.33, W.D.P.37, W.D.P.48, W.D.P.50, W.D.P.66, Th.D.P.26, Th.D.P.74, D.509, D.518, D.537, D.643, T.E.O.14, T.E.O.16, W.E.O.14, W.E.O.21, M.E.P.3, M.E.P.13, M.E.P.21, M.E.P.72, M.E.P.74, T.E.P.11, T.E.P.17, T.E.P.36, T.E.P.42, T.E.P.74, W.E.P.1, W.E.P.43, W.E.P.50, Th.E.P.14, Th.E.P.15, Th.E.P.29, Th.E.P.31, E.534, E.535, E.551, E.554, E.558, E.560, E.562, E.572, E.608, E.613, E.626, E.635, E.655, E.702, E.709, M.F.O.2, M.F.O.3, T.F.O.18, Th.F.O.2, Th.F.O.4, M.F.P.1, M.F.P.4, M.F.P.5, M.F.P.6, Th.F.P.3, Th.G.O.1, T.G.P.1, M.H.O.8, W.H.O.8, W.H.O.9, W.H.O.15, T.H.P.22, T.H.P.24, W.H.P.21, W.H.P.23, Th.H.P.5, Th.H.P.9

GEOGRAPHICAL ASPECTS, SOUTH AMERICA
Argentina
  W.A.P.22, A.520, A.582, W.B.P.382, Th.B.P.4, B.513, M.G.O.29, M.G.P.29, Th.G.P.17, Th.G.P.21
Brazil
  M.A.P.84, T.A.P.117, W.A.P.70, A.549, T.B.O.7, T.B.O.12, M.B.P.279, T.B.P.194, T.B.P.196, W.B.P.20, W.B.P.48, W.B.P.116, W.B.P.237, Th.B.P.36, Th.B.P.39, Th.B.P.47, Th.B.P.63, B.525, T.D.O.28, T.D.P.25, T.D.P.54, T.D.P.78, T.D.P.83, W.D.P.38, Th.D.P.89, D.532, D.547, D.604, D.656, D.709, M.E.O.9, M.E.O.17, W.E.O.29, M.E.P.31, M.E.P.66, T.E.P.69, W.E.P.37, Th.E.P.19, E.591, E.603, E.641, E.759, E.781, E.785, E.799, Th.F.P.1, M.G.O.26, W.G.O.15, W.G.O.23, Th.G.O.50, M.G.P.1, M.G.P.4, M.G.P.6, M.G.P.8, M.G.P.12, M.G.P.13, M.G.P.14, M.G.P.15, M.G.P.20, T.G.P.14, W.G.P.3, W.G.P.15, Th.G.P.3, Th.G.P.26, G.518
Buenos Aires
  A.586, M.B.O.16, Th.B.P.3, M.D.O.10, W.D.P.56, Th.D.P.46, W.G.P.18, W.G.P.21
Chile
  M.G.P.17, Th.G.P.4
Colombia
  W.E.P.48, M.G.O.6
Ecuador
  T.D.P.85, M.G.O.28, M.G.P.19, W.G.P.12
Peru
  D.552, M.E.P.20, E.645, E.787, Th.H.P.17
Rio de Janeiro
  M.A.P.53, W.A.P.51, M.B.P.109, M.B.P.182, M.B.P.257, T.B.P.190, T.B.P.364, Th.B.P.66, Th.B.P.74, B.532, B.534, M.E.O.9, W.E.O.16, T.E.P.64, T.E.P.65, E.523, T.G.P.25
Sao Paulo
  t.A.P.17, A.554, M.B.P.44, M.B.P.108, T.B.P.356, D.540, W.E.O.29, T.E.P.49, Th.E.P.22, E.610, E.665, G.515
South America, General
  M.B.P.181, D.691
Surinam
  D.535
see also Developing countries; Gay men; Intravenous drug users; Prostitutes

GLOVES
  A.538, E.601, E.746, E.747, T.G.P.19, M.H.P.26, M.H.P.27
see also Health care personnel

GLYCOPEPTIDES
  Th.C.O.31, M.C.P.104

GLYCOSYLATION INHIBITORS
  W.C.O.26, M.C.P.134, Th.C.P.43, Th.C.P.47

GLYCYRRHIZIN
  W.B.P.298

GM-CSF
  Th.B.O.45, T.B.P.284, T.B.P.299, T.B.P.331, W.B.P.306, W.B.P.309, W.B.P.328, W.B.P.329, T.C.O.16, Th.C.O.17, M.C.P.103, W.C.P.42, W.C.P.85, W.C.P.109, W.C.P.122

GONADOTROPINS
  M.B.P.266

GP 120
activation
  A.535, Th.B.P.96, M.C.P.22
binding
  T.C.O.34, T.C.O.35, W.C.O.12, W.C.O.16, W.C.O.38, Th.C.O.14, Th.C.O.26, M.C.P.4,

T.C.P.48, W.C.P.56, W.C.P.66, W.C.P.90, W.C.P.128, Th.C.P.1, Th.C.P.34, Th.C.P.100, Th.C.P.121, C.516, C.523, C.613, C.635, C.674, C.680, C.752, C.783

defective
C.680

glycosylation
M.C.P.26, Th.C.P.1, Th.C.P.47, Th.C.P.60, Th.C.P.61, Th.C.P.122, C.547, C.783, D.630

human monoclonal
W.B.P.70, T.C.P.150

suppression
Th.B.P.101, M.C.O.21, T.C.P.15, C.635

other
T.B.P.104, T.B.P.207, T.B.P.240, W.B.P.111, Th.B.P.231, T.C.O.22, Th.C.O.31, M.C.P.25, M.C.P.35, M.C.P.38, M.C.P.72, M.C.P.92, T.C.P.29, T.C.P.106, W.C.P.8, W.C.P.44, C.552, C.578, C.760

GP 41
T.B.P.104, T.B.P.106, W.B.P.71, W.B.P.99, W.B.P.111, W.B.P.118, W.B.P.144, Th.B.P.99, Th.B.P.101, B.548, B.562, B.592, M.C.O.22, M.C.O.32, T.C.O.33, T.C.O.34, T.C.O.35, T.C.O.37, M.C.P.35, M.C.P.36, M.C.P.146, T.C.P.70, T.C.P.107, T.C.P.150, W.C.P.57, W.C.P.98, Th.C.P.39, Th.C.P.78, Th.C.P.100, Th.C.P.122, C.567, C.656

see also Epitope analysis

GROUP SUPPORT
M.B.P.317, W.B.P.207, T.D.O.30, M.D.P.20, Th.D.P.37, M.E.O.17, M.E.O.24, M.E.P.35, Th.E.P.73, E.516, E.540

GUILLAIN-BARRE SYNDROME
Th.B.P.214

GYNECOLOGY
Th.A.P.104, M.B.P.55, M.B.P.58, M.B.P.59, M.B.P.276, M.B.P.292, T.B.P.366, Th.C.P.26, W.D.P.54, Th.D.P.10, D.712

HAIR LOSS
M.B.P.364

HBV
see Hepatitis B virus

HDV
see Hepatitis delta virus

HEALTH BELIEFS
M.B.P.320, W.B.P.271, Th.B.P.314, B.508, M.D.O.5, M.D.P.36, T.D.P.12, T.D.P.33, T.D.P.39, D.652, Th.E.P.52, T.G.P.15

HEALTH CARE, COST
see Cost

HEALTH CARE ORGANIZATION
A.597, M.B.P.302, M.B.P.318, M.B.P.376, W.B.P.61, W.B.P.238, W.B.P.245, W.B.P.248, W.B.P.253, W.B.P.257, W.B.P.260, W.B.P.262, W.B.P.271, Th.B.P.216, B.507, Th.D.P.92, D.600, D.661, W.E.O.10, M.E.P.47, M.E.P.49, M.E.P.55, M.E.P.56, M.E.P.75, W.E.P.70, Th.E.P.69, E.506, E.536, E.772, W.G.P.5, Th.G.P.10, G.505, T.H.P.13

HEALTH CARE PERSONNEL

behaviour
W.A.O.4, W.B.P.63, W.B.P.245, Th.B.P.33, Th.B.P.314, Th.B.P.354, M.D.O.16, M.D.O.17, M.D.O.18, M.D.P.42, M.D.P.48, M.D.P.53, M.D.P.54, M.D.P.57, M.D.P.60, M.D.P.61, M.D.P.65, M.D.P.69, M.D.P.74, M.D.P.76, M.D.P.79, M.D.P.81, M.D.P.83, M.D.P.84, M.D.P.87, M.D.P.89, T.D.P.54, W.D.P.5, D.624, D.631, D.638, D.642, D.647, D.648, D.652, D.717, T.E.O.4, M.E.P.26, M.E.P.41, M.E.P.44, M.E.P.53, M.E.P.58, T.E.P.39, W.E.P.2, W.E.P.54, Th.E.P.16, Th.E.P.53, Th.E.P.56, Th.E.P.59, E.545, E.594, E.595, E.605, E.684, E.734, E.745, E.763, T.F.P.5, W.F.P.1, M.G.O.16

dentists
A.520, M.D.P.53, M.D.P.64, M.D.P.77, M.D.P.80, T.D.P.25, D.633, E.601, E.667, E.693, E.729, E.747

needle sticks
Th.A.P.45, Th.A.P.48, A.503, M.D.P.68, E.743

nurses
M.A.P.115, M.B.P.304, M.B.P.306, M.B.P.307, M.B.P.308, M.B.P.309, M.B.P.310, M.B.P.311, M.B.P.312, M.B.P.316, M.B.P.319, M.B.P.320, M.B.P.322, W.B.P.65, W.B.P.218, W.B.P.248, W.B.P.376, Th.B.P.35, M.D.O.16, M.D.P.56, M.D.P.61, M.D.P.87, D.626, M.E.P.58, W.E.P.25, W.E.P.76, Th.E.P.56, E.596, E.598, E.745, E.773

physicians
M.A.O.21, W.A.P.120, A.626, M.B.P.308, M.B.P.319, T.B.P.36, T.B.P.384, W.B.P.64, W.B.P.237, W.B.P.249, W.B.P.251, W.B.P.264, Th.B.P.35, M.D.P.41, M.D.P.44, M.D.P.51, M.D.P.57, M.D.P.59, M.D.P.66, M.D.P.67, M.D.P.78, M.D.P.84, M.D.P.86, M.D.P.89, W.D.P.5, Th.D.P.92, D.614, D.625, D.628, D.644, D.654, M.E.O.28, Th.E.O.10, M.E.P.45, M.E.P.58, T.E.P.39, W.E.P.73, W.E.P.76, Th.E.P.16, Th.E.P.53, E.606, E.622, E.678, E.683, E.745, E.811, Th.F.O.7, T.F.P.6, Th.F.P.1

prevalence
W.A.O.3, A.517

risks to
W.A.O.1, W.A.O.2, W.A.O.4, Th.A.P.9, Th.A.P.46, Th.A.P.47, Th.A.P.48, Th.A.P.49, A.503, A.517, A.618, M.B.P.308, M.D.O.14, M.D.O.17, M.D.P.62, M.D.P.68, M.D.P.72, M.D.P.88, D.623, D.627, D.628, M.E.P.29, M.E.P.32, E.632, E.743, E.746, E.757, T.F.P.1, T.F.P.7, T.G.P.19, M.H.P.27

stress
A.639, M.D.P.43, M.D.P.55, D.564, D.582, D.632, D.639, D.653, D.656, M.E.P.58, M.E.P.65, E.509, E.595, E.596, E.605, E.629, E.743, E.745, E.746

training
W.A.P.112, A.630, A.639, M.B.P.320, M.B.P.322, W.B.P.63, W.B.P.237, W.B.P.251, W.B.P.251, W.B.P.376, Th.B.P.314, M.D.O.13, M.D.O.15, M.D.O.16, M.D.O.18, T.D.O.33, M.D.P.42, M.D.P.45, M.D.P.47, M.D.P.48, M.D.P.49, M.D.P.50, M.D.P.55, M.D.P.56, M.D.P.57, M.D.P.58, M.D.P.59, M.D.P.62, M.D.P.63, M.D.P.67, M.D.P.69, M.D.P.81, M.D.P.85, M.D.P.89, M.D.P.92, W.D.P.12, D.550, D.552, D.553, D.582, D.622, D.625, D.626, D.629, D.630, D.633, D.634, D.635, D.638, D.640, D.643, D.650, D.655, M.E.O.34, T.E.O.2, T.E.O.4, M.E.P.24, M.E.P.26, M.E.P.31, M.E.P.32, M.E.P.53, M.E.P.56, M.E.P.59, M.E.P.74, T.E.P.18, W.E.P.6, W.E.P.9, W.E.P.13, W.E.P.15, W.E.P.21, W.E.P.50, W.E.P.54, W.E.P.55, W.E.P.60, Th.E.P.41, E.545, E.553, E.568, E.582, E.583, E.594, E.595, E.596, E.597, E.598, E.599, E.600, E.602, E.603, E.603, E.605, E.606, E.606, E.607, E.608, E.609, E.610, E.611, E.612, E.624, E.627, E.628, E.629, E.630, E.631, E.632, E.634, E.664, E.668, E.673, E.676, E.678, E.683, E.699, E.714, E.753, E.769, E.793, M.G.O.16, T.G.P.16, T.G.P.22, Th.G.P.14

other
M.B.P.313, M.B.P.314, M.B.P.376, W.B.P.272, M.D.P.71, M.D.P.73, M.D.P.74, M.D.P.90, D.526, D.636, D.645, D.649, D.651, M.E.P.46, W.E.P.15, M.H.P.26

HEALTH MAINTENANCE ORGANIZATION (HMO)
D.504, E.668, M.H.O.14, T.H.O.2, T.H.P.1, T.H.P.2, T.H.P.12

HEART

endocarditis
M.B.P.282, M.B.P.287, Th.D.O.4

myocarditis
M.B.P.273, M.B.P.282, M.B.P.284, T.B.P.146

other
M.B.P.86, M.B.P.259, M.B.P.282, M.B.P.283, M.B.P.284, M.B.P.285, M.B.P.286, T.B.P.256, B.533, B.534

HEAT TREATED FACTOR VIII
M.B.P.65

HEMATOLOGICAL ABNORMALITIES
Th.A.P.94, M.B.P.160, M.B.P.171, M.B.P.249, M.B.P.250, M.B.P.325, M.B.P.336, T.B.P.239, W.B.P.124, W.B.P.303, W.C.P.38, W.C.P.115, C.702

HEMATOPOIESIS
T.B.P.268

HEMODIALYSIS
T.A.P.26, T.A.P.27, A.613, M.B.P.277, M.B.P.344, T.B.P.356, Th.C.P.88

HEMOPHILIA
see Children

coinfections
M.A.P.42, W.B.O.28, M.B.P.63, Th.B.P.7, Th.B.P.10, Th.B.P.22, Th.B.P.23, Th.B.P.25, Th.B.P.355

education
Th.B.P.26, M.E.P.37

epidemiology
W.B.O.27, W.B.P.283, Th.B.P.14, Th.B.P.16, T.E.P.54
immunology
M.A.P.45, W.B.O.25, M.B.P.145, T.B.P.110, W.B.P.87, W.B.P.311, Th.B.P.1, Th.B.P.2, Th.B.P.8, Th.B.P.10, Th.B.P.16, Th.B.P.142, Th.B.P.362, B.512, B.518, T.C.P.141
neurology
W.B.O.42, T.B.P.177, Th.B.P.192
prevalence
M.A.P.44, T.A.P.64, A.565, T.B.P.345, Th.B.P.3, Th.B.P.24, T.G.P.20
prevention
Th.B.P.30, T.E.P.54, T.E.P.55
prognosis
W.B.O.23, W.B.O.26, W.B.O.28, W.C.P.124
progression
Th.A.O.26, M.A.P.96, W.B.O.26, M.B.P.145, T.B.P.345, W.B.P.74, W.B.P.298, W.B.P.348, Th.B.P.11, Th.B.P.12, Th.B.P.13, Th.B.P.15, Th.B.P.192, C.514
psychosocial
W.B.P.383, Th.B.P.11, Th.B.P.17, Th.B.P.26, Th.B.P.27, Th.B.P.28, Th.B.P.29, Th.B.P.31, Th.B.P.32, Th.B.P.33, Th.B.P.35, E.507, E.775, E.783
seroconversion
M.A.O.12, M.A.P.41, M.A.P.109, W.A.P.61, W.B.O.24, W.B.O.28, Th.B.P.15, Th.B.P.17, Th.B.P.34, Th.B.P.311, B.511, B.513, Th.C.P.69
sexual transmission
M.A.O.33, T.A.P.107, T.A.P.108, T.A.P.109, T.A.P.110, T.B.P.84, Th.B.P.30, Th.B.P.33, Th.B.P.34, Th.G.P.21
zidovudine metabolism
M.B.P.342, T.B.P.177, T.B.P.253, W.B.P.348, W.B.P.349
other
W.A.P.61, Th.B.O.8, M.B.P.35, M.B.P.112, M.B.P.223, T.B.P.109, T.B.P.275, W.B.P.70, W.B.P.357, Th.B.P.4, Th.B.P.6, Th.B.P.19, Th.B.P.174, B.511, Th.C.P.69, Th.C.P.105, Th.C.P.126, C.716, C.727, C.754, C.780, T.D.O.34, T.D.P.15

HEPARIN
C.595

HEPATITIS B VIRUS (HBV)
M.A.O.40, M.A.P.18, M.A.P.45, T.A.P.29, T.A.P.59, T.A.P.76, T.A.P.82, T.A.P.83, W.A.P.7, A.511, A.521, A.550, A.582, A.586, M.B.P.112, M.B.P.113, M.B.P.215, M.B.P.216, M.B.P.217, M.B.P.219, M.B.P.220, M.B.P.222, M.B.P.223, M.B.P.224, M.B.P.246, M.B.P.362, T.B.P.132, T.B.P.309, T.B.P.343, T.B.P.368, B.525, M.C.P.4, M.C.P.15, M.C.P.43, Th.C.P.139, C.747, D.583, W.G.O.29, W.G.O.30, M.G.P.5, W.G.P.1, W.G.P.2

HEPATITIS B VACCINATION
M.A.P.45, Th.A.P.91, A.550, Th.B.P.5, Th.B.P.119, D.583

HEPATITIS DELTA VIRUS (HDV)
W.A.P.22, A.586, M.B.P.112, M.B.P.215, M.B.P.216, M.B.P.218, M.B.P.221, T.B.P.368, W.G.P.1

HEPATITIS, NON-A, NON-B
M.B.P.242

HEROIN
T.D.P.64, T.D.P.65, D.608, E.694, W.G.P.22
see also Intravenous drug users

HERPES VIRUSES
M.A.O.46, T.A.P.119, W.A.P.7, W.A.P.41, W.A.P.54, Th.A.P.100, M.B.P.47, M.B.P.48, M.B.P.49, M.B.P.50, M.B.P.51, M.B.P.52, M.B.P.133, M.B.P.176, M.B.P.178, M.B.P.179, M.B.P.275, T.B.P.188, W.B.P.268, B.526, B.547, M.C.P.17, M.C.P.65, M.C.P.81, T.C.P.6, W.C.P.47, Th.C.P.38, Th.C.P.62, C.504, C.704, C.740, W.G.P.5

HETEROSEXUAL
hemophilia
T.A.P.109, Th.G.P.21
prevalence
W.A.O.14, W.A.O.15, Th.A.O.5, M.A.P.5, M.A.P.7, M.A.P.8, M.A.P.58, M.A.P.61, M.A.P.65, M.A.P.66, T.A.P.4, T.A.P.14, T.A.P.114, W.A.P.21, Th.A.P.27, Th.A.P.38, Th.A.P.53, A.501, A.556, A.558, A.614, A.617, M.B.P.137, B.620, B.623, W.G.P.18, Th.G.P.28, Th.H.P.23
prevention
M.A.O.37, T.A.P.100, W.A.P.118, W.D.P.41, W.D.P.43, W.F.P.10
prognosis
T.A.P.103, W.G.P.24
progression
T.A.P.93, Th.A.P.53, A.546, M.G.P.1, W.G.P.11
see Sexual behaviour
see Transmission
other
W.A.P.29, Th.A.P.59, Th.B.P.352, T.C.P.52

HGP-30
W.B.P.141, M.C.P.13

HIGH RISK GROUPS, COMBINED
M.A.O.28, M.A.O.29, M.A.O.30, T.A.O.4, T.A.O.17, W.A.O.29, Th.A.O.30, M.A.P.54, M.A.P.60, M.A.P.63, M.A.P.70, M.A.P.72, M.A.P.82, T.A.P.2, T.A.P.5, T.A.P.7, T.A.P.8, T.A.P.63, T.A.P.70, T.A.P.81, T.A.P.83, T.A.P.97, W.A.P.13, W.A.P.18, W.A.P.19, W.A.P.25, W.A.P.26, W.A.P.55, W.A.P.78, Th.A.P.5, Th.A.P.12, Th.A.P.22, Th.A.P.40, Th.A.P.97, Th.A.P.116, A.504, A.508, A.514, A.526, A.534, A.539, A.547, A.619, W.B.P.223, Th.B.P.179, Th.B.P.186, B.634, B.643, M.C.P.9, T.D.P.21, D.544, M.E.O.32, W.E.O.7, W.E.O.23, M.E.P.57, T.E.P.73, Th.E.P.70, E.516, E.633, E.644, E.725, E.813, Th.G.O.30, M.G.P.11, M.G.P.23, M.G.P.29, T.G.P.14, W.G.P.30, Th.G.P.26, G.501, Th.H.P.30
see also Gay men; Hemophilia; Intravenous drug users

HISTOPATHOLOGY
Th.A.P.104, W.B.O.20, M.B.P.38, M.B.P.45, M.B.P.231, M.B.P.241, M.B.P.243, M.B.P.258, M.B.P.266, M.B.P.295, T.B.P.16, T.B.P.156, T.B.P.369, Th.B.P.248, Th.B.P.252, Th.B.P.332, Th.B.P.339, Th.B.P.342, B.583, T.C.P.123, T.C.P.125, W.C.P.21, W.C.P.30, W.C.P.32, C.571, C.664, C.699, Th.G.O.32

HISTOPLASMOSIS
M.B.P.78, M.B.P.79, M.B.P.80, M.B.P.81, M.B.P.82, B.560

HISTORICAL ANALOGIES
Th.E.P.37, Th.E.P.45, M.G.P.21

HIV ANTIGEMIA
M.A.O.47, Th.A.O.4, M.A.P.94, M.A.P.99, Th.A.P.85, Th.A.P.92, M.B.P.348, T.B.P.90, T.B.P.283, W.B.P.280, W.B.P.365, Th.B.P.86

HIV ANTIGEN
assay
Th.A.P.117, M.B.O.25, M.B.O.27, Th.B.O.9, Th.B.O.12, Th.B.O.59, M.B.P.147, M.B.P.148, M.B.P.170, T.B.P.81, T.B.P.93, T.B.P.94, T.B.P.99, T.B.P.101, T.B.P.131, T.B.P.132, T.B.P.133, T.B.P.134, T.B.P.136, T.B.P.144, T.B.P.230, T.B.P.339, T.B.P.349, T.B.P.351, W.B.P.93, W.B.P.94, W.B.P.99, W.B.P.103, W.B.P.104, W.B.P.105, W.B.P.109, W.B.P.110, W.B.P.111, W.B.P.112, W.B.P.113, W.B.P.120, W.B.P.121, W.B.P.128, W.B.P.135, W.B.P.137, W.B.P.140, W.B.P.142, W.B.P.143, W.B.P.149, W.B.P.158, W.B.P.161, W.B.P.166, W.B.P.171, Th.B.P.111, Th.B.P.124, Th.B.P.174, Th.B.P.177, Th.B.P.180, Th.B.P.181, Th.B.P.369, Th.B.P.370, Th.B.P.371, B.518, B.618, B.624, M.C.P.17, T.C.P.10, T.C.P.32, W.C.P.89, Th.C.P.35, Th.C.P.46, C.764, C.779, M.G.O.5, Th.G.P.3
brain
Th.B.P.248, Th.B.P.250
children
W.A.P.52, M.B.P.200, T.B.P.165, T.B.P.244
core protein, *see* Gene products
flow cytometry
M.B.P.144, M.B.P.348, T.B.P.83, T.B.P.84, T.B.P.87, T.B.P.88, T.B.P.89, T.B.P.313, Th.B.P.108, Th.B.P.112, Th.B.P.142, Th.B.P.147, Th.B.P.151, Th.B.P.240, B.605, C.519, C.710
see Gp 120
immune complexes
M.C.P.142
infectivity
Th.A.P.106, T.B.P.90, T.C.O.35, T.C.P.32, W.C.P.90, C.750
monitor
W.B.P.254, Th.C.P.148

  pregnancy
    M.B.P.4, M.B.P.6, M.B.P.7, M.B.P.17, M.B.P.20, M.B.P.32, T.B.P.165, T.B.P.195, B.646
  prognosis
    Th.A.P.106, T.B.P.103, W.B.P.77, W.B.P.288, Th.B.P.163, Th.B.P.186, Th.B.P.291
  seroconversion
    M.A.O.35, Th.B.O.58, M.B.P.6, T.B.P.244, T.B.P.354, W.B.P.97, Th.B.P.14, Th.B.P.370, B.535
  standardization
    W.B.P.254
  zidovudine
    M.B.P.361, M.B.P.370, W.B.P.339, W.B.P.342
  other
    M.B.P.195, M.B.P.219, M.B.P.277, M.B.P.327, M.B.P.373, T.B.P.92, T.B.P.115, T.B.P.315, Th.B.P.235, M.C.P.84, W.C.P.145, C.585, C.683, C.708, T.H.P.15

HIV-IMMUNOGEN
    Th.B.O.44, W.C.P.8, C.558

HIV-ISCOM
    Th.C.O.50, Th.C.P.80

HIV-SPECIFIC ACTIVE IMMUNOTHERAPY (HSAI)
    T.C.P.7

HIV-2
  disease
    A.573, M.B.P.82, T.B.P.109, T.B.P.357, T.B.P.362, W.B.P.99, Th.B.P.21, Th.B.P.156, B.612, B.641, W.C.O.46, W.C.P.3, W.C.P.141, C.540, M.G.O.5, T.G.P.27
  serologic tests
    M.A.O.13, M.A.P.77, M.A.P.79, M.A.P.83, M.A.P.84, M.A.P.85, T.A.P.10, Th.A.P.108, A.509, A.511, A.512, A.568, A.634, A.634, T.B.O.8, T.B.O.10, Th.B.O.54, Th.B.O.55, Th.B.O.56, Th.B.O.56, M.B.P.327, M.B.P.373, T.B.P.99, T.B.P.104, T.B.P.105, T.B.P.109, T.B.P.116, T.B.P.116, T.B.P.119, T.B.P.119, T.B.P.120, T.B.P.128, T.B.P.137, T.B.P.349, T.B.P.362, W.B.P.93, W.B.P.93, W.B.P.94, W.B.P.95, W.B.P.96, W.B.P.100, W.B.P.101, W.B.P.102, W.B.P.102, W.B.P.103, W.B.P.104, W.B.P.105, W.B.P.107, W.B.P.108, W.B.P.109, W.B.P.110, W.B.P.111, W.B.P.112, W.B.P.113, W.B.P.114, W.B.P.120, W.B.P.121, Th.B.P.110, B.535, B.538, B.562, B.602, B.618, B.618, B.619, B.624, B.624, B.629, B.644, W.C.P.89, Th.C.P.21, Th.C.P.35, Th.C.P.37, Th.C.P.131, C.745, C.764, C.765, T.G.O.21, W.G.O.27, Th.G.O.26, M.G.P.2, M.G.P.12, M.G.P.13, M.G.P.24, T.G.P.25, T.G.P.29, T.G.P.30, T.G.P.31, T.G.P.32, W.G.P.22, G.517, Th.H.P.19
  seroprevalence
    M.A.O.14, M.A.O.15, M.A.P.52, M.A.P.77, M.A.P.78, Th.A.P.30, A.576, A.634, M.B.P.158, M.B.P.200, T.B.P.106, Th.B.P.3, W.C.P.136, Th.E.P.3, M.G.P.16, T.G.P.26, T.G.P.28, Th.H.P.25
  other
    M.A.P.77, M.B.P.195, T.B.P.340, T.B.P.373, W.B.P.98, Th.B.P.151, T.C.O.20, T.C.O.36, T.C.O.43, W.C.O.14, Th.C.O.24, M.C.P.29, M.C.P.84, M.C.P.91, M.C.P.135, T.C.P.23, T.C.P.37, T.C.P.95, T.C.P.115, T.C.P.126, T.C.P.127, W.C.P.26, W.C.P.35, W.C.P.79, W.C.P.108, Th.C.P.6, Th.C.P.22, Th.C.P.23, Th.C.P.36, Th.C.P.58, Th.C.P.75, Th.C.P.123, Th.C.P.124, Th.C.P.140, C.526, C.595, C.598, C.608, C.660, C.669, C.681, C.694, C.706, C.732

HLA
    M.A.P.101, M.B.P.187, M.B.P.347, T.B.P.342, Th.B.P.91, Th.B.P.116, Th.B.P.372, B.590, M.C.P.20, T.C.P.26, C.519, C.546, C.655, C.708, C.714
  expression
    W.B.O.17, M.B.P.296, Th.B.P.102, Th.B.P.351, Th.C.P.13, C.521

HMO
  see Health maintenance organization

HOE/BAY 946
    C.607

HOME CARE
    A.581, Th.B.O.37, M.B.P.304, M.B.P.307, M.B.P.310, M.B.P.311, T.B.P.52, T.B.P.300, T.B.P.325, W.B.P.64, W.B.P.65, W.B.P.66, W.B.P.67, W.B.P.265, W.B.P.376, Th.B.P.27, B.506, B.507, B.593, M.D.P.75, W.E.O.26, M.E.P.53, M.E.P.56, T.E.P.34, E.506, E.528, E.774, E.808, W.G.P.13

HOMELESSNESS
    M.A.O.28, M.A.P.50, M.A.P.51, W.B.P.209, W.B.P.218, B.506, M.D.O.9, T.D.P.11, Th.D.P.17, Th.D.P.65, D.506, D.620, M.E.O.9, M.E.P.48, M.E.P.61, M.E.P.68, E.520, E.691

HOMOSEXUALS
  see Gay men
  see Lesbians

HORMONES
    W.B.P.189, T.C.O.15, C.564, C.602

HOSPICE CARE
    M.B.P.302, M.B.P.304, W.B.P.67, W.B.P.248, W.B.P.253, W.B.P.260, W.B.P.263, W.B.P.265, W.B.P.377, W.B.P.378, B.593, M.E.P.47, M.E.P.60, Th.E.P.72, E.542, E.543, M.F.O.18

HOSPITAL COST
  see Cost

HOSPITALS
    M.A.P.16, T.A.P.72, T.A.P.73, W.A.P.72, W.A.P.79, Th.A.P.9, Th.A.P.47, Th.A.P.49, A.547, A.551, A.571, A.581, A.635, T.B.O.11, M.B.P.70, M.B.P.302, M.B.P.384, W.B.P.238, W.B.P.260, W.B.P.269, W.B.P.273, W.B.P.353, W.B.P.380, M.D.O.13, M.D.P.47, W.D.P.11, D.627, T.E.P.66, W.E.P.31, E.506, E.703, E.748, T.F.P.7, T.G.O.20, T.H.P.13

HOT-LINE
    Th.E.O.2, M.E.P.17, T.E.P.22, W.E.P.62, W.E.P.64, Th.E.P.11, E.567, E.569, E.574, E.575, E.576

HPA-23
    M.C.P.68

HSV-2
  see Herpes viruses

HTLV-I
  disease
    Th.A.P.12, M.B.P.161, Th.B.P.199, Th.B.P.249, B.637
  serologic tests
    Th.A.O.33, Th.A.P.2, Th.A.P.7, Th.A.P.24, Th.A.P.26, Th.A.P.29, Th.A.P.31, Th.A.P.110, Th.A.P.117, Th.A.P.118, Th.A.P.119, A.510, A.629, T.B.O.8, T.B.O.10, Th.B.O.59, M.B.P.19, M.B.P.161, M.B.P.173, T.B.P.107, T.B.P.108, T.B.P.128, T.B.P.355, W.B.P.119, W.B.P.122, W.B.P.128, W.B.P.130, W.B.P.140, W.B.P.140, W.B.P.152, Th.B.P.173, Th.B.P.176, Th.B.P.223, B.518, B.538, B.551, Th.C.P.25, Th.C.P.27, Th.C.P.105, C.690, C.702, C.721, C.775, T.G.O.21, W.G.O.27, M.G.P.2, M.G.P.3, M.G.P.5, M.G.P.12, M.G.P.13, M.G.P.20, M.G.P.24, T.G.P.29, T.G.P.30, T.G.P.32, W.G.P.2, W.G.P.26
  seroprevalence
    M.A.O.14, M.A.O.16, M.A.O.18, M.A.O.39, Th.A.O.29, Th.A.O.30, Th.A.O.32, Th.A.O.34, M.A.P.52, T.A.P.32, Th.A.P.1, Th.A.P.3, Th.A.P.4, Th.A.P.5, Th.A.P.7, Th.A.P.8, Th.A.P.11, Th.A.P.12, Th.A.P.20, Th.A.P.22, Th.A.P.24, Th.A.P.26, Th.A.P.27, Th.A.P.28, Th.A.P.32, Th.A.P.112, A.576, T.B.P.107, W.B.P.119, Th.B.P.24, Th.B.P.25, Th.B.P.173, B.630, B.631, B.633, B.634, W.C.P.4, M.G.P.14, Th.G.P.2, Th.H.P.21
  other
    M.A.P.42, Th.A.P.25, Th.A.P.119, A.587, Th.B.O.11, M.B.P.144, W.C.P.139, Th.C.P.3, Th.C.P.30, Th.C.P.42, Th.C.P.43, Th.C.P.108, Th.C.P.115, Th.C.P.119, Th.C.P.132, C.572, C.725

HTLV-II
    M.A.O.18, Th.A.O.33, T.A.P.32, T.A.P.53, Th.A.P.21, Th.A.P.32, Th.A.P.110, Th.B.O.11, B.634, Th.C.P.5, Th.C.P.108, Th.C.P.132, C.702

HUMAN HERPES VIRUS 6 (HHV-6)
    W.C.P.125, Th.C.P.19, Th.C.P.52, Th.C.P.57, C.704, T.F.P.10

HUMAN PAPILLOMA VIRUS (HPV)
    Th.A.P.104, M.B.O.18, M.B.P.53, M.B.P.55, M.B.P.56, M.B.P.60, M.B.P.186, M.B.P.191, M.B.P.292, Th.C.O.36, W.C.P.51, W.C.P.53

HUMAN RIGHTS
E.577, E.693, T.F.P.9, W.F.P.1, Th.F.P.5, Th.F.P.8, Th.F.P.11, Th.F.P.12

HYBRIDIZATION
Th.B.O.10, M.B.P.62, M.B.P.127, T.B.P.80, T.B.P.110, W.B.P.123, W.B.P.124, W.B.P.149, Th.B.P.111, Th.B.P.338, T.C.O.19, Th.C.O.28, Th.C.O.36, M.C.P.50, M.C.P.126, T.C.P.123, W.C.P.43, W.C.P.55, W.C.P.67, W.C.P.86, W.C.P.127, Th.C.P.19, Th.C.P.24, Th.C.P.33, Th.C.P.83, Th.C.P.111, Th.C.P.137, Th.C.P.146, C.664, C.733, C.739, C.749

HYDROCOTYLE ASIATICA
M.C.P.95

HYPERICIN
M.C.P.18, C.501, C.608, C.626

HYPERTRIGLYCERIDEMIA
M.B.P.270

HYPONATREMIA
M.B.P.271

IEC
see Information-Education-Communication

IL-1
W.B.P.277, Th.B.P.96, M.C.O.27, M.C.P.29, T.C.P.3, W.C.P.77, W.C.P.78, C.529, C.549, C.705

IL-2
T.B.P.214, T.B.P.236, W.B.P.47, W.B.P.276, W.B.P.281, W.B.P.288, W.B.P.306, W.B.P.325, W.B.P.330, W.B.P.335, Th.B.P.91, Th.B.P.92, Th.B.P.353, T.C.P.4, T.C.P.53, T.C.P.54, T.C.P.61, T.C.P.71, W.C.P.39, C.535, C.705

IL-2 RECEPTOR
M.B.P.355, W.B.P.69, W.B.P.277, W.B.P.294, W.C.O.10, T.C.P.53, C.535
soluble
Th.B.O.25, M.B.P.354, T.B.P.212, Th.B.P.83, T.C.P.43, C.561

IL-6
T.C.P.19, Th.C.P.144

IMMUNOASSAY
M.B.O.23, Th.B.O.12, Th.B.O.54, Th.B.O.59, M.B.P.11, M.B.P.18, M.B.P.127, M.B.P.157, M.B.P.167, M.B.P.169, M.B.P.172, M.B.P.173, M.B.P.174, M.B.P.331, M.B.P.345, T.B.P.7, T.B.P.14, T.B.P.89, T.B.P.94, T.B.P.97, T.B.P.102, T.B.P.105, T.B.P.114, T.B.P.120, T.B.P.123, T.B.P.124, T.B.P.129, T.B.P.135, T.B.P.139, T.B.P.140, T.B.P.172, T.B.P.219, T.B.P.229, T.B.P.240, T.B.P.339, T.B.P.340, T.B.P.342, T.B.P.349, T.B.P.358, W.B.P.85, W.B.P.95, W.B.P.100, W.B.P.103, W.B.P.105, W.B.P.106, W.B.P.110, W.B.P.111, W.B.P.117, W.B.P.121, W.B.P.126, W.B.P.133, W.B.P.134, W.B.P.135, W.B.P.136, W.B.P.140, W.B.P.145, W.B.P.150, W.B.P.155, W.B.P.164, W.B.P.168, W.B.P.170, Th.B.P.112, Th.B.P.113, Th.B.P.173, Th.B.P.369, Th.B.P.371, B.536, B.539, B.541, B.548, B.605, B.638, M.C.O.27, T.C.O.5, Th.C.O.26, M.C.P.15, M.C.P.17, M.C.P.25, M.C.P.33, M.C.P.36, M.C.P.47, T.C.P.10, T.C.P.27, T.C.P.36, T.C.P.37, T.C.P.39, T.C.P.42, T.C.P.51, T.C.P.52, T.C.P.72, W.C.P.14, W.C.P.112, W.C.P.114, W.C.P.119, W.C.P.126, W.C.P.127, W.C.P.131, Th.C.P.5, Th.C.P.6, Th.C.P.13, Th.C.P.20, Th.C.P.25, Th.C.P.39, Th.C.P.53, Th.C.P.85, Th.C.P.86, Th.C.P.111, Th.C.P.121, Th.C.P.138, Th.C.P.143, C.510, C.542, C.583, C.664, C.665, C.690, C.720, C.739, C.747, C.761, M.G.O.4, Th.G.P.7, Th.G.P.9

IMMUNOGLOBULINS
IgA
Th.A.O.8, M.B.P.278, T.B.P.226, W.B.P.73, W.B.P.136, Th.B.P.6, Th.B.P.94, Th.B.P.123, Th.B.P.132, Th.B.P.161, Th.B.P.174, Th.B.P.175, Th.B.P.344, M.C.P.37, T.C.P.22, T.C.P.64, C.522
IgD
Th.B.P.128
IgE
M.B.P.193, T.B.P.215, Th.B.P.135, Th.B.P.143
IgG subclass
M.B.O.4, M.B.P.140, M.B.P.167, T.B.P.153, T.B.P.166, T.B.P.210, T.B.P.218, T.B.P.220, T.B.P.231, T.B.P.233, W.B.P.50, W.B.P.103, W.B.P.116, W.B.P.133, W.B.P.136, Th.B.P.6, Th.B.P.55, Th.B.P.94, Th.B.P.101, Th.B.P.123, Th.B.P.132, Th.B.P.140, Th.B.P.172, Th.B.P.174, Th.B.P.223, Th.B.P.225, Th.B.P.230, Th.B.P.247, Th.B.P.363, Th.B.P.368, B.512, B.625, B.628, T.C.O.39, Th.C.O.4, M.C.P.89, T.C.P.22, T.C.P.75, W.C.P.73, C.520, C.526, C.697, C.717, C.761, W.G.O.6, W.G.P.9
IgM
T.B.P.210, T.B.P.217, T.B.P.220, T.B.P.221, T.B.P.222, T.B.P.226, T.B.P.231, T.B.P.232, T.B.P.236, T.B.P.242, W.B.P.131, W.B.P.133, W.B.P.136, W.B.P.200, Th.B.P.6, Th.B.P.94, Th.B.P.123, Th.B.P.151, Th.B.P.176, B.625, W.G.O.6

IMMUNE COMPLEXES
T.B.P.96, T.B.P.287, W.B.P.68, W.B.P.285, Th.B.P.125, Th.B.P.127, Th.B.P.134, Th.B.P.136, Th.B.P.151, Th.B.P.191, T.C.P.46

IMMUNIZATION
M.B.P.31, M.B.P.37, M.B.P.224, W.B.P.314, Th.B.P.118, Th.B.P.119, W.C.O.49, Th.C.O.46, M.C.P.7, W.C.P.8

IMMUNOADHESION
T.B.P.287, Th.C.O.15

IMMUNOMODULATION
Th.B.O.25, M.B.P.34, T.B.P.206, T.B.P.214, T.B.P.315, W.B.P.190, W.B.P.221, W.B.P.276, W.B.P.279, W.B.P.294, W.B.P.296, W.B.P.307, W.B.P.310, W.B.P.313, Th.B.P.1, Th.B.P.19, Th.B.P.91, Th.B.P.150, Th.B.P.162, Th.B.P.359, B.596, T.C.P.30, T.C.P.142, W.C.P.81, W.C.P.144, C.511, C.512, C.588, C.591, C.619, C.628, C.632, C.711, T.D.P.29

IMMUNOPATHOLOGY
Th.A.P.58, Th.A.P.97, W.B.O.20, M.B.P.193, T.B.P.6, Th.B.P.43, Th.B.P.129, Th.B.P.151, Th.B.P.156, Th.B.P.171, Th.B.P.225, Th.B.P.226, Th.B.P.342, Th.B.P.351

IMMUNOSUPPRESSION
mechanism
Th.B.P.94, Th.B.P.118, Th.B.P.156, Th.B.P.315, Th.B.P.316, B.550, W.C.P.97, C.566, C.707, C.722
serum
M.A.P.101
other
Th.A.P.98, M.B.P.21, M.B.P.261, M.B.P.279, T.B.P.309, B.543, B.588, M.C.P.43, W.C.P.22, W.C.P.104

IMMUNOTHERAPY
T.B.P.285, W.B.P.45, Th.B.P.133, B.579, M.C.P.139, W.C.P.19

IMMUNOTOXIN
Th.C.O.14, M.C.P.129, T.C.P.7

IMPLANTABLE INFUSION PORTS (PAC)
T.B.P.258, W.B.P.381

IMREG-1
Th.B.O.47, W.B.P.279

IMUTHIOL
W.B.P.277, W.B.P.281, W.B.P.284, W.B.P.287, W.B.P.296, W.B.P.297, W.B.P.301, W.B.P.305, W.C.P.19

INACTIVATION
A.601, Th.B.O.44, M.B.P.147, W.B.P.163, Th.B.P.353, M.C.P.66, M.C.P.147, T.C.P.77, Th.C.P.136, C.536, C.582, C.598, C.746

INCIDENCE
M.A.O.1, M.A.O.6, M.A.O.27, M.A.O.44, T.A.O.27, T.A.O.37, W.A.O.13, Th.A.O.12, Th.A.O.27, M.A.P.11, M.A.P.76, M.A.P.95, T.A.P.5, T.A.P.20, T.A.P.82, T.A.P.83, T.A.P.91, T.A.P.113, W.A.P.15, W.A.P.19, W.A.P.24, W.A.P.55, W.A.P.64, Th.A.P.35, Th.A.P.36, Th.A.P.76, A.526, A.530, A.537, A.548, A.551, A.555, A.603, A.636, M.B.P.91, M.B.P.166, M.B.P.380, T.B.P.19, W.B.P.26, W.B.P.40, W.B.P.48, W.B.P.267, Th.B.P.63, Th.B.P.364, B.529, W.G.O.27, W.G.P.5, Th.G.P.24, G.507, G.519, W.H.P.15, Th.H.P.17, Th.H.P.24

INCUBATION TIME
M.A.O.7, W.A.P.25, Th.A.P.36, Th.A.P.60, Th.A.P.61, Th.A.P.62, Th.A.P.75,

Th.A.P.77, Th.A.P.87, A.561, T.B.P.361, W.H.P.20

INFECTION, PRIMARY
T.A.O.30, M.B.P.38, M.B.P.184, M.B.P.262, T.B.P.372, B.557, B.610, M.C.O.15, T.C.O.13, W.C.O.6, W.C.O.7, M.C.P.66, M.C.P.119, W.C.P.15, W.C.P.64, Th.C.P.72, C.517, C.786

INFECTIVITY, ACTIVATION
T.A.O.15, T.A.O.38, M.A.P.29, Th.A.P.53, A.601, M.B.P.169, Th.B.P.356, W.C.O.7, W.C.O.33, T.C.P.12, T.C.P.34, T.C.P.78, W.C.P.59, W.C.P.63, W.C.P.105, W.C.P.107, W.C.P.137, Th.C.P.77, C.516, C.578, C.712, D.707, W.H.P.18

INFORMATION-EDUCATION-COMMUNICATION (IEC)
M.A.O.22, M.A.O.43, T.A.O.22, T.A.O.23, W.A.O.23, W.A.O.27, M.A.P.20, M.A.P.115, M.A.P.117, T.A.P.96, W.A.P.2, W.A.P.87, W.A.P.110, W.A.P.113, W.A.P.117, W.A.P.118, W.A.P.120, A.506, A.557, W.B.P.267, M.D.P.45, T.D.P.35, W.D.P.66, Th.E.O.7, W.E.P.15, E.569, E.677, E.803, W.G.P.30, Th.G.P.5, Th.G.P.29, Th.H.P.29

INFORMATION SYSTEMS
T.A.O.27, T.A.P.25, T.A.P.71, T.A.P.75, W.A.P.60, W.A.P.82, W.A.P.119, Th.A.P.50, A.591, W.B.P.376, B.577, W.E.O.5, T.E.P.60, W.E.P.29, Th.E.P.50, E.508, E.539, E.570, E.669, Th.G.P.12, M.H.O.12, W.H.O.11, W.H.O.16, W.H.O.17, M.H.P.8, M.H.P.11, M.H.P.18, M.H.P.19, T.H.P.12, W.H.P.7, W.H.P.8, W.H.P.10, W.H.P.11, W.H.P.26, Th.H.P.3

INSULIN
W.C.P.24

INSURANCE
W.H.O.4, W.H.O.7, W.H.O.8, W.H.O.9, W.H.O.10, M.H.P.12, T.H.P.16, T.H.P.17, T.H.P.20, T.H.P.23, T.H.P.24, T.H.P.26, T.H.P.27

INTEGRATED CARE MODEL
W.A.P.112, A.630, W.B.P.62, W.B.P.377, T.E.O.1, E.701, T.H.O.3, T.H.O.10, T.H.P.6

INTERFERON
acid labile
Th.B.P.122, T.C.P.58
alpha
Th.B.O.43, Th.B.O.45, M.B.P.333, M.B.P.353, T.B.P.275, T.B.P.279, T.B.P.281, T.B.P.282, T.B.P.283, T.B.P.288, T.B.P.289, T.B.P.331, W.B.P.75, W.B.P.321, W.B.P.322, W.B.P.326, W.B.P.374, Th.B.P.99, Th.B.P.103, Th.B.P.122, Th.B.P.133, Th.B.P.145, B.587, M.C.P.81, M.C.P.82, M.C.P.97, M.C.P.109, T.C.P.26, T.C.P.54, T.C.P.58, T.C.P.88, T.C.P.98, W.C.P.29, W.C.P.82, W.C.P.83
beta
Th.B.O.45, M.B.P.341, T.B.P.291, T.B.P.322, T.B.P.381, W.B.P.323, T.C.P.54, T.C.P.71, T.C.P.118
gamma
T.B.P.214, W.B.P.79, Th.B.P.103, Th.B.P.145, W.C.O.8, M.C.P.101, W.C.P.85, C.519, C.521, C.563, C.705
other
Th.B.O.28, Th.B.O.29, W.B.P.276, M.C.P.116, T.C.P.14, C.515, C.719, C.776

INTESTINE
W.B.O.38, Th.B.O.41, M.B.P.120, M.B.P.135, M.B.P.232, M.B.P.234, T.B.P.375, W.B.P.38, Th.B.P.175, M.C.O.27, T.C.P.123, W.C.P.90, W.C.P.131, C.664

INTRAVENOUS DRUG USERS (IVDU)
alcohol
T.A.P.94, A.532, M.B.P.56, Th.B.P.58, Th.C.P.132, Th.D.O.14, T.D.P.51, W.D.P.67, W.D.P.70, Th.D.P.7, D.725
behaviour
M.A.O.9, T.A.O.8, T.A.O.9, T.A.O.14, M.A.P.38, M.A.P.50, T.A.P.30, T.A.P.31, T.A.P.33, T.A.P.38, T.A.P.39, T.A.P.42, T.A.P.44, T.A.P.45, T.A.P.46, T.A.P.49, T.A.P.55, W.A.P.89, W.A.P.90, W.A.P.104, W.A.P.106, W.A.P.107, W.A.P.108, Th.A.P.64, Th.A.P.70, M.B.P.30, W.B.P.246, Th.B.P.68, W.D.O.4, Th.D.O.3, Th.D.O.5, Th.D.O.6, M.D.P.26, T.D.P.71, W.D.P.25, W.D.P.51, W.D.P.52, W.D.P.55, W.D.P.57, W.D.P.62, W.D.P.63, W.D.P.64, W.D.P.66, W.D.P.67, W.D.P.68, W.D.P.69, W.D.P.72, W.D.P.73, W.D.P.74, W.D.P.75, W.D.P.76, W.D.P.77, W.D.P.79, W.D.P.80, W.D.P.82, Th.D.P.30, Th.D.P.31, Th.D.P.35, Th.D.P.42, Th.D.P.43, Th.D.P.48, Th.D.P.49, Th.D.P.52, Th.D.P.53, Th.D.P.55, Th.D.P.59, Th.D.P.60, Th.D.P.62, Th.D.P.63, Th.D.P.70, Th.D.P.75, Th.D.P.77, Th.D.P.80, Th.D.P.81, Th.D.P.84, D.591, D.592, D.594, D.607, D.609, D.610, D.611, D.615, D.620, D.704, D.706, D.712, Th.E.O.17, M.E.P.62, T.E.P.38, W.E.P.9, W.E.P.68, Th.E.P.36, E.526, E.566, E.677, E.694, E.726, E.767, T.G.O.23, W.G.P.19, T.H.P.23
geographical
T.A.O.12, T.A.P.37, T.A.P.39, T.A.P.43, T.A.P.46, T.A.P.50, T.A.P.57, Th.A.P.19, A.539, W.D.P.68, Th.D.P.48, D.688, T.G.O.23, W.G.P.19
HIV-2
M.A.P.81, M.G.P.7
HTLV-I
Th.A.O.23, Th.A.O.32, T.A.P.53, Th.A.P.10, Th.A.P.24, Th.A.P.29, Th.B.O.58, Th.C.P.105, M.G.P.7
immunology
T.A.O.14, M.A.P.94, T.A.P.41, Th.A.P.97, Th.A.P.101, T.B.P.330, W.B.P.268, Th.B.P.82, Th.B.P.121, Th.B.P.148, Th.B.P.164, Th.B.P.191, Th.B.P.335, M.C.P.43, W.C.P.120, C.729
methadone
T.A.O.8, Th.A.O.24, T.A.P.34, T.A.P.49, T.A.P.54, T.A.P.82, W.A.P.105, A.525, M.B.P.8, W.B.P.60, Th.D.O.2, Th.D.O.5, Th.D.O.16, W.D.P.63, W.D.P.71, W.D.P.78, Th.D.P.58, Th.D.P.69, Th.D.P.71, Th.D.P.86, D.586, D.590, D.594, D.596, D.600, D.703
needle-syringe exchange
T.A.O.9, T.A.O.20, T.A.O.21, T.A.P.33, T.A.P.45, T.A.P.47, W.A.P.89, W.A.P.104, W.A.P.106, W.A.P.108, Th.A.P.56, Th.A.P.111, C.686, Th.D.O.13, W.D.P.63, W.D.P.65, W.D.P.69, Th.D.P.32, Th.D.P.34, Th.D.P.36, Th.D.P.38, Th.D.P.42, Th.D.P.50, Th.D.P.73, Th.D.P.74, Th.D.P.77, D.601, D.609, D.618, D.707, Th.E.O.17, M.E.P.46, T.E.P.17, E.694, M.F.P.12, W.F.P.6, T.G.P.9
pregnancy
W.A.P.47, M.B.P.14, M.B.P.24, M.B.P.26, T.B.P.159, T.B.P.173, D.600, E.512
prevalence
T.A.O.8, T.A.O.10, T.A.O.12, M.A.P.5, M.A.P.28, M.A.P.73, T.A.P.29, T.A.P.30, T.A.P.31, T.A.P.32, T.A.P.33, T.A.P.34, T.A.P.35, T.A.P.36, T.A.P.38, T.A.P.41, T.A.P.42, T.A.P.43, T.A.P.53, T.A.P.54, T.A.P.55, T.A.P.56, T.A.P.57, T.A.P.58, T.A.P.59, T.A.P.60, T.A.P.114, T.A.P.115, Th.A.P.1, Th.A.P.10, Th.A.P.18, Th.A.P.19, Th.A.P.21, A.505, A.529, A.550, A.566, A.576, A.613, W.B.O.9, M.B.P.137, W.B.P.268, B.609, Th.D.P.41, Th.D.P.46, Th.D.P.49, Th.D.P.56, Th.D.P.58, Th.D.P.67, Th.D.P.68, Th.D.P.79, Th.D.P.82, D.584, D.590, D.597, D.608, D.609, D.610, D.709, M.G.O.26, M.G.P.29, W.G.P.18
prevention
M.A.O.9, T.A.O.8, T.A.O.22, M.A.P.20, T.A.P.28, T.A.P.34, T.A.P.42, T.A.P.56, W.A.P.88, W.A.P.89, W.A.P.105, W.A.P.109, Th.A.P.73, T.B.P.52, B.609, M.D.O.5, Th.D.O.15, T.D.P.26, W.D.P.78, W.D.P.83, W.D.P.86, Th.D.P.36, Th.D.P.37, Th.D.P.38, Th.D.P.43, Th.D.P.66, Th.D.P.80, Th.D.P.81, Th.D.P.85, D.583, D.585, D.586, D.588, D.596, D.599, D.606, D.619, D.663, D.707, Th.E.O.6, Th.E.O.17, T.E.P.17, T.E.P.43, W.E.P.68, E.566, E.587, E.694, E.695, E.799, E.800, E.801
prognosis
W.A.P.78, W.B.P.268, Th.C.O.40, W.C.P.50, T.E.P.43, E.587
progression
Th.A.O.24, M.A.P.92, M.A.P.98, M.A.P.105, W.A.P.59, W.A.P.63, W.A.P.71, W.A.P.75, Th.A.P.73, Th.A.P.102, A.516, A.536, M.B.P.293, W.B.P.88, W.B.P.229, Th.B.P.121, Th.B.P.184, Th.D.P.39, Th.D.P.40, Th.D.P.75, D.583, D.603
psychological
T.A.P.30, W.B.P.215, Th.B.P.271, Th.D.P.69, D.577, D.602, Th.E.O.17, Th.E.P.36, E.734

see Sexual behaviour
subgroups
M.A.P.23, T.A.P.37, T.A.P.40, T.A.P.48, T.A.P.49, T.A.P.52, T.A.P.57, Th.B.P.331, Th.D.P.17, D.589, E.586
support
T.A.P.34, A.598, W.D.P.86, D.577, D.585, D.602, D.617, D.705, D.708, T.E.P.42
symptoms
M.B.P.55, M.B.P.113, M.B.P.177, T.B.P.272, W.B.P.186, Th.B.P.201, B.611, W.D.P.68, Th.E.P.36
testing
T.A.O.9, T.A.O.11, Th.A.P.10, M.B.P.206, M.B.P.218, T.B.P.130, T.B.P.185, W.B.P.268, Th.B.P.164, Th.B.P.206, Th.B.P.271, W.D.P.72, W.D.P.80, W.D.P.81, D.703, E.726, E.767
treatment
T.A.O.10, T.A.O.11, T.A.P.30, T.A.P.47, T.A.P.52, W.A.P.104, W.B.O.3, W.B.O.11, M.B.P.92, M.B.P.363, T.B.P.74, W.B.P.246, W.B.P.317, W.B.P.336, W.B.P.343, W.B.P.352, W.B.P.367, W.B.P.370, W.B.P.371, B.587, B.607, Th.D.O.18, W.D.P.75, W.D.P.77, Th.D.P.82, D.590, D.599, D.600, D.606, D.613, D.649, D.704, M.E.P.62, T.E.P.42, W.E.P.9
other
W.A.P.30, Th.A.P.10, Th.A.P.18, Th.A.P.68, M.B.P.94, M.B.P.243, M.B.P.248, M.B.P.273, M.B.P.277, M.B.P.287, W.B.P.81, W.B.P.217, W.B.P.232, W.B.P.240, Th.B.P.188, Th.B.P.220, B.509, B.527, B.565, B.610, Th.C.P.5, C.705, C.716, W.D.O.1, Th.D.O.1, Th.D.O.4, T.D.P.64, T.D.P.65, T.D.P.80, W.D.P.42, W.D.P.84, Th.D.P.3, Th.D.P.5, Th.D.P.13, Th.D.P.54, Th.D.P.57, Th.D.P.61, Th.D.P.65, Th.D.P.67, Th.D.P.68, Th.D.P.72, Th.D.P.78, D.595, D.603, D.605, D.612, D.616, D.666, D.699, Th.E.P.36, Th.F.O.6

INTRAVENOUS IMMUNOGLOBULIN ADMINISTRATION
T.B.P.163, T.B.P.257, T.B.P.275, W.B.P.291, W.B.P.295, Th.B.P.134, B.517, B.579

IODO-DEOXYURIDINE (IUDR)
T.B.P.111, W.B.P.147

ISCOM
see HIV-iscom

ISOLATE
African
W.C.P.96, Th.C.P.131, C.745, C.762
Brazil
C.743
Cameroon
Th.C.P.109
HIV-2
T.C.P.105
SIV
W.C.P.2, W.C.P.40
other
T.C.O.7, T.C.O.28, W.C.O.30, M.C.P.25, T.C.P.76, T.C.P.82, T.C.P.128, W.C.P.96, Th.C.P.77, C.672

ISOLATION
plasma
T.B.P.111, T.B.P.115, T.B.P.245, Th.C.P.131, Th.C.P.138
other
A.624, T.B.P.117, W.B.P.351, Th.B.P.37, M.C.O.7, M.C.O.8, T.C.O.50, W.C.P.46, W.C.P.106, W.C.P.134, Th.C.P.65, Th.C.P.125, C.649, C.768, C.780, C.781

ISOSPORA BELLI
T.B.P.196, W.B.P.313, Th.B.P.47

ISOPRINOSINE
Th.B.O.2, Th.B.O.46, W.B.P.280, W.B.P.288, W.B.P.290, W.B.P.304, W.B.P.308

ITRACONAZOLE
M.B.P.81, M.B.P.82, M.B.P.175, M.B.P.340, W.B.P.2, W.B.P.10, Th.B.P.328

IVDU
see Intravenous drug users

JUSTICE
Th.D.O.18, D.599, W.F.P.9

KAB
see Knowledge-attitude-behaviour

KAPLAN-MEIER ANALYSIS
T.A.O.32, Th.A.O.22, W.A.P.14, W.A.P.57, W.A.P.78, W.A.P.80, W.A.P.81, W.A.P.82, A.548, W.B.O.39, W.B.P.333

KAPOSI'S SARCOMA
children
T.B.P.191, T.B.P.259, B.581
epidemiology
M.A.O.30, A.621, W.B.O.19, M.B.P.297, T.B.P.375, Th.B.P.337, M.G.P.1
histopathology
M.B.P.136
immunology
M.B.P.296, T.B.P.287, W.C.P.47, W.C.P.48, W.C.P.140
survival/HIV antigen
W.B.O.23, M.B.P.291, M.B.P.299, W.C.P.38
tissue culture
W.C.P.54
treatment IFN
Th.B.O.28, M.B.P.333, M.B.P.366, T.B.P.281, T.B.P.282, T.B.P.283, T.B.P.288, T.B.P.289, T.B.P.291, T.B.P.292, T.B.P.293, T.B.P.331, T.B.P.381, W.B.P.374
other
M.B.O.21, W.B.O.22, M.B.P.180, M.B.P.188, M.B.P.234, M.B.P.274, M.B.P.289, M.B.P.368, T.B.P.286, T.B.P.290, T.B.P.375, W.B.P.242, W.B.P.335, Th.B.P.138, Th.B.P.167, Th.B.P.340, Th.B.P.341, Th.B.P.349, Th.B.P.381, B.530, B.559, B.589, B.615, Th.C.O.40, M.C.P.103, T.C.P.147, W.C.P.50, W.C.P.52, W.C.P.146, C.546, C.573, C.700, C.726

KETOCONAZOLE
M.B.P.80, M.B.P.81, M.B.P.175, M.B.P.240, W.B.P.22, Th.B.P.328, Th.B.P.348, B.591

KIDNEY
W.B.O.4, M.B.P.35, M.B.P.74, M.B.P.249, M.B.P.271, M.B.P.278, M.B.P.279, M.B.P.280, M.B.P.281, T.B.P.264, T.B.P.365

KNOWLEDGE
see Survey

KNOWLEDGE-ATTITUDE-BEHAVIOUR (KAB)
M.A.O.22, T.A.O.20, T.A.P.44, W.A.P.36, W.A.P.92, W.A.P.97, W.A.P.99, W.A.P.110, W.A.P.111, A.513, A.542, A.564, A.579, T.D.P.27, T.D.P.30, T.D.P.34, T.D.P.36, T.E.P.22, E.501, E.662, E.677, E.758, M.G.O.13, T.G.P.11

LABORATORY TESTS, ROUTINE
M.B.P.138, W.B.P.77, W.B.P.88, B.624

L-ACETYL CARNITINE
Th.B.P.234

LACTATE DEHYDROGENASE (LDH)
M.B.P.105, T.B.P.17, B.537

LANGERHANS CELLS
W.C.P.32, C.549

LASER THERAPY
W.C.P.148, C.587

LATENCY
cell line
Th.C.P.16
regulation
T.C.P.102, Th.C.P.16, C.684
reservoir
M.C.O.10, M.C.O.16, W.C.P.117, C.769
signal
T.G.P.24
other
Th.A.P.116, T.B.P.361, Th.C.P.111, Th.C.P.146

LAW
A.554, Th.D.P.8, T.E.O.15, W.E.O.18, M.E.P.29, M.E.P.38, T.E.P.29, E.513, E.540, T.F.O.6, W.F.O.22, Th.F.O.3, M.F.P.2, M.F.P.5, M.F.P.7, M.F.P.11, M.F.P.12, W.F.P.9, Th.F.P.10, M.G.O.1

LDH
see Lactate dehydrogenase

LECTINS
W.B.P.163, T.C.P.31, W.C.P.102, Th.C.P.40, Th.C.P.60, Th.C.P.61, C.613, C.674, C.707

LEGAL ASSISTANCE
Th.F.O.2, Th.F.P.6, Th.F.P.13, Th.F.P.14

LEGISLATION
Th.D.P.32, W.E.P.43, Th.E.P.31, E.577, E.790, E.814, M.F.O.2, M.F.O.3, M.F.O.4, T.F.O.2, T.F.O.5, Th.F.O.4, M.F.P.1, M.F.P.3, M.F.P.9, Th.F.P.3

LENGTH OF STAY (LOS)
M.E.P.60, M.H.O.11, M.H.P.3, M.H.P.5, M.H.P.6, M.H.P.7, M.H.P.14, Th.H.P.3

LENTINAN
W.B.P.311

LEISHMANIASIS
M.B.P.97, M.B.P.98, M.B.P.99, M.B.P.100, W.B.P.44, B.546, W.C.P.63

LEPROSY
A.587, T.B.O.9, Th.B.P.70

LESBIANS
W.A.P.10, T.D.P.75, D.511

LEUKEMIA
M.B.P.298, T.B.P.261, B.631

LF1695
W.B.P.282, C.591

LFA-1
W.C.O.42, T.C.P.44

LIP
T.B.P.152, T.B.P.197, B.582, C.713

LIPIDS
Th.B.O.41, M.B.P.270, T.B.P.34, W.B.P.82, Th.B.P.2, Th.B.P.88, Th.B.P.124, W.C.O.21, M.C.P.124, T.C.P.107, W.C.P.74, Th.C.P.107, C.574, C.581, C.742

LIPOSOMES
M.B.O.26, M.B.P.190, W.C.O.40

LITIGATION
Th.F.O.4, M.F.P.6

LIVER
M.B.P.216, M.B.P.223, M.B.P.231, M.B.P.243, M.B.P.323, M.B.P.332, M.B.P.335, M.B.P.362, T.B.P.249, Th.B.P.40, Th.B.P.372, B.580, Th.C.P.68, C.769, C.770

LOS
see Length of stay

LUNG
see Cytomegalovirus
diagnosis
W.B.O.37, M.B.P.41, M.B.P.103, M.B.P.206, M.B.P.211, M.B.P.213, T.B.P.13, T.B.P.155, T.B.P.379, W.B.P.3, W.B.P.18, W.B.P.25, Th.B.P.76, C.541, C.725, Th.G.O.2
symptoms
W.B.O.22, M.B.P.42, M.B.P.71, M.B.P.73, M.B.P.201, M.B.P.205, M.B.P.207, M.B.P.209, T.B.P.10, T.B.P.199, T.B.P.286, W.B.P.23, Th.B.P.78, Th.B.P.79, Th.B.P.80, B.537, B.559, B.589, B.615, T.C.P.8, W.C.P.71, C.541, W.D.P.84
see also Pneumocystis carinii
Pneumonia; Pneumonitis

LYMPH NODES
A.583, M.B.P.43, M.B.P.254, M.B.P.255, M.B.P.256, T.B.P.152, T.B.P.369, Th.B.P.71, Th.B.P.92, Th.B.P.103, Th.B.P.324, Th.B.P.325, Th.B.P.336, B.518, W.C.P.73, W.C.P.118, Th.G.O.35
histopathology
W.B.O.21, M.B.P.44, M.B.P.232, Th.B.P.121, W.C.P.67, W.C.P.73, W.C.P.117

LYMPHOCYTES
see CD4, CD8

LYMPHOMA
W.A.P.14, W.A.P.17, W.B.O.19, W.B.O.20, W.B.O.21, M.B.P.288, M.B.P.290, M.B.P.295, T.B.P.259, T.B.P.264, T.B.P.280, T.B.P.284, W.B.P.319, Th.B.P.336, B.565, B.588, Th.C.O.35, Th.C.O.37, Th.C.O.39, Th.C.O.40, M.C.P.103, W.C.P.42, W.C.P.50, Th.C.P.54, Th.C.P.86, C.699, C.703, C.704, C.777
Hodgkin's
W.B.O.20, M.B.P.290, B.631, Th.C.O.38, M.C.P.103

LYMPHOTOXIN
B.631

MACROPHAGES
Th.B.O.22, W.B.P.79, W.B.P.293, W.B.P.328, Th.B.P.79, Th.B.P.96, Th.B.P.99, Th.B.P.366, Th.B.P.372, M.C.O.19, T.C.O.16, W.C.O.7, W.C.O.8, W.C.O.9, Th.C.O.18, Th.C.O.24, M.C.P.42, M.C.P.49, M.C.P.109, M.C.P.135, T.C.P.5, T.C.P.6, T.C.P.8, T.C.P.17, T.C.P.34, T.C.P.58, T.C.P.66, T.C.P.140, T.C.P.146, W.C.P.6, W.C.P.17, W.C.P.27, W.C.P.55, W.C.P.60, W.C.P.63, W.C.P.64, W.C.P.66, W.C.P.68, W.C.P.71, W.C.P.77, W.C.P.78, W.C.P.93, W.C.P.100, W.C.P.105, W.C.P.122, W.C.P.123, Th.C.P.8, Th.C.P.29, Th.C.P.79, Th.C.P.87, Th.C.P.92, Th.C.P.101, Th.C.P.137, C.541, C.549, C.575, C.623, C.636, C.670, C.712, C.713, C.724, C.741, C.769, C.780

MAGNETIC RESONANCE IMAGING (MRI)
Th.B.O.23, M.B.P.196, Th.B.P.253, Th.B.P.254, Th.B.P.255, Th.B.P.256, Th.B.P.260, Th.B.P.262, Th.B.P.270, Th.B.P.282, Th.B.P.283, W.C.P.69, C.581

MAJOR HISTOCOMPATIBILITY COMPLEX ANTIGENS
M.C.P.30, W.C.P.130

MALARIA
W.B.P.151, W.B.P.152, E.666, M.G.P.28

MANNITOL
Th.B.P.204

MATHEMATICAL MODEL
see Model

MEASLES
M.G.P.27

MEDIA
A.557, T.D.O.15, D.503, D.698, W.E.O.1, W.E.O.20, W.E.O.21, W.E.O.22, W.E.O.23, W.E.O.24, Th.E.O.3, Th.E.O.6, M.E.P.4, M.E.P.6, M.E.P.7, M.E.P.13, M.E.P.14, M.E.P.15, M.E.P.16, M.E.P.17, M.E.P.18, M.E.P.19, M.E.P.20, M.E.P.21, M.E.P.22, M.E.P.44, M.E.P.48, M.E.P.59, T.E.P.4, T.E.P.5, T.E.P.16, T.E.P.21, T.E.P.23, T.E.P.56, T.E.P.68, W.E.P.2, W.E.P.4, W.E.P.11, W.E.P.19, W.E.P.21, W.E.P.25, W.E.P.27, W.E.P.28, W.E.P.29, W.E.P.30, W.E.P.52, W.E.P.58, W.E.P.64, Th.E.P.12, Th.E.P.20, Th.E.P.32, Th.E.P.37, Th.E.P.62, Th.E.P.63, Th.E.P.64, Th.E.P.65, Th.E.P.66, E.558, E.559, E.571, E.574, E.575, E.576, E.587, E.593, E.635, E.640, E.644, E.645, E.647, E.648, E.673, E.674, E.675, E.732, E.735, E.736, E.737, E.738, E.739, E.741, E.787, E.799, E.800, E.801, W.F.P.7, T.G.O.9

MEGESTROL
T.B.P.298, Th.B.P.309

MEMBRANE PROTEIN INHIBITORS
W.C.P.123

MENINGOENCEPHALITIS
M.A.O.31, M.B.O.36, Th.B.O.22, M.B.P.118, T.B.P.48, T.B.P.176, W.B.P.4, W.B.P.5, W.B.P.11, W.B.P.15, W.B.P.16, W.B.P.22, W.B.P.24, W.B.P.27, W.B.P.31, Th.B.P.205, Th.B.P.250, Th.B.P.258, Th.B.P.375, B.599

MEROCYANINE 540 (MC 540)
M.B.P.147

METHADONE
see Intravenous drug users

METHISOPRINOL
M.B.O.39

MHC
see Major histocompatibility complex

MIGRATION
W.A.O.30, T.A.P.15, T.A.P.46, T.A.P.51, A.528, A.589, M.E.O.11, M.E.P.12, M.E.P.13, E.546, E.552, W.F.O.22, W.G.O.13, T.G.P.24, M.H.O.4, Th.H.P.20, Th.H.P.26

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T.B.P.80, T.B.P.97, W.B.P.128, Th.C.O.4, T.C.P.84, T.C.P.149, Th.C.P.42, Th.C.P.59, Th.C.P.75, Th.C.P.108, C.663
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M.B.P.202, W.B.P.64, W.B.P.66,
W.B.P.378, Th.B.P.27, B.505
PANCREAS
M.B.P.233, M.B.P.235, Th.B.P.317
PARACOCCIDIOIDOMYCOSIS
M.B.P.93
PARASITES
M.B.P.91, T.B.P.1, W.B.P.30, B.521
PARENTERAL NUTRITION
Th.B.O.37
PARENTS
see Family
PAROTITIS
Th.B.P.347, B.582, B.583
PARTNER NOTIFICATION
M.A.O.33, T.A.O.33, W.A.O.19, W.A.O.20,
W.A.O.21, W.A.O.22, W.A.O.23,
W.A.O.24, M.A.P.97, W.A.P.84, W.A.P.85,
W.A.P.86, W.A.P.87, T.D.O.29, W.D.P.1,
Th.D.P.4, W.E.O.24, E.724, E.729,
W.H.P.24
PASSIVE IMMUNOTHERAPY
T.B.P.5, W.B.P.45, T.C.O.39, W.C.O.27,
W.G.O.6

PBL
see Peripheral blood lymphocytes

PCP
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see Children

PEER SUPPORT
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PELVIC INFLAMMATORY DISEASE (PID)
M.A.P.56, M.B.P.54

PENICILLIN, BENZATHINE
W.B.P.59

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T.B.O.3, T.B.O.26, T.B.O.30, M.B.P.233, M.B.P.235, M.B.P.286, M.B.P.377, T.B.P.32, T.B.P.37, T.B.P.38, T.B.P.44, T.B.P.45, T.B.P.51, T.B.P.60, T.B.P.65, T.B.P.70, T.B.P.72, T.B.P.73, T.B.P.78, T.B.P.319
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T.B.O.1, T.B.O.2, M.B.P.208, M.B.P.378, T.B.P.21, T.B.P.23, T.B.P.25, T.B.P.28, T.B.P.33, T.B.P.40, T.B.P.49, T.B.P.50, T.B.P.52, T.B.P.53, T.B.P.54, T.B.P.55, T.B.P.56, T.B.P.57, T.B.P.58, T.B.P.59, T.B.P.61, T.B.P.62, T.B.P.63, T.B.P.64, T.B.P.65, T.B.P.66, T.B.P.67, T.B.P.68, T.B.P.69, T.B.P.71, T.B.P.74, T.B.P.75, T.B.P.76, T.B.P.77, T.B.P.79, T.B.P.324, T.B.P.379, B.607, W.C.P.1, C.634, C.639

PENTOSAN-POLYSULFATE
W.B.P.299, W.B.P.300

PEPTIDE T
W.B.O.45a, W.B.P.286, M.C.P.92

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Th.B.O.54, Th.B.O.55, Th.B.O.56, T.B.P.91, T.B.P.103, T.B.P.119, T.B.P.120, T.B.P.231, T.B.P.332, T.B.P.349, W.B.P.94, W.B.P.95, W.B.P.97, W.B.P.106, W.B.P.118, W.B.P.120, W.B.P.121, W.B.P.125, W.B.P.127, W.B.P.133, W.B.P.134, W.B.P.137, W.B.P.166, W.B.P.169, W.B.P.171, W.B.P.172, Th.B.P.110, Th.B.P.169, Th.B.P.231, B.587, B.619, M.C.O.25, T.C.O.31, T.C.P.48, Th.C.P.2, Th.C.P.44, Th.C.P.73, C.554, C.648, C.665, C.690, C.694, C.697
synthetic
Th.B.O.9, Th.B.O.54, M.B.P.167, T.B.P.82, T.B.P.104, T.B.P.128, T.B.P.129, W.B.P.96, W.B.P.101, W.B.P.103, W.B.P.109, W.B.P.110, W.B.P.114, W.B.P.115, W.B.P.125, W.B.P.126, W.B.P.131, W.B.P.144, Th.B.P.110, Th.B.P.172, Th.B.P.371, B.535, B.548, B.562, M.C.O.32, T.C.O.11, T.C.O.35, W.C.O.40, M.C.P.6, M.C.P.7, M.C.P.41, T.C.P.16, T.C.P.23, T.C.P.48, T.C.P.76, T.C.P.144, W.C.P.98, Th.C.P.39, Th.C.P.55, Th.C.P.59, Th.C.P.78, Th.C.P.102, Th.C.P.127, C.523, C.544, C.545, C.555, C.745, C.765

PERCEPTION OF RISK
see Risk

PERIPHERAL BLOOD LYMPHOCYTES (PBL)
Th.B.O.10, M.B.P.131, M.B.P.165, M.B.P.246, T.B.P.88, T.B.P.95, T.B.P.110, W.B.P.32, W.B.P.145, W.B.P.167, Th.B.P.81, Th.B.P.97, Th.B.P.98, Th.B.P.149, Th.B.P.153, Th.B.P.165, Th.B.P.167, B.544, B.564, T.C.O.44, M.C.P.9, T.C.P.26, W.C.P.94, C.738

PERSONS WITH AIDS (PWA)
M.D.O.2, M.D.P.86, W.D.P.3, W.D.P.25, W.D.P.54, Th.D.P.24, D.558, D.563, D.578, D.670, D.706, M.E.O.14, M.E.O.26, M.E.P.57, M.E.P.63, T.E.P.53, E.524, E.700, Th.F.P.10, T.H.P.18

PERSONS WITH ARC (PWARC)
M.B.P.104, W.B.P.346, T.E.P.53

PHAGOCYTES
W.B.P.293, Th.B.P.100

PHORBOL ESTER (TPA)
T.B.P.111, Th.C.P.24

PHOSPHATIDYLCHOLINE
C.598

PHYLOGENETIC
M.C.O.5

PHYSICAL EXERCISE
T.B.P.301

PHYSICIANS
see Health care personnel

PID
see Pelvic inflammatory disease

PLACEBO CONTROLS
M.B.O.48, Th.B.O.43, Th.B.O.46, Th.B.O.47, M.B.P.352, T.B.P.294, T.B.P.304, W.B.P.282, W.B.P.290, W.B.P.302, W.B.P.308, W.B.P.313, W.B.P.331, M.C.P.142, W.F.O.5, W.F.O.6, W.F.O.7, W.F.P.3

PLACENTA
M.B.P.11, M.B.P.18, M.B.P.20

PMEA
M.C.P.69, M.C.P.74, M.C.P.81

PML
M.B.P.134, W.B.P.311, Th.B.P.89, Th.B.P.362, M.C.P.118, Th.C.P.113

***PNEUMOCYSTIS CARINII* PNEUMONIA (PCP)**
diagnosis
A.584, M.B.P.209, M.B.P.211, M.B.P.377, M.B.P.380, T.B.P.2, T.B.P.3, T.B.P.4, T.B.P.7, T.B.P.8, T.B.P.11, T.B.P.12, T.B.P.13, T.B.P.14, T.B.P.15, T.B.P.20, T.B.P.36, T.B.P.42, T.B.P.155, T.B.P.266, W.B.P.72, Th.B.P.81, B.559, B.616
prognosis
M.B.P.207, M.B.P.375, T.B.P.18, T.B.P.24, T.B.P.31, T.B.P.32, T.B.P.43, T.B.P.50, T.B.P.156, Th.B.P.52
prophylaxis
T.B.O.1, T.B.O.3, T.B.O.4, T.B.O.5, T.B.O.6, M.B.P.208, M.B.P.378, T.B.P.5, T.B.P.21, T.B.P.32, T.B.P.43, T.B.P.44, T.B.P.45, T.B.P.46, T.B.P.47, T.B.P.48, T.B.P.49, T.B.P.50, T.B.P.51, T.B.P.52, T.B.P.53, T.B.P.54, T.B.P.56, T.B.P.58, T.B.P.59, T.B.P.60, T.B.P.62, T.B.P.63, T.B.P.66, T.B.P.68, T.B.P.69, T.B.P.70, T.B.P.71, T.B.P.73, T.B.P.74, T.B.P.75, T.B.P.76, T.B.P.78, T.B.P.324, T.B.P.379, W.B.P.285, B.607, M.C.P.46, T.H.P.15
treatment
T.B.O.2, T.B.O.26, T.B.O.28, T.B.O.29, T.B.O.30, T.B.O.31, M.B.P.205, M.B.P.376, T.B.P.5, T.B.P.22, T.B.P.23, T.B.P.24, T.B.P.25, T.B.P.26, T.B.P.27, T.B.P.28, T.B.P.29, T.B.P.30, T.B.P.31, T.B.P.32, T.B.P.33, T.B.P.34, T.B.P.35, T.B.P.36, T.B.P.37, T.B.P.38, T.B.P.39, T.B.P.40, T.B.P.41, T.B.P.42, T.B.P.61, T.B.P.64, T.B.P.72, T.B.P.316, T.B.P.319, W.B.P.273, W.B.P.285, B.647, C.634, C.639
other
T.B.O.27, M.B.P.192, M.B.P.205, M.B.P.207, M.B.P.210, M.B.P.240, M.B.P.284, M.B.P.285, M.B.P.286, M.B.P.289, M.B.P.379, T.B.P.1, T.B.P.6, T.B.P.9, T.B.P.10, T.B.P.16, T.B.P.17, T.B.P.19, T.B.P.153, T.B.P.199, W.B.P.28, W.B.P.193, Th.B.P.340, B.537, C.518, C.722

PNEUMONIA
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PNEUMONITIS
M.B.P.106, M.B.P.115, M.B.P.210, M.B.P.212, M.B.P.214, M.B.P.297, T.B.P.316, Th.B.P.76, Th.B.P.77, B.582, B.615

PNEUMOTHORAX
M.B.P.205, M.B.P.207, M.B.P.208, T.B.P.76

POLIO VACCINE HYPERIMMUNIZATION
Th.B.P.118

POLYMERASE CHAIN REACTION (PCR)
Th.A.P.109, Th.A.P.110, Th.A.P.111, M.B.O.6, Th.B.O.7, Th.B.O.8, Th.B.O.9, Th.B.O.10, Th.B.O.11, Th.B.O.12, M.B.P.1, M.B.P.333, T.B.P.80, T.B.P.81, T.B.P.82, T.B.P.110, T.B.P.227, T.B.P.235, W.B.P.157, W.B.P.319, Th.B.P.111, Th.B.P.179, B.549, B.623, B.643, M.C.O.10, T.C.O.13, T.C.O.14, T.C.O.40, T.C.O.50, Th.C.O.50, M.C.P.9, M.C.P.28, T.C.P.10, T.C.P.21, T.C.P.82, T.C.P.92, T.C.P.131, T.C.P.143, W.C.P.33, W.C.P.41, W.C.P.43, W.C.P.62, W.C.P.84, W.C.P.88, W.C.P.119, W.C.P.126, W.C.P.133, W.C.P.139, Th.C.P.21,

Th.C.P.69, Th.C.P.70, Th.C.P.81, Th.C.P.114, Th.C.P.119, Th.C.P.148, C.650, C.659, C.660, C.675, C.725, C.733, C.738, C.741, C.754, C.759, C.773, Th.G.P.6

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W.B.P.343, M.D.P.1, Th.F.O.2, M.G.O.17

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W.A.O.7, W.A.O.8, W.A.O.12, M.A.P.6, W.A.P.7, Th.A.P.15, M.B.P.3, M.B.P.5, M.B.P.6, M.B.P.10, M.B.P.16, M.B.P.19, M.B.P.23, M.B.P.25, M.B.P.27, M.B.P.28, M.B.P.33, T.B.P.201, T.B.P.343, B.503, B.504, W.D.P.50, M.G.P.8, W.G.P.10
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M.B.P.21
see Serologic tests
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see Bisexuals
see Children
see Gay men
see General population
see Geographical aspects
see Hemophilia
see Heterosexuals
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methodology
M.A.O.4, Th.A.O.12, W.A.P.29, W.A.P.119, Th.A.P.34, Th.A.P.35, Th.A.P.78, T.B.P.347, W.B.P.213, Th.E.P.18
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see Prisoners
see Prostitutes
other
M.A.P.59, T.A.P.17, T.A.P.26, Th.A.P.16, W.B.P.209, W.D.P.34, M.G.O.29
see also Serologic tests

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M.A.O.27, W.A.O.21, W.A.O.29, M.A.P.15, M.A.P.70, M.A.P.76, T.A.P.104, W.A.P.93, W.A.P.105, W.A.P.111, W.A.P.113, W.A.P.119, A.557, M.B.P.117, Th.D.O.18, M.D.P.32, M.D.P.36, W.D.P.52, W.D.P.57, W.D.P.65, Th.D.P.30, D.531, D.557, D.665, W.E.O.7, T.E.P.35, T.E.P.64, W.E.P.19, Th.E.P.43, E.502, E.561, E.770, W.F.P.5, T.G.O.10, W.G.O.17, Th.G.O.31, T.G.P.8, Th.G.P.29, M.H.P.27, Th.H.P.27
see Gay men
see Hemophilia
see Heterosexuals
see Intravenous drug users
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see Prostitutes
other
M.A.P.2, M.A.P.115, W.A.P.2, W.A.P.120, Th.A.P.44, A.533, A.570, M.B.P.316, T.B.P.55, W.B.P.66, W.B.P.206, W.B.P.265, W.B.P.276, W.B.P.355, T.C.O.39, T.D.O.14, T.D.O.16, Th.D.O.10, T.D.P.6, T.D.P.89, W.D.P.23, W.D.P.45, W.D.P.46, D.516, D.627, D.660, D.668, D.669, D.683, D.684, D.691, E.546, E.555, T.G.P.21, T.G.P.22, Th.G.P.5, Th.H.P.30

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M.A.O.39, M.A.O.40, M.A.O.41, M.A.P.18, M.A.P.19, M.A.P.21, M.A.P.22, M.A.P.24, M.A.P.25, M.A.P.26, M.A.P.27, M.A.P.28, Th.A.P.20, Th.A.P.56, A.532, A.613, T.D.P.7, W.D.P.76, Th.D.P.16, Th.D.P.31, Th.D.P.45, D.723, M.E.P.6, M.F.P.4, G.518
prevention
M.A.O.38, M.A.O.43, M.A.P.20, Th.A.P.56, A.532, T.D.O.30, Th.D.O.17, T.D.P.32, W.D.P.78, M.E.P.6, T.E.P.20, W.E.P.37, W.E.P.67, Th.E.P.32, E.589, E.642, E.797
other
M.A.O.40, M.A.P.23, M.B.P.69, T.B.P.18, T.D.P.13, T.D.P.68, D.502, W.E.P.15, E.693, E.811, Th.F.O.6, M.F.P.6

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W.B.O.4, W.B.P.58, Th.B.P.198

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CD4 lymphocytes
T.A.O.29, M.A.P.99, M.A.P.100, M.A.P.102, M.B.P.356, Th.B.P.163, W.C.P.38
see Children
see Gay men
see Hemophilia
see Heterosexuals
see P24 antigen/antibody
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laboratory markers
T.A.O.29, T.A.O.34, M.A.P.37, M.A.P.88, M.A.P.96, M.A.P.102, W.A.P.58, W.A.P.62, A.531, A.540, A.583, A.622, Th.B.O.29, M.B.P.140, M.B.P.165, M.B.P.192, M.B.P.197, M.B.P.356, M.B.P.357, T.B.P.50, T.B.P.103, T.B.P.172, T.B.P.211, T.B.P.222, T.B.P.240, T.B.P.311, T.B.P.323, W.B.P.70, W.B.P.72, W.B.P.77, W.B.P.83, W.B.P.86, W.B.P.90, W.B.P.92, W.B.P.118, W.B.P.139, W.B.P.141, W.B.P.170, Th.B.P.17, Th.B.P.81, Th.B.P.84, Th.B.P.87, Th.B.P.97, Th.B.P.107, Th.B.P.143, Th.B.P.144, Th.B.P.161, Th.B.P.163, Th.B.P.168, Th.B.P.169, Th.B.P.183, Th.B.P.186, Th.B.P.291, Th.B.P.310, B.561, B.585, B.628, W.C.P.92, T.D.P.29, W.G.P.9
see Neopterin
other
M.A.P.102, A.609, A.622, M.B.P.198, M.B.P.288, T.B.P.269, T.B.P.372, W.B.P.4, W.B.P.344, Th.C.O.28, W.C.P.98, C.766, T.H.P.4

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T.A.O.6, T.A.O.20, T.A.O.21, T.A.O.24, W.A.O.11, W.A.O.23, W.A.O.24, W.A.O.25, W.A.O.28, M.A.P.20, M.A.P.55, M.A.P.62, M.A.P.70, T.A.P.82, W.A.P.88, W.A.P.96, W.A.P.106, W.A.P.107, W.A.P.108, W.A.P.116, Th.A.P.35, A.542, T.B.O.7, M.B.P.159, M.B.P.315, T.B.P.122, T.B.P.143, W.B.P.60, W.B.P.247, Th.B.P.146, B.545, B.577, M.C.P.61, M.D.P.45, W.D.P.88, Th.E.O.5, Th.E.O.6, M.E.P.74, T.E.P.49, W.E.P.33, E.531, E.541, E.588, E.662, E.677, E.758, W.F.P.10, M.G.O.1, G.510, Th.H.P.29

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T.A.O.23, M.A.P.10, M.A.P.118, T.A.P.11, W.A.P.31, W.A.P.114, W.A.P.117, A.577, A.579, A.591, T.B.P.333, W.B.P.241, C.617, T.D.P.14, T.D.P.89, W.D.P.44, D.516, D.619, W.E.O.23, W.E.P.4, W.E.P.5, E.647, M.F.O.2, M.G.O.2, W.G.O.13, W.G.O.18, M.G.P.17, T.G.P.9, T.G.P.10, T.G.P.17, Th.G.P.14, T.H.P.15, Th.H.P.8

PROGRESSION
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M.A.P.53, Th.B.P.155, T.C.P.60, W.C.P.134, C.708
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M.A.O.47, T.A.O.34, M.A.P.95, W.A.P.54, W.A.P.60, Th.A.P.85, Th.A.P.89, Th.A.P.96, A.510, A.638, Th.B.P.70, Th.B.P.187, T.C.P.69
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M.A.O.29, M.A.P.88, M.A.P.102, M.A.P.106, Th.A.P.86, W.B.O.45, Th.B.O.2, Th.B.O.40, Th.B.O.43, Th.B.O.46, M.B.P.105, M.B.P.246, M.B.P.367, W.B.P.56, W.B.P.145, W.B.P.165, W.B.P.180, W.B.P.186, W.B.P.198, W.B.P.201, W.B.P.298, W.B.P.302, W.B.P.362, Th.B.P.30, Th.B.P.90, Th.B.P.93, Th.B.P.105, Th.B.P.120, Th.B.P.139, Th.B.P.140, Th.B.P.203, Th.B.P.240, Th.B.P.263, Th.B.P.264, Th.B.P.265, Th.B.P.271, Th.B.P.287, Th.B.P.290, Th.B.P.298, Th.B.P.321, Th.B.P.326, Th.B.P.367, W.G.P.9
CDC stages
M.B.P.295, T.B.P.294, W.B.P.83, W.B.P.86, Th.B.P.166, Th.B.P.262, Th.B.P.270, T.C.P.73
see Children
see Gay men
see Hemophilia
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see Intravenous drug users
laboratory parameters
T.A.O.31, T.A.O.34, T.A.O.38, Th.A.O.10, M.A.P.92, M.A.P.97, M.A.P.98, M.A.P.101, M.A.P.103, M.A.P.104, M.A.P.105, M.A.P.106, M.A.P.107, M.A.P.108, W.A.P.53, W.A.P.58, W.A.P.66, W.A.P.75, W.A.P.79, Th.A.P.84, Th.A.P.86, Th.A.P.93, Th.A.P.99, Th.A.P.100, Th.A.P.102, A.612, M.B.O.18, M.B.O.23, M.B.O.50, M.B.P.35, M.B.P.105, M.B.P.254, M.B.P.258, T.B.P.304, T.B.P.336, W.B.P.73, W.B.P.74, W.B.P.76, W.B.P.77, W.B.P.79, W.B.P.80, W.B.P.87, W.B.P.91, W.B.P.341, Th.B.P.75,

Th.B.P.80, Th.B.P.90, Th.B.P.114, Th.B.P.133, Th.B.P.142, Th.B.P.145, Th.B.P.155, Th.B.P.168, Th.B.P.169, Th.B.P.181, Th.B.P.187, Th.B.P.222, Th.B.P.233, Th.B.P.236, Th.B.P.243, Th.B.P.245, Th.B.P.310, Th.B.P.313, B.520, B.554, M.C.O.9, M.C.P.50, T.C.P.50, T.C.P.67, W.C.P.56, W.C.P.72, W.C.P.80, C.714, W.G.O.6, T.G.P.25, W.H.P.18

see Pregnancy

Walter Reed stage
M.A.P.13, W.A.P.66, W.A.P.73, Th.A.P.93, W.B.P.239, Th.B.P.126, T.C.P.29, T.C.P.49, T.C.P.88, T.D.P.59

other
T.A.O.30, T.A.O.33, Th.A.O.25, Th.A.O.27, M.A.P.102, M.A.P.110, M.A.P.113, W.A.P.57, W.A.P.63, W.A.P.70, Th.A.P.83, Th.A.P.103, A.553, Th.B.O.38, M.B.P.8, M.B.P.14, M.B.P.29, M.B.P.34, T.B.P.357, T.B.P.372, W.B.P.146, W.B.P.291, Th.B.P.49, Th.B.P.127, Th.B.P.182, B.641, M.C.O.7, W.C.P.46, W.C.P.99, W.C.P.134, Th.C.P.74, W.D.P.40, Th.D.P.39, D.725

PROJECTION
T.A.O.35, T.A.O.36, T.A.O.37, T.A.O.39, Th.A.O.11, Th.A.O.22, M.A.P.67, M.A.P.87, M.A.P.89, M.A.P.96, T.A.P.62, W.A.P.34, Th.A.P.50, Th.A.P.52, Th.A.P.54, Th.A.P.57, Th.A.P.60, Th.A.P.61, Th.A.P.63, Th.A.P.67, Th.A.P.68, Th.A.P.69, Th.A.P.71, Th.A.P.74, Th.A.P.75, Th.A.P.76, Th.A.P.77, Th.A.P.79, Th.A.P.80, Th.A.P.81, Th.A.P.82, A.519, A.524, A.560, A.561, A.593, A.605, B.593, Th.E.P.2, M.G.O.26, T.G.P.7, M.H.O.2, M.H.O.10, M.H.O.18, T.H.O.2, W.H.O.15, T.H.P.12, W.H.P.17, W.H.P.19, W.H.P.20, W.H.P.22, W.H.P.25, Th.H.P.7

PROLACTIN (PRL)
Th.B.P.138

PROLIFERATIVE RESPONSE
Th.B.P.107, W.C.O.39, W.C.O.40, Th.C.O.1, M.C.P.8, M.C.P.56, M.C.P.79, T.C.P.14, T.C.P.27, T.C.P.38, T.C.P.62, T.C.P.74, T.C.P.77, W.C.P.104, C.535, C.545, C.554, C.557, C.566, C.711, C.758

PROMISCUITY
see Cultural practices
see Sexual behaviour

PROSTAGLANDINS
W.B.P.281, Th.B.P.98, W.C.P.120, W.C.P.131

PROSTITUTES
clients
M.A.O.35, W.A.O.30, M.A.P.47, M.A.P.48, M.A.P.49, A.617, T.D.P.78, T.D.P.80, W.D.P.41, W.G.O.23, M.G.P.5, Th.G.P.15

see Condoms

geographic
M.A.O.13, M.A.O.15, M.A.P.110, T.A.P.90, E.521, E.523, W.G.O.24, W.G.P.27, Th.H.P.17

intravenous drug users
M.A.P.28, M.A.P.52, W.B.P.53, Th.D.P.65, D.682, D.693, E.519

male
W.A.P.38, Th.D.O.8, M.D.P.19, W.D.P.31, M.E.O.31, W.E.P.14, E.519, E.522, W.F.O.22, M.G.P.20

prevalence
Th.A.O.21, Th.A.O.25, M.A.P.28, M.A.P.46, M.A.P.52, M.A.P.84, A.564, A.574, W.C.P.136, M.D.O.12, Th.D.O.11, Th.D.P.23, D.612, D.693, Th.E.P.3, E.523, W.G.O.26, Th.G.O.25, Th.G.O.26, M.G.P.13, T.G.P.32, W.G.P.21, W.G.P.27

prevention
M.A.O.36, T.A.O.25, M.A.P.117, W.A.P.96, W.A.P.118, M.D.O.12, Th.D.O.7, Th.D.O.9, Th.D.O.11, Th.D.O.12, W.D.P.41, Th.D.P.20, Th.D.P.21, Th.D.P.22, Th.D.P.66, Th.D.P.91, D.697, T.E.P.70, W.E.P.71, E.523, E.776, W.G.O.19, W.G.O.20, W.G.O.21, W.G.O.23, T.G.P.11, Th.H.P.29

other
M.B.P.53, T.B.P.366, Th.B.P.324, W.C.P.79, Th.D.O.10, T.D.P.80, Th.D.P.3, Th.D.P.19, D.620, D.682, Th.E.P.76, E.523, M.F.P.8, W.F.P.8

PROTEASE
W.B.P.137, M.C.O.23, T.C.O.11, M.C.P.84, T.C.P.73, T.C.P.85, T.C.P.130, T.C.P.135, Th.C.P.4, Th.C.P.10, Th.C.P.66, Th.C.P.73, Th.C.P.136, C.662, C.666, C.683, C.694

PROTEIN KINASE C
W.C.O.21, T.C.P.98, W.C.P.27, W.C.P.59, W.C.P.104

PSEUDOTYPES
Th.C.P.48

PSYCHIATRY
W.B.O.40, W.B.O.41, W.B.O.43, W.B.O.45a, M.B.P.306, M.B.P.381, M.B.P.382, M.B.P.383, M.B.P.384, W.B.P.182, W.B.P.185, W.B.P.191, W.B.P.201, W.B.P.202, W.B.P.203, W.B.P.205, W.B.P.206, W.B.P.208, W.B.P.209, W.B.P.210, W.B.P.211, W.B.P.212, W.B.P.213, W.B.P.214, W.B.P.215, W.B.P.216, W.B.P.217, W.B.P.218, W.B.P.220, W.B.P.223, W.B.P.224, W.B.P.226, W.B.P.228, W.B.P.231, W.B.P.236, W.B.P.261, W.B.P.380, Th.B.P.32, Th.B.P.188, Th.B.P.217, Th.B.P.221, Th.B.P.267, Th.B.P.284, Th.B.P.286, Th.B.P.377, C.584, T.D.P.84, T.D.P.86, D.675, E.659

PSYCHOIMMUNOLOGIC
T.B.P.301, W.B.P.68, W.B.P.190, W.B.P.222, Th.B.P.292, T.D.P.29, T.D.P.50, D.533, D.675, D.713

PSYCHOMETRIC
W.A.O.28, M.B.O.41, W.B.O.43, W.B.P.185, W.B.P.187, W.B.P.255, W.B.P.256, W.B.P.259, B.566, T.D.P.30, T.D.P.51, T.D.P.58, T.D.P.59, D.708, D.713

see also Central nervous system

PSYCHOSOCIAL
M.A.O.48, M.A.O.49, Th.A.P.64, A.638, W.B.O.44, M.B.P.155, M.B.P.306, T.B.P.300, W.B.P.63, W.B.P.66, W.B.P.187, W.B.P.199, W.B.P.203, W.B.P.205, W.B.P.212, W.B.P.219, W.B.P.269, W.B.P.332, Th.B.P.318, B.595, M.D.O.2, T.D.O.8, T.D.O.9, W.D.O.2, M.D.P.41, M.D.P.46, M.D.P.91, T.D.P.22, T.D.P.44, T.D.P.49, T.D.P.52, T.D.P.53, T.D.P.60, T.D.P.66, T.D.P.68, T.D.P.70, T.D.P.72, W.D.P.7, W.D.P.10, W.D.P.17, W.D.P.31, W.D.P.38, W.D.P.58, D.506, D.527, D.532, D.551, D.560, D.578, D.600, D.635, D.638, D.661, D.670, D.674, D.675, D.678, D.681, D.687, D.699, D.710, D.712, D.714, D.718, W.E.O.12, W.E.O.15, Th.E.O.13, M.E.P.2, M.E.P.34, M.E.P.36, M.E.P.47, M.E.P.57, M.E.P.74, M.E.P.75, W.E.P.44, Th.E.P.24, E.524, E.527, E.541, E.675, E.700, E.704, E.761, E.766, E.809

PSYCHOTHERAPY
A.581, W.B.P.207, W.B.P.243, W.B.P.261, W.B.P.380, B.608, W.D.P.14, W.D.P.17, Th.D.P.88, D.536, D.558, D.577, D.586, D.654, D.708, D.710, D.719

PUBLIC POLICY
W.A.O.7, W.A.O.22, W.A.P.115, A.506, A.579, A.593, A.597, W.B.P.241, W.B.P.267, Th.B.P.216, M.C.P.123, M.D.P.63, Th.D.P.74, D.697, T.E.O.1, T.E.O.10, T.E.O.14, T.E.O.15, T.E.O.16, T.E.O.17, W.E.O.8, W.E.O.25, Th.E.O.7, Th.E.O.9, M.E.P.3, M.E.P.11, M.E.P.24, T.E.P.11, T.E.P.31, T.E.P.33, T.E.P.35, T.E.P.36, T.E.P.37, T.E.P.40, T.E.P.41, T.E.P.45, T.E.P.46, T.E.P.48, T.E.P.49, T.E.P.70, T.E.P.72, Th.E.P.68, E.530, E.536, E.577, E.613, E.633, E.682, E.695, E.696, E.698, E.721, E.767, E.784, M.F.O.3, T.F.O.7, M.F.P.10, M.F.P.12, T.F.P.2, Th.F.P.3, Th.F.P.4, Th.F.P.5, Th.F.P.9, Th.F.P.10, Th.F.P.11, M.G.O.14, W.G.O.14, W.G.O.15, W.G.O.25, T.G.P.1, Th.G.P.18, G.505, G.513, M.H.O.2, M.H.O.4, M.H.O.5, M.H.O.8, M.H.O.9, M.H.O.10, M.H.O.11, M.H.O.16, M.H.O.18, T.H.O.4, T.H.O.5, T.H.O.13, W.H.O.4, W.H.O.11, W.H.O.12, W.H.O.15, Th.H.O.4, M.H.P.10, M.H.P.20, T.H.P.3, T.H.P.5, T.H.P.6, T.H.P.8, T.H.P.9, T.H.P.11, T.H.P.14, T.H.P.19, T.H.P.20, W.H.P.8, W.H.P.11, Th.H.P.1, Th.H.P.3, Th.H.P.4, Th.H.P.5

PUROMYCIN
M.C.P.90

PWA
see Persons with AIDS

PWARC
see Persons with ARC

PYRIMETHAMINE-SULFADOXINE
T.B.P.43, T.B.P.48, W.B.P.34

QUALITY OF LIFE
M.B.P.28, M.B.P.307, M.B.P.311, T.B.P.300, W.B.P.66, W.B.P.262, Th.B.P.318, T.D.P.50, T.D.P.52, T.D.P.62, W.D.P.9, W.D.P.13, D.543, D.577, D.578, T.E.P.25, T.E.P.53
QUINOLIZINE
M.C.P.108
QUINOLONES
M.B.P.69, Th.B.P.232, M.C.P.147, C.624
RADIATION, ULTRAVIOLET
W.A.P.117, W.B.P.82, W.C.P.70, Th.C.P.20, E.802
RECOMBINANT SOLUBLE CD4 (RCD4)
Th.B.O.6, T.B.P.303, M.C.O.15, T.C.O.18, Th.C.O.5, Th.C.O.11, Th.C.O.13, Th.C.O.14, Th.C.O.15, Th.C.O.16, M.C.P.49, M.C.P.89, M.C.P.97, M.C.P.127, M.C.P.129, M.C.P.137, T.C.P.96, T.C.P.116, W.C.P.135, Th.C.P.22, C.627
linked toxin
Th.C.O.12, M.C.P.72
REGIONAL
see Geographical aspects
REGULATION
by cellular factor
T.B.P.322, T.C.P.20, T.C.P.83, T.C.P.101, T.C.P.113, T.C.P.117, T.C.P.118, T.C.P.133, W.C.P.17, W.C.P.91, W.C.P.105, W.C.P.121, Th.C.P.15, Th.C.P.29
herpes viruses
T.C.P.78
LTR
M.C.O.24, M.C.O.31, M.C.O.31, T.C.O.12, T.C.O.14, T.C.O.15, T.C.O.16, T.C.O.30, W.C.O.22, Th.C.O.23, T.C.P.91, T.C.P.94, T.C.P.101, T.C.P.103, T.C.P.118, T.C.P.120, T.C.P.133, T.C.P.136, W.C.P.121, Th.C.P.19, Th.C.P.20, Th.C.P.71, Th.C.P.93, C.525, C.646, C.658, C.670
nef
W.C.O.33, W.C.O.37, Th.C.O.25, M.C.P.31, T.C.P.120, T.C.P.127, T.C.P.129, T.C.P.132, T.C.P.139, W.C.P.91, Th.C.P.23
pol
T.C.P.137
rev
T.C.P.80, T.C.P.81, T.C.P.102, T.C.P.114, T.C.P.127, T.C.P.129, T.C.P.139, Th.C.P.140, C.647, C.667
TAR
T.C.O.27, T.C.O.29, T.C.O.31, T.C.P.93, T.C.P.136
tat
T.C.O.29, T.C.O.31, T.C.P.83, T.C.P.87, T.C.P.89, T.C.P.93, T.C.P.94, T.C.P.101, T.C.P.103, T.C.P.127, T.C.P.129, T.C.P.139, C.645, C.646, C.776, C.782
other
W.B.P.241, T.C.O.13, T.C.O.15, T.C.O.45, W.C.O.5, T.C.P.104, W.C.P.121, Th.C.P.67, C.606, C.646, C.649, C.789
REITER'S SYNDROME
W.B.O.17
RELATED DISEASES
see AIDS-related complex
see Sexually transmitted disease
RELIGION AND MORALITY
M.E.O.11, W.E.O.27, W.E.O.28, W.E.O.30, T.E.P.29, Th.E.P.40, Th.E.P.41, Th.E.P.42, Th.E.P.44, Th.E.P.61, E.733, E.734, W.F.O.14
REPLICATION
assembly
T.C.O.6, W.C.O.36, T.C.P.99, Th.C.P.90
endocytosis
Th.C.P.150
env processing
M.C.P.146, Th.C.P.122
high molecular weight RNA
T.C.P.129
kinetics
T.C.P.144, W.C.P.70, Th.C.P.27, Th.C.P.41, Th.C.P.89, Th.C.P.93, Th.C.P.116, C.743
recombination
B.561, M.C.O.19, T.C.O.19, Th.C.P.28, Th.C.P.31, Th.C.P.32, Th.C.P.33, Th.C.P.56, C.703
small nuclear RNAs
M.C.P.78, T.C.P.80
syncytia
M.C.O.8, T.C.O.20, Th.C.O.2, Th.C.O.4, M.C.P.1, M.C.P.75, M.C.P.147, W.C.P.46, Th.C.P.61, Th.C.P.63, Th.C.P.116, Th.C.P.150, C.550, C.582, C.743, C.750
other
T.B.P.118, T.B.P.314, W.B.P.146, W.B.P.357, B.547, M.C.O.19, T.C.O.47, W.C.O.9, W.C.O.24, W.C.O.36, W.C.O.37, Th.C.O.17, Th.C.O.19, M.C.P.39, M.C.P.112, M.C.P.121, T.C.P.20, T.C.P.104, T.C.P.110, T.C.P.119, T.C.P.145, W.C.P.108, W.C.P.118, W.C.P.144, Th.C.P.64, Th.C.P.90, Th.C.P.147, C.585, C.597, C.789
REPORTING
T.A.O.3, T.A.O.5, T.A.O.6, T.A.O.7, T.A.O.26, T.A.O.27, W.A.O.13, T.A.P.9, T.A.P.25, T.A.P.61, T.A.P.64, T.A.P.66, T.A.P.68, T.A.P.69, T.A.P.70, T.A.P.72, T.A.P.73, T.A.P.74, T.A.P.77, T.A.P.78, W.A.P.15, W.A.P.60, Th.A.P.115, A.530, A.551, A.590, T.D.O.11, M.E.P.19, E.559, E.738, T.F.O.11, M.F.P.10, Th.F.P.4, Th.G.P.18, W.H.P.15, W.H.P.17, W.H.P.22
REPRODUCTION
Th.B.P.277
RESEARCH PRIORITIES
M.C.P.61, M.G.P.23
RESOURCE ALLOCATION
T.A.P.3, A.504, W.B.P.63, W.B.P.241, W.B.P.262, M.E.P.69, T.E.P.58, T.E.P.71, Th.E.P.67, E.531, T.F.O.11, W.G.O.17, T.G.P.4, M.H.O.8, M.H.O.15, M.H.O.16, T.H.O.2, T.H.O.5, T.H.O.9, T.H.O.11, W.H.O.11, Th.H.O.4, T.H.P.1, T.H.P.9, T.H.P.18, T.H.P.25
RESUSCITATION
A.599, T.B.P.31, T.B.P.294, T.F.O.19
RETINITIS
M.B.P.52, M.B.P.225, M.B.P.228, M.B.P.229, M.B.P.230
RETINOL BINDING
Th.B.P.306
RETROVIR
see Zidovudine
RETROVIRUSES (OTHER THAN HIV)
see under specific viruses
REVERSE TRANSCRIPTASE
M.B.P.336, T.B.P.110, W.B.P.118, W.B.P.147, Th.B.P.184, M.C.O.31, M.C.O.31, T.C.O.2, T.C.O.4, W.C.O.24, W.C.O.43, Th.C.O.19, M.C.P.76, M.C.P.106, M.C.P.108, M.C.P.115, M.C.P.118, M.C.P.125, T.C.P.108, T.C.P.126, W.C.P.16, W.C.P.111, Th.C.P.2, Th.C.P.82, Th.C.P.84, Th.C.P.103, Th.C.P.116, Th.C.P.118, Th.C.P.120, Th.C.P.123, Th.C.P.128, C.585, C.597, C.624, C.666, C.672, C.681, C.682
RHODOTORULA RUBRA
M.B.P.83
RIBAVIRIN
Th.A.P.43, Th.B.O.1, Th.B.O.2, T.B.P.294, T.B.P.296, T.B.P.302, M.C.P.88, C.677
RIBOZYMES
Th.C.O.22, M.C.P.58
RISK FACTORS
see Intravenous drug users
see Sexual behaviour
see Transmission
RISK, PERCEPTION
T.A.O.22, W.A.P.51, W.A.P.91, A.570, M.B.P.4, M.B.P.142, M.D.O.15, Th.D.O.8, M.D.P.52, M.D.P.54, M.D.P.62, M.D.P.63, M.D.P.64, M.D.P.78, T.D.P.7, T.D.P.16, T.D.P.27, T.D.P.51, W.D.P.69, W.D.P.92, Th.D.P.5, Th.D.P.8, Th.D.P.11, D.595, D.624, D.631, D.636, D.664, D.671, W.E.O.19, M.E.P.18, M.E.P.33, W.E.P.40, W.E.P.65, E.501, E.716, E.724, E.749, E.785, E.802, T.F.P.5, T.F.P.6, T.F.P.7, T.F.P.9, T.F.P.10, Th.F.P.12, T.G.O.7, M.G.P.31, T.G.P.23
RISK (PREDICTORS OF HIV INFECTION)
M.A.O.3, M.A.O.6, M.A.O.21, M.A.O.32, M.A.O.41, T.A.O.14, T.A.O.17, T.A.O.19, Th.A.O.16, Th.A.O.20, Th.A.O.21, Th.A.O.23, M.A.P.1, M.A.P.4, M.A.P.12, M.A.P.15, M.A.P.23, M.A.P.48, M.A.P.57, M.A.P.65, T.A.P.9, T.A.P.10, T.A.P.12, T.A.P.18, T.A.P.20, T.A.P.24, T.A.P.43, T.A.P.45, T.A.P.50, T.A.P.85, T.A.P.87, T.A.P.96, T.A.P.98, T.A.P.99, T.A.P.103,

T.A.P.105, T.A.P.110, T.A.P.112, T.A.P.118, T.A.P.119, T.A.P.120, W.A.P.3, W.A.P.4, W.A.P.6, W.A.P.8, W.A.P.12, W.A.P.36, W.A.P.37, W.A.P.38, W.A.P.43, W.A.P.48, W.A.P.107, Th.A.P.20, Th.A.P.45, Th.A.P.66, A.513, A.562, A.580, A.607, A.615, A.637, M.B.O.20, M.B.P.5, M.B.P.23, M.B.P.28, M.B.P.33, M.B.P.54, M.B.P.141, M.B.P.150, M.B.P.276, T.B.P.217, T.B.P.352, W.B.P.53, W.B.P.223, W.B.P.266, W.B.P.270, B.504, M.C.P.111, C.515, M.D.O.1, M.D.O.10, T.D.O.9, T.D.O.13, Th.D.O.14, M.D.P.25, M.D.P.35, T.D.P.20, T.D.P.51, T.D.P.67, T.D.P.71, W.D.P.5, W.D.P.56, W.D.P.70, W.D.P.92, Th.D.P.1, Th.D.P.2, Th.D.P.31, Th.D.P.48, Th.D.P.49, Th.D.P.51, Th.D.P.60, Th.D.P.63, Th.D.P.65, D.508, D.511, D.541, D.561, D.587, D.611, D.620, Th.E.P.21, E.558, T.F.O.19, Th.G.O.53, W.G.P.3, G.509, W.H.P.23, Th.H.P.19, Th.H.P.20, Th.H.P.24

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T.A.P.2, T.A.P.18, A.523, A.619, A.638, T.B.P.145, T.B.P.160, T.B.P.359, W.B.P.252, M.D.P.51, D.526, D.635, Th.E.P.9, Th.E.P.10, Th.E.P.12, Th.E.P.15, Th.E.P.17, Th.E.P.26, Th.E.P.27, Th.E.P.30, E.550, E.717, E.722, E.723, E.727, E.731
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M.A.P.67, M.A.P.71, M.A.P.83, M.A.P.100, M.A.P.119, T.A.P.13, T.A.P.79, T.A.P.81, W.A.P.11, Th.A.P.1, Th.A.P.7, Th.A.P.24, Th.A.P.38, Th.A.P.40, Th.A.P.107, Th.A.P.108, Th.A.P.110, Th.A.P.112, Th.A.P.117, A.568, A.617, A.623, A.629, M.B.O.26, M.B.O.27, T.B.O.9, Th.B.O.9, Th.B.O.10, Th.B.O.56, Th.B.O.57, M.B.P.40, M.B.P.163, M.B.P.164, M.B.P.168, M.B.P.170, M.B.P.172, M.B.P.173, M.B.P.357, T.B.P.11, T.B.P.92, T.B.P.101, T.B.P.102, T.B.P.104, T.B.P.108, T.B.P.116, T.B.P.119, T.B.P.121, T.B.P.126, T.B.P.127, T.B.P.130, T.B.P.131, T.B.P.135, T.B.P.137, T.B.P.141, T.B.P.142, T.B.P.143, T.B.P.144, T.B.P.230, T.B.P.231, T.B.P.232, T.B.P.243, T.B.P.337, T.B.P.338, T.B.P.348, W.B.P.100, W.B.P.101, W.B.P.102, W.B.P.104, W.B.P.108, W.B.P.112, W.B.P.113, W.B.P.114, W.B.P.116, W.B.P.117, W.B.P.129, W.B.P.131, W.B.P.138, W.B.P.143, W.B.P.150, W.B.P.156, W.B.P.159, W.B.P.160, W.B.P.166, W.B.P.168, W.B.P.171, W.B.P.172, W.B.P.173, W.B.P.174, W.B.P.179, Th.B.P.110, Th.B.P.126, Th.B.P.169, Th.B.P.170, Th.B.P.176, Th.B.P.338, Th.B.P.365, Th.B.P.369, B.536, B.539, B.549, B.551, B.553, B.556, B.603, B.605, B.617, B.618, B.624, B.629, B.635, B.642, M.C.P.100, M.C.P.111, T.C.P.46, W.C.P.38, Th.C.P.37, Th.C.P.46, Th.C.P.55, Th.C.P.86, C.569, W.D.P.49, Th.E.P.7, Th.E.P.21, Th.E.P.25, Th.E.P.28, E.710, E.718, E.719, E.730, E.731, W.G.P.1, W.G.P.15, Th.G.P.9, Th.H.P.18
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M.A.P.55, M.A.P.59, M.A.P.75, M.A.P.76, M.B.P.155, B.554, T.D.O.18, W.D.P.15, T.E.O.10, Th.E.P.9, Th.E.P.10, Th.E.P.29, E.678, E.712, E.717, E.720, M.G.O.17
ethical and legal aspects
M.B.P.152, B.552, Th.E.P.14, Th.E.P.29, T.F.O.13
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W.A.O.9, Th.A.O.10, Th.A.O.14, M.A.P.118, T.A.P.81, T.A.P.108, Th.A.P.2, Th.A.P.88, Th.A.P.107, Th.A.P.108, Th.A.P.116, Th.A.P.118, A.509, A.512, A.534, A.552, A.593, M.B.O.25, M.B.O.27, Th.B.O.9, Th.B.O.59, M.B.P.99, M.B.P.107, M.B.P.153, M.B.P.170, M.B.P.218, M.B.P.361, T.B.P.82, T.B.P.97, T.B.P.100, T.B.P.113, T.B.P.120, T.B.P.123, T.B.P.125, T.B.P.126, T.B.P.127, T.B.P.131, T.B.P.141, T.B.P.142, T.B.P.144, T.B.P.145, T.B.P.201, T.B.P.221, T.B.P.233, T.B.P.241, T.B.P.242, T.B.P.332, T.B.P.333, T.B.P.335, T.B.P.336, T.B.P.339, T.B.P.342, T.B.P.347, W.B.P.6, W.B.P.17, W.B.P.97, W.B.P.100, W.B.P.102, W.B.P.106, W.B.P.113, W.B.P.129, W.B.P.147, W.B.P.153, W.B.P.154, W.B.P.161, W.B.P.162, W.B.P.169, W.B.P.170, W.B.P.171, W.B.P.172, W.B.P.175, W.B.P.177, W.B.P.178, W.B.P.200, Th.B.P.112, Th.B.P.123, Th.B.P.149, B.542, B.548, B.549, B.550, B.551, B.554, B.556, B.557, B.561, B.578, B.619, B.623, B.635, B.636, B.640, B.644, M.C.P.100, Th.C.P.80, Th.C.P.104, C.513, C.569, C.622, C.765, C.779, Th.D.P.24, Th.E.P.21, Th.E.P.31, E.709, E.730, E.731, M.G.O.5, W.G.P.15, Th.G.P.7, Th.G.P.8, Th.G.P.9, Th.H.P.18
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see HTLV-I
in hospitals
T.A.O.5, M.A.P.10, M.A.P.16, T.A.P.23, W.A.P.8, Th.A.P.9, Th.A.P.12, A.521, A.529, A.558, A.562, T.B.P.126,

T.B.P.127, T.B.P.144, B.510, Th.E.P.15, Th.E.P.28, T.G.O.20, M.G.P.15
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  M.A.O.1, W.A.O.25, W.B.P.228, T.E.P.56, W.E.P.76, Th.E.P.31, E.721
pregnancy and perinatal
  T.A.O.18, W.A.O.8, W.A.O.9, W.A.O.11, W.A.O.12, M.A.P.6, M.A.P.8, M.A.P.12, M.A.P.15, W.A.P.2, W.A.P.8, W.A.P.8, W.A.P.11, W.A.P.52, Th.A.P.39, M.B.P.2, M.B.P.5, M.B.P.8, M.B.P.12, M.B.P.14, M.B.P.25, M.B.P.29, M.B.P.30, M.B.P.31, M.B.P.34, T.B.P.160, T.B.P.195, T.B.P.198, T.B.P.202, T.B.P.212, T.B.P.217, T.B.P.220, T.B.P.231, T.B.P.238, T.B.P.343, Th.B.P.34, B.503, B.504, B.585, W.D.P.58, Th.E.P.16, Th.E.P.23, Th.E.P.27, E.716, T.G.O.19, W.G.O.26, W.G.O.30, W.G.O.30, Th.G.O.28, Th.G.O.51, M.G.P.16, M.G.P.18, Th.G.P.2, G.507
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  W.A.O.25, Th.E.P.16, Th.E.P.31, W.F.P.4
prisoners
  M.A.O.42, M.A.P.19, M.A.P.21, M.A.P.23, D.723, Th.E.P.32, E.721
psychology
  A.638, T.B.P.160, T.B.P.192, W.B.P.192, W.B.P.194, W.B.P.210, W.B.P.228, D.714, M.E.P.51, Th.E.P.9, Th.E.P.24, E.729
saliva antibodies
  T.B.P.238, W.B.P.156, T.C.P.64
STD clinics
  M.A.O.20, M.A.O.22, M.A.O.23, M.A.O.25, Th.A.O.18, M.A.P.54, M.A.P.57, M.A.P.58, M.A.P.61, M.A.P.62, M.A.P.66, M.A.P.67, M.A.P.68, M.A.P.69, M.A.P.72, M.A.P.73, M.A.P.74, M.A.P.86, T.A.P.3, T.A.P.52, T.A.P.89, T.A.P.112, T.A.P.118, Th.A.P.16, A.523, A.528, A.580, A.614, M.D.P.28, M.D.P.30, W.D.P.82, D.557, W.E.P.53, Th.E.P.8, Th.E.P.18, Th.E.P.25, Th.E.P.28, E.713, E.716, E.724, T.G.O.22, Th.G.O.31, Th.G.O.35, T.G.P.18, W.G.P.4, W.G.P.28, W.G.P.29, Th.G.P.5
other
  M.A.O.6, M.A.O.14, M.A.O.17, M.A.O.21, M.A.O.28, T.A.O.5, Th.A.O.19, M.A.P.2, M.A.P.4, M.A.P.9, M.A.P.22, M.A.P.48, M.A.P.60, M.A.P.104, T.A.P.6, T.A.P.16, T.A.P.17, T.A.P.27, T.A.P.38, W.A.P.3, W.A.P.87, Th.A.P.34, Th.A.P.37, Th.A.P.96, A.501, A.511, A.514, A.515, A.518, A.520, A.525, A.584, A.585, A.629, M.B.P.5, M.B.P.125, M.B.P.145, M.B.P.149, M.B.P.174, T.B.P.138, T.B.P.333, T.B.P.336, T.B.P.341, T.B.P.357, W.B.P.56, W.B.P.90, W.B.P.115, W.B.P.148, W.B.P.173, W.B.P.176, Th.B.P.85, Th.B.P.114, Th.B.P.154, Th.B.P.175, Th.B.P.231, Th.B.P.236, Th.B.P.271, B.511, B.617, B.622, B.643, W.C.O.47, Th.C.O.46, W.C.P.23, Th.C.P.128, C.766, M.D.O.6, T.D.O.9, M.D.P.10, W.D.P.8, Th.D.P.63, D.586, Th.E.O.4, W.E.P.31, Th.E.P.7, Th.E.P.13, Th.E.P.25, E.714, E.728, E.783, M.G.P.22, M.G.P.25, T.G.P.10, W.G.P.2, W.G.P.30, Th.G.P.26, Th.G.P.30, G.501, G.503, G.512, G.515

SEROREVERSION
  W.A.P.45, A.616, T.B.P.240, W.B.P.54, W.B.P.176, T.C.P.134, C.502, W.D.P.6

SEROTONIN
  W.B.P.194, Th.B.P.224, Th.B.P.237

SERUM ENHANCING FACTORS
  see Antibody-dependent enhancement
  see Complement-dependent enhancement

SERVICE UTILIZATION
  M.A.O.24, M.A.P.59, W.A.P.98, A.504, A.506, A.597, A.608, A.627, A.628, B.607, Th.D.P.15, M.E.P.55, M.E.P.56, E.541, T.G.P.4, M.H.O.9, M.H.O.11, M.H.O.17, T.H.O.2, M.H.P.1, M.H.P.2, M.H.P.9, M.H.P.11, M.H.P.12, M.H.P.17, T.H.P.3, T.H.P.7, T.H.P.8, T.H.P.9, T.H.P.12, Th.H.P.3, Th.H.P.5, Th.H.P.10, Th.H.P.11

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  T.A.O.16, T.A.O.40, W.A.O.27, M.A.P.47, T.A.P.83, T.A.P.105, T.A.P.117, W.A.P.40, W.A.P.46, W.A.P.91, W.A.P.116, Th.A.P.52, Th.A.P.57, A.507, A.522, A.524, M.B.O.19, M.B.P.28, T.B.P.341, T.D.O.8, T.D.O.21, T.D.O.29, W.D.O.1, W.D.O.4, M.D.P.3, M.D.P.4, M.D.P.5, M.D.P.19, M.D.P.23, M.D.P.25, M.D.P.26, M.D.P.28, M.D.P.30, M.D.P.83, T.D.P.1, T.D.P.6, T.D.P.17, T.D.P.18, T.D.P.19, T.D.P.28, T.D.P.37, T.D.P.75, T.D.P.80, T.D.P.82, T.D.P.92, W.D.P.30, W.D.P.36, W.D.P.46, W.D.P.51, W.D.P.52, W.D.P.70, W.D.P.82, Th.D.P.3, Th.D.P.6, Th.D.P.17, Th.D.P.19, Th.D.P.23, Th.D.P.25, Th.D.P.30, Th.D.P.53, Th.D.P.57, Th.D.P.60, Th.D.P.83, D.507, D.510, D.518, D.527, D.529, D.547, D.580, D.665, D.666, D.673, D.702, D.723, D.723, M.E.O.32, W.E.P.31, Th.E.P.11, Th.E.P.37, Th.E.P.48, Th.E.P.54, E.515, E.522, E.651, E.812, W.G.O.22, W.G.O.24, Th.G.O.30, W.G.P.11, W.G.P.20, Th.G.P.15, Th.G.P.23, G.520, W.H.P.24
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  M.A.O.22, M.A.P.21, T.A.P.8, Th.B.P.178, T.D.O.11, E.712
bisexuals
  M.A.P.76, M.A.P.120, T.A.P.21, T.A.P.58, T.A.P.113, W.A.P.24, W.A.P.39, W.A.P.92, T.D.O.6, W.D.O.6, M.D.P.23, M.D.P.28, M.D.P.31, T.D.P.18, T.D.P.20, T.D.P.33, T.D.P.35, T.D.P.39, W.D.P.9, W.D.P.27, W.D.P.89, D.528, D.555, D.713, M.E.P.36, M.E.P.43, W.E.P.7, Th.E.P.48, Th.E.P.74, Th.E.P.75, E.544, M.G.P.14
gay men
  M.A.O.42, Th.A.O.16, M.A.P.76, M.A.P.120, T.A.P.20, T.A.P.21, T.A.P.58, T.A.P.84, W.A.P.24, W.A.P.36, W.A.P.39, W.A.P.42, W.A.P.44, W.A.P.69, W.A.P.92, Th.A.P.33, Th.A.P.42, A.524, A.570, Th.B.P.178, B.627, Th.C.O.36, T.D.O.22, M.D.P.15, M.D.P.22, M.D.P.23, M.D.P.28, M.D.P.34, M.D.P.38, T.D.P.4, T.D.P.12, T.D.P.23, T.D.P.28, T.D.P.31, T.D.P.33, T.D.P.35, T.D.P.36, T.D.P.39, T.D.P.42, T.D.P.43, T.D.P.47, W.D.P.3, W.D.P.27, W.D.P.70, W.D.P.89, W.D.P.92, Th.D.P.88, D.528, D.529, D.531, D.555, D.701, D.713, Th.E.O.16, M.E.P.2, T.E.P.1, T.E.P.6, T.E.P.8, T.E.P.29, T.E.P.47, W.E.P.7, Th.E.P.48, Th.E.P.74, Th.E.P.75, E.517, E.544
heterosexuals
  T.A.O.16, W.A.O.19, M.A.P.107, T.A.P.14, T.A.P.40, T.A.P.84, T.A.P.91, T.A.P.94, T.A.P.97, T.A.P.100, T.A.P.101, T.A.P.105, T.A.P.106, T.A.P.112, W.A.P.18, W.A.P.21, Th.A.P.11, Th.A.P.59, A.604, A.635, M.B.P.28, M.B.P.141, B.557, M.D.O.3, T.D.O.20, Th.D.O.14, M.D.P.13, T.D.P.1, T.D.P.2, T.D.P.34, T.D.P.43, T.D.P.71, W.D.P.53, W.D.P.55, W.D.P.83, W.D.P.90, Th.D.P.21, Th.D.P.83, D.541, D.678, D.721, D.722, T.E.P.47, Th.G.P.4, Th.G.P.29
intravenous drug users
  T.A.O.13, T.A.P.31, T.A.P.40, T.A.P.47, T.A.P.112, T.A.P.113, W.A.P.88, Th.A.P.64, Th.A.P.101, M.B.P.27, W.D.O.5, Th.D.O.5, Th.D.O.15, T.D.P.77, W.D.P.62, W.D.P.64, W.D.P.79, W.D.P.85, Th.D.P.6, Th.D.P.12, Th.D.P.42, Th.D.P.47, Th.D.P.64, Th.D.P.65, Th.D.P.83, D.589, D.597, D.601, T.E.P.17, T.E.P.38, Th.E.P.4
safer sex
  M.A.O.22, M.A.O.37, M.A.P.47, M.A.P.120, T.A.P.76, W.A.P.44, W.A.P.93, W.A.P.100, W.A.P.116, A.570, A.636, M.B.P.4, Th.B.P.178, M.D.O.4, T.D.O.8, T.D.O.20, W.D.O.2, M.D.P.21, M.D.P.27, M.D.P.38, T.D.P.31, T.D.P.36, T.D.P.43, T.D.P.76, T.D.P.83, T.D.P.91, W.D.P.57, Th.D.P.81, Th.D.P.88, D.551, M.E.O.10, M.E.O.33, Th.E.O.16, M.E.P.43, T.E.P.1, T.E.P.3, T.E.P.6, T.E.P.8, T.E.P.12, T.E.P.21, W.E.P.6, W.E.P.10, W.E.P.71, W.E.P.72, Th.E.P.39, Th.E.P.73, E.519, E.525, E.544, E.619, E.653, E.724, T.G.O.8, T.G.O.11
seropositive partners
  T.A.O.16, T.A.O.17, W.A.O.19, W.A.O.22, M.A.P.107, T.A.P.88, T.A.P.90, T.A.P.95, T.A.P.99, T.A.P.104, T.A.P.109, T.A.P.114, W.A.P.40, W.A.P.93, Th.A.P.1, Th.A.P.71, W.B.P.367, Th.B.P.33, Th.B.P.34, C.739, T.D.O.35, T.D.P.41, T.D.P.53, W.D.P.2, Th.D.P.4, D.571, D.576, D.686, T.E.P.29
other
  A.515, M.D.O.1, Th.E.P.22, E.649
see also Prostitutes; Transmission

SEXUAL DYSFUNCTION
  W.B.P.189, B.608, T.D.O.22, E.548

SEXUALLY TRANSMITTED DISEASES (STD)
  M.A.O.23, M.A.O.34, Th.A.O.17, Th.A.O.21, M.A.P.53, M.A.P.90, T.A.P.32,

T.A.P.58, T.A.P.76, T.A.P.83, T.A.P.84, T.A.P.87, T.A.P.91, T.A.P.102, T.A.P.118, T.A.P.119, W.A.P.37, W.A.P.39, W.A.P.45, W.A.P.85, Th.A.P.16, Th.A.P.51, Th.A.P.100, A.506, M.B.P.57, M.B.P.146, M.B.P.181, W.B.P.51, W.B.P.53, W.B.P.56, B.557, W.C.P.86, T.D.O.25, T.D.P.2, T.D.P.17, W.D.P.3, W.D.P.15, W.D.P.20, W.D.P.52, W.D.P.55, Th.D.P.23, Th.D.P.44, D.507, D.659, D.693, D.696, T.E.P.24, E.716, E.722, E.735, Th.G.O.36, Th.G.O.53, M.G.P.2, W.G.P.16, W.G.P.18, W.G.P.21, W.G.P.28, Th.G.P.5, Th.G.P.24

SHO-SAIKO-TOH
W.B.P.292, M.C.P.144, M.C.P.148

SIMIAN D-TYPE RETROVIRUS
T.C.O.39, W.C.P.32, W.C.P.52, W.C.P.146, W.C.P.147

SINUSITIS
M.B.P.203

SIV
M.C.O.5, M.C.O.6, M.C.O.25, T.C.O.17, T.C.O.30, T.C.O.36, T.C.O.40, T.C.O.41, T.C.O.42, T.C.O.43, T.C.O.45, W.C.O.12, W.C.O.42, W.C.O.45, W.C.O.50, M.C.P.16, M.C.P.33, M.C.P.45, M.C.P.47, T.C.P.10, T.C.P.100, T.C.P.115, T.C.P.134, W.C.P.7, W.C.P.9, W.C.P.10, W.C.P.12, W.C.P.15, W.C.P.18, W.C.P.23, W.C.P.25, W.C.P.30, W.C.P.33, W.C.P.34, W.C.P.75, W.C.P.89, Th.C.P.23, Th.C.P.58, Th.C.P.78, Th.C.P.89, Th.C.P.107, C.502, C.510, C.540, C.681, C.696, C.746, C.758

SJOGREN'S SYNDROME
Th.B.P.116

SKIN DISEASES
epithelioid angiomatosis
M.B.P.36
herpes zoster
M.B.P.176, M.B.P.178, M.B.P.188, Th.G.O.35, W.G.P.24
psoriasis
Th.A.P.107, W.B.O.17, M.B.P.187, M.B.P.365, T.B.P.330, B.530
Steven Johnson's syndrome
T.B.P.43
other
M.B.P.111, M.B.P.176, M.B.P.177, M.B.P.180, M.B.P.181, M.B.P.182, M.B.P.183, M.B.P.184, M.B.P.185, M.B.P.186, M.B.P.188, T.B.P.149, T.B.P.292, T.B.P.309, T.B.P.316, T.B.P.371, T.B.P.372, T.B.P.373, W.B.P.49, W.B.P.297, Th.B.P.71, Th.B.P.328, B.530, B.584

SKIN TESTING
DTH
W.B.P.274, W.B.P.279, Th.B.P.82, Th.B.P.114, Th.B.P.115, W.C.P.97, W.C.P.145
other
B.639, B.639

SMOKING
T.A.O.18, Th.B.P.75

SMS 201-995
C.612

SOCIAL IMPACT
M.B.P.305, W.B.P.215, B.607, W.D.P.67, D.543, Th.E.O.13, Th.E.P.19, E.510, M.F.P.8, M.F.P.11, T.F.P.5, Th.F.P.12, M.G.P.30, T.G.P.13, T.G.P.15, W.H.P.14

SOCIAL SUPPORT
W.B.O.40, M.B.P.311, W.B.P.64, W.B.P.219, W.B.P.238, W.B.P.262, B.595, B.646, C.618, M.D.P.46, D.675, D.677, D.690, M.E.O.17, T.E.O.1, M.E.P.64, M.E.P.65, M.E.P.69, E.510, E.532, E.533

SOCIOECONOMIC MODELS
Th.E.O.14, W.H.O.8, W.H.O.9, W.H.O.16, W.H.O.17, T.H.P.27, W.H.P.9, W.H.P.14

SOCIOECONOMIC STATUS
M.A.O.41, T.A.O.18, M.A.P.53, W.A.P.1, W.A.P.25, M.D.P.29, W.D.P.60, D.690, Th.E.O.15, M.E.P.13, W.E.P.51, Th.E.P.5, Th.E.P.19, E.637, W.G.O.22, M.G.P.18, W.G.P.20

SOMATOSTATIN
W.B.P.43

SOMATOSTATIN ANALOG
M.C.P.112

SPECIMEN BANK
Th.E.P.70

SPERMICIDES
M.A.O.36, M.A.O.37, Th.A.O.15, W.A.P.102, D.544, T.E.P.61

SPINAL CORD
W.C.P.55

SPLEEN
W.B.O.12, M.B.P.377, T.B.P.272, T.B.P.273, T.B.P.275, B.524

S-POLYSACCHARIDES
W.C.O.23

STAFF STRESS
see Health care personnel

STAGES
see Progression

STAPHYLOCOCCUS AUREUS
M.B.P.72, M.B.P.287

STD
see Sexually transmitted diseases

STIGMA
A.554, D.631, M.E.P.3, Th.E.P.44, E.504, E.554, T.F.O.3, T.F.P.9

STRAIN VARIATION
Th.A.P.114, M.C.O.6, M.C.O.9, M.C.O.20, T.C.O.37, T.C.O.41, Th.C.O.28, M.C.P.87, T.C.P.91, T.C.P.111, T.C.P.122, T.C.P.124, W.C.P.96, Th.C.P.11, Th.C.P.17, Th.C.P.50, Th.C.P.71, Th.C.P.74, Th.C.P.76, Th.C.P.85, Th.C.P.91, Th.C.P.120, Th.C.P.125, C.643, C.659, C.696, M.F.P.3

STRAINS, VIRULENCE
T.C.P.94, T.C.P.134, W.C.P.2, W.C.P.7, Th.C.P.100, Th.C.P.116, Th.C.P.117, C.646

STREET KIDS
see Adolescents

STREPTOMYCIN
Th.B.P.61

SUBSTANCE ABUSE (NON-INTRAVENOUS)
M.A.P.56, T.A.P.32, T.A.P.48, A.516, M.B.P.256, W.B.P.197, W.B.P.210, W.B.P.217, Th.B.P.331, Th.B.P.380, C.711, W.D.O.4, M.D.P.24, T.D.P.51, W.D.P.61, W.D.P.82, Th.D.P.33, Th.D.P.44, Th.D.P.75, Th.D.P.85, D.587, D.604, D.706, E.726
see also Alcohol; Intravenous drug users; Nitrite inhalants

SUGAR ANALOGUES
M.C.O.18, M.C.P.93, M.C.P.134, M.C.P.141, Th.C.P.43

SUGAR
see Oligosaccharides

SUICIDE
A.554, M.B.P.383, W.B.P.214, D.676

SULPHATED COMPOUNDS
M.C.P.75, M.C.P.75, M.C.P.79, C.595, C.607, C.623

SUPPORT GROUPS
M.B.P.317, M.B.P.361, Th.B.P.35, C.617, M.D.P.92, W.D.P.7, W.D.P.18, Th.D.P.7, Th.D.P.54, D.546, D.554, D.565, D.568, D.571, D.576, D.598, D.602, D.617, D.645, D.649, D.651, D.687, D.704, D.720, M.E.O.16, M.E.O.28, W.E.O.6, M.E.P.1, M.E.P.51, W.E.P.16, Th.E.P.33, E.809, Th.F.PP.203, T.B.P.273, W.B.P.381, Th.B.P.349, B.531

SURVEILLANCE
M.A.O.5, M.A.O.6, M.A.O.11, M.A.O.21, T.A.O.6, T.A.O.9, T.A.O.10, T.A.O.26, T.A.O.27, W.A.O.1, W.A.O.2, W.A.O.14, W.A.O.17, W.A.O.29, Th.A.O.11, Th.A.O.12, Th.A.O.14, M.A.P.2, M.A.P.3, M.A.P.4, M.A.P.10, M.A.P.16, M.A.P.17, M.A.P.61, M.A.P.64, M.A.P.117, T.A.P.5, T.A.P.25, T.A.P.35, T.A.P.37, T.A.P.56, T.A.P.61, T.A.P.65, T.A.P.66, T.A.P.68, T.A.P.69, T.A.P.70, T.A.P.71, T.A.P.72, T.A.P.73, T.A.P.77, T.A.P.79, T.A.P.80, W.A.P.4, W.A.P.10, W.A.P.12, W.A.P.15, W.A.P.18, W.A.P.20, W.A.P.25, W.A.P.28, W.A.P.29, W.A.P.35, W.A.P.60, W.A.P.83, W.A.P.86, W.A.P.119, Th.A.P.76, Th.A.P.115, Th.A.P.120, A.526, A.530, A.535, A.537, A.547, A.551, A.567, A.569, A.575, A.578, A.588, A.590, A.591, A.595, A.607, A.619, A.635, T.B.P.157, T.B.P.346, T.B.P.364, W.B.P.155, Th.B.P.44, B.541, B.633, B.646, W.G.O.13, W.G.O.25, T.G.P.2, Th.G.P.18, Th.G.P.28, G.502, W.H.P.15, Th.H.P.26

SURVEY
attitudes and knowledge
W.A.O.20, W.A.O.26, W.A.O.27, W.A.O.28, M.A.P.53, M.A.P.60, T.A.P.19, W.A.P.85, W.A.P.91, W.A.P.97, W.A.P.115, W.A.P.117, Th.A.P.33, A.512, A.566, A.589, A.626, M.B.P.309, T.B.P.36, W.B.P.251, Th.B.P.30, C.618, M.D.O.3, M.D.O.8, M.D.O.11, M.D.O.13, M.D.O.15, M.D.O.16, T.D.O.24, T.D.O.29, Th.D.O.1, M.D.P.2, M.D.P.5, M.D.P.6, M.D.P.11, M.D.P.12, M.D.P.13, M.D.P.14, M.D.P.16, M.D.P.17, M.D.P.18, M.D.P.20, M.D.P.26, M.D.P.27, M.D.P.30, M.D.P.32, M.D.P.33, M.D.P.35, M.D.P.37, M.D.P.40, M.D.P.42, M.D.P.44, M.D.P.50, M.D.P.52, M.D.P.54, M.D.P.55, M.D.P.56, M.D.P.57, M.D.P.58, M.D.P.59, M.D.P.60, M.D.P.64, M.D.P.65, M.D.P.66, M.D.P.69, M.D.P.70, M.D.P.71, M.D.P.77, M.D.P.79, M.D.P.80, M.D.P.82, M.D.P.84, M.D.P.86, M.D.P.89, M.D.P.90, T.D.P.7, T.D.P.8, T.D.P.9, T.D.P.10, T.D.P.11, T.D.P.13, T.D.P.13, T.D.P.15, T.D.P.19, T.D.P.21, T.D.P.25, T.D.P.40, T.D.P.50, T.D.P.55, T.D.P.85, T.D.P.90, W.D.P.6, W.D.P.18, W.D.P.21, W.D.P.29, W.D.P.30, W.D.P.31, W.D.P.35, W.D.P.43, W.D.P.47, W.D.P.60, W.D.P.62, Th.D.P.8, Th.D.P.19, Th.D.P.20, Th.D.P.52, Th.D.P.72, Th.D.P.76, Th.D.P.80, Th.D.P.92, D.510, D.526, D.527, D.530, D.538, D.542, D.544, D.545, D.590, D.595, D.605, D.625, D.626, D.642, D.647, D.659, D.671, D.679, D.680, D.682, D.694, D.696, M.E.O.33, M.E.O.36, T.E.O.2, W.E.O.25, Th.E.O.3, Th.E.O.17, M.E.P.3, M.E.P.4, M.E.P.14, M.E.P.18, M.E.P.30, M.E.P.33, M.E.P.43, M.E.P.63, M.E.P.66, M.E.P.70, T.E.P.1, T.E.P.6, T.E.P.7, T.E.P.14, T.E.P.20, T.E.P.21, T.E.P.26, T.E.P.31, T.E.P.34, T.E.P.36, T.E.P.39, T.E.P.47, W.E.P.1, W.E.P.10, W.E.P.11, W.E.P.12, W.E.P.14, W.E.P.17, W.E.P.19, W.E.P.22, W.E.P.31, W.E.P.38, W.E.P.49, W.E.P.51, W.E.P.53, W.E.P.58, W.E.P.59, W.E.P.63, W.E.P.65, W.E.P.68, W.E.P.69, W.E.P.73, W.E.P.75, W.E.P.76, Th.E.P.10, Th.E.P.11, Th.E.P.13, Th.E.P.27, Th.E.P.28, Th.E.P.35, Th.E.P.39, Th.E.P.46, Th.E.P.48, Th.E.P.53, Th.E.P.56, Th.E.P.59, Th.E.P.74, Th.E.P.76, E.504, E.515, E.525, E.526, E.543, E.549, E.552, E.553, E.562, E.563, E.565, E.570, E.580, E.581, E.584, E.587, E.590, E.596, E.599, E.600, E.606, E.607, E.608, E.609, E.614, E.619, E.620, E.621, E.622, E.627, E.629, E.635, E.637, E.638, E.639, E.642, E.644, E.648, E.649, E.651, E.652, E.653, E.654, E.662, E.667, E.669, E.676, E.681, E.699, E.704, E.705, E.723, E.726, E.745, E.746, E.747, E.752, E.763, E.764, E.766, E.769, E.772, E.785, E.787, E.794, Th.F.O.7, W.F.P.1, W.F.P.3, Th.F.P.7, Th.F.P.14, M.G.O.13, M.G.O.14, M.G.O.18, W.G.O.21, W.G.P.27, Th.G.P.16, Th.G.P.20, Th.H.P.29, Th.H.P.30
methodology
Th.A.O.13, Th.A.O.14, T.A.P.26, Th.A.P.39, T.B.P.358, W.B.P.61, W.B.P.240, W.B.P.270, M.D.O.6, T.D.O.11, M.D.P.37, M.D.P.52, M.D.P.65, T.D.P.90, W.D.P.73, D.537, D.587, D.588, D.679, M.E.O.36, Th.E.P.50, E.614, E.648, E.651, E.711, T.F.O.13, W.F.O.7, T.H.P.28

SURVIVAL
T.A.O.36, M.A.P.91, M.A.P.108, W.A.P.34, W.A.P.65, W.A.P.76, W.A.P.77, W.A.P.78, W.A.P.80, W.A.P.81, W.A.P.82, W.A.P.83, A.559, A.563, A.608, M.B.O.45, M.B.O.46, T.B.O.11, T.B.O.27, W.B.O.39, T.B.P.18, T.B.P.31, T.B.P.77, W.B.P.333, W.B.P.337, W.B.P.345, W.B.P.347, W.B.P.352, W.B.P.354, W.B.P.358, W.B.P.363, W.B.P.366, Th.B.P.48, Th.B.P.63, T.E.P.25, W.G.O.2, T.H.P.4, Th.H.P.16

SURVIVORS
T.B.P.77, D.566

SUSCEPTIBILITY
Th.A.P.83, Th.B.P.366

SYNERGY
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    M.B.O.46, M.B.O.50, M.B.P.47, M.B.P.352, W.B.P.318, W.B.P.321, W.B.P.350
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    M.B.O.48, M.B.P.328, M.B.P.358, T.B.P.268, T.B.P.306, T.B.P.308, T.B.P.324, T.B.P.325, W.B.P.338, W.B.P.356, W.B.P.368, W.B.P.375, B.648
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  ddC
    Th.B.O.4, C.592, C.620
  dose
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  foscarnet
    W.B.O.12, M.B.P.47, M.B.P.128, C.592, C.620
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  IFN
    M.B.P.353, T.B.P.279, T.B.P.381, W.B.P.321, W.B.P.322, W.B.P.323, W.B.P.326, M.C.P.97
  in asymptomatic disease
    T.A.P.115, M.B.O.50, W.B.O.1, M.B.P.349, M.B.P.352, W.B.P.322, W.B.P.325, W.B.P.332, W.B.P.368
  in vitro
    M.B.P.353, Th.B.P.106, T.C.O.7, M.C.P.42, M.C.P.50, M.C.P.55, M.C.P.87, M.C.P.96, M.C.P.114, T.C.P.3, T.C.P.58, Th.C.P.79, Th.C.P.98, C.570, C.593, C.621
  ITP
    T.B.P.270, T.B.P.271, T.B.P.273, T.B.P.306
  intravenous drug users
    M.B.P.361, W.B.P.336, W.B.P.373, Th.B.P.164
  Kaposi's sarcoma
    M.B.P.365, T.B.P.279, T.B.P.291, T.B.P.293, T.B.P.331, T.B.P.380, W.B.P.326, W.B.P.359
  kinetics
    W.B.O.1, W.B.O.2, W.B.O.3, W.B.O.4, W.B.O.5, M.B.P.9, M.B.P.13, M.B.P.15, M.B.P.22, M.B.P.323, M.B.P.324, M.B.P.331, M.B.P.332, M.B.P.334, M.B.P.338, M.B.P.340, M.B.P.341, M.B.P.343, M.B.P.344, Th.B.P.198, Th.B.P.204, M.C.P.54, M.C.P.64, M.C.P.94, M.C.P.98, W.C.P.81, Th.C.P.88
  levels
    W.B.O.4, M.B.P.331, M.B.P.336, M.B.P.337, M.B.P.339, M.B.P.342, M.B.P.344, M.B.P.345, W.B.P.360, Th.B.P.204, Th.C.P.88
  mechanism
    M.B.P.345, B.582, Th.C.O.21, M.C.P.120, Th.C.P.79
  monitor
    Th.A.P.72, Th.B.O.26, M.B.P.346, T.B.P.313, W.B.P.332, W.B.P.337, W.B.P.354, W.B.P.363, M.C.P.126, T.C.P.67, Th.C.P.138, T.E.P.45
  neurology
    T.B.P.248, T.B.P.299, W.B.P.255, W.B.P.331, Th.B.P.197, Th.B.P.210, Th.B.P.215, Th.B.P.218, Th.B.P.268, Th.B.P.278, C.610
  Pneumocystis carinii pneumonia
    T.B.P.73, W.B.P.347
  Pneumocystis carinii pneumonia
  suppression
    W.B.P.358
  pregnancy
    M.B.P.9, M.B.P.13, M.B.P.15, M.B.P.22
  quality of life
    T.B.P.325, T.B.P.329, W.B.P.187, W.B.P.337, W.B.P.360, W.B.P.364, C.633, D.674
  resistance
    M.B.P.350, M.C.P.50, T.C.P.111, Th.C.P.74, Th.C.P.76
  semen
    T.C.P.28, E.548
  side effects
    Th.A.P.45, M.B.O.47, M.B.O.49, M.B.O.50, W.B.O.6, M.B.P.37, M.B.P.189, M.B.P.235, M.B.P.239, M.B.P.325, M.B.P.326, M.B.P.329, M.B.P.330, M.B.P.335, M.B.P.337, M.B.P.363, M.B.P.364, M.B.P.367, T.B.P.249, T.B.P.253, T.B.P.268, T.B.P.277, T.B.P.305, T.B.P.307, T.B.P.308, T.B.P.310, T.B.P.314, T.B.P.315, T.B.P.321,

T.B.P.322, T.B.P.326, T.B.P.327, T.B.P.329, W.B.P.326, W.B.P.328, W.B.P.334, W.B.P.337, W.B.P.338, W.B.P.342, W.B.P.345, W.B.P.349, W.B.P.355, W.B.P.356, W.B.P.358, W.B.P.359, W.B.P.361, W.B.P.362, W.B.P.363, W.B.P.369, Th.B.P.307, B.601, B.648, M.C.P.53, M.C.P.64, C.610

Toxoplasma
W.B.P.24

other
W.A.P.57, M.B.O.45, T.B.O.6, W.B.O.7, W.B.O.8, W.B.O.9, Th.B.O.26, M.B.P.104, M.B.P.335, M.B.P.342, M.B.P.346, M.B.P.347, M.B.P.348, M.B.P.351, M.B.P.355, M.B.P.356, M.B.P.359, M.B.P.360, M.B.P.363, M.B.P.364, M.B.P.365, M.B.P.370, T.B.P.49, T.B.P.74, T.B.P.274, T.B.P.285, T.B.P.311, T.B.P.312, T.B.P.323, T.B.P.328, W.B.P.155, W.B.P.333, W.B.P.338, W.B.P.339, W.B.P.340, W.B.P.343, W.B.P.344, W.B.P.352, W.B.P.353, W.B.P.355, W.B.P.357, W.B.P.360, W.B.P.364, W.B.P.365, W.B.P.366, W.B.P.367, W.B.P.369, W.B.P.370, W.B.P.371, W.B.P.372, W.B.P.373, Th.B.P.71, Th.B.P.115, Th.B.P.145, Th.B.P.194, Th.B.P.195, Th.B.P.308, B.597, B.606, T.C.O.42, Th.C.O.17, Th.C.O.18, M.C.P.53, M.C.P.70, M.C.P.109, M.C.P.132, W.C.P.29, C.512, C.584, C.618, C.640, W.F.P.9

ZINC
Th.B.P.303, Th.B.P.310, Th.B.P.315, M.C.P.56

ZOONOSIS
A.626, A.632, Th.B.P.316